

# **NUCLEAR REGULATORY COMMISSION ISSUANCES**

## **OPINIONS AND DECISIONS OF THE NUCLEAR REGULATORY COMMISSION WITH SELECTED ORDERS**

**July 1, 1987 – December 31, 1987**

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Prepared by the  
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B. Paul Cotter, Chairman, Atomic Safety & Licensing Board Panel**

**\*Mr. Rogers began serving as Commissioner on August 7, 1987.**

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## ADMINISTRATIVE LAW JUDGES

Ivan W. Smith  
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## PREFACE

This is the twenty-sixth volume of issuances (1 - 530) of the Nuclear Regulatory Commission and its Atomic Safety and Licensing Appeal Boards, Atomic Safety and Licensing Boards, and Administrative Law Judges. It covers the period from July 1, 1987 to December 31, 1987.

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 Administrative Law Judges appointed pursuant to the Administrative Procedure Act, who preside over proceedings as directed by the Commission.

The hardbound edition of the Nuclear Regulatory Commission Issuances is a final compilation of the monthly issuances. It includes all of the legal precedents for the agency within a six-month period. Any opinions, decisions, denials, memoranda and orders of the Commission inadvertently omitted from the monthly softbounds and any corrections submitted by the NRC legal staff to the printed softbound issuances are contained in the hardbound edition. 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 Judges--ALJ, Directors' Decisions--DD, and Denial of Petitions 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:

Lando W. Zech, Jr., Chairman  
Thomas M. Roberts  
James K. Asselstine  
Frederick M. Bernthal  
Kenneth M. Carr

In the Matter of

Docket Nos. 50-456-OL  
50-457-OL

COMMONWEALTH EDISON  
COMPANY

(Baldwood Nuclear Power Station,  
Units 1 and 2)

June 30, 1987

The Commission conducts a review under 10 C.F.R. § 2.764(f) to determine if the effectiveness of two Licensing Board decisions that resolved all contested issues in the proceeding in favor of Applicant and that authorized the issuance of full-power operating licenses should be stayed. The Commission concludes that no safety reasons exist for staying the effectiveness of the Board's decisions, and that the decision authorizing issuance of full-power operating licenses should become effective, pending completion of the agency's adjudicatory appellate process.

**CIVIL PENALTIES: ASSESSMENT (AUTHORITY)**

Unless assigned by the Commission to hear cases under 10 C.F.R. § 2.205, licensing boards have no authority independently to impose civil penalties. *Metro-politan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-82-31, 16 NRC 1236, 1238-39 (1982).

## NRC: HEALTH AND SAFETY RESPONSIBILITIES

In its immediate effectiveness review of a board decision, the Commission, having responsibility for public health and safety, will consider a safety issue discussed by the board, even though the issue was not properly before the board.

### ORDER

The Licensing Board in the Braidwood proceeding has issued two partial initial decisions (PIDs)<sup>1</sup> which, taken together, resolve all the contested issues in that proceeding in favor of the Applicant, Commonwealth Edison. In concluding the second of the decisions, the Licensing Board declared that the Director of Nuclear Reactor Regulation ("NRR") was authorized, upon making the findings required under 10 C.F.R. § 50.57(a), to issue full-power operating licenses to the Applicant. LBP-87-14, 25 NRC 461, 504. Only this second, and authorizing, decision has been appealed, but neither decision has become final under the agency's adjudicatory appellate process.<sup>2</sup> Thus, pending the completion of that process, and consistent with 10 C.F.R. § 2.764(f), the Commission has conducted a review of the Board's decisions to determine whether there are safety reasons for delaying the effectiveness of the Board's concluding PID.<sup>3</sup> The Commission has determined that no such reasons exist, and that the Licensing Board's concluding decision should become effective.<sup>4</sup>

The first PID dealt with two emergency planning issues: public information programs, and evacuation of institutions such as nursing homes. In a unanimous opinion, the Board ruled in the Applicant's favor on the first issue, subject to the Applicant's making certain changes in the public information booklets, and the Board declared the Intervenor in default on the second issue for having failed to file, as directed, proposed findings of fact and conclusions of law. See 10 C.F.R. § 2.754(b). No party has appealed this PID, although the Appeal Board will be reviewing it *sua sponte*, as is customary with licensing board decisions

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<sup>1</sup> The first PID, on emergency planning, was issued on May 13, 1987. LBP-87-13, 25 NRC 449. The second, on quality assurance, was issued on May 19, 1987. LBP-87-14, 25 NRC 461.

<sup>2</sup> The Appeal Board will be undertaking *sua sponte* review of the first PID.

<sup>3</sup> Under § 2.764(f)(2)(ii), parties are permitted to file effectiveness comments for the Commission's consideration during its review. Only the Applicant filed such comments.

<sup>4</sup> Still before the Licensing Board is a motion to reopen the record to hear a contention that a new entity that the Applicant has proposed separately to be allowed to operate the facility is not an "electric utility" under the Commission's financial qualification rule, 10 C.F.R. § 2.104(c)(4), and is not financially qualified to operate the facility. Since the new entity is not the applicant for the licenses whose issuance was authorized by the Board, we have not considered this new contention during our effectiveness review. The application to have the new entity operate the facility will be the subject of a separate proceeding.

that are not appealed. We have reviewed the decision and find nothing in it that warrants delaying the effectiveness of the concluding PID.<sup>5</sup>

The second and concluding PID was concentrated on a single contention, which alleged that certain specified instances of harassment of quality assurance inspectors who inspected electrical system welding had taken place in the last few years at Braidwood. The Board's two technical judges, with the lawyer-chairman in dissent, concluded that although the efforts of certain managers to eliminate a large backlog<sup>6</sup> of needed inspections had not been above reproach, nothing had taken place that called for "the precipitous action of license denial." LBP-87-14, 24 NRC at 502. Although the Chairman in his dissent recommends imposition of civil penalties on the Applicant,<sup>7</sup> he also concluded that "the weight of the evidence is that management made no attempt to discourage inspectors from documenting ordinary discrepancies," and that the inspectors who suffered the alleged intimidation "performed their field inspections competently and successfully resisted any attempts that may have been made by management to sacrifice quality for quantity." *Id.*, Dissenting Opinion, 24 NRC at 668-69. The Board was unanimous in concluding that there is reasonable assurance that the part of the electrical system that was installed during the period at issue under the contention could be operated without adverse impact on the public health and safety. Dissenting Opinion at 560; Majority Opinion at 504. As a result of our review of the concluding PID, we find in the contested issues in the proceeding no reason to stay the effectiveness of the Board's decision pending completion of the appellate process.

However, the dissent also calls into question the adequacy of the electrical system welding performed before the period of time at issue under the contention. *See* Dissenting Opinion, 24 NRC 538, 560. Though granting that the safety of the earlier welding was not at issue in the adjudication, *id.* at 554-55, 669, the dissent nonetheless argues that the weld inspection program in place before October 1983 was not adequate to ensure the safety of the electrical system installed before the date, and that the principal later reinspection program which covered that period, though it found no safety-significant welding discrepancies, cannot vouch for the safety of the welding on that system. The dissent's principal reason for discounting the later reinspection program was that under that program, Sargent & Lundy, the architect/engineer for Braidwood, was the organization responsible for judging the safety significance of any welding dis-

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<sup>5</sup> Nothing in our conclusions on either of the PIDs is to be taken to prejudice the issues before the Appeal Board in this proceeding. *See* 10 C.F.R. § 2.764(g).

<sup>6</sup> The backlog arose in part because of the Applicant's decision to require the subcontractor with responsibility for the inspections to perform more of them. *See* LBP-87-14, 24 NRC at 470, 500 n.18.

<sup>7</sup> Unless assigned by the Commission to hear cases under 10 C.F.R. § 2.205, licensing boards have no authority independently to impose civil penalties. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-82-31, 16 NRC 1236, 1238-39 (1982).

crepancies found during reinspection, and that as architect/engineer, Sargent & Lundy was too interested in getting the plant licensed, and too given to believing that it had designed adequate margins of safety into the electrical system, to give sound judgment in its evaluations of the discrepancies. The Board's majority disagreed.

Although the adequacy of the electrical system welding was not one of the contested issues in the proceeding, the Commission, having responsibility for public health and safety, will not ignore a safety issue discussed by the Board merely because the issue was not properly before it.<sup>8</sup> Having reviewed these, and the other less important but pertinent arguments in the majority and minority opinions on the safety of the welding on the electrical system installed before October 1983, we conclude that there is reasonable assurance of the safety of that system. As the majority points out, the architect/engineer for a project is the entity best qualified to judge whether its designs have been adequately realized in the construction, and most anxious to ensure that they have been. Majority Opinion at 493. Moreover, we find that the Board majority's account of the very considerable safety margins designed into the welded structures in the electrical system is well supported.<sup>9</sup> Thus we find in the Board's discussion of the safety of the electrical system welding done before October 1983 no cause to stay the effectiveness of the concluding PID.

Accordingly, for the reasons given above, pursuant to 10 C.F.R. § 2.764(f)(2), the Commission finds that the Licensing Board's decision resolving all contested issues should become immediately effective and the Director, NRR, is authorized, upon making the findings required under 10 C.F.R. § 50.57(a), to issue the full-power licenses for the Braidwood facility.

Commissioner Asselstine disapproved the order; his separate views are attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK  
Secretary of the Commission

Dated at Washington, D.C.,  
this 30th day of June 1987.

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<sup>8</sup>The Board learned of the pre-October 1983 inspection program in the course of testimony over the results of the reinspection program, which were being offered as evidence of the efficacy of the inspection program despite whatever harassment the inspectors might have suffered.

<sup>9</sup>We note, moreover, that the greater part of the welding in the electrical system will remain accessible for any needed inspection or repair after full-power operation begins.

## SEPARATE VIEWS OF COMMISSIONER ASSELSTINE

The Commission decides today to permit the final Licensing Board decision to become effective and thus to permit the Director of the Office of Nuclear Reactor Regulation to issue an operating license for the Braidwood facility. In effect, the Commission finds that there is no issue that cannot await the outcome of the appellate review process. I cannot agree.

In a series of decisions in late 1985 and early 1986, the Commission prevented the Licensing Board from hearing contentions on the quality assurance program at the Braidwood facility that the Licensing Board had decided to admit for litigation. *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), Docket Nos. 50-456, 50-457 (December 5, 1985); *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), Docket Nos. 50-456, 50-457 (March 20, 1986); *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), CLI-86-8, 23 NRC 241 (1986). Because the Licensing Board was not permitted to hear those safety issues the Intervenor sought to raise, I cannot support allowing the decision to become effective.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman  
Thomas M. Roberts  
Frederick M. Bernthal  
Kenneth M. Carr

In the Matter of

Docket Nos. 50-498-OL  
50-499-OL

HOUSTON LIGHTING AND  
POWER COMPANY, *et al.*  
(South Texas Project, Units 1  
and 2)

July 15, 1987

The Commission denies Billie Garde's motion to quash a subpoena that requires her appearance regarding a Government Accountability Project-initiated investigation into allegations concerning safety at the South Texas plant, and further denies Garde's request for oral argument on that motion. The Commission determines that Garde's arguments that the EDO lacks authority to issue subpoenas and that her compliance with the subpoena would compromise the public health and safety are without merit. The Commission does not reach the issue of the applicability of the attorney-client and work product privileges asserted by Garde because it lacks sufficient information at this time to make such a determination. The Commission concludes that Garde is required to testify and produce documents bearing on plant safety and therefore resets an appearance date for the subpoena.

**NRC: HEALTH AND SAFETY RESPONSIBILITIES**

The fact that an outside organization lacks confidence in certain NRC Staff to competently investigate safety allegations obtained by that organization's own investigation of plant safety does not result in the conclusion that divulgement

of the information would compromise the public health and safety. In fact, the converse is true. Failure of the NRC to obtain the allegations would more likely compromise the public health and safety, particularly if the allegations are substantiated.

#### **NRC: AUTHORITY TO INVESTIGATE (SUBPOENA)**

The Commission is authorized to issue subpoenas pursuant to § 161c of the Atomic Energy Act, and it further has the power to delegate this authority to the Executive Director for Operations consistent with § 209(b) of the Energy Reorganization Act and 10 C.F.R. § 1.40. This delegated responsibility has been incorporated in NRC Manual Chapter 103-0214.

#### **RULES OF PRACTICE: PRIVILEGE (ATTORNEY-CLIENT, WORK PRODUCT)**

The Commission's view is that assertion of the attorney-client privilege and work product doctrine by a subpoenaed witness prior to that individual's testimony is premature. The more appropriate time for a witness to invoke privileges is when testimony is obtained regarding specific questions posed and where the individual can explain the relationship of the privileges to the information sought.

### **MEMORANDUM AND ORDER**

On May 20, 1987, the NRC Executive Director for Operations (EDO) subpoenaed Billie P. Garde, Esq., of the Government Accountability Project (GAP) to testify before NRC personnel concerning safety allegations of current and former employees of the South Texas Project and any other safety allegations regarding the South Texas Project. The subpoena further requested Ms. Garde to provide any records or documents regarding the allegations.

Ms. Garde now moves to quash the subpoena, arguing that compliance with the subpoena would compromise the public health and safety, the EDO has no authority to issue the subpoena, and the attorney-client privilege and work product doctrine preclude divulgement of the information requested. Movant also requests oral argument on the motion.

Houston Lighting and Power Company\* and the NRC Staff filed responses to the motion on June 11, 1987. Ms. Garde also filed a reply to the NRC Staff's response on June 25, 1987

## I. BACKGROUND

Beginning in January 1987, Ms. Garde informed the NRC that GAP had commenced an investigation into allegations concerning the safety of the South Texas nuclear project. According to Ms. Garde, GAP received these safety allegations from approximately thirty-six current and former employees of the South Texas Project. GAP informed the NRC that upon completion of the investigation it would issue a public report, but in the interim it would not advise its clients to provide the allegations to the NRC Region IV office because of its lack of confidence in the office's ability to comply with regulatory requirements. Thus GAP advised the NRC that unless it was willing to provide independent inspectors to process the allegations, GAP would turn over the allegations to the State Attorney General's office, congressional committees, and other regulatory and municipal bodies interested in ensuring the public safety at the South Texas plant.

Correspondence followed between the NRC Executive Director of Operations (EDO) and GAP regarding allegations management. Essentially GAP desires an investigation of the allegations by an NRC employee or task force independent of Region IV. The EDO is of the position that the South Texas Project is located in Region IV, and the personnel in that region can adequately investigate the allegations; and in any event, GAP should turn over the allegations to the agency so that the agency can determine the proper handling of them. After repeated requests for the information, the EDO issued a subpoena requesting Ms. Garde to testify and produce documents regarding the South Texas allegations on May 26, 1987, at 9:00 a.m. at the NRC, Room 6507, 7735 Old Georgetown Road, Bethesda, Maryland. On May 22, 1987, attorneys for Ms. Garde and the NRC entered into an agreement. Ms. Garde agreed to move to quash the subpoena by Friday, May 29, 1987, and the NRC agreed to continue the appearance date for the subpoena from May 26, 1987, until 14 days after the decision on the motion to quash, unless the parties agreed on an earlier date.

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\*The subpoena was issued in support of the Staff's responsibility to pursue and resolve allegations bearing on NRC-licensed activities, but was not issued in connection with a pending licensing or enforcement adjudication on the South Texas Project. Thus, the Houston Lighting & Power Company is not, strictly speaking, a party to the dispute over the subpoena and has no legally cognizable interest in its enforcement. Nonetheless, the Commission has considered the utility's views insofar as they may aid the Commission's resolution of the issues.



## **II. ANALYSIS**

### **A. Compliance with the Subpoena Would Compromise the Public Health and Safety**

Ms. Garde cites no authority for her first argument which is based on her belief that Region IV and the EDO could not competently investigate the allegations. Compliance with the subpoena would not compromise the public health and safety. In fact, the converse is true. Failure of the NRC to obtain the allegations would more likely compromise the public health and safety, particularly if the allegations are substantiated. Moreover, the agency has demonstrated its commitment to protect health and safety through the rigorous and repeated efforts of the EDO to obtain the allegations, which culminated in issuance of the subpoena.

### **B. EDO's Authority to Issue the Subpoena**

Contrary to Garde's assertions, the EDO clearly had the authority to issue the subpoena. The Commission is authorized to issue subpoenas pursuant to 42 U.S.C. § 2201(c) (§ 161c of the Atomic Energy Act). It further has the power to delegate this authority consistent with 42 U.S.C. § 5849 (§ 209(b) of the Energy Reorganization Act) and 10 C.F.R. § 1.40, which provide that the EDO shall perform such functions as the Commission may direct. *See also* Atomic Energy Act, § 161n, 42 U.S.C. § 2201(n). The Commission delegated the authority to issue subpoenas to the EDO in 1982. This delegated responsibility has been incorporated in the NRC Manual Chapter 103-0214 which provides: "The [EDO] . . . is specifically responsible for: . . . issuing subpoenas under Section 161c of the Atomic Energy Act of 1954, as amended, where necessary or appropriate for the conduct of inspections or investigations." Thus, Garde's argument that the EDO lacked authority to issue the subpoena is without merit.

### **C. Attorney-Client Privilege and Work Product Doctrine**

Ms. Garde claims that she cannot comply with the subpoena because the withheld information is protected by the attorney-client privilege and the work product doctrine. The Commission does not reach these issues because Ms. Garde has not provided sufficient factual information in her affidavit, retainer agreement, or other supplemental documents upon which the Commission can make the determination that all the relevant information that the subpoena requests is protected by the attorney-client privilege or work product doctrine. *See NLRB v. Harvey*, 349 F.2d 900 (4th Cir. 1965).

The Commission notes, however, that based on a review of the information that Ms. Garde has provided, on its face, it appears that she possesses at least some information that is not withholdable under the attorney-client privilege or shielded by the work product doctrine. The attorney-client privilege applies if:

(1) the asserted holder of the privilege is a client; (2) the person to whom the communication was made (a) is a member of the bar of a court, and (b) in connection with this communication is acting as a lawyer; (3) the communication relates to a fact of which the attorney was informed (a) by his client (b) without the presence of strangers (c) for the purpose of securing primarily either (i) an opinion on law or (ii) legal services or (iii) assistance in some legal proceeding, and not (d) for the purpose of committing a crime or tort; and (4) the privilege has been (a) claimed and (b) not waived by the client.

*Eagle-Picher Industries, Inc. v. United States*, 11 Ct. Cl. 452 (1987). The work product doctrine is a qualified privilege that protects documents and tangible items prepared in anticipation of litigation or trial. *Id.*; Fed. R. Civ. P. 26(b)(3); 10 C.F.R. § 2.740(b)(2). Fact work product is discoverable upon showings of substantial need and inability without undue hardship to obtain the substantial equivalent of the materials by other means. *Id.*; see *Hickman v. Taylor*, 329 U.S. 495, 510-12 (1947); *In re Murphy*, 560 F.2d 326, 334 (8th Cir. 1977). Opinion work product (mental impressions, conclusions, opinions, or legal theories) may be discoverable upon extraordinary justification. See *Hickman*, 329 U.S. at 513; *Murphy*, 560 F.2d at 336.

As the utility points out, Ms. Garde indicated in her January 20, 1987 letter to the EDO and the Attorney General for the State of Texas that GAP either represents or "is working with" approximately thirty-six current or former employees of the South Texas plant. Attachment 2 to Garde's Motion to Quash. Obviously, the attorney-client privilege cannot attach if there is no client. Thus, the presumption is that communications with the employees that GAP "is working with," as opposed to representing, are not a part of or protected by the attorney-client privilege.

Furthermore, it is unclear from the facts before the Commission whether Ms. Garde was acting in a legal capacity when she gathered allegations from employees for the purpose of having them reviewed by the NRC. If she was not acting in such a capacity, it would be questionable as to whether the communications made at that juncture would be protected by the attorney-client privilege. Also, Ms. Garde seeks to withhold the identities of her clients. Assuming *arguendo* that the attorney-client privilege applies, generally the identity of an attorney's client is not considered privileged. *NLRB*, 349 F.2d at 904. Moreover, it is difficult to determine from the information thus far provided whether the privileged nature of the information, if any, has been waived, thereby terminating the privilege. See *Artesian Industries, Inc. v. Department of Health and Human Services*, 646 F. Supp. 1004, 1008 (D.D.C. 1986), citing

*In re Grand Jury Investigation of Ocean Transportation*, 604 F.2d 672, 675 (D.C. Cir. 1979), *cert. denied sub nom. Sea-Land Service, Inc. v. United States*, 444 U.S. 915 (1979). It appears that GAP intends to reveal at least some of the information when it releases its public report.

The Commission also lacks sufficient data to determine whether the work product doctrine applies to all documents requested under the subpoena. The Commission would need more information regarding the circumstances surrounding the creation of each document in order to make that determination. Also, since it is unclear whether the attorney-client privilege is applicable, it is equally unclear whether logically any of the documents could be *attorney* work product. Other questions include whether Ms. Garde prepared the documents in anticipation of litigation and whether work product documents, if any, are discoverable under the substantial need exception. See 10 C.F.R. § 2.740(b)(2); Fed. R. Civ. P. 26(b)(3).

The Commission's view is that the more appropriate time for Ms. Garde to assert the attorney-client privilege and work product doctrine is when Ms. Garde testifies regarding specific questions posed, in response to the subpoena. At that time she may invoke privileges that she believes are applicable and explain their relationship to the information sought by the Commission. Her assertion of them at this time is premature.

Therefore, the motion to quash the subpoena and the request for oral argument are denied. Unless the parties agree otherwise, Ms. Garde shall appear 14 days after the date of this decision at Room 6507, 7735 Old Georgetown Road, Bethesda, Maryland, at 9:00 a.m. to testify and produce documents concerning allegations bearing on safety at the South Texas plant, pursuant to the May 22, 1987 agreement between Ms. Garde and the NRC.

It is so ORDERED.

For the Commission\*

SAMUEL J. CHILK  
Secretary of the Commission

Dated at Washington, D.C.,  
this 15th day of July 1987.

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\*Commissioner Carr was not present for the affirmation of this Order. If he had been present he would have approved it.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

**ATOMIC SAFETY AND LICENSING APPEAL BOARD**

**Administrative Judges:**

**Christine N. Kohl, Chairman**  
**Gary J. Edles**  
**Howard A. Wilber**

**In the Matter of**

**Docket No. 50-271-OLA**  
**(Spent Fuel Pool Amendment)**

**VERMONT YANKEE NUCLEAR**  
**POWER CORPORATION**  
**(Vermont Yankee Nuclear Power**  
**Station)**

**July 21, 1987**

In an appeal brought by an applicant under 10 C.F.R. § 2.714a(c), the Appeal Board affirms the Licensing Board's admission of most of one contention but reverses the Board insofar as it admitted two other contentions.

**RULES OF PRACTICE: APPELLATE REVIEW (INTERVENTION RULINGS)**

Under 10 C.F.R. § 2.714a(c), an applicant may appeal a licensing board order on the question of whether a petition for intervention and/or request for a hearing should have been wholly denied.

**REGULATIONS: DEFINITIONS (SINGLE FAILURE)**

A single failure is defined in the Commission's regulations as an occurrence which results in the loss of capability of a component to perform its intended safety functions. 10 C.F.R. Part 50, Appendix A, "Definitions and Explanations."

## **RULES OF PRACTICE: RESPONSIBILITIES OF STAFF**

When the staff's review of a matter is not complete, it should say so and advise the licensing board and parties of when it reasonably expects to complete that review.

## **RULES OF PRACTICE: DOCTRINES OF REPOSE**

For the doctrines of repose (res judicata and collateral estoppel) to apply so as to bar litigation of an issue, the issue to be precluded must be the same as that involved in the prior proceeding and must have been actually raised, litigated, and adjudged. Additionally, the issue must have been material and relevant to the disposition of the first action, so that its resolution was necessary to the outcome of the earlier proceeding. *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 536-37 (1986).

## **REGULATIONS: DEFINITIONS (ACTIVE/PASSIVE COMPONENT)**

An active component requires mechanical movement to perform its safety function, whereas a passive component does not. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-788, 20 NRC 1102, 1164 n.355 (1984).

## **LICENSING BOARDS: SCOPE OF REVIEW (CONTENTIONS)**

At the contention admission stage, boards should determine only if the contention has basis and specificity, as required by 10 C.F.R. § 2.714(b), and should not reach the merits. *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 547-49 (1980).

## **REGULATIONS: COMPLIANCE METHODS**

General Design Criteria and other regulations embody minimum requirements. Standard Review Plan provisions, "regulatory guides," and the like offer staff guidance on how regulatory requirements can be met. Applicants, however, may demonstrate that other means not specified in the staff guidance will accomplish the same goals. *Consumers Power Co.* (Big Rock Point Nuclear Plant), ALAB-725, 17 NRC 562, 567 n.7, 568 n.10 (1983).

## **ADJUDICATORY BOARDS: SCOPE OF REVIEW (SUA SPONTE ISSUES)**

The Commission's regulations permit boards in operating license proceedings to examine and decide "[m]atters not put into controversy by the parties," but only after a determination that "a serious safety, environmental, or common defense and security matter exists." 10 C.F.R. § 2.760a.

## **ADJUDICATORY BOARDS: SCOPE OF REVIEW (SUA SPONTE ISSUES)**

A licensing board invoking its section 2.760a sua sponte authority must set forth such a determination "in a separate order which makes the requisite findings and briefly states the reasons for raising the issue." *Texas Utilities Generating Co.* (Comanche Peak Steam Electric Station, Units 1 and 2), CLI-81-24, 14 NRC 614, 615 (1981). The Commission itself then reviews the determination and decides if the sua sponte issue should remain in the proceeding. *See id.*, CLI-81-36, 14 NRC 1111 (1981). *See also Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), LBP-81-54, 14 NRC 918, 922-23 & n.4 (1981).

## **RULES OF PRACTICE: INTERLOCUTORY APPEALS**

10 C.F.R. § 2.714a contains a limited exception to the general rule prohibiting interlocutory appeals. A petitioner may appeal a board ruling that denies the entirety of its petition to intervene or for a hearing. 10 C.F.R. § 2.714a(b). So too, a party other than such petitioner (usually an applicant) may appeal a board ruling granting intervention or a hearing, on the issue of whether such request "should have been wholly denied." 10 C.F.R. § 2.714a(c).

## **RULES OF PRACTICE: APPELLATE REVIEW (INTERVENTION RULINGS)**

The terms and spirit of 10 C.F.R. § 2.714a(c) allow appeal boards to exercise discretion concerning the need and desirability of reviewing other contentions, once one admissible contention is found. *Compare Mississippi Power and Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 424, 426 n.9 (1973) (once board found that petitioner had at least one admissible contention, there was no "need" to examine any others) *with Duquesne Light Co.* (Beaver Valley Power Station, Unit No. 1), ALAB-109, 6 AEC 243, 244 & n.3 (1973) (in applicant's appeal from licensing board admission of three contentions, appeal board found two contentions admissible and expressed no view as to the third). *Cf. Louisiana Power & Light Co.* (Waterford Steam Electric

Station, Unit 3), ALAB-125, 6 AEC 371, 373 (1973) (in intervenor's section 2.714a(b) appeal from a licensing board rejection of his five contentions, appeal board examined and found admissible all five contentions).

## **RULES OF PRACTICE: CONTENTIONS**

One purpose of the basis and specificity requirements for contentions is to assure the hearing process is not improperly invoked and issues raised are appropriate for litigation in the particular proceeding. *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21, *modified on other grounds*, CLI-74-32, 8 AEC 217 (1974).

## **NEPA: HEARINGS**

10 C.F.R. § 51.104 provides generally that matters within the scope of the National Environmental Policy Act of 1969, 42 U.S.C. § 4321 [hereinafter "NEPA"], may be raised in NRC hearings.

## **NEPA: ENVIRONMENTAL IMPACT STATEMENT (SPENT FUEL POOL)**

The need for an environmental impact statement in a spent fuel pool proceeding must be determined on a case-by-case basis. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-86-12, 24 NRC 1, 12, *rev'd on other grounds sub nom. San Luis Obispo Mothers for Peace v. NRC*, 799 F.2d 1268 (9th Cir. 1986).

## **NEPA: ENVIRONMENTAL ASSESSMENT**

An environmental assessment is a concise statement usually prepared to "[a]id the Commission's compliance with NEPA when no environmental impact statement is necessary." 10 C.F.R. § 51.14(a).

## **NEPA: ENVIRONMENTAL IMPACT STATEMENT (NEED)**

Only when the Commission makes a "no significant hazards" determination does the categorical exclusion in 10 C.F.R. § 51.22(c)(9) apply so as to preclude an environmental impact statement.



## **NEPA: CONSIDERATION OF SEVERE ACCIDENTS**

NEPA does not require NRC consideration of severe, beyond design-basis accidents because they are, by definition, highly improbable — i.e., remote and speculative — events. *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1301 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26, *cert. denied*, — U.S. —, 107 S. Ct. 330 (1986).

## **NEPA: CONSIDERATION OF SEVERE ACCIDENTS (COMMISSION POLICY STATEMENT)**

To the extent that the Commission ever considers the environmental impact and risks of a beyond design-basis accident, it does so as an exercise of discretion under its Interim Policy on “Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969,” 45 Fed. Reg. 40,101 (1980) [hereinafter “NEPA Policy Statement”]. *San Luis Obispo*, 751 F.2d at 1301.

## **NEPA: LICENSE AMENDMENT PROCEEDING (COMMISSION POLICY STATEMENT)**

Nothing in the language of the NEPA Policy Statement, 45 Fed. Reg. 40,101, indicates that it was intended to apply to a license amendment proceeding.

## **NEPA: CONSIDERATION OF SEVERE ACCIDENTS (COMMISSION POLICY STATEMENT)**

Before the NEPA Policy Statement is even invoked, there must be some basis for requiring an EIS other than a claim of increased risk from a beyond design-basis accident scenario.

## **NEPA: SUFFICIENCY OF CONTENTIONS**

Contentions that assert an EIS is required because of claims of increased risk from beyond design-basis accident scenarios are not litigable — as a matter of law under NEPA, and as a matter of discretion under the NRC’s NEPA Policy Statement.

## **NEPA: SUFFICIENCY OF CONTENTIONS**

In general, environmental contentions should be directed to whether the NRC staff (not an applicant) has fulfilled its obligations under NEPA. *See Boston*

*Edison Co.* (Pilgrim Nuclear Generating Station, Unit 2), ALAB-479, 7 NRC 774, 793-94 (1978).

#### **RULES OF PRACTICE: CONTENTIONS (CONDITIONAL)**

Conditional contentions are prohibited. *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 466-67 (1982), *rev'd in part*, CLI-83-19, 17 NRC 1041 (1983).

#### **NEPA: SUFFICIENCY OF CONTENTIONS**

Some environmental contentions can be formulated and admitted before issuance of the relevant staff document — namely, those unlikely to be affected by the staff's forthcoming analysis, and those based on information required to be provided in an applicant's "environmental report" (ER). *Catawba*, CLI-83-19, 17 NRC at 1049.

#### **RULES OF PRACTICE: STANDARD OF REVIEW**

Unreviewed licensing board decisions do not have precedential effect as to issues of law. *Duke Power Co.* (Cherokee Nuclear Station, Units 1, 2, and 3), ALAB-482, 7 NRC 979, 981 n.4 (1978).

#### **NEPA: ENVIRONMENTAL ASSESSMENT**

Licensing boards should await the issuance of a staff environmental assessment before determining that it is inadequate. *Consumers Power Co.* (Big Rock Point Nuclear Plant), ALAB-636, 13 NRC 312, 330-31 (1981).

#### **NEPA: ENVIRONMENTAL REPORT**

An ER is required for a construction permit and operating license, but not for a license amendment application. 10 C.F.R. §§ 51.50, 51.53. The information that must be included in an ER is described in 10 C.F.R. §§ 51.45, 51.51, 51.52.

#### **TECHNICAL ISSUES DISCUSSED**

- Single failure criterion
- Residual heat removal system
- Spent fuel pool cooling
- General Design Criterion 61

General Design Criterion 44  
Active and passive components.

## APPEARANCES

Thomas G. Dignan, Jr., and Kathryn A. Selleck, Boston, Massachusetts, for applicant Vermont Yankee Nuclear Power Corporation.

Ellyn R. Weiss, Washington, D.C., for intervenor New England Coalition on Nuclear Pollution.

James M. Shannon and George B. Dean, Boston, Massachusetts, for intervenor Commonwealth of Massachusetts.

David J. Mullett, Montpelier, Vermont, for the State of Vermont.

Ann P. Hodgdon and Robert M. Weisman for the Nuclear Regulatory Commission staff.

## DECISION

Applicant Vermont Yankee Nuclear Power Corporation has appealed, pursuant to 10 C.F.R. § 2.714a(c), the Licensing Board's recent prehearing conference order granting the requests for hearing and petitions to intervene of the New England Coalition on Nuclear Pollution (NECNP) and the Commonwealth of Massachusetts, and admitting three contentions in this spent fuel pool expansion proceeding. *See* LBP-87-17, 25 NRC 838 (1987).<sup>1</sup> Contention 1 concerns spent fuel pool cooling and contentions 2 and 3 raise environmental issues. The Commonwealth, NECNP, and Vermont (participating as an "interested State" under 10 C.F.R. § 2.715(c)) each oppose applicant's appeal and argue that the contentions are admissible. The NRC staff, which opposed the admission of all three contentions before the Licensing Board, now opposes applicant's appeal with regard to the spent fuel pool cooling contention (*see infra* note 7), but supports applicant insofar as it seeks the rejection of the environmental contentions.

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<sup>1</sup> Under 10 C.F.R. § 2.714a(c), applicant may appeal the Licensing Board's order "on the question whether the petition[s] and/or the request[s] for a hearing should have been wholly denied."

For the reasons explained below, we affirm the Licensing Board's decision with respect to most of contention 1, but reverse its admission of contentions 2 and 3.

## I. SPENT FUEL POOL COOLING (CONTENTION 1)

NECNP's proposed contention 3 stated that applicant's proposed operating license amendment authorizing spent fuel pool expansion should be denied because it violates the single failure criterion.<sup>2</sup> The basis for the contention was NECNP's concern that, due to the added heat load to the pool following a normal spent fuel discharge, one train of the reactor's residual heat removal (RHR) system is to be used to supplement the spent fuel pool cooling system and to keep the pool water temperature within the design limit of 150°F. According to NECNP, applicant has not established that this method of pool cooling ensures that both the pool cooling system and the RHR system are single failure proof. In admitting this contention, the Licensing Board renumbered it "contention 1" and recast it as follows:

The spent fuel pool expansion amendment should be denied because, through the necessity to use one train of the reactor's residual heat removal system (RHR) in addition to the spent fuel cooling system in order to maintain the pool water within the regulatory limits of 140°F, the single-failure criterion as set forth in the General Design Criteria, and particularly Criterion 44, will be violated. The Applicant has not established that its proposed method of spent fuel pool cooling ensures that both the fuel pool cooling system and the reactor cooling system are single-failure proof.

LBP-87-17, 25 NRC at 864.<sup>3</sup> See generally *id.* at 847-51.

Applicant raises three objections to the Board's admission of contention 1. First, it argues that the doctrines of repose (*res judicata* and collateral estoppel) bar the litigation of this issue. Applicant notes that NECNP was a party to an earlier (1977) spent fuel pool expansion proceeding involving the Vermont Yankee facility. See LBP-77-54, 6 NRC 436 (1977), *aff'd sub nom. Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2),

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<sup>2</sup> The Commission's regulations define "single failure" as

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

10 C.F.R. Part 50, Appendix A, "Definitions and Explanations" (footnote omitted). For a discussion of active and passive components, see *infra* note 12.

<sup>3</sup> The three contentions, as admitted and rewritten by the Licensing Board, are set out in Appendix A, along with the contentions from which they are derived. See *infra* pp. 35-40.

ALAB-455, 7 NRC 41 (1978), *remanded on other grounds sub nom. Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979). Applicant argues that the issue of the use of the RHR system to augment spent fuel pool cooling was "available for litigation" at that time. Brief of Applicant (June 10, 1987) at 14. Citing the staff's 1977 safety evaluation, applicant asserts that everyone had notice of the cooling augmentation and that no limit was placed on the frequency with which the RHR system could be used for this purpose. *Id.* at 15-18. As applicant sees it,

[t]he narrower question of how many times [it] should be allowed to call on the RHR System to augment spent fuel pool cooling is clearly encompassed in the issue of whether [it] should be allowed to do so at all. This being the case, the doctrines of repose apply.

*Id.* at 18.

We disagree. As the Licensing Board points out, the record of the 1977 proceeding clearly shows that, at that time, the RHR system was to be used only in an emergency as a backup or following a full core offload — an event that may happen only a few times during the life of a plant. LBP-87-17, 25 NRC at 848. There is no mention of any more routine use of the RHR system to augment cooling of the spent fuel pool. *See* Letter from D.E. Vandenburg (Vermont Yankee Vice President) to NRC (November 5, 1976), Enclosure 2 at 3, 6; NRC Safety Evaluation (June 10, 1977) at 4; NRC Safety Evaluation, Supplement No. 1 (June 20, 1977), at 1-2.

In contrast, the instant application contemplates more frequent, non-emergency use of the RHR system for pool cooling during every fuel offload (i.e., the one-third of the fuel routinely removed every 12 to 18 months). *See* Letter from R.W. Capstick (Vermont Yankee Licensing Engineer) to NRC (November 24, 1986), Enclosure 1 [hereinafter "November 1986 Letter"], Responses to Questions 13, 17, 18.<sup>4</sup> As the staff explains, a normal one-third core discharge, where the pool is filled, is the worst case for removing the heat load in the pool.<sup>5</sup> According to the staff's calculations, using both trains of the spent fuel pool cooling system is inadequate to perform this function at the initial decay heat generation rate. As a result, one train of the RHR system (which has a much greater heat removal capability) would be necessary for at least 68 days. At that time, the decay heat rate will have dissipated such that one train

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<sup>4</sup> Applicant does not dispute this. Indeed, it apparently has been relying on RHR augmentation of spent fuel pool cooling for routine offloads for some time. *See* Tr. 35, 59, 61. We leave to the staff to decide whether applicant has thereby violated the terms of its existing license or any Commission regulations. The staff has already requested and apparently obtained a proposed change in applicant's technical specifications to address this existing situation. *See* Letter from Warren P. Murphy (Vermont Yankee Vice President and Manager of Operations) to NRC (June 11, 1987); NRC Staff's Brief (June 25, 1987) at 5, 9.

<sup>5</sup> During a full core offload, although the pool heat load would be greater, no fuel would remain in the reactor vessel and thus the RHR system would be more readily available to cool the pool.

of the spent fuel pool cooling system would be sufficient, with the remaining spent fuel pool train kept in reserve. During the 68-day period, however, the remaining RHR train would be needed to remove decay heat from the shutdown reactor. Although the staff acknowledges that limited use of the RHR system is currently authorized, the increased heat load associated with the requested amendment (approximately 10 to 15 percent)<sup>6</sup> exacerbates the situation and has "focused the Staff's attention on the need to explicitly assure the availability of supplemental cooling capacity for the spent fuel pool." NRC Staff's Brief, *supra* note 4, Appendix C (Affidavit of John N. Ridgely) [hereinafter "Ridgely Affidavit"] at 1-3.<sup>7</sup> Thus, not only does NECNP believe that a grant of the requested amendment will mean a different and greater use of the RHR system for fuel pool cooling than was contemplated and authorized by the 1977 license amendment, but the NRC staff does as well. Moreover, it is the additional circumstance in which the RHR system will be used — not just the frequency of its use — that is pertinent here to the increased heat load attributable to the proposed expanded pool capacity. See NRC Staff's Brief at 11. Applicant is therefore incorrect in its view that there was a fair opportunity in 1977 to litigate the issue of RHR augmentation of pool cooling for other than an emergency or full core offload condition and that this issue was subsumed in those addressed previously.<sup>8</sup> Consequently, the doctrines of repose simply do not apply. See *Carolina Power and Light Co. (Shearon Harris Nuclear Power Plant)*, ALAB-837, 23 NRC 525, 536-37 (1986) ("[t]he issue to be precluded . . . must be the same as that involved in the prior proceeding and . . . must have been actually raised, litigated, and adjudged. Additionally, the issue must have been material and relevant to the disposition of the first action, so that its resolution was necessary to the outcome of the earlier proceeding.").

Applicant next argues that the single failure criterion, on which contention 1 is premised, does not apply to spent fuel pools. According to applicant, General Design Criterion (GDC) 61 is the only GDC clearly applicable to spent fuel pools and relevant to NECNP's contention, and it does not impose the single failure

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<sup>6</sup>The applicant seeks permission to increase Vermont Yankee's spent fuel pool capacity from 2000 to 2870 fuel assemblies by reracking — i.e., replacing the present spent fuel racks with new racks that allow closer spacing of the fuel assemblies.

<sup>7</sup>The staff accounts for its change in position on contention 1 (see *supra* p. 19) by explaining that its "review of the amendment application was not complete" at the time of the Licensing Board's consideration of the contention. Ridgely Affidavit at 3. When the staff's review of a matter is not complete, it should say so and advise the board and parties of when it reasonably expects to complete that review. Taking an initially unequivocal position on a largely unreviewed matter — as the staff did here (see NRC Staff Response to Contentions (April 13, 1987) at 18-19; Tr. 67-71, 75-76) — is unfair to a licensing board and the other parties and is simply unacceptable.

<sup>8</sup>In this regard, we are inclined to agree with the view expressed by NECNP at the prehearing conference (Tr. 78) that, had it attempted in 1977 to litigate the use of the RHR system for spent fuel cooling in other than an emergency or full core offload situation, the applicant would have vigorously and successfully opposed such a contention as beyond the scope of the license amendment then at issue.

criterion.<sup>9</sup> Applicant acknowledges that, under the current Standard Review Plan for spent fuel pool cooling, the staff applies GDC 44 as well. See NUREG-0800, "Standard Review Plan," §9.1.3 (Rev. 1 - July 1981) [hereinafter "SRP"], at 9.1.3-4 to 9.1.3-5, 9.1.3-10.<sup>10</sup> GDC 44 requires the safety function of a cooling water system to be accomplished assuming a single failure.<sup>11</sup> Applicant, however, contends that, because GDC 61 specifically applies to spent fuel pools and GDC 44 only pertains generally to "Fluid Systems," the former governs here, to the exclusion of the latter. But even if GDC 44 does apply to spent fuel pools, applicant continues, NECNP's contention concerns only the failure of "passive components," and the Commission's regulations do not now apply GDC 44 to such components. Brief of Applicant at 19-20.<sup>12</sup>

Observing that a spent fuel pool cooling system is a "Fluid System," the staff argues that both GDC 61 and 44 apply here, and that the latter just "places more stringent design criteria on the spent fuel pool cooling system." NRC Staff's Brief at 12. The staff believes these two criteria are therefore consistent, rather than mutually exclusive, as applicant contends. *Ibid.* NECNP similarly argues that more than one criterion may apply. Brief of the New England Coalition on Nuclear Pollution (July 1, 1987) [hereinafter "NECNP Brief"] at 5.

The Licensing Board took note of "the differences in opinion as to whether the single-failure criterion is or should be applicable, either through regulatory requirement or Staff guidance" and determined that it could therefore not rule out NECNP's contention on legal grounds. LBP-87-17, 25 NRC at 850. In our view, the Board took the proper course. We agree with NECNP that, in the

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<sup>9</sup> GDC 61 states, as pertinent:

*Fuel storage and handling and radioactivity control.* The fuel storage and handling, radioactive waste, and other systems which may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions. These systems shall be designed . . . with a residual heat removal capability having reliability and testability that reflects the importance to safety of decay heat and other residual heat removal . . . .

<sup>10</sup> C.F.R. Part 50, Appendix A, Criterion 61.

<sup>10</sup> Applicant points out, however, that SRPs are not "regulations." Brief of Applicant at 20. See *infra* note 13.

<sup>11</sup> GDC 44 states:

*Cooling water.* A system to transfer heat from structures, systems, and components important to safety, to an ultimate heat sink shall be provided. The system safety function shall be to transfer the combined heat load of these structures, systems, and components under normal operating and accident conditions.

Suitable redundancy in components and features, and suitable interconnections, leak detection, and isolation capabilities shall be provided to assure that for onsite electric power system operation (assuming offsite power is not available) and for offsite electric power system operation (assuming onsite power is not available) the system safety function can be accomplished, assuming a single failure.

<sup>10</sup> C.F.R. Part 50, Appendix A, Criterion 44.

<sup>12</sup> An active component requires mechanical movement to perform its safety function, whereas a passive component does not. Leakage from a valve stem is an example of a passive component failure. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-788, 20 NRC 1102, 1164 n.355 (1984). The Commission's regulations state:

The conditions under which a single failure of a passive component in a fluid system should be considered in designing the system against a single failure are under development.

<sup>10</sup> C.F.R. Part 50, Appendix A n.2.

circumstances here, the applicability of the single failure criterion is a "merits, not a threshold, issue." NECNP Brief at 6. *See Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 547-49 (1980) (at contention admission stage, boards should determine only if the contention has basis and specificity, as required by 10 C.F.R. § 2.714(b), and should not reach the merits). *See also* Brief of the Commonwealth (June 25, 1987) at 4. The merits nature of the dispute at this stage is evident in the disagreement between applicant, on the one hand, and the staff and NECNP, on the other, as to which GDC(s) may apply. Moreover, the status of the SRP as guidance, rather than a regulatory requirement,<sup>13</sup> and the staff's developing position on the applicability of the single failure criterion to passive components of a fluid system (*see supra* note 12) provide added support for the admission of the contention now and the resolution of its merits later, following at least discovery and possibly hearing.<sup>14</sup>

Applicant's final argument with regard to contention 1 is that the Licensing Board has sua sponte injected a new issue into the contention (a temperature limit of 140°F), without complying with the appropriate Commission rules. Brief of Applicant at 20-21. On this score, we agree with applicant.

NECNP's original contention 3 referred to Vermont Yankee's existing design limits for pool water of 150°F. *See* Appendix A, *infra* p. 35. The Licensing Board noted that, although that temperature (150°F) was used in the 1977 evaluation of the pool, the current SRP, "which was adopted in 1981, provides that pool water temperature be kept to 140°F, except in the event of 'abnormal heat load.'" LBP-87-17, 25 NRC at 850-51. The Board thus decided that 140°F is the applicable temperature, "unless the Applicant can demonstrate why some other temperature should be controlling." *Id.* at 851.

What the proper temperature limit for the pool should be is an issue unto itself.<sup>15</sup> NECNP or another intervenor might well have attempted to raise this

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<sup>13</sup> GDCs and other regulations embody minimum requirements. SRP provisions, "regulatory guides," and the like offer staff guidance on how regulatory requirements can be met. Applicants, however, may demonstrate that other means not specified in the staff guidance will accomplish the same goals. *Consumers Power Co.* (Big Rock Point Nuclear Plant), ALAB-725, 17 NRC 562, 567 n.7, 568 n.10 (1983).

<sup>14</sup> In addition, contention 1 asserts that, because one train of the RHR will be needed to augment the spent fuel pool cooling system, applicant has also failed to demonstrate compliance with the single failure criterion as it applies to the use of the RHR for reactor core cooling. The Licensing Board thus expects the parties to explore "the need for a redundant RHR system for decay heat removal purposes during periods of cold shutdown . . . as part of this contention." LBP-87-17, 25 NRC at 850. Apart from the more general argument that litigation of the use of the RHR system is barred by the doctrines of repose — an argument we have rejected — applicant does not now challenge this aspect of contention 1.

<sup>15</sup> The staff argues that the "temperature difference . . . does not go to the substance of [the contention], but affects how that contention should be evaluated." NRC Staff's Brief at 7. It thus believes that the contention as rewritten by the Board "fairly characterizes NECNP's Contention 3." *Id.* at 8. The focus of the original contention, however, was on whether the single failure criterion is violated; that version simply assumed that the temperature limit for the pool was 150°, and it *did not contend that it should be lower*. *See* Appendix A, *infra* p. 35. We therefore disagree with the staff that the Board did not add anything of substance to the contention. We also disagree with the staff's notion that the method of evaluating a contention and the issue it raises — i.e., the determination of

(Continued)



as an issue but did not. The Licensing Board has thus sua sponte added this otherwise uncontested issue to the proceeding. The Commission's regulations permit boards in operating license proceedings to examine and decide "[m]atters not put into controversy by the parties," but only after a determination that "a serious safety, environmental, or common defense and security matter exists." 10 C.F.R. § 2.760a. Whether this regulation authorizes a board to raise such an issue sua sponte in an operating license amendment proceeding is not clear. See, e.g., 44 Fed. Reg. 67,088 (1979); *Consolidated Edison Co. of New York* (Indian Point Nuclear Generating Unit 3), CLI-74-28, 8 AEC 7 (1974).<sup>16</sup> In any event, a board invoking its section 2.760a sua sponte authority must set forth such a determination "in a separate order which makes the requisite findings and briefly states the reasons for raising the issue." *Texas Utilities Generating Co.* (Comanche Peak Steam Electric Station, Units 1 and 2), CLI-81-24, 14 NRC 614, 615 (1981). The Commission itself then reviews the determination and decides if the sua sponte issue should remain in the proceeding. See *id.*, CLI-81-36, 14 NRC 1111 (1981). See also *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), LBP-81-54, 14 NRC 918, 922-23 & n.4 (1981).

The Licensing Board here has failed to comply with these Commission requirements.<sup>17</sup> We therefore strike the Board's reference in contention 1 to the "regulatory limits of 140°F" and substitute "design limits of 150°F" from NECNP's original contention 3.<sup>18</sup> Otherwise, we affirm the Board's admission of the contention, as rewritten.

## II. ENVIRONMENTAL ISSUES (CONTENTIONS 2 AND 3)

Before addressing the parties' substantive arguments concerning the Licensing Board's admission of contentions 2 and 3, a procedural question commands

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what regulatory standard should apply — is not a matter of substance. Indeed, separate contentions that challenge the application of a particular regulatory standard or guide are often admitted to a proceeding and thus cannot be said to be lacking in substance.

<sup>16</sup> Applicant does not argue, however, that boards do not have sua sponte authority in amendment proceedings. See Brief of Applicant at 20-21.

<sup>17</sup> We thus reject NECNP's brief argument that it was "surely well within the Board's discretion to make the instant [temperature] change." NECNP Brief at 6.

<sup>18</sup> Our determination in this regard, however, is without prejudice to any effort the Licensing Board might undertake to comply with the Commission's sua sponte rules.

We note, however, that the Board assumed incorrectly that the staff's SRP did not adopt 140°F as the temperature limit for spent fuel pools until the 1981 revision of § 9.1.3. See LBP-87-17, 25 NRC at 850-51; Tr. 73-74. In fact, the SRP in effect at the time of the 1977 pool expansion proceeding also provided for a pool temperature of 140°F. See NUREG-75/087, SRP, § 9.1.3, at 9.1.3-5. It is therefore not evident to us why or when Vermont Yankee's technical specification of 150°F was approved. Indeed, the confusion continues. See, e.g., November 1986 Letter, Question 17 and Response. We therefore expect that, irrespective of whether the Licensing Board again attempts to raise this issue sua sponte, the staff will fulfill its responsibility and resolve this discrepancy. See Tr. 74.

our attention. The staff suggests that, once we have found one contention admissible, consideration of the others is "not contemplated by 10 C.F.R. § 2.714a." It nonetheless urges us, "[i]n the interest of judicial economy," to consider and reverse the Board's admission of contentions 2 and 3. NRC Staff's Brief at 19. Neither the applicant nor the intervenors express any views on this matter.

We agree with the staff that the situation presented here is not explicitly contemplated by section 2.714a. That provision contains a limited exception to the general rule prohibiting interlocutory appeals. A petitioner may appeal a board ruling that denies the entirety of its petition to intervene or for a hearing. 10 C.F.R. § 2.714a(b). So too, a party other than such petitioner (usually an applicant) may appeal a board ruling granting intervention or a hearing, on the issue of whether such request "should have been *wholly denied*." 10 C.F.R. § 2.714a(c) (emphasis added). Thus, an argument could be made that, in a section 2.714a(c) appeal, once one admissible contention of a particular petitioner is found, the remainder of the appeal can be dismissed.

In this case, at least as to applicant's objections to the admission of NECNP's contentions, we might well conclude our review now, having found most of contention 1 admissible. Applicant's complaints, however, are also directed to the admission of the Commonwealth's contentions I and II. Although in admitting these contentions the Licensing Board combined both of them with portions of NECNP contention 5 and renumbered them as contentions 2 and 3, we believe that applicant is nonetheless entitled to our further consideration of its claim that the Commonwealth's petition "should have been wholly denied." We will therefore also review the Licensing Board's decision insofar as it concerns the admission of contentions 2 and 3.

Even if the unusual procedural posture of this case did not dictate our review of the other contentions, however, the terms and spirit of section 2.714a, as interpreted by our cases over the years, are flexible enough to allow appeal boards discretion in this regard.<sup>19</sup> The focus of 10 C.F.R. § 2.714a(c) is on when and whether an order is "appealable" — an inquiry that takes place at the time the appeal is filed. Hence, our cases refer to the appellant's "claim" or "complaint." See, e.g., *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-861, 25 NRC 129, 136 (1987); *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 464 (1982), *rev'd in part*, CLI-83-19, 17 NRC 1041 (1983). Nor does the language of section 2.714a suggest that an order that is appealable at the time an appeal is filed necessarily loses its appealability once an admissible

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<sup>19</sup> The "legislative history" of the section, however, sheds no light on this matter. See 37 Fed. Reg. 28,710 (1972); 43 Fed. Reg. 17,798 (1978).

contention is found.<sup>20</sup> Instead, past cases simply reflect appeal boards' exercise of discretion concerning the need and desirability of reviewing other contentions, once one admissible contention is found. *Compare Mississippi Power and Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 424, 426 n.9 (1973) (once board found that petitioner had at least one admissible contention, there was no "need" to examine any others) with *Duquesne Light Co.* (Beaver Valley Power Station, Unit No. 1), ALAB-109, 6 AEC 243, 244 & n.3 (1973) (in applicant's appeal from licensing board admission of three contentions, appeal board found two contentions admissible and expressed no view as to the third). *Cf. Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-125, 6 AEC 371, 373 (1973) (in intervenor's section 2.714a(b) appeal from a licensing board rejection of his five contentions, appeal board examined and found admissible all five contentions).<sup>21</sup>

As we show below, this proceeding provides a particularly appropriate opportunity for the exercise of our discretion to examine both of the remaining contentions admitted by the Licensing Board and challenged by applicant on appeal. That is, each contention is inherently inadmissible. *See generally Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21, *modified on other grounds*, CLI-74-32, 8 AEC 217 (1974) (one purpose of basis and specificity requirements for contentions is to assure hearing process is not improperly invoked and issues raised are appropriate for litigation in the particular proceeding).

## A. Contention 2

In its contention 5, NECNP complained broadly that the NRC has not complied with the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4321, and the Commission's own environmental regulations, 10 C.F.R.

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<sup>20</sup> Otherwise, the outcome of a case could be determined by the order in which an appeal board considers the contentions being challenged.

<sup>21</sup> In *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 1), ALAB-868, 25 NRC 912, 916-17 (1987), the board majority affirmed the Licensing Board's admission of a contention in amended form. The majority also found that, as a consequence of intervenors' thus having one admissible contention, an earlier set of appeals from the admission of the contention as originally proffered "no longer [lay] under 10 C.F.R. § 2.714a(c)." That case, however, involved the peculiar (if not unique) circumstances of (1) appeals (by applicants and the staff) from the admission of a contention, followed sciatim by (2) indefinite deferral of these appeals pending receipt of Commission guidance on the proper scope of such contention, (3) intervenors' amendment of the original contention in an effort to comply with the subsequent Commission guidance, (4) Licensing Board admission of the amended contention, and (5) a second set of appeals challenging the admission of the amended contention. The dissent also noted that the original contention was subsumed within the amended version. *Id.* at 939 n.1. In the circumstances, we thus believe that the majority opinion in *Comanche Peak* can be viewed as yet another example of an appeal board's exercise of discretion with regard to the scope of its consideration of a section 2.714a(c) appeal.

Part 51. The basis for the contention essentially had two parts.<sup>22</sup> As pertinent here, the first part referred to an accident scenario set forth primarily in NECNP contention 1 and supported by references to several NRC staff studies. *See* New England Coalition on Nuclear Pollution's Response to Board Order of February 27, 1987: Statement of Contentions and Standing (March 30, 1987) at 8-9, 2-4.<sup>23</sup> The Licensing Board summarized the accident as a combination of the following circumstances:

(1) the greater likelihood of failure in the event of an accident of a GE Mark I BWR containment (as is used at Vermont Yankee) as contrasted with other designs; (2) the location of the pool in the reactor building, which is not designed to take severe accident loads; (3) the failure of the pool or its cooling systems to be designed to accommodate such severe accident loads; (4) the possibility of hydrogen leakage to the reactor building in such an accident, resulting in hydrogen deflagration and detonation; and (5) an increase in potential consequences of such an accident by the 40% increase in the amount of fuel stored, particularly because of the increased inventory of cesium and strontium.

LBP-87-17, 25 NRC at 845. The Board also noted that such a scenario is considered "clearly a 'beyond design basis accident.'" *Id.* at 846. In the first part of its basis for contention 5, NECNP claimed that, because of the substantially increased risk to the public health and safety attributable to this scenario, the proposed license amendment is a major federal action significantly affecting the quality of the environment, for which NEPA and 10 C.F.R. § 51.20 require an environmental impact statement (EIS). Commonwealth contention I did not specifically refer to NEPA or the need for an EIS, but it set forth a similar accident scenario. *See* Appendix A, *infra* pp. 36-38.

The Licensing Board combined the EIS portion of NECNP contention 5 with Commonwealth contention I and redrafted and admitted them as contention 2:

The proposed amendment would create a situation in which consequences and risks of a hypothesized accident (hydrogen detonation in the reactor building) would be greater than those previously evaluated in connection with the Vermont Yankee reactor. This risk is sufficient to constitute the proposed amendment as a "major federal action significantly affecting the quality of the human environment" and requiring preparation and issuance of an Environmental Impact Statement prior to approval of the amendment.

LBP-87-17, 25 NRC at 864. The Board initially determined that litigation of this type of contention is permitted under the Commission's regulations (*see* 10 C.F.R. § 51.104), although it also noted that there have been no spent

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<sup>22</sup> The Licensing Board accordingly divided NECNP contention 5 into two segments, one of which was admitted as "contention 2" and the other as "contention 3." The portion of NECNP contention 5 that is now contention 3 is discussed *infra* pp. 32-34.

<sup>23</sup> NECNP contention 1, which the Licensing Board rejected, is not involved in this appeal. *See* LBP-87-17, 25 NRC at 844-47.

fuel pool expansion cases for which an EIS has been required. *Id.* at 853.<sup>24</sup> The Board cited *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-86-12, 24 NRC 1, 12, *rev'd on other grounds sub nom. San Luis Obispo Mothers for Peace v. NRC*, 799 F.2d 1268 (9th Cir. 1986), in which the Commission stated that the need for an EIS in a spent fuel pool proceeding must be determined on a case-by-case basis. The Board also stressed the Commission's requirement that a petitioner who seeks an EIS must allege some specific deficiency in the environmental evaluation or demonstrate sufficient impacts to warrant an EIS. LBP-87-17, 25 NRC at 853. The Board then concluded that the accident scenario described by NECNP and the Commonwealth provided the requisite specificity for an EIS contention demanded by *Diablo Canyon*. *Id.* at 854.

In addition, the Licensing Board rejected the staff's argument that the Commission's "Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants," 50 Fed. Reg. 32,138, 32,144-45 (1985), bars litigation of this contention. The Board construed that policy as prohibiting only the consideration of *control or mitigation measures* to counter the effects of a severe (i.e., beyond design-basis) accident. In the Board's view, this prohibition "does not extend to the NEPA-mandated consideration of the *risks* of such an accident." LBP-87-17, 25 NRC at 854-55 (emphasis in original). The Board thus admitted the contention insofar as "it asserts that the particular accident scenario set forth . . . represents an impact serious enough to warrant an EIS to discuss its risk." *Id.* at 855. According to the Board, that discussion of risk would be pursuant to the Commission's Interim Policy on "Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969," 45 Fed. Reg. 40,101 (1980) [hereinafter "NEPA Policy Statement"]. LBP-87-17, 25 NRC at 855.

Applicant presents three basic arguments why the Licensing Board erred in admitting contention 2. First, it asserts that an "environmental assessment" is essentially a jurisdictional prerequisite for a contention that claims an EIS is required.<sup>25</sup> Because the staff has not yet issued its assessment, applicant argues that the contention is premature, and the Board's admission of it is thus conditional — a practice prohibited by *Catawba*, ALAB-687, 16 NRC at 466-67. Second, applicant argues that the Commission's environmental regulations exclude the license amendment here at issue from those actions requiring the preparation of an EIS. Applicant asserts that this amendment "involves no significant hazards consideration" and therefore falls within the categorical exclusion provided in 10 C.F.R. § 51.22(c)(9). Third, applicant argues that

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<sup>24</sup> Section 51.104 provides generally that matters within the scope of NEPA may be raised in NRC hearings.

<sup>25</sup> An environmental assessment is a concise statement usually prepared to "[a]id the Commission's compliance with NEPA when no environmental impact statement is necessary." 10 C.F.R. § 51.14(a).

there is no nexus between the contention and the proposed amendment. The expansion of the spent fuel pool will effect no alteration in the containment or the pool cooling system; the only change will be an increase in the fuel assembly inventory. To the extent that that increases the potential consequences (and thus the risk) of an accident, that is true in every spent fuel pool expansion case. The Commission, however, has not placed such cases in the "EIS required" category (see 10 C.F.R. § 51.20). According to applicant, this indicates that the potential of increased risk from increased fuel inventory is not an appropriate basis for finding a major federal action significantly affecting the quality of the human environment, so as to require the preparation of an EIS. Brief of Applicant at 21-26.

We are not persuaded by any of applicant's arguments. First, although some environmental contentions must abide the issuance of the staff's environmental assessment (see *infra* pp. 33-34), that is not always the case. *Catawba*, CLI-83-19, 17 NRC at 1049. Here, the staff has already indicated that it is preparing an environmental assessment, not an EIS. Tr. 91. Further, the risk scenario that provides the basis for contention 2 is unlikely to be affected by anything in that assessment, given the latter's brevity and purpose. See *supra* note 25. Thus, in these circumstances, there would have been no cause for intervenors to await the issuance of the environmental assessment before proffering this particular EIS contention. It is therefore neither premature nor conditional. The short answer to applicant's second argument is that the Commission has not yet made a "no significant hazards" determination in this case. Only if and when it does so, would the categorical exclusion in 10 C.F.R. § 51.22(c)(9) apply here so as to preclude an EIS. Lastly, applicant's syllogistic nexus argument is at odds with the case-by-case determination of the need for an EIS required by the Commission's *Diablo Canyon* decision, 24 NRC at 12.

The staff's argument, however, comes closer to the reason contention 2 must be rejected as a matter of law. The staff complains that the contention is premised on "a comparative assessment of risks involving spent fuel pools for a chain of unlikely events." NRC Staff's Brief at 14. The staff points out that the environmental consequences of the accident scenario in the contention have never been evaluated, nor were they required to be, for the Vermont Yankee facility. *Id.* at 14-15 (citing the Commission's NEPA Policy Statement and *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26, *cert. denied*, \_\_\_ U.S. \_\_\_, 107 S. Ct. 330 (1986)). The staff asserts that it thus would be anomalous to require for a license amendment an EIS addressing remote and highly improbable consequences, when there was no such requirement for the operating license itself. *Id.* at 15.

The staff could have taken its point one step farther. As the D.C. Circuit held in *San Luis Obispo*, 751 F.2d at 1301, NEPA does not require NRC consideration of severe, beyond design-basis accidents because they are, by definition, highly

improbable — i.e., remote and speculative — events.<sup>26</sup> See also *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 697, 698 (1985), *aff'd in part and review declined*, CLI-86-5, 23 NRC 125 (1986); *Public Service Electric and Gas Co.* (Salem Nuclear Generating Station, Unit 1), ALAB-650, 14 NRC 43, 62-63 n.29 (1981), *aff'd sub nom. Township of Lower Alloways Creek v. Public Service Electric and Gas Co.*, 687 F.2d 732 (3d Cir. 1982). The scenario that provides the basis for intervenors' claims of increased risk in contention 2 is just such an accident. See LBP-87-17, 25 NRC at 845, 846, 854. Thus, the Licensing Board erred in its belief that NEPA "mandate[s]" consideration of the risks of the accident hypothesized here. *Id.* at 854-55.

To the extent that the Commission ever considers the environmental impact and risks of a beyond design-basis accident, it does so as an exercise of discretion under its 1980 NEPA Policy Statement. *San Luis Obispo*, 751 F.2d at 1301. The Licensing Board, however, erred in assuming that that policy statement applies to this proceeding. See LBP-87-17, 25 NRC at 855. Nothing in the language of the statement indicates that it was intended to apply to a license amendment proceeding. More important, by its terms, the policy applies to those cases where there has already been a determination that a major federal action significantly affecting the environment is involved and hence an EIS is necessary; it therefore directs what should be included in the EIS (i.e., consideration of the environmental impacts of a severe accident), not whether the EIS is required in the first place. See 45 Fed. Reg. at 40,101-04.<sup>27</sup> Thus, before the NEPA Policy Statement is even invoked, there must be some basis for requiring an EIS *other than* a claim of increased risk from a beyond design-basis accident scenario. In contrast, intervenors' claim here is just that: i.e., the proposed action (expansion of the spent fuel pool) will significantly affect the environment, thereby requiring an EIS, *because of* the risks of the beyond design-basis accident scenario they have described.

In sum, intervenors cannot use a beyond design-basis accident scenario to "bootstrap" their way to an admissible contention that asserts an EIS is required to examine the environmental risks of such an accident. Neither the Commission's NEPA Policy Statement nor the statute itself provides a legally cognizable basis for contention 2.<sup>28</sup> We therefore reject it.

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<sup>26</sup> The court refers to such accidents as "Class Nine" — the terminology previously used by the Commission to describe severe accidents of very low probability, involving significant deterioration of the fuel and breach of containment.

<sup>27</sup> The Commonwealth recognizes this distinction between the adequacy of the contents of an EIS and the need to prepare one. See Brief of the Commonwealth at 10-11.

<sup>28</sup> We stress that we are *not* ruling out all contentions in spent fuel pool proceedings that claim an EIS is required. Only contentions that are premised on claims of increased risk from beyond design-basis accident scenarios are not litigable — as a matter of law under NEPA, and as a matter of discretion under the NRC's NEPA Policy Statement.

## B. Contention 3

As previously discussed, NECNP contention 5 stated generally that the NRC had not complied with NEPA and its own environmental regulations. *See supra* pp. 27-28. The second part of the basis for that contention asserted that, at a minimum, the staff must prepare an environmental assessment (*see supra* note 25) and must consider alternatives to the proposed spent fuel pool expansion — specifically, dry cask storage and independent pool storage. NECNP also noted that it “expects to change this contention at such time that NEPA-related documents are issued by NRC.” Appendix A, *infra* p. 39. Commonwealth contention II likewise complained about the lack of an environmental assessment and the NRC’s failure to consider the alternatives of dry spent fuel storage and “an in-ground spent fuel pool” (i.e., an independent storage facility). Appendix A, *infra* pp. 39-40.

The Licensing Board struggled with these contentions. It noted applicant’s and the staff’s arguments that the contentions are premature and would have to await the issuance of the staff’s environmental assessment; admission now would be conditional and thus barred by *Catawba*, ALAB-687. The Board recognized that NEPA obliges the agency, rather than applicant, to analyze alternatives to the proposed action, and that the adequacy of the staff’s review is subject to litigation. But the Board worried that delay in the issuance of the staff’s environmental assessment could effectively deprive petitioners (NECNP and the Commonwealth) of their hearing rights. In this regard, the Board observed that, if it rejected all of the petitioners’ contentions now, it would have to dismiss petitioners and terminate the proceeding.<sup>29</sup> Petitioners’ only recourse once the environmental assessment was issued would be to seek, in essence, a reopening of the proceeding — a task more difficult than filing a late contention. The Board went on to note that, although the Commission’s regulations do not require applicant to submit environmental documents in connection with its license amendment application, applicant nevertheless provided some such information in response to the staff’s informal requests and guidance. Thus, after scrutinizing the decisions of both the Commission and us in *Catawba*, CLI-83-19 and ALAB-687, the Licensing Board decided to admit the environmental assessment contentions now — changing their focus, however, from the staff’s to the applicant’s consideration of alternatives. LBP-87-17, 25 NRC at 855-60. They were combined into contention 3, which states:

The Applicant has failed to submit an adequate analysis of alternatives to the proposed action, as required by §§ 102(2)(C) and 102(2)(E) of the National Environmental Policy Act, 42 U.S.C. §§ 4332(2)(C) and 4332(2)(E), and implementing NRC regulations or guidelines. Specifically, the Applicant has failed to analyze adequately the alternatives of (1) dry

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<sup>29</sup> The Board’s observation is curious, inasmuch as it had already admitted contentions 1 and 2.



cask storage and (2) independent pool storage. Both of these alternatives are available options and provide obvious safety advantages over the instant proposal.

*Id.* at 864.

The applicant's objection to contention 3 is brief and to the point: the focus of environmental contentions should be the adequacy of the staff's analysis, not the applicant's. The contention, as rewritten by the Board, is thus inadmissible on its face and must be rejected. Brief of Applicant at 27 (citing *Boston Edison Co.* (Pilgrim Nuclear Generating Station, Unit 2), ALAB-479, 7 NRC 774, 793-94 (1978)). We agree generally with applicant that environmental contentions should be directed to whether the NRC staff has fulfilled its obligations under NEPA. But as explained below, some admissible environmental contentions may properly focus on an applicant's environmental analysis. The contention at issue here, however, is not one of them and therefore we agree that it must be rejected.

Contention 3, as originally proposed by NECNP and the Commonwealth, correctly related to the staff's environmental assessment and consideration of alternatives. That assessment, however, has not yet been issued. NECNP itself noted the "preliminar[y]" nature of its contention and stated that it expects to change it when the staff's NEPA evaluation is issued (see Appendix A, *infra* p. 39) — making it precisely the type of baseless, conditional contention prohibited by *Catawba*, ALAB-687, 16 NRC at 466-67.

In an effort to rehabilitate the contention or to cure this infirmity, the Licensing Board shifted the focus to *applicant's* environmental analysis. The Board reasoned that the environmental information already provided to the staff by applicant — albeit not required by the regulations — was enough to justify this change in focus and to avoid deferral of the contention pending issuance of the staff's environmental document.<sup>30</sup> To be sure, as the Commission held in *Catawba*, CLI-83-19, 17 NRC at 1049, and we recognize *supra* p. 30, some environmental contentions can be formulated and admitted before issuance of the relevant staff document — namely, those unlikely to be affected by the staff's forthcoming analysis (like contention 2), and those based on information required to be provided in an applicant's "environmental report" (ER). Contention 3 fits into neither category. The heart of the contention (at least as intervenors initially intended) goes to the adequacy of the staff's consideration of alternatives. See Tr. 100, 107. As for the information already supplied by applicant, it in no way

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<sup>30</sup> The Board also stated that contentions focusing on an *applicant's* consideration of alternatives have been admitted in other spent fuel pool expansion proceedings, citing *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-86-21, 23 NRC 849, 869 (1986). See also Brief of the Commonwealth at 15. In that case, however, the staff had already issued its environmental assessment about one month before the Licensing Board's order (see 51 Fed. Reg. 19,430 (1986)), and, in addition, no party objected to the admission of the contention. LBP-86-21, 23 NRC at 869. In any event, that Licensing Board decision has not been reviewed on appeal and thus does not have precedential effect as to issues of law. *Duke Power Co.* (Cherokee Nuclear Station, Units 1, 2, and 3), ALAB-482, 7 NRC 979, 981 n.4 (1978).

resembles the substantial data and analyses required in an ER and to which the Commission referred in its *Catawba* decision. See Letter from Warren P. Murphy (Vermont Yankee Vice President and Manager of Operations) to NRC (April 25, 1986) at 2-3, Enclosure (Replacement Report) at 4-6.<sup>31</sup>

Thus, the Board's attempt to transform an otherwise baseless, premature contention into one that is admissible has failed. As NECNP's own contention 5 contemplated, intervenors must await the issuance of the staff's environmental assessment and, then if dissatisfied with its consideration of alternatives, formulate promptly an appropriate contention in accordance with the Commission's regulations for late-filed contentions, 10 C.F.R. § 2.714(a)(1).<sup>32</sup> Cf. *Consumers Power Co.* (Big Rock Point Nuclear Plant), ALAB-636, 13 NRC 312, 330-31 (1981) (Licensing Board should have awaited issuance of staff environmental assessment of spent fuel pool expansion proposal before determining that it was inadequate).

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Insofar as the Licensing Board's decision (LBP-87-17, 25 NRC 838) admits contention 1, it is *affirmed*, subject to the substitution of the phrase "design limits of 150°F" for "regulatory limits of 140°F"; otherwise the decision is *reversed*, with respect to contentions 2 and 3. Because the Commonwealth of Massachusetts has failed to submit at least one admissible contention, it is *dismissed* as an intervenor in this proceeding (see 10 C.F.R. § 2.714(b)); the Commonwealth, however, is already authorized to participate as an interested State pursuant to 10 C.F.R. § 2.715(c). See LBP-87-7, 25 NRC 116, 118 (1987).

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker  
Secretary to the  
Appeal Board

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<sup>31</sup> An ER is required for a construction permit and operating license, but not for a license amendment application. 10 C.F.R. §§ 51.50, 51.53. The information that must be included in an ER is described in 10 C.F.R. §§ 51.45, 51.51, 51.52.

<sup>32</sup> The assessment is expected soon. Tr. 91.

## APPENDIX A

### Contentions as Admitted

#### *Contention 1*

The spent fuel pool expansion amendment should be denied because, through the necessity to use one train of the reactor's residual heat removal system (RHR) in addition to the spent fuel cooling system in order to maintain the pool water within the regulatory limits of 140°F, the single-failure criterion as set forth in the General Design Criteria, and particularly Criterion 44, will be violated. The Applicant has not established that its proposed method of spent fuel pool cooling ensures that both the fuel pool cooling system and the reactor cooling system are single-failure proof.

### Derivation\*

#### *NECNP Contention 3*

The spent fuel pool expansion amendment should be denied because it violates the single failure criterion.

Basis: Should this amendment be approved, it would be necessary under certain conditions to use one train of the reactor's residual heat removal system (RHR) in addition to the spent fuel pool cooling system in order to maintain the pool water within the design limits of 150°F. (See Vermont Yankee Spent Fuel Storage Rack Replacement Report, April, 1986, at 56-59 and Response to Request for Additional Information—Proposed Change No. 133, Spent Fuel Pool Expansion, November 24, 1986, responses to questions 16 and 17). The heat load in the pool after a normal fuel discharge is roughly 50% greater than the design capacity of both trains of the spent fuel cooling system. While Applicants assert that the two pumps in one RHR train are single active failure proof, they have not demonstrated that there is no single failure in the RHR system components and power supplies that would not disable the single train of RHR.

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\*New England Coalition on Nuclear Pollution's Response to Board Order of February 27, 1987: Statement of Contentions and Standing (March 30, 1987) at 6-7, 8-10; Contentions of the Commonwealth of Massachusetts (March 30, 1987) at 1-3.

## Contentions as Admitted

### *Contention 2*

The proposed amendment would create a situation in which consequences and risks of a hypothesized accident (hydrogen detonation in the reactor building) would be greater than those previously evaluated in connection with the Vermont Yankee reactor. This risk is sufficient to constitute the proposed amendment as a "major federal action significantly affecting the quality of the human environment" and requiring preparation and issuance of an Environmental Impact Statement prior to approval of the amendment.

## Derivation

Moreover, under conditions where one RHR train is needed for spent fuel pool cooling, there is only one train available for decay heat removal from the core. Applicants have not established that this leaves a single failure proof method of cooling the core.

In summary, Applicants have not established that their proposed method of spent fuel pool cooling ensures that both the fuel pool cooling system and the reactor cooling system are single failure proof.

### *NECNP Contention 5*

The NRC has not complied with the provisions of the National Environmental Policy Act nor of its own rules in 10 C.F.R. Part 51.

Basis (in pertinent part): The bases for Contentions 1-4 are reasserted herein. The National Environmental Policy Act requires the preparation of an environmental impact statement detailing, *inter alia*, the environmental impact of the proposal and considering alternatives, for any "major federal action significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). The proposed amendment, which would substantially increase the risk to

## Contentions as Admitted

## Derivation

public health and safety associated with operation of the Vermont Yankee plant, is such an action. NRC has not prepared an environmental statement, as required by law and by 10 C.F.R. 51.20.

### *Commonwealth Contention I*

The Commonwealth contends that the license amendment proposed by Vermont Yankee Nuclear Power Corporation ("Licensee") is inconsistent with the protection of the public health and safety and the environment.

#### Basis:

1. Probabilistic [sic] risk studies of boiling water reactors indicate that the expected frequency of severe accidents at such reactors is non-negligible.
2. In the event of a severe accident, a significant quantity of hydrogen gas could be generated and such gas could, through containment leakage or failure, be released into the reactor building.
3. The hydrogen gas which could be released into the reactor building as a result of a severe accident would likely burn or detonate and would thereby generate pressure which would threaten the structural integrity of the containment building.

## Contentions as Admitted

### *Contention 3*

The Applicant has failed to submit an adequate analysis of alternatives to the proposed action, as required by §§ 102(2)(C) and 102(2)(E) of the National Environmental Policy Act, 42 U.S.C. §§ 4332(2)(C) and 4332(2)(E), and implementing NRC regulations or guidelines. Specifically, the Applicant has failed to analyze adequately the alternatives of (1) dry cask storage and (2) independent pool

## Derivation

4. The spent fuel pool of the Vermont Yankee Nuclear Power Station is so located that in the event of a severe accident resulting in hydrogen gas being released into the reactor building, it is possible that either: (a) spent fuel cooling systems will be damaged and rendered inoperable with restricted access to the building preventing their repair; or (b) the structural integrity of the spent fuel pool will be breached.
5. Inadequate cooling of fuel in the spent fuel pool or a breach in the structural integrity of the spent fuel pool can result in a radiological release.
6. Allowance of the proposed license amendment would increase the amount of spent fuel stored in the spent fuel pool and, thereby, increase the magnitude of the possible radiological release that could occur in the event of a severe accident.

### *NECNP Contention 5*

The NRC has not complied with the provisions of the National Environmental Policy Act nor of its own rules in 10 C.F.R. Part 51.

Basis in pertinent part: NRC rules (10 C.F.R. 51.21) require the preparation of an environmental assessment for all licensing and regulatory actions except those identi-

## **Contentions as Admitted**

storage. Both of these alternatives are available options and provide obvious safety advantages over the instant proposal.

## **Derivation**

fied as requiring an impact statement (Listed in 10 C.F.R. 51.20(b) or categorically excluded in § 51.22(c)). This proposed amendment is listed in neither section and thus requires at a minimum the preparation of an environmental assessment. That document has not been prepared.

While NECNP expects to change this contention at such time that NEPA-related documents are issued by NRC, it can state preliminarily that two areas of specific concern to it are the consideration of alternatives to the proposed action and consideration of the increased risk to public health and safety. In particular, serious consideration should be given to the alternatives of dry cask storage and independent pool storage, both of which provide obvious safety advantages over the instant proposal. On July 2, 1986, the NRC licensed an independent spent fuel storage installation using dry casks for the two Surry plants in Virginia.

## ***Commonwealth Contention II***

The Commonwealth contends that the NRC has failed to comply with its own rules and, as a result, has failed to consider alternatives to the proposed action such as the construction of a dry spent fuel storage facility or an in-ground spent fuel pool.

## **Contentions as Admitted**

## **Derivation**

### **Basis:**

1. The basis for Contention I is incorporated herein.
2. NRC regulations (10 C.F.R. § 51.21) mandate that an environmental assessment be prepared for all licensing and regulatory actions except those which require an environmental impact statement pursuant to 10 C.F.R. § 51.20(b) or which are categorically excluded in § 51.22(c).
3. No environmental assessment has been prepared and the proposed amendment is not an action identified in either 10 C.F.R. § 51.20(b) or § 51.22(c).



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ivan W. Smith, Chairman  
Dr. A. Dixon Callihan  
Dr. Richard F. Cole

In the Matter of

Docket Nos. 50-456-OL  
50-457-OL  
(ASLBP No. 79-410-03-OL)

COMMONWEALTH EDISON  
COMPANY  
(Braidwood Nuclear Power Station,  
Units 1 and 2)

July 6, 1987

MEMORANDUM AND ORDER  
(Denying Intervenors' Motion for Reconsideration and  
Denying Intervenors' Refiled Motion to Reopen  
the Record)

I. INTERVENORS' MOTION FOR RECONSIDERATION

In our Memorandum and Order of June 10, 1987, we denied the motion of Intervenors, Rorem *et al.*, to file a late-filed contention on financial qualifications. LBP-87-19, 25 NRC 950. The proffered contention was based upon a proposed change in the ownership and financing arrangements for the Braidwood Station. We rejected the contention for want of jurisdiction because, as

we stated, any application for an amendment to the operating license seeking approval for the proposed change would be the subject of a separate proceeding.

We also noted (incorrectly) that the Licensee had not yet even applied for an operating license amendment for the ownership changes — an obvious predicate to jurisdiction over the issue that would be raised by the application. We did not enumerate, because it was not necessary to do so, all of the other steps required before jurisdiction over a proceeding is conferred upon an NRC presiding officer — except to note that, at minimum, the Commission must issue a notice of opportunity for hearing on a license amendment application.<sup>1</sup>

By motion mailed June 23, 1987, the Intervenor petitioned for reconsideration of the Board's June 10 order on the grounds that the Board was mistaken in its belief that the application for the change of Braidwood ownership had not then been filed. In fact the application had been filed on May 28. Intervenor argue that the original notice of hearing in this proceeding was broad enough to confer upon this Board jurisdiction over the proposed contention. Apparently, according to Intervenor, the application for changed ownership simply makes the issue ripe for this Board's consideration under that previously conferred jurisdiction. Motion at 2. The Board had already considered and rejected the possibility that the original notice of hearing would provide the necessary jurisdiction to consider the issue raised by the amendment application. LBP-87-19, 25 NRC at 951-52. Intervenor's motion for reconsideration raises nothing new except the fact that the first of several steps essential to the commencement of an adjudicatory proceeding has been taken. Intervenor seem to have confused the NRC's jurisdiction over the application with a licensing board's jurisdiction to preside over any proceeding on the application.

Recent events make it unnecessary to prolong the discussion. On June 30, 1987, the Commission issued its order giving immediate effect to the Board's earlier decisions authorizing operation of the Braidwood units. CLI-87-7, 26 NRC 1 (1987). In that order the Commission commented on the pendency of the financial qualification motion before this Board and noted:

Since the new entity is not the applicant for the licenses whose issuance was authorized by the Board, we have not considered this new contention during our effectiveness review. The application to have the new entity operate the facility will be the subject of a separate proceeding.

*Id.* at 2 n.4.

It is clear that the Commission, as does the Board, regards the amendment application to be beyond the proceeding over which we now exercise jurisdiction.

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<sup>1</sup> Section 189 of the Atomic Energy Act, as amended (42 U.S.C. §2239); 10 C.F.R. §2.105. *See also* 10 C.F.R. §2.717, Commencement and termination of jurisdiction of presiding officer.

tion. Therefore, without waiting for answers to Intervenor's motion for reconsideration, the Board denies the motion.<sup>2</sup>

## **II. INTERVENORS' REFILED MOTION TO REOPEN THE RECORD**

On July 1, 1987, Intervenor's served a paper entitled "Motion to Reopen the Record to Admit Late-Filed Contention on Financial Qualifications." The motion restates the same factual averments and arguments originally set out in Intervenor's May 6, 1987 motion on the same subject. It also incorporates the arguments made in Intervenor's motion for reconsideration discussed and denied above. The July 1 pleading adds no new information or support for Intervenor's position. It appears to be designed to cure any defect perceived in the May 6 motion based upon the fact that the earlier motion was filed before the application for the license amendment on ownership changes.

Our reasons for denying the Intervenor's original motion were explained in our respective June 10 Order and expanded upon in the discussion above. The fact that Intervenor's original motion was filed before the application did not by itself defeat the motion. Refiling the motion after the application does not save it. As explained, we simply lack jurisdiction to consider it whenever it is filed. The motion to reopen the record is therefore denied.

**FOR THE ATOMIC SAFETY  
AND LICENSING BOARD**

**Ivan W. Smith  
ADMINISTRATIVE LAW JUDGE**

Bethesda, Maryland  
July 6, 1987

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<sup>2</sup> Counsel for Licensee and the NRC Staff were informed that answers to the motion for reconsideration were not required.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

Robert M. Bernero, Acting Director

In the Matter of

Docket No. 71-5942

GENERAL ELECTRIC COMPANY  
(Puncture Analysis of Model GE-700  
Shipping Cask)

July 6, 1987

The Director of the Office of Nuclear Material Safety and Safeguards denies a Petition filed by Lindsay Audin requesting action with regard to the GE-700 shipping cask. The Petitioner requested that the Safety Analysis Report for the container be reviewed in order to reevaluate its puncture test analysis, and that the cask be used only in its nonextended mode until it can be shown that the extended mode complies with all of the requirements of 10 C.F.R. Part 71.

**RULES OF PRACTICE: CHALLENGE TO COMMISSION  
REGULATIONS**

Generally, the proper forum for challenging a rule is the rulemaking proceeding. A petition under 10 C.F.R. § 2.206 requesting enforcement action is not a vehicle for challenging a Commission rule.

**RULES OF PRACTICE: SHOW-CAUSE PROCEEDING**

Where a petitioner has not provided the factual basis for a request with the specificity required by 10 C.F.R. § 2.206, action need not be taken on the request.

**TECHNICAL ISSUE DISCUSSED**

Assessment of Type B package design.

# DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206

## INTRODUCTION

By Petition dated January 10, 1987, Lindsay Audin (Petitioner) requested the Director of Nuclear Material Safety and Safeguards to review the Safety Analysis Report (SAR) for the GE-700 shipping cask in order to reevaluate its puncture test analysis. Mr. Audin further requested that the cask be used only in its nonextended mode until it can be shown that the extended mode complies with all aspects of 10 C.F.R. Part 71.

Petitioner states three concerns related to the puncture test analysis that was performed on the GE-700 cask, based upon his review of the SAR for the cask as developed in 1980 and the GE-100 cask as developed in 1968. Petitioner's first concern is that the puncture test analysis was based on testing of the much smaller GE-100 cask, which does not have an extension. According to Petitioner, the extended version of the GE-700 offers a potentially vulnerable point (the juncture between the extension and main cask body) not present in the GE-100. The second concern is that use of the GE-100 test takes credit for the lead shielding behind the cask's outer wall. Petitioner asserts that puncture evaluations should not take credit for the lead shielding because "recent findings (i.e., NUREG/CR-0930, 1980)"<sup>1</sup> indicate puncture resistance would be weakened if the lead were softened or melted by a fire that occurred before the puncture stress. Petitioner's third concern is based on NUREG/CR-0930, which, according to Petitioner, found that the empirical methods used to analyze casks for puncture were "crude and unreliable" and failed to give accurate results when tested against real punctures. Petitioner asserts that since the scaling up of the GE-100 is dependent upon such analyses, a proper puncture analysis should utilize the NIKE2D or similarly sophisticated computer simulation to be certain of its accuracy.

Receipt of Mr. Audin's Petition was acknowledged by letter dated February 17, 1987. A notice that the Petition was under consideration was published in the *Federal Register* on February 23, 1987. 52 Fed. Reg. 5511.

We understand the Petitioner's request for a review of the SAR with regard to evaluation of its puncture test analysis to constitute a request that the cask be reanalyzed with regard to its ability to withstand puncture. For the reasons set forth below, I have determined that no sufficient reason exists to justify reanalysis of the puncture resistance of the cask, and that the information in

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<sup>1</sup>NUREG/CR-0930, "Puncture of Shielded Radioactive Material Shipping Containers," by R.A. Larder and D. Arthur, April 1980.

Mr. Audin's Petition does not demonstrate that the GE-700 shipping cask fails to comply with 10 C.F.R. Part 71.

## DISCUSSION

The regulations in 10 C.F.R. Part 71 set forth the requirements for packaging and transportation of radioactive material. In addition to the general packaging requirements for all packages, 10 C.F.R. §§ 71.51(a), 71.71, and 71.73 establish safety and design standards for packages known as Type B packaging. These standards require Type B packages to withstand conditions incident to normal transport. Pursuant to Part 71, the NRC reviews and specifically approves each package design, including Type B, to ensure that the design meets applicable requirements. The approvals are issued in the form of a certificate of compliance for each package design.

The standards in § 71.73 specify certain hypothetical accident conditions for which a cask must be assessed. These include a 30-foot drop onto a flat, essentially unyielding surface, a 40-inch drop onto a 6-inch-diameter steel pin ("40-inch puncture test") and an exposure to a 30-minute fire environment of 1475°F.<sup>2</sup> Following exposure to these accident conditions, the cask must provide adequate containment of its contents, experience only limited loss of shielding, and maintain its contents in a subcritical condition. The regulations in Part 71 also set forth various procedural, administrative, and technical requirements to be followed for use of Type B packages. These standards are designed to ensure adequate containment of the radioactive material, adequate control of the radiation emitted by the material, and prevention of nuclear criticality during transport of radioactive materials. In addition, 10 C.F.R. § 71.101 specifies quality assurance standards under which packages must be designed, fabricated, shipped, and used, and requires that the quality assurance program be approved by the NRC.

### Background on the GE-700 Cask Design with Respect to Puncture Evaluation

The GE-700 cask design was originally approved by the Atomic Energy Commission (AEC) as an amendment to the General Electric Company's license SNM-130 on August 24, 1961. At that time, the cask design did not include either the protective steel jacket or the optional extension discussed in the

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<sup>2</sup> Section 71.41 of 10 C.F.R. provides, however, that as an acceptable alternative to use of a sample package, a licensee may evaluate a cask design for the conditions specified in § 71.73 by subjecting a scale-model specimen to the test or by using other methods acceptable to the Commission.

Petition. The cask design was approved in accordance with the criteria in the then-proposed regulations in Part 72, which did not require either a 30-foot drop test or a 40-inch puncture test.

On June 26, 1964, the General Electric Company requested AEC approval of an optional extension that could be bolted to the top of the GE-700 cask body to lengthen the inner cavity. In support of this application, General Electric subjected a quarter-scale model of the GE-700, with extension, to two 15-foot drops. The scale-model specimen was first drop-tested onto a flat, essentially unyielding surface with the cask impacting at an angle of 45° onto the extension at the upper end. In the second test, the same scale-model specimen was dropped in a horizontal position onto a rounded steel bar lying on the essentially unyielding surface. The tests were conducted in a manner intended to place maximum stress on the joint and its bolted connection between the cask body and the upper extension. The Safety Evaluation prepared by the AEC staff concluded that the test results demonstrated satisfactory strength of the GE-700 extension and its attachment to the cask body.<sup>3</sup> The GE-700 extension was subsequently authorized by the AEC on October 28, 1964 (Amendment No. 25 to SNM-130, Docket 70-154).

On August 22, 1966, the AEC revised its packaging regulations (now in Part 71) to require, among other things, a 30-foot drop test and a 40-inch puncture test. The General Electric Company, by application dated December 23, 1968, as amended February 4, 1969, requested approval of the GE-700 cask under the new regulations.<sup>4</sup> Because of the more stringent test conditions in the new regulations, the design of the GE-700 cask was revised to include a protective jacket constructed of two 5/8-inch-thick steel shells. The applicant's assessment of the protective jacket was based on extrapolating (scaling up) the results of tests previously conducted on the GE-100, a similar but smaller cask.<sup>5</sup> The GE-100 cask is equipped with a protective jacket constructed of two 1/4-inch-thick steel shells. When the GE-100 cask was subjected to the 40-inch puncture test, its protective jacket experienced only localized yielding and was not penetrated.<sup>6</sup> The applicant used the laws of similitude to scale up the thickness of the GE-100 protective jacket to the size that would be needed in order to provide comparable

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<sup>3</sup> The scale-model tests and results are described in GE Report No. APED-4522, "Destructive Drop Tests of a Model Fuel Cask," dated April 15, 1964. The report is attached to the June 26, 1964 application submitted by the General Electric Company for approval of the optional extension.

<sup>4</sup> A safety analysis report (SAR) was submitted in connection with the December 23, 1968 application.

<sup>5</sup> The use of scaling techniques or similitude to evaluate shipping casks is in accordance with the requirements of 10 C.F.R. §71.41. See note 2, *supra*.

<sup>6</sup> The test results are described in the General Electric Company application for the GE-100 cask, dated September 18, 1968 (Docket 70-754).



puncture protection for the heavier GE-700 cask.<sup>7</sup> The AEC staff agreed with the applicant's conclusion that the GE-700 protective jacket provided ample steel thickness to protect against puncture, see "Safety Analysis by the Irradiated Fuels Branch" (with attachment), March 11, 1969, and approved the revised design of the GE-700 cask with protective steel jacket (Amendment No. 71-27 to SNM-960, Docket 70-754).

The puncture analysis submitted in the 1968 SAR was incorporated, with essentially no changes, into subsequent applications until 1982. On June 22, 1982, the General Electric Company requested an administrative amendment to the NRC Certificate of Compliance for the GE-700 cask. On August 10, 1982, following a determination by the licensee that the actual measured weight of the package was greater than that presented in previous SARs, the puncture evaluation was revised to account for the increased weight. The revised puncture evaluation used the same methods and laws of similitude as were used in the February 4, 1969 application that requested initial approval of the protective jacket. The results demonstrated that a thickness of 0.525 inch for the two steel shells in the protective jacket would provide puncture protection comparable to the results observed in the GE-100 test (i.e., only localized yielding of the protective jacket and no penetration). The design of the GE-700 protective jacket specifies 0.625-inch-thick steel shells, which is more than necessary as indicated by the revised puncture evaluation. Accordingly, the NRC approved the GE-700 cask with corrected weight on August 25, 1982 (NRC Certificate of Compliance No. 5942, Revision 5).

### Puncture Evaluation of the GE-700 Cask

Petitioner's first concern is that the GE-700 SAR uses the results of testing of the GE-100 cask as the basis for demonstrating the ability of the GE-700 to withstand puncture. Petitioner asserts that this is deficient because the extended version of the GE-700 offers a potentially vulnerable point at the juncture between the extension and the main cask body which is not present in the GE-100.<sup>8</sup>

The GE-100 tests to which Petitioner refers were used in the February 4, 1969, and June 22, 1982 applications to show that the protective jacket of the GE-700 would not be penetrated. As discussed above, using the laws of

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<sup>7</sup>The laws of similitude used to scale up the results of the GE-100 tests are described in "Some Studies of Structural Response of Casks to Impact," by H.G. Clark, Jr., Proceedings of the Second International Symposium on Packaging and Transportation of Radioactive Materials (October 14-18, 1968).

<sup>8</sup>Petitioner states that his concerns are based upon a review of the SAR for the GE-700 cask as developed in 1980. Petitioner does not identify the specific 1980 SAR that constitutes the basis for his concerns. Moreover, as stated above, the puncture analysis submitted in any 1980 SAR would have been essentially the same as that submitted in the December 23, 1968 SAR.

similitude to account for differences in weight, test results from the smaller but similar GE-100 cask were scaled up to show that the steel shells of the protective jacket around the heavier GE-700 cask were sufficiently thick to provide comparable protection. The evaluation indicated that the steel shells are thicker than necessary for the purpose of preventing puncture.

The GE-700 cask has an optional extension which the smaller GE-100 cask does not have. Petitioner is concerned that the joint between the cask body and the extension could be vulnerable to the puncture test since the joint was not considered in scaling up the GE-100 test results. However, as discussed above, the strength of the joint was demonstrated in the General Electric Company application dated June 26, 1964. A scale model of the GE-700 cask, with extension, was subjected to two 15-foot drop tests without the benefit of a protective jacket. The tests were conducted in a manner intended to place maximum stress on the joint and its bolted connection. In the judgment of the NRC Staff, the stresses and forces to which the joint was subjected in these two 15-foot drop tests were greater than those that would be expected in a 40-inch puncture test of the GE-700 cask. Thus, while the joint was not considered in scaling up the GE-100 test results, the strength and adequacy of the joint and its bolted connection were substantiated by another set of tests which were conducted before the tests to which Petitioner refers. Petitioner may not have been aware of the earlier scale-model tests. The earlier tests, conducted without benefit of the protective jacket, demonstrate the integrity of the joint. Therefore, there is no basis to grant the Petitioner's request based upon the assertion that the joint could be vulnerable to puncture.

### **Sequence of Puncture and Fire Tests**

Petitioner next asserts that puncture evaluations should not take credit for lead shielding because puncture resistance would be weakened if the lead were first softened or melted by a fire. Although 10 C.F.R. § 71.73 specifies that the puncture test is to be conducted before the fire test, Petitioner asserts that the sequence of events could easily be reversed in an actual accident. As an example, Petitioner speculates that a rail car collapsing in a fire could tip over onto adjacent railroad tracks or reinforced protrusions.

Petitioner's argument constitutes an impermissible collateral attack upon an agency rule. Generally, the proper forum for directly challenging a rule is the rulemaking proceeding. See *Union Electric Co.* (Callaway Plant, Units 1 and 2), ALAB-352, 4 NRC 371, 374 (1976). A petition under 10 C.F.R. § 2.206 requesting enforcement action is not a vehicle for challenging a Commission rule. Rather, if a member of the public is dissatisfied with an existing rule, he or she may petition the Commission to institute a rulemaking proceeding to change the rule. Since the GE-700 cask was tested and approved in accordance with the

Commission's regulations, it cannot now be found unsatisfactory based merely on Petitioner's dissatisfaction with the Commission's rules themselves.

With respect to Petitioner's implication that the Commission's rules governing the approval of shipping casks are inadequate, it should be noted that during the past several years, the Commission has reexamined its regulations concerning the transportation of radioactive materials<sup>9</sup> and has concluded that existing regulations are adequate to protect the public against unreasonable risk. See 40 Fed. Reg. 23,768 (June 2, 1975) and 46 Fed. Reg. 21,619 (Apr. 13, 1981). See also NUREG-0170, "Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes," December 1977. The Commission specifically reaffirmed the adequacy of Part 71 with respect to the safety of radioactive waste transportation in a rulemaking on advance notification. See 47 Fed. Reg. 596 (Jan. 6, 1982). Petitioner has not presented any information that would indicate that the test sequence in Part 71 of puncture followed by fire is not sufficient to provide adequate assurance of public health and safety, or that the sequence of puncture followed by fire could easily be reversed during an accident. As such, in addition to impermissibly challenging the Commission's rules, Petitioner has failed to provide the factual basis for his request with the specificity required by 10 C.F.R. § 2.206, and action need not be taken on his request for this reason also. See, e.g., *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), DD-85-11, 22 NRC 149, 154 (1985).

## Method of Analysis

Petitioner asserts that NUREG/CR-0930 found that puncture evaluations based upon empirical analysis were "crude and unreliable" and failed to give accurate results.<sup>10</sup> He further asserts that the scaling of the GE-100 test results is dependent upon such analysis and that a proper puncture analysis should utilize NIKE2D or a similarly sophisticated computer program to be certain of its accuracy.

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<sup>9</sup> Special note is made of the fact that on August 17, 1979, a total revision of 10 C.F.R. Part 71 to make it more compatible with International Atomic Energy Agency (IAEA) regulations was published for comment as a proposed rule (44 Fed. Reg. 48,234). After consideration of comments, the NRC published revised Part 71 in final form on August 5, 1983 (48 Fed. Reg. 35,600).

<sup>10</sup> Although NUREG/CR-0930 does state that empirical methods of analysis are "crude and unreliable," the report's conclusions and recommendations are that empirical methods are too conservative; i.e., empirical equations conservatively underestimate the energy needed to produce puncture by about 60%, and use of a more sophisticated method of analysis would permit thinner jacket thicknesses to be used when puncture controls the design. See NUREG/CR-0930, at 29, 32. Moreover, the NRC Staff is not aware of any instance where the empirical methods used to evaluate puncture of lead-shielded casks have failed to predict a conservative result when the cask design was subjected to actual physical testing.

It is not clear why Petitioner believes that the puncture evaluation of the GE-700 cask is based on empirical design equations. As previously discussed, test results of the smaller but similar GE-100 cask were based on calculations using the laws of similitude, not on empirical equations. The use of similitude to scale behavioral differences between large and small objects of similar design is a well-established and accepted engineering practice.<sup>11</sup> As indicated *supra* note 5, the use of similitude to evaluate shipping casks is in accordance with the requirements of 10 C.F.R. § 71.41. Thus, there is no basis to grant Petitioner's request for a reevaluation of the GE-700 cask based upon this concern.

## CONCLUSION

In sum, the Petitioner has failed to set forth sufficient grounds for his request that the SAR for the GE-700 container be reviewed in order to reevaluate the puncture test analysis for this cask, or for his request that the cask be used only in its nonextended mode until it can be shown that the extended mode complies with all aspects of Part 71. As explained above, Petitioner has failed to provide sufficient information showing that the puncture evaluation that was performed on the GE-700 cask was inadequate or that the cask in its extended mode fails to comply with Part 71. Consequently, I decline to take the action requested by the Petitioner.

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.

Robert M. Bernero, Jr., Acting  
Director  
Office of Nuclear Material Safety  
and Safeguards

Dated at Silver Spring, Maryland,  
this 6th day of July 1987.

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<sup>11</sup> See, e.g., T. Duffey, *Scaling Laws for Fuel Capsules Subjected to Blast Impact and Thermal Loading* (1971).

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

CONSOLIDATED EDISON COMPANY  
OF NEW YORK, INC.  
(Indian Point, Unit 2)

Docket No. 50-247

POWER AUTHORITY OF THE STATE  
OF NEW YORK  
(Indian Point, Unit 3)

Docket No. 50-286

July 20, 1987

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by the New York Public Interest Research Group, Inc., and seven community organizations (Petitioners) requesting the suspension of operations at Indian Point Units 2 and 3. Petitioners base this request on an alleged unacceptable risk to the health and safety of schoolchildren in the vicinity of the Indian Point facility in the event there is a radioactive emergency there.

**FEMA'S RESPONSIBILITY FOR OFFSITE EMERGENCY  
PREPAREDNESS**

The Federal Emergency Management Agency (FEMA) has the responsibility for evaluating and advising the NRC with respect to offsite emergency preparedness issues.

**DEFICIENCIES IN EMERGENCY PREPAREDNESS PLANS**

In practice, radiological emergency response plans are rarely if ever perfect and complete, and this is the reason for continuing FEMA and NRC oversight of this area.

Because of the potential impact of deficiencies on emergency preparedness, they are required to be promptly corrected through appropriate remedial actions including remedial exercises, drills, or other actions.

Even in those instances where the Commission can no longer make a reasonable assurance finding that adequate protective measures can and will be taken in a radiological emergency, emergency preparedness deficiencies may not require facility shutdown.

## **DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206**

### **I. INTRODUCTION**

By petition dated April 6, 1984, the New York Public Interest Research Group, Inc. (NYPIRG), joined by seven community organizations<sup>1</sup> (herein collectively referred to as Petitioners), pursuant to 10 C.F.R. § 2.206, seek the institution of proceedings pursuant to 10 C.F.R. § 2.202 to immediately suspend the operating licenses of Indian Point Units 2 and 3. As a basis for this action, the Petitioners contend that there will be an unacceptable risk to the public health and safety of schoolchildren in the vicinity of the nuclear plant located at Indian Point, New York, in the event of a radiological emergency at that facility.

In an unpublished order of July 23, 1984, this matter was referred by the Commission to the Director, Office of Inspection and Enforcement, for treatment pursuant to § 2.206. On August 28, 1984, the Petitioners were advised that the NRC Staff was considering their petition under § 2.206 and that immediate enforcement action was not warranted. This matter was subsequently referred to me for a decision. For the reasons discussed below, the petition is denied.

### **II. BACKGROUND**

On April 6, 1984, the Petitioners<sup>2</sup> filed their initial petition regarding emergency planning for schoolchildren in the vicinity of the Indian Point nuclear

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<sup>1</sup>The School Task Force of the Alliance to Close Indian Point, Croton Parents Concerned About Indian Point, Yorktown Parents Concerned About Indian Point, North Rockland Alliance to Close Indian Point, Rockland Families to Close Indian Point, Greater Ossining Neighborhood Action Group, and West Branch Conservation Association.

<sup>2</sup>Most of these Petitioners also had been involved in an earlier requested shutdown of Indian Point Units 2 and 3. In that action, the Commission had initiated a discretionary Atomic Safety and Licensing Board proceeding designed to gather information on whether to shut down the units or to take other enforcement action. The Commission concluded that neither shutdown nor imposition of additional remedial action was warranted, but it directed the NRC Staff to confer with the Federal Emergency Management Agency (FEMA) on whether deficiencies identified by the Atomic Safety and Licensing Board and the Commission had been corrected. See CLI-85-6, 21 NRC 1043 (1985).

facility.<sup>3</sup> This petition was responded to by Consolidated Edison Company of New York, Inc., and Power Authority of the State of New York (Licensees) on May 4, 1984. These Licensees contended that the petition should be denied because the issues had already been litigated in a special proceeding involving Indian Point<sup>4</sup> and because the matters raised in the petition were before the Commission as part of its review of the Licensing Board's recommendations in that proceeding. On June 9, 1984, the Petitioners submitted a "Supplement to New York Public Interest Research Group, *et al.* Petition for Suspension of Operation of Indian Point Units 2 and 3," in response to the Licensees' response. In that supplement the Petitioners contended that the information in their petition and supplement was new and had not been reviewed by the Commission.

On December 13, 1984, the Petitioners submitted "Supplement II to New York Public Interest Research Group, *et al.*, Petition for Suspension of Operation of Indian Point Units 2 and 3." This second supplement further addressed the status of school preparedness near the Indian Point plant, commented on the completeness and depth of a November 28, 1984 emergency exercise, and responded to certain evaluations made by FEMA of the issues raised by the Petitioners. Included with this supplement was a suggested list of radiological emergency exercise objectives specifically dealing with emergency preparedness and the implementation of plans for schoolchildren.

On May 25, 1984, June 22, 1984, August 21, 1984, March 1, 1985, and December 6, 1985, the NRC requested that FEMA review the Petitioners' allegations and contentions in accordance with a "Memorandum of Understanding Between Federal Emergency Management Agency and Nuclear Regulatory Commission," 45 Fed. Reg. 82,713 (Dec. 16, 1980).<sup>5</sup> Comments from FEMA's reviews of the original petition were transmitted to the NRC on June 11, 1984, and July 31, 1984. FEMA's reviews of the Petitioners' Supplements I and II were transmitted to the NRC on October 23, 1984, and May 28, 1985, respectively.

On November 28, 1984, April 10, 1985, and June 4, 1986, FEMA evaluated offsite emergency preparedness exercises conducted for the Indian Point facility. FEMA's evaluations were transmitted to the NRC on March 14, 1985, May 17, 1985, October 6, 1986, and October 21, 1986.

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<sup>3</sup>Bearing on the time required for response to this petition was the fact that Rockland County, New York, formally entered into the emergency planning for Indian Point on January 7, 1984. Thus, at the time the Petitioners' submissions were being prepared and developed for submittal to the NRC, the county was developing its plans. These changing circumstances made final response to the Petitioners' concerns impractical until the radiological emergency plans for Indian Point had been completed, evaluated, and exercised.

<sup>4</sup>See CLI-85-6, *supra*.

<sup>5</sup>This Memorandum of Understanding between FEMA and NRC was later revised on April 18, 1985. See 50 Fed. Reg. 15,485 (Apr. 18, 1985).

For the November 28, 1984 exercise, FEMA identified two exercise deficiencies that could have affected schoolchildren. First, the formulation and issuance of Emergency Broadcast System messages from the joint news center took too much time and, second, decisionmaking for protective action recommendations was delayed in Rockland County. A remedial exercise was held on April 10, 1985, and FEMA subsequently reported on May 17, 1985, that both deficiencies had been corrected.

In a related proceeding regarding emergency planning for the Indian Point facility, the Commission directed the NRC Staff on May 7, 1985, to confer with FEMA and report to the Commission on the current status of emergency planning at Indian Point and on whether deficiencies identified by the Atomic Safety and Licensing Board and by the Commission in that proceeding had been corrected. (CLI-85-6, 21 NRC at 1091. *See also* note 2, *supra*.) Some of those deficiencies were directly related to issues raised in the subject petition and its supplements. On August 30, 1985, FEMA transmitted its responses to the Commission's questions in CLI-85-6 in a report that noted several unresolved issues relevant to the emergency planning affecting schoolchildren. On December 6, 1985, the NRC requested a status report from FEMA on the unresolved issues in the Commission proceeding. In another memorandum of this same date, the NRC requested that FEMA provide by April 1986 a specific finding and determination as to whether the offsite radiological emergency plans for Indian Point were adequate to protect the health and safety of schoolchildren in the event of a radiological emergency.

FEMA notified the NRC on February 5, 1986, that planning and preparedness for Indian Point was generally adequate but that four items relevant to CLI-85-6 (two of which related to schoolchildren) remained unresolved. It further reported that although work was continuing toward their resolution, it was not possible to make a firm estimate of the time required for completing the necessary corrective actions. On February 26, 1986, the NRC Staff advised the Petitioners of its request that FEMA provide by April 1986 a finding and determination on the plans to protect schoolchildren in the vicinity of Indian Point. The NRC Staff also advised that on the basis of the 1985 exercise results and FEMA's general finding that plans and preparedness were adequate, no enforcement action was necessary at that time while additional corrective actions were being pursued.

On September 17, 1986, FEMA informed the NRC that because there were still some staff problems with the local authorities' emergency plans, it was unable to provide reasonable assurance that the public health and safety of schoolchildren in the four-county emergency planning zone at Indian Point could be protected. On September 19, 1986, NRC Region I staff transmitted the September 17, 1986 FEMA negative finding to the Licensees and requested that they advise the NRC of the status of the unresolved FEMA issues, the plans and schedules for correcting these unresolved issues, and their views on



the significance of the FEMA findings. On September 26, 1986, NRC Region I staff sent the Petitioners copies of the letters transmitting the FEMA finding to the Licensees and an advance copy of the FEMA finding.

The Licensees responded to FEMA's negative finding on September 29, 1986. This response included schedules for correcting unresolved items and proposed corrective actions to include projected multiple training sessions and revisions to the State plan which were scheduled for January 1987.

On October 6, 1986, FEMA furnished the NRC a report on the June 4, 1986 full-scale exercise at Indian Point that identified six deficiencies, two of which affected the planning for schoolchildren. The first was that plans and procedures for two nonpublic schools in Rockland County had not been developed, and the second was that administrators at some schools in Orange County were not aware of radiological response procedures.

The NRC Staff formally transmitted the FEMA negative finding to the Petitioners on October 20, 1986, and notified them that the decision on their petition had been deferred until FEMA had evaluated additional information that was being submitted. By letter to the Commission on October 27, 1986, the Petitioners protested the NRC's failure to act and insisted on an immediate decision. On January 28, 1987, the NRC Staff responded to the Petitioners that deficiencies in planning do not necessarily require shutdown and that corrective actions identified by the Licensees were sufficiently prompt and responsive to permit continued operation. The NRC Staff also informed the Petitioners that the NRC was continuing to closely monitor the resolution of the issues and was awaiting the forthcoming supplemental finding from FEMA before determining further action. Remedial drills to demonstrate correction of the June 4, 1986 deficiencies were conducted in November and December 1986 and February 1987. Plan revisions to incorporate necessary corrections were completed on March 26, 1987.

On February 26, 1987, there were two remaining emergency preparedness items that had not been resolved to FEMA's satisfaction. These items were the procurement of letters of agreement (1) between Rockland County and the schools in Rockland County and (2) from the State of New Jersey regarding the establishment of general population reception centers, school reception centers, and other resources. A meeting was held on March 4, 1987, between the New York State Radiological Emergency Preparedness Group and FEMA regarding these items.

On the basis of its evaluation of plan changes and remedial exercises that were conducted through March 26, 1987, FEMA notified the NRC on April 9, 1987, that it was able to provide reasonable assurance that the public health and safety of schoolchildren could be protected in Indian Point's four-county emergency planning zone in the event of a nuclear accident. As part of this determination, FEMA committed to continue to work with New York State to

enhance the planning and preparedness of schools in the Indian Point emergency planning zone.

At the time of this April 9, 1987 notification, a FEMA guidance memorandum for emergency preparedness at nuclear facilities recently had been issued entitled, "Protective Actions for School Children (GM EV-2)." Although its evaluation for Indian Point did not take into consideration the additional guidance indicated in GM EV-2, FEMA subsequently asked that New York State submit plan revisions to satisfy the criteria in GM EV-2 by January 31, 1988. An exercise for demonstrating these revisions is scheduled at Indian Point for March 1988.

### III. DISCUSSION

The Petitioners seek the immediate suspension of the operating licenses of Indian Point Units 2 and 3 until and unless the Commission can give assurance that adequate protective measures can and will be taken to protect children in schools and day-care centers during a radiological emergency at Indian Point. They assert that the current state of emergency planning and preparedness is inadequate because there is an undue risk to the health and safety of schoolchildren in the vicinity of the plants, and they cite Evaluation Criteria 9 and 10 of Planning Standard J in NUREG-0654/FEMA-REP-1 (Rev. 1, November 1980) as authority for their claims.

The Petitioners' concerns are with offsite emergency preparedness issues and the Indian Point facility. Since these are offsite (as opposed to onsite) issues involving the planning and preparedness of local and state authorities, FEMA has the responsibility for their evaluation and for advising the NRC with respect to any possible problems. *See* 10 C.F.R. § 50.47(a)(2). *See also* Memorandum of Understanding Between FEMA and the NRC, 50 Fed. Reg. 15,485 (Apr. 18, 1985). Under 44 C.F.R. Part 350, FEMA is also charged with assessing offsite plans submitted by state and local governments. In accordance with these designated responsibilities, on May 25, 1984, June 22, 1984, August 21, 1984, March 1, 1985, and December 6, 1985, the NRC requested FEMA's evaluation of the emergency preparedness issues contained in the petition and its supplements.

#### A. FEMA's Responses to Petitioners' Contentions

In FEMA's June 11, 1984 response to the Petitioners' April 6, 1984 petition, FEMA identified the following thirteen contentions:

1. Residents in communities surrounding Indian Point lacked confidence that schoolchildren will be protected.

2. School protective actions could not be initiated before local Emergency Operations Centers (EOCs) for Indian Point were fully activated.
  3. Early dismissal of schools during a radiological emergency would adversely affect notification and mobilization of emergency workers because of strain placed on local phone systems.
  4. Parents might not follow emergency instructions to stay away from the schools and might attempt to evacuate their children even when sheltering is advised.
  5. There were not enough school buses in the Indian Point area to evacuate schoolchildren.
  6. Early dismissal (i.e., "go-home") procedures that may be used by school districts had not been evaluated by FEMA.
  7. Letters of agreement for transportation resources (i.e., buses and drivers) were lacking.
  8. Governmental guidance to help school districts in radiological emergency planning was limited.
  9. Schools lacked necessary data for radiological emergency planning.
  10. Public education and information programs for parents were inadequate.
  11. Sheltering guidelines for school buildings were not available.
  12. Lists of nonpublic schools, preschools, and day-care centers were not maintained.
  13. Legal and financial responsibilities of school districts were not clear.
- In its June 11, 1984 response, FEMA evaluated these contentions and concluded they lacked validity for the following reasons, respectively:
1. *Residents' lack of confidence that schoolchildren would be protected.* FEMA was not aware of any substantive evidence that residents of the communities surrounding the Indian Point site lacked confidence that their children would be protected in the event of an offsite radiological emergency.
  2. *School protective actions before EOC activation.* FEMA concluded that the corrective action recommendations for schoolchildren could be effectively selected and implemented before local EOCs were fully activated. The counties' plans provide that the protective action recommended for schools will be evaluated by the County Executives upon notification of an incident by the Licensees. These officials will be notified by tone-alert radios which will allow them to issue the first broadcast messages before or when the sirens are sounded.
  3. *Effect of early dismissal of schools on the notification and mobilization of emergency workers.* FEMA stated that it had rebutted this same contention in its January 30, 1984 response to the Atomic

Safety and Licensing Board in the special NRC-litigated proceeding for Indian Point. During radiological exercises, the notification and mobilization of all emergency response organizations, especially those assigned to the EOC, would be tested to ensure that they were effective. Notification would be successfully achieved by telephones, radios, the New York State Radiological Emergency Communications System which will operate on a 24-hour basis, tone-alert radios, dedicated hotlines, key personnel equipped with pagers, and a commitment that the telephone company will install additional telephones on short notice in the case of an emergency.

4. *Emergency instructions to parents.* FEMA was not aware of any substantive evidence that parents of schoolchildren would disobey an Emergency Broadcast System advisory instructing them not to go to schools to pick up their children. According to FEMA, the weight of the evidence is that the public will comply with emergency plans and instructions.
5. *School buses.* FEMA responded that there were 850 buses and 540 vans assigned to evacuate schoolchildren. Although transportation studies were only currently under way in Westchester and Rockland Counties, there was no indication at the time of the June 11, 1984 FEMA response that transportation would be inadequate.
6. *FEMA's evaluation of early dismissal procedures.* FEMA responded that early dismissal procedures were being formulated by local authorities and that when revised plans were submitted they would be reviewed and evaluated by FEMA. FEMA would continue to work with the State to ensure that dismissal procedures were in place and could be effectively implemented.
7. *Letters of agreement for transportation resources.* FEMA identified the lack of letters of agreement with bus companies and drivers as a planning deficiency. FEMA pledged to continue working with the State on this problem.
8. *Governmental guidance to schools.* FEMA stated that it had answered this issue in response to the Petitioners' issues 5, 6, 9, and 10.
9. *Radiological emergency planning data for schools.* FEMA disagreed that schools lacked basic data to enable them to begin radiological emergency planning. As documented in Argonne National Laboratory Report, ANL/EES-TM-228 (May 1983), a majority of the school organizations had been contacted concerning their role in emergency plans for the county, and some schools had received training in evacuation procedures.

10. *Information programs for parents.* FEMA contended that the public education brochure for Indian Point included information for parents regarding the safety of schoolchildren in a radiological emergency (e.g., early dismissal and sheltering). FEMA would continue to work with the State to increase the effectiveness of public education.
11. *Sheltering guidelines for school buildings.* FEMA found that the sheltering capabilities of school buildings were adequate and that no evidence had been submitted to contradict this judgment.
12. *Lists of nonpublic schools, preschools, and day-care centers.* According to FEMA, the existing county plans contained listings of nonpublic schools, preschools, and day-care centers within the Indian Point plume exposure emergency planning zone. When updated plans became available, FEMA would analyze them to ensure that the listing of various facilities including schools had been updated.
13. *Legal and financial responsibilities of schools.* FEMA forwarded the Petitioners' petition to New York State for its review and response on the issues related to legal and financial responsibility under state law.

FEMA subsequently identified additional contentions of the Petitioners, and on July 31, 1984, it supplemented its June 11, 1984 response. Additional contentions identified by FEMA included:

14. The scenarios for Indian Point involving sheltering, evacuation, and early dismissal had not been made explicit to the school districts.
15. The public information brochure on Indian Point emergency preparedness appeared to contradict New York State's position on the evacuation of schoolchildren.
16. Certain State and county officials had made inaccurate representations and empty promises regarding planning and preparedness for schools, including inconsistent statements about early "dismissal/go-home" plans for schools.
17. FEMA had consistently identified deficiencies in the public information and notification program to include a failure by many residents to know such basic information as the meaning of warning sirens.
18. The description in the State's emergency response plan of the Red Cross' role at reception centers was not what the Red Cross had agreed to perform.
19. A survey conducted by Argonne National Laboratory for FEMA during 1983 revealed that schools lacked training in emergency procedures in the vicinity of Indian Point, and there was no evidence of improvement in training during the following year.

20. The early dismissal or "go-home" plans for schools in the vicinity of Indian Point did not take into account the special needs of schoolchildren.

FEMA's July 31, 1984 response to these additional contentions may be summarized as follows:

14. *Scenarios for sheltering, evacuation, and early dismissal.* FEMA found that the sheltering, evacuation, and early dismissal plans were sufficient since:
  - (a) The New York State Education Department required school districts to review and update their emergency plans and procedures;
  - (b) Instructions concerning the sheltering, evacuation, and early dismissal of schoolchildren were contained in the county plans and in the public education brochure for each of the four counties within the Indian Point plume exposure pathway emergency planning zone;
  - (c) School administrators had been provided with information regarding protective response options and their roles in case of an emergency; and
  - (d) The implementation of protective response options for schoolchildren would be tested during forthcoming exercises.
15. *Apparent contradiction between the public information brochure and the State's position.* FEMA believed this claim was refuted by New York State officials who had assured FEMA that they did not disagree with the public education brochure for the counties.
16. *Inaccurate representations by officials.* New York State demonstrated to FEMA that there was no substantial inconsistency between statements made by the officials in question regarding early "dismissal/go-home" plans.
17. *The public information and notification program.* FEMA acknowledged that deficiencies had existed in the past in the public information and notification programs at Indian Point. For example, FEMA's April 14, 1983 post-exercise assessment reported that spot checks in Westchester, Rockland, and Orange Counties revealed that many people neither understood the meaning of the sirens nor knew that they were supposed to listen to Emergency Broadcast System messages over the radio.

However, FEMA noted that this deficiency could be explained since public education brochures had not been distributed in Rockland, Westchester, and Orange Counties prior to the exercises. FEMA also noted that public awareness would be evaluated again during the Fall 1984 exercise at Indian Point and that FEMA expected the situation

to improve. FEMA committed to verify that the information in the brochures agreed with the information in the counties' emergency plans and that Indian Point emergency brochures were properly written to ensure comprehension and information retention by the public.

With respect to public notification, FEMA reported that the Licensees had upgraded the siren system by moving existing sirens and providing additional sirens in the Indian Point emergency planning zone. Adequate public notification would also be ensured by FEMA review of the counties' acoustical design for their alert and notification systems.

18. *The Red Cross' role.* FEMA concluded that the Red Cross' role at sheltered facilities was accurately described in the New York State Radiological Emergency Response Plan for Indian Point. That role was verified by the Red Cross' prior written commitment in the Statement of Understanding between the State of New York and the National Red Cross.
19. *Emergency preparedness training for the schools.* FEMA responded that adequate training was being furnished to the schools. This training had taken place in many meetings between planners, county and State officials, and school administrators concerning emergency procedures for schoolchildren. Information sharing between these groups included: the development of the Transportation Safety Planning Group's plan in Westchester and Rockland Counties, the development of the Compensating Measures Plan in Rockland County, and the presentation of slide shows to clubs, schools, and PTAs in the vicinity of Indian Point. School districts and school administrators also had been contacted, and their roles and responsibilities in radiological emergency planning had been discussed.
20. *The "go-home" plans.* FEMA responded that the special needs of schoolchildren near Indian Point had been considered in emergency planning. According to FEMA, the success of early dismissal was based on the prescribed procedure that children would be where their parents wanted them. Moreover, the school districts had detailed procedures in place for notifying parents in the event of an emergency early dismissal and for securing alternative contacts when parents could not be reached by phone.

On May 28, 1985, FEMA addressed the following additional contentions raised in Petitioners' Supplement II:

21. Current school emergency preparedness remained gravely deficient in the areas of school evacuation, early dismissal, and parental notification.

22. Parental information and education failed to consider that:
  - (a) Calls to the emergency telephone number for a child may not always be answered;
  - (b) All parents will not be notified by telephone, sirens, and Emergency Broadcast System messages;
  - (c) Early dismissal will cause children who walk or ride buses home to proceed without knowing whether an adult awaited them;
  - (d) When children are dropped off at their usual release corners, there is no way of knowing if they will be able to later join with an adult;
  - (e) If school authorities do not notify adults before releasing children, it is unclear how children would find a protective adult; and
  - (f) Access control during worsening accident conditions may prevent working parents from fetching their children.
23. Transportation plans for school or general evacuation were not finalized, and lists of volunteer drivers have not been compiled.
24. There is an assumption that drivers in training will perform in an emergency. However, this assumption is not valid since bus drivers have been assured that attendance at training is not construed to mean commitment to drive during an accident.
25. The November 28, 1984 exercise of offsite radiological emergency preparedness for Indian Point failed to provide FEMA with a legitimate basis for ensuring the adequacy of school evacuation procedures. Deficiencies existed in the following areas:
  - (a) There was inadequate testing in the areas of in-school radiological emergency procedures, school evacuation of children to reception centers, early dismissal of children, bus driver notification, bus mobilization, the driving of bus routes, revised transportation plans, and parental notification.
  - (b) Emergency Broadcast System messages issued during the exercise were inadequate since they failed to include information concerning early school dismissals, instructions to adults who may be caring for children other than their own, instructions to children who may be home alone, and information contained in news releases.
  - (c) A more realistic exercise of offsite radiological emergency preparedness to protect schoolchildren would involve the testing and/or timing of: (1) all county-to-school district notification and verification procedures; (2) notification and verification procedures (including telephone and tone alert) for schools and similar institutions; (3) parental telephone and Emergency



Broadcast System notification procedures; (4) in-school procedures for early dismissal, evacuation, and sheltering; (5) notification and verification procedures for bus companies; (6) the ability of bus companies to muster buses and drivers from the field at nonroutine times; (7) school transportation procedures for early school dismissal and evacuation; and (8) parental notification procedures for nursery schools, day-care centers, and after-school centers that plan to keep children until parents can come for them (rather than dismiss early or evacuate).

26. The Petitioners' concerns were not adequately addressed by FEMA's responses dated June 8, 1984, and July 31, 1984.

FEMA's May 28, 1985 responses to these additional concerns may be summarized as follows:

21. *Current status of school preparedness.* New York State advised FEMA that all schools in the Indian Point area were participating in preparedness activities, although not all schools would participate in exercises. The schools were reviewing their plans and would continue to participate in and support the involvement of their staffs by educating them about the radiological emergency preparedness program.

22. *Parental information and education.* FEMA responded that the counties' emergency plans did not contain procedures for schools to notify parents by telephone if a radiological emergency necessitated an early dismissal of schools. If such procedures existed at specific schools or school districts, the telephone contact systems would be documented in their early dismissal plans. Early dismissal would include radio announcements to the public advising them of this action.

FEMA believed that existing procedures were adequate to ensure the safety of schoolchildren. The person chosen by the parent to be responsible for the child in the event of an emergency would be someone upon whom the parent can depend to be in the vicinity should any emergency arise requiring the activation of early dismissal plans. If an emergency escalates and requires areawide evacuation, the predesignated person would be prepared to escort the child.

Notification of an emergency situation was primarily ensured by the siren system. According to FEMA, all 146 sirens in the emergency notification system for Indian Point operated for 3 minutes during a March 9, 1983 exercise. The purpose of the sirens was to alert people to turn on their radios and televisions. An independent telephone survey of the population within the 10-mile radius determined that 87.2% of the households in the area were alerted by the siren

system. A similar formal test by an independent surveyor of the alert and notification system for the Indian Point site was scheduled to be held on June 27, 1985.

In addition to fixed sirens, the second part of the Indian Point alerting system was single-station tone-alert radios that would provide alerting signals and instructional messages. These tone-alert radios were provided to institutional facilities, including schools. During the March 9, 1983 exercise, an independent survey revealed that 88% of the special institutions in the Indian Point area that had those devices were alerted.

FEMA also responded that it had received assurance from the State that schoolchildren would go home as reported in the plan (i.e., if the school plan called for children to walk home, they would in fact do that). Similarly, children who ride buses would go home from the bus stops. FEMA had no evidence that the school authorities would abdicate their responsibilities.

The care of schoolchildren would also be provided by a system in which schoolchildren would be retrieved by their parents following their early dismissal. Under this system, parents would be allowed access to their homes upon identifying themselves to the police officer at the access control point.

23. *Transportation plans.* FEMA reported that in-depth bus transportation plans were in the process of being finalized by a contractor, Transportation Study Planning Group, consisting of local bus companies in Westchester and Rockland Counties. Revised bus routes already had been tested by this contractor, and the revised county plans were currently being reviewed by the Regional Assistance Committee. FEMA had not yet received a complete set of the revised bus transportation plans including a complete listing of routes and associated maps.
24. *Bus drivers.* According to FEMA, the State as well as the bus companies did not believe that it was necessary to obtain letters of agreement from bus drivers. Ongoing training and driver awareness of the transportation plan would continue to provide a pool of drivers large enough to provide necessary transportation. FEMA would continue to ensure that letters of agreement with bus companies were obtained. FEMA was not aware of any evidence that drivers attending radiological emergency preparedness training sessions were told that they would not be required to drive buses in the event of an accident at Indian Point.
25. *School emergency preparedness.* FEMA responded to the Petitioners' charge that there was inadequate testing during the Indian Point

November 28, 1984 exercise by detailing how FEMA's methods of evaluation were satisfactory. Offsite emergency preparedness for schools was tested during the November 28, 1984 exercise and was evaluated on the basis of objectives agreed upon by the State, the counties, and FEMA. The scenarios and objectives of that exercise were based on NUREG-0654/FEMA-REP-1, Rev. 1, and 44 C.F.R. Part 350 guidance documents which provide for the testing of major elements of emergency preparedness plans and the evaluation of response organizations.

The objectives of the November 28, 1984 exercise were to test school notification procedures, the activation and mobilization of transportation companies, and the timeliness of overall decisionmaking at the county and State level. Samplings of transportation companies and schools were tested for their ability to evacuate schoolchildren to reception centers during that exercise. The evaluation of early dismissal procedures during the exercise was based on evaluations by federal observers at two schools in both Westchester and Rockland Counties. Officials were interviewed regarding the effectiveness of notification equipment and their knowledge of plans and the types of training they had received. Evaluation of school evacuation resources was based on a demonstration of notification, vehicle and driver mobilization, and drivers' knowledge of routes. Four buses were used during a simulated evacuation to demonstrate procedures that would be used for schoolchildren in a fast-moving incident. Federal observers evaluated notification of the bus companies, evaluated mobilization of the drivers and vehicles, and rode on the buses to assess the drivers' knowledge.

In finding that the exercise testing was satisfactory, FEMA also stated that many of the testing procedures that were requested by the Petitioners were not practical. Although schools were invited to participate in exercises to the fullest extent they desired, neither the State nor FEMA has the statutory authority to require them to participate. Moreover, according to FEMA, the Petitioners' criticism of the November 28 exercise fails to consider the financial and manpower resources that would be necessary for the Petitioners' requested tests. The current county plans specify approximately 250 schools and 55,000 school-aged children.

FEMA also determined that Emergency Broadcast System (EBS) messages for Indian Point were satisfactory. EBS messages should contain only essential information. The backup information to EBS messages are contained in news releases. At a meeting in March 1985 between FEMA and the New York State Emergency Preparedness

Group, it was agreed that EBS messages should contain information regarding the plant affected, location, governing authority, protective actions, affected areas, general FEMA descriptions, and reception centers. It was further agreed that any additional information would be optional, and the decision to include it would be at the discretion of the counties and New York State. During the remedial exercise for Indian Point on April 10, 1985, FEMA found that the EBS messages contained all critical information.

FEMA concluded that most schools demonstrated an ability during the exercise to effect early dismissal and emergency evacuation. Those schools that had deficiencies were subject to remedial actions, and corrections were made.

FEMA will continue to review county radiological emergency response plans based on the planning standards in NUREG-0654/FEMA-REP 1, Rev. 1, and will work with New York State to ensure that emergency procedures are in place and can be implemented in the event of a radiological emergency at Indian Point.

26. *Petitioners' claim that FEMA had not adequately addressed earlier concerns.* FEMA contended that the Petitioners' petition and supplement had been carefully analyzed and adequate responses had been provided. FEMA also pointed out that it was working with New York State to provide additional public education for residents living around Indian Point. FEMA's input was being provided to the New York State Public Education Management Group (PEMG), which is chaired by the State and has representatives from FEMA, all seven counties involved in radiological emergency response planning, New York State, and all nuclear utilities in the State. In the opinion of New York State, all public information and education issues in New York State were and would be successfully addressed by PEMG.

For all of the above reasons reported to the NRC by FEMA, the Petitioners' contentions lacked either validity or sufficient substance to provide an adequate basis for discontinuing operations at the Indian Point nuclear facility.

## **B. Ongoing Emergency Preparedness Efforts For Indian Point**

At the same time that FEMA was furnishing the NRC advice on the Petitioners' contentions, the Licensees and local and State authorities were cooperating to correct any deficiencies in the existing offsite emergency preparedness plans for Indian Point. During the time between the submission of the petition and FEMA's findings of September 17, 1986, the NRC permitted the continued operation of the Indian Point facility based on: (1) the continuing cooperation and responsiveness of the Licensees and State and local authorities in the correc-

tion of deficiencies<sup>6</sup> and (2) FEMA's previous findings which included FEMA's evaluation of State and local emergency preparedness exercises at Indian Point held on March 3, 1982, March 9, 1983, November 28, 1984, and June 4, 1986.

Although several deficiencies were identified during the two exercises that were conducted since the submission of the subject petition (i.e., the November 28, 1984, and June 4, 1986 exercises), they were not significant enough to result in a shutdown of the Indian Point facility. In practice, radiological emergency response plans are rarely if ever perfect and complete, and this is the reason for continuing FEMA and NRC oversight of this area. By their nature, exercises are intended to identify areas of potential weakness so that periodic improvements can be made to ensure that plans are current and well understood. Even in those instances where the Commission can no longer make a reasonable assurance finding that adequate protective measures can and will be taken in a radiological emergency, emergency preparedness deficiencies may not require facility shutdown. *See* 10 C.F.R. § 50.54(s)(2)(ii). On the basis of its evaluations of plan changes and remedial exercises, FEMA found that the corrective actions for Indian Point were adequate.

In its September 17, 1986 findings, FEMA was unable to provide reasonable assurance that the public health and safety of schoolchildren in the vicinity of Indian Point could be protected in the event of a radiological emergency. However, corrective actions identified by the Licensees were sufficiently prompt and responsive to permit continued operation. The NRC and FEMA continued to oversee progress in the correction of those deficiencies. Thereafter, on April 9, 1987, FEMA provided a letter of reasonable assurance that the public health and safety of schoolchildren in the four-county planning zone at Indian Point could be protected.

Under all of these circumstances, and based upon FEMA's April 9, 1987 reasonable assurance finding, no enforcement action is warranted with respect to the Petitioners' claims.

#### IV. CONCLUSION

The Petitioners seek the institution of proceedings pursuant to 10 C.F.R. § 2.202 to revoke or suspend the operating licenses for the Indian Point facility. The institution of proceedings pursuant to § 2.202 is appropriate only where

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<sup>6</sup>FEMA defines an exercise deficiency as a demonstrated and observed inadequacy that would cause a finding that offsite emergency preparedness was not adequate to provide reasonable assurance that appropriate protective measures could be taken to protect the health and safety of the public living in the vicinity of a nuclear power facility in the event of a radiological emergency. Because of the potential impact of deficiencies on emergency preparedness, they are required to be promptly corrected through appropriate remedial actions including remedial exercises, drills, or other actions. *See* Federal Emergency Management Agency Guidance Memorandum, EX-1, "Remedial Exercises" (July 15, 1985).

substantial health and safety issues have been raised. See *Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 176 (1975), and *Washington Public Power System* (WPPS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). This is the standard that I have applied in this decision to determine whether enforcement action is warranted regarding the concerns raised by the Petitioners.

For the reasons discussed above, I find no substantial basis for taking the actions requested by the Petitioners. Rather, based upon the lengthy oversight and review of emergency planning efforts at Indian Point by both the NRC and FEMA, including the consideration of issues raised in the present petition, I am of the view that emergency preparedness planning for the facility is adequate. The NRC and FEMA will continue to monitor emergency preparedness for the Indian Point facility. Accordingly, the Petitioners' requests pursuant to 10 C.F.R. § 2.206 for action pursuant to 10 C.F.R. § 2.202 are denied. As provided in 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary for the Commission's review.

Thomas E. Murley, Director  
Office of Nuclear Reactor  
Regulation

Dated at Bethesda, Maryland,  
this 20th day of July 1987.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman  
Thomas S. Moore  
Howard A. Wilber

In the Matter of

Docket Nos. 50-445-OL  
50-446-OL

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

August 27, 1987

The Appeal Board denies a request by Texas Utilities Electric Company (TU), lead applicant and majority owner of the Comanche Peak nuclear facility, for interlocutory review of a Licensing Board discovery order. The protective order restricts access to certain documents sought by an intervenor from Tex-La Electric Cooperative of Texas, Inc., a minority owner and co-applicant of the plant, to TU's licensing counsel and precludes licensing counsel from disclosing the contents of the documents to any principals of TU or other counsel representing TU in litigation against Tex-La.

**RULES OF PRACTICE: DIRECTED CERTIFICATION**

An appeal board will exercise its discretionary authority to direct certification of an interlocutory order of a licensing board "only where the ruling below either (1) threaten[s] the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, [can]not be alleviated by a later appeal or (2) affect[s] the basic structure of the proceeding in a pervasive

or an unusual manner.” *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977).

#### **RULES OF PRACTICE: DIRECTED CERTIFICATION**

Appeal boards have repeatedly pointed out that “discovery rulings of licensing boards are not promising candidates for the exercise of our discretionary authority to review interlocutory orders.” *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), ALAB-608, 12 NRC 168, 170 (1980). See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-780, 20 NRC 378, 381 (1984).

#### **RULES OF PRACTICE: DIRECTED CERTIFICATION**

Like a referral by a licensing board pursuant to 10 C.F.R. § 2.730(f), a petition requesting the invocation of an appeal board’s discretionary directed certification authority must also be filed promptly after the interlocutory ruling at issue is handed down.

#### **APPEARANCES**

**R.K. Gad III, William S. Eggeling, John P. Dennis and Deborah A. Steenland**, Boston, Massachusetts, for the applicant Texas Utilities Electric Company.

**William H. Burchette, Foster De Reitzes and Michael N. McCarty**, Washington, D.C., for the applicant Tex-La Electric Cooperative of Texas, Inc.

**Anthony Z. Roisman**, Washington, D.C., for the intervenor Citizens Association for Sound Energy.

**Geary S. Mizuno** for the Nuclear Regulatory Commission staff.

#### **MEMORANDUM AND ORDER**

A. On November 28, 1986, the Licensing Board in this operating license proceeding issued a discovery order in response to the motion of the intervenor, Citizens Association for Sound Energy (CASE), to compel the production of



certain documents from Tex-La Electric Cooperative of Texas, Inc. (Tex-La) — one of the co-applicants and minority owners of the Comanche Peak nuclear facility. Before the Licensing Board, Tex-La asserted that the documents were covered by the work product privilege because they were prepared by Tex-La's engineering consultants in anticipation of state court litigation against the majority owner and lead applicant of the project, Texas Utilities Electric Company (TU). The Licensing Board found that the documents in issue were discoverable and that the asserted privilege was inapplicable with respect to CASE's document request. It indicated, however, that Tex-La could shield the information from TU and any legal counsel representing TU in litigation against Tex-La. The Board then instructed CASE to draft and to execute a protective agreement which, "[i]f Tex-La approves . . . shall constitute an Order of this Board."<sup>1</sup>

Thereafter, CASE and Tex-La reached an accord on the terms of a protective agreement that they executed and submitted to the Licensing Board in the form of a protective order. The Chairman of the Board approved the order on March 12, 1987. In essence, the order provides that Tex-La turn over the requested documents to certain employees or representatives of CASE and, upon request, to the NRC staff and licensing counsel for TU. But the order prohibits any recipient of the protected documents from disclosing the material to any principal of TU or any counsel representing TU in litigation against Tex-La.<sup>2</sup>

On June 19, 1987, TU filed a petition for directed certification of the Licensing Board's March 12 protective order.<sup>3</sup> In its petition, TU asserts that the protective order violates its right to due process, contravenes settled discovery principles and prevents the NRC staff from fulfilling its licensing responsibilities. After obtaining extensions of time in which to respond, Tex-La, CASE and the staff all urge that we deny the petition.

B. Our cases make clear that we will exercise our discretionary authority to direct certification of an interlocutory order of a licensing board "only where the ruling below either (1) threaten[s] the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, [can]not be alleviated by a later appeal or (2) affect[s] the basic structure of the proceeding in a pervasive or unusual manner."<sup>4</sup> We also have repeatedly pointed

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<sup>1</sup> Memorandum and Order (November 28, 1986) at 4.

<sup>2</sup> Protective Order (March 12, 1987) at 2-3.

<sup>3</sup> See 10 C.F.R. § 2.718(i); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478, 482-83 (1975).

<sup>4</sup> *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977) (footnotes omitted). *Accord Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-861, 25 NRC 129, 134 (1987); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-839, 24 NRC 45, 49-50 (1986); *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), ALAB-817, 22 NRC 470, 473 (1985); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-805, 21 NRC 596, 599 (1985); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station,

(Continued)

out that "discovery rulings of licensing boards are not promising candidates for the exercise of our discretionary authority to review interlocutory orders."<sup>5</sup> This Licensing Board order is no exception. In spite of the overblown rhetoric in TU's petition, the March 12, 1987 discovery order neither threatens TU with imminent and serious irremediable harm nor pervasively affects the very foundation of the operating license proceeding. Indeed, stated most charitably, TU's petition is so devoid of merit that it gives credence to Tex-La's assertion that TU seeks to use this licensing proceeding to advance its interests in the pending state court litigation with the minority owners.<sup>6</sup>

In the text of its petition, TU first asserts that the protective order prohibits it access to allegedly relevant discovery material and therefore denies TU its due process right to know what it must establish in order to succeed in the operating license proceeding.<sup>7</sup> TU follows its constitutional argument with a footnote asserting that the provision of the protective order allowing TU's licensing counsel access to the Tex-La documents "is simply unworkable, and its attempted implementation would contravene the essential premises of the system of representative advocacy employed before the NRC (as well as in Anglo-American jurisprudence in general)."<sup>8</sup> As is evident from the structure of its argument, TU is well aware that its claim of constitutional error contains an inaccurate factual predicate. The Licensing Board's protective order does not deprive TU of any discovery material because it specifically permits TU's licensing counsel access to the Tex-La documents. Thus, even assuming we were to accept TU's highly questionable claim of a due process right to the Tex-La documents at this stage of the proceeding, such a right is not infringed here.

TU's other claim is similarly without merit. Merely asserting, without more, that the Licensing Board's limitation is unworkable does not advance TU's position any more than its amorphous claims of violations of the norms of Anglo-American jurisprudence. From all that appears in its petition, TU's licensing counsel has yet even to request the documents in question. In any event, counsel certainly has not demonstrated how the Board's order is impractical or explained what specific prejudicial material in the Tex-La documents must be revealed to the principals of TU. Nor is it likely licensing counsel can do

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Unit 1), ALAB-791, 20 NRC 1579, 1582 (1984); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-762, 19 NRC 565, 568 (1984); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 2 and 3), ALAB-742, 18 NRC 380, 383 (1983).

<sup>5</sup> *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), ALAB-608, 12 NRC 168, 170 (1980). See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-780, 20 NRC 378, 381 (1984); *Long Island Lighting Co.* (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-318, 3 NRC 186, 187 (1976).

<sup>6</sup> See Response of Applicant Tex-La Electric Cooperative of Texas, Inc. (July 22, 1987) at 15-16.

<sup>7</sup> Applicant Texas Utilities Electric Company's Petition for Directed Certification of Licensing Board Order of March 12, 1987 (June 19, 1987) at 5-6 [hereinafter TU Petition].

<sup>8</sup> *Id.* at 6 n.5.

this because any possible prejudice to TU does not arise until CASE seeks to use the documents in question against TU at the licensing hearing. Only at that time could licensing counsel be disadvantaged by not being able to disclose the contents of the documents to appropriate employees of TU. But any such claim is entirely premature because there is no indication such documents will ever be used at trial and the protective order precludes the introduction of such materials at the hearing without a further order of the Board.<sup>9</sup> Thus, TU's argument establishes neither that the Licensing Board's order threatens it with immediate and irreparable harm nor that the order pervasively alters the basic structure of the proceeding.

The same is true of TU's remaining two arguments. TU claims that "there is no provision in the Rules of Practice which would permit discovery by some parties and not others of information such as CASE claims may exist in the Tex-La documents."<sup>10</sup> TU then concludes that "[i]t is thus presumptively impermissible to enforce a work product privilege against only one of the parties."<sup>11</sup> Contrary to TU's assertion, however, the Commission's discovery regulations expressly provide that the Licensing Board

may make any order which justice requires to protect a party or person from annoyance, embarrassment, oppression, or undue burden or expense, including one or more of the following: . . . ; (2) that the discovery may be had only on specified terms and conditions . . . ; (4) that certain matters not be inquired into . . . ; (5) that discovery be conducted with no one present except persons designated by the presiding officer . . . .<sup>12</sup>

Here, the Licensing Board's protective order limiting access of the Tex-La documents to TU's licensing counsel is well within the broad reach of these provisions. Indeed, in analogous circumstances, we have sanctioned similar limiting provisions.<sup>13</sup>

TU also claims that the "most egregious" fault of the Licensing Board's order is that it prevents the staff from fulfilling the staff's licensing responsibilities.<sup>14</sup> According to TU, if the Tex-La documents reveal instances where TU has failed to comply with licensing commitments or agency regulations, the staff is precluded by the protective order from disclosing the deficiencies to the appropriate TU officials so they may be corrected.<sup>15</sup> TU's objection is once again premature for the staff has indicated neither that the Tex-La documents reveal

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<sup>9</sup> See Protective Order (March 12, 1987) at 4.

<sup>10</sup> TU Petition at 8.

<sup>11</sup> *Id.* at 8-9.

<sup>12</sup> 10 C.F.R. § 2.740(c).

<sup>13</sup> See, e.g., *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-592, 11 NRC 744, 757 (1980).

<sup>14</sup> TU Petition at 11-12.

<sup>15</sup> *Id.* at 12.

any such deficiencies nor that the staff is permanently precluded by the order from fulfilling its responsibilities. Rather, in its opposition to TU's petition for directed certification, the staff states that "the Protective Order does not pose any immediate and substantial threat to the Staff's ability to conduct its regulatory and licensing activities."<sup>16</sup> In any event, as hardly should need be mentioned, TU has no standing to complain on behalf of the staff. TU's petition is, therefore, denied for failing to meet either of the two standards for the grant of directed certification.

Finally, the petition is subject to denial on yet another ground. Although the Rules of Practice do not specify any time limit for motions requesting the exercise of our discretionary authority under 10 C.F.R. § 2.718(i) to direct certification of an interlocutory ruling, we have indicated that parties should act with dispatch in seeking such relief.<sup>17</sup> That suggestion is in accord with the analogous referral provision of 10 C.F.R. § 2.730(f) specifying that referrals of interlocutory rulings by the licensing boards must be made "promptly." Even though the Commission's regulations generally prohibit interlocutory appeals,<sup>18</sup> each exception to that proscription, such as that for referrals, requires that the interlocutory appeals be taken expeditiously in order to prevent undue delay and to avoid diverting attention from the progress of the licensing hearing.<sup>19</sup> Thus, like a referral, a petition requesting the invocation of our discretionary directed certification authority must also be filed promptly after the interlocutory ruling at issue is handed down. To hold otherwise would sanction the possibility of needless delay in licensing proceedings in contravention of the Commission's policy "that the process move[] along at an expeditious pace, consistent with the demands of fairness."<sup>20</sup> It also would create the unnecessary incongruity in the Rules of Practice of requiring licensing boards to act immediately in requesting our review of interlocutory rulings while not imposing a similar requirement on the parties themselves.<sup>21</sup>

The limits of what constitutes a prompt request for relief depend upon the circumstances of each case. But here, no matter where the reasonable outer line is drawn, TU's petition falls far beyond that boundary. The Licensing Board's

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<sup>16</sup> NRC Staff Response to Texas Utilities Electric Company's Petition for Directed Certification (July 27, 1987) at 12.

<sup>17</sup> See *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-741, 18 NRC 371, 373 n.2 (1983).

<sup>18</sup> See 10 C.F.R. § 2.730(f); *Shoreham*, 25 NRC at 134.

<sup>19</sup> See 10 C.F.R. §§ 2.730(f), 2.714(s); *Palo Verde*, 18 NRC at 384.

<sup>20</sup> *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 453 (1981).

<sup>21</sup> Indeed, the standards we apply in determining whether to exercise our discretion in directing certification of an interlocutory ruling presuppose a timely request by a party for relief. Thus, the ruling must, *inter alia*, threaten the adversely affected party with immediate harm that cannot await the regular appeal route for correction. Alternatively, the ruling must affect the basic structure of the proceeding. This standard implies that the error is so fundamental and disruptive that it must be corrected by prompt interlocutory review to ensure that the proceeding can be efficiently completed.

order was issued March 12, 1987; yet TU's petition was not filed until June 19 — over three months later. Moreover, TU had been aware of the substance of the protective order since November 28, 1986, when the Licensing Board issued its initial order in response to CASE's motion to compel the production of the Tex-La documents. TU's only mention of the extreme tardiness of its filing, however, is buried in a footnote on page 16 of its 18 page petition where it states that "[u]pon the entry of the Board's unprecedented Order, TU Electric attempted to determine whether it could somehow be accepted as tolerable if nonetheless erroneous. The hopeful evaluation of that possibility took some time."<sup>22</sup> Contrary to TU's evident belief, it is not free to take over three months in determining whether the Licensing Board's order is "tolerable," after already having had over three additional months notice of the substance of the order, if it expects to persuade us to invoke our discretionary directed certification authority. Rather, it must act promptly in seeking such interlocutory relief. Thus, TU's lack of diligence in filing its request also compels the denial of its petition.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker  
Secretary to the  
Appeal Board

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<sup>22</sup> TU Petition at 16 n.16.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Gary J. Edles, Chairman  
Dr. W. Reed Johnson  
Christine N. Kohl

In the Matter of

Docket Nos. 50-456-OL  
50-457-OL  
(Emergency Planning)

COMMONWEALTH EDISON  
COMPANY  
(Baldwood Nuclear Power Station,  
Units 1 and 2)

August 28, 1987

On *sua sponte* review of a Licensing Board partial initial decision in this operating license proceeding (LBP-87-13, 25 NRC 449 (1987)), the Appeal Board finds no error necessitating corrective action and affirms the result reached by the Licensing Board.

DECISION

The Licensing Board has issued two partial initial decisions in this operating license proceeding.<sup>1</sup> In addition, it issued a memorandum and order denying both a motion for reconsideration and a motion to admit a late-filed contention.<sup>2</sup>

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<sup>1</sup> LBP-87-13, 25 NRC 449 (1987) and LBP-87-14, 25 NRC 461 (1987), as amended, LBP-87-14A (May 22, 1987).

<sup>2</sup> See LBP-87-22, 26 NRC 41 (1987).

Appeals from the second of the partial initial decisions and the Board's memorandum and order are pending before us. No appeal from the first of the partial initial decisions was filed, however, and, as a consequence, we announced our intent to review that decision *sua sponte* in accordance with our standard practice.<sup>3</sup>

Our review of the Licensing Board's decision and pertinent portions of the underlying record reveals no error necessitating corrective action. Accordingly, we affirm the result reached by the Licensing Board.

One matter is nonetheless worthy of note. The development of plans for disseminating emergency information, including the production of accurate and meaningful emergency information brochures or pamphlets, is generally an evolving process in which members of the public have at times played a useful role.<sup>4</sup> In the instant case, certain of the intervenors' concerns were endorsed by the Licensing Board and the applicant voluntarily committed itself to improve its emergency information booklet in its next revision.<sup>5</sup> As we see it, this cooperative approach contributed significantly to a better public information program while avoiding the need for additional litigation.

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LBP-87-13 is *affirmed*.  
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker  
Secretary to the  
Appeal Board

Ms. Kohl did not participate in this decision.

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<sup>3</sup> Appeal Board June 9, 1987 Order (unpublished). See generally *Consumers Power Co.* (Big Rock Point Plant), ALAB-795, 21 NRC 1 (1985).

<sup>4</sup> See, e.g., *Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-753, 18 NRC 1321, 1331 (1983), *aff'g sua sponte*, LBP-83-27, 17 NRC 949 (1983), and *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-697, 16 NRC 1265, 1274 (1982).

<sup>5</sup> The Board required the fulfillment of that commitment as a license condition.





UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judge:

Charles Bechhoefer

In the Matter of

Docket No. 55-60755  
(ASLBP No. 87-551-02-SP)

ALFRED J. MORABITO  
(Senior Operator License for  
Beaver Valley Power Station,  
Unit 1)

August 25, 1987

In a proceeding involving an Applicant's appeal of the denial of his senior operator's license, the Presiding Officer rules on motions concerning (1) burden of proof, (2) revision of operator license examination process, and (3) timing of proceeding in relation to the resolution of certain charges made by the Applicant to the NRC Office of Inspector and Auditor.

**RULES OF PRACTICE: BURDEN OF PROOF**

In a proceeding challenging the denial by the NRC Staff of a senior operator license, the burden of proof is on the license applicant to show that the examination has been incorrectly graded or administered.

**SENIOR OPERATOR LICENSE: SCOPE OF INFORMATION  
REQUESTED FOR LICENSING**

Under 10 C.F.R. § 55.10(a)(6) (1987), one of the items needed for licensing is "[e]vidence that the applicant has learned to operate the controls in a competent and safe manner." This requirement may be fulfilled by the certification of the

facility licensee. Such certification, however, has no bearing on whether an applicant has passed the examination required by 10 C.F.R. § 55.11(b) (1987).

#### **RULES OF PRACTICE: BURDEN OF GOING FORWARD**

In a proceeding challenging the denial of a senior operator license, once the applicant establishes a *prima facie* case that the Staff's grading or administration of the SRO examination was incorrect, the burden of going forward with evidence shifts to the Staff.

#### **RULES OF PRACTICE: JURISDICTION OF PRESIDING OFFICER**

In a proceeding challenging the NRC Staff's denial of a senior operator license, the jurisdiction of the presiding officer is limited to determining whether the applicant should have been granted the license. If the applicant wishes to change the methods and procedures for examining and licensing nuclear power plant operators or senior operators, he can petition for such a change under the procedures of 10 C.F.R. § 2.800 *et seq.*

#### **RULES OF PRACTICE: SCHEDULING**

The schedule of a licensing proceeding should not be governed by the resolution by the NRC Office of Inspector and Auditor (OIA) of charges made to it and having some relationship to a license application. OIA reports directly to the Commission and is not technically involved in the licensing proceedings.

### **MEMORANDUM AND ORDER** **(Ruling on Various Motions)**

Pending before me are three motions, each dated July 20, 1987, submitted by Mr. Alfred J. Morabito, the Applicant in this proceeding. On August 10, 1987, the NRC Staff submitted a combined response to all three motions. For reasons set forth below, I must deny each of the motions.

1. In his first motion (supplemented by a July 21, 1987 filing, which I have taken into account), Mr. Morabito seeks a ruling that he has satisfied his burden of proof in seeking reversal of the NRC Staff's denial of his senior operator license. He reasons that he received a certification from Duquesne Light Company, his employer, to the effect that he had met the license requirements of 10 C.F.R. Part 55 and that, pursuant to 10 C.F.R. § 55.10(a)(6), this certification should be accepted by the Commission as "proof" that "he has learned to operate

the controls in a competent and safe manner." Mr. Morabito believes that the NRC Staff should have the burden to prove that the candidate's "actions and answers are incorrect."

In my opinion, Mr. Morabito is misreading the provisions of § 55.10(a)(6).<sup>1</sup> Under § 55.10, the Commission sets forth a number of discrete items that must be submitted as part of an application for an operator or senior operator license. One of those items is "[e]vidence that the applicant has learned to operate the controls in a competent and safe manner." To fulfill this requirement of the application, the Commission may accept the certification of the facility licensee as proof. As far as I can determine, the Commission followed this practice in this proceeding.

The rules further require, as a condition for a license, that the applicant pass a test (10 C.F.R. § 55.11(b)). Thus, the successful fulfillment of the application requirements set forth in § 55.10 only permits the applicant to take the test required by § 55.11(b). This sequence is made clear by another of the application requirements, a written request by the facility licensee "that the operating test be administered" (10 C.F.R. § 55.10(a)(5)). Thus, as part of the application, the written request of and the certification by the facility licensee are comparable: they both are requisites for taking the test and have no bearing on whether the applicant has passed or failed the test.

In these circumstances, no basis has been supplied for altering the normal burden-of-proof rule for licensing proceedings. In proceedings subject to 10 C.F.R. Part 2, Subpart G, the burden is placed on a license applicant unless otherwise ordered by the presiding officer. 10 C.F.R. § 2.732; *see also Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-123, 6 AEC 331, 345 (1973). No explicit allocation of burden of proof is set forth in Part 55, or in the Commission's proposed rules in 10 C.F.R. Part 2, Subpart L, which I am following for guidance. But in show-cause proceedings, where the Staff is seeking to impose conditions on a construction permit, the licensee (who will eventually become an operating license applicant) still has the burden of proof. *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-283, 2 NRC 11, 17-18 (1975), *clarified and aff'd on reconsideration*, ALAB-315, 3 NRC 101 (1976). This allocation of burden of proof rests on the Atomic Energy Act as interpreted by the Commission. *Midland*, ALAB-315, *supra*, 3 NRC at 103.

Although under 10 C.F.R. § 2.732 the presiding officer may determine that a party other than the applicant has the burden of proof, I have been presented no persuasive reason for changing the normal burden of proof in this case. As

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<sup>1</sup>Effective May 26, 1987, the Commission amended the provisions of Part 55. The requirement formerly set forth in § 55.10(a)(6) now appears (with revisions) in new 10 C.F.R. § 55.31(a)(4). Since Mr. Morabito's examination was conducted under the old rules, and since his appeal was filed under those rules, I will apply those rules in this proceeding. The certification in the new rules appears to have a comparable effect to that under the old rules. References to Part 55 in this Memorandum and Order refer to the old rules, unless otherwise specified.

explained above, the provisions of § 55.10(a)(6) cited by Mr. Morabito do not constitute an adequate reason for shifting the burden, and Mr. Morabito has advanced no other reasons for my doing so. Accordingly, the burden of proof that the examination has been incorrectly graded or administered in this case, and that he is entitled to a license, must fall on Mr. Morabito, and his motion requesting a ruling to the contrary must be denied.

As the Staff observes, however, the burden of proof must be differentiated from the burden of going forward with evidence. Once Mr. Morabito has established a *prima facie* case that the Staff's grading or administration of the SRO examination was incorrect, the burden of going forward with evidence shifts to the Staff. *Midland*, ALAB-315, *supra*, 3 NRC at 110-12; *Midland*, ALAB-123, *supra*; *cf. Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), ALAB-772, 19 NRC 1193, 1245 (1984). Since the certification under § 55.10(a)(6), referenced by Mr. Morabito, has no bearing on the examination, it would not shift the burden of going forward with evidence with respect to the examination. However, Mr. Morabito, through his Specification of Claims, has set forth substantial reasons why the Staff's examination process may have been deficient in certain respects. The Staff must now go forward with responding to Mr. Morabito's claims, and it is in the process of doing so. See my Memorandum and Order (Extension of Time), dated August 19, 1987 (unpublished), granting the Staff an extension of time for this purpose.

My decision will consider all of the filings, together with any other information I find necessary and ask the parties to provide. Although the ultimate burden of proof rests on Mr. Morabito, that allocation becomes pertinent "only where the evidence on an issue is evenly balanced or if the trier is in doubt about the facts." *Midland*, ALAB-315, *supra*, 3 NRC at 107. Please be assured that, in reaching my decision, I will give due consideration to all the pertinent information advanced by Mr. Morabito and the Staff so that my decision will reflect a full and fair resolution of the issues that Mr. Morabito is raising.

2. Mr. Morabito's second motion seeks revision of the operator license process with five specified measures. However, I do not have authority to put such measures into effect. My jurisdiction is limited by the Commission's July 1, 1987 Order granting Mr. Morabito a hearing, as well as by 10 C.F.R. § 2.103(b), to determining whether Mr. Morabito should have been granted the license for which he applied. As the Staff points out, if Mr. Morabito wishes to change the methods and procedures for examining and licensing nuclear power plant operators, or senior operators, he can petition for such a change under the procedures of 10 C.F.R. § 2.800 *et seq.*

I note, however, Mr. Morabito's argument that, if this proceeding were to lead to a ruling that he passed either the written or the simulator examination, then sufficient proof would have been given that the license examination process is faulty and in need of revision. In determining whether Mr. Morabito passed

those examinations, I will of course take into account all arguments presented to me on that subject. Mr. Morabito then may use my decision in any way he finds useful if he should determine that general rule changes are still warranted.

3. Mr. Morabito's third motion asks me to issue my final ruling in this proceeding only after charges of improper conduct by NRC officials, which Mr. Morabito filed on April 16, 1987, with the NRC Office of Inspector and Auditor (OIA), are resolved. Mr. Morabito asserts that his letter of April 16, 1987, to OIA (of which I have not received a copy or otherwise had access) stated that actions of NRC officials on March 20, 1987, in holding a telephone conference with officials of Duquesne Light Company violated 10 C.F.R. § 2.780 and/or various sections of 10 C.F.R. Part 0, especially § 0.735-20(a). He adds that, until those charges are resolved, he has no confidence that the NRC can render an impartial decision on his appeal.

Resolution by OIA of the charges with respect to the March 20, 1987 telephone conversation can have no bearing upon this proceeding. As the Staff points out, OIA reports directly to the Commission and is not technically involved in licensing proceedings of the type before me. See *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), LBP-84-13, 19 NRC 659, 717 (1984), *aff'd on other grounds*, ALAB-799, 21 NRC 360, 381 (1985). My review of Mr. Morabito's claims is completely independent of both OIA and the NRC Staff. The timing of my completion of this proceeding, and of the resolution of the matter before OIA, is thus entirely fortuitous.

My only knowledge of a telephone conversation of March 20, 1987, between representatives of the NRC Staff and Duquesne Light Company comes from the assertions (1) in Mr. Morabito's motion and (2) in the response of the NRC Staff, which attached a copy of a letter dated April 8, 1987, from a representative of the NRC Office of the General Counsel to Mr. Morabito. The April 8 letter advised Mr. Morabito of the subject of the conversation (i.e., that Duquesne Light was advised that Mr. Morabito was contesting the results of his senior operator license examination and that it should preserve any memoranda or notes it may have concerning the examination) and also that Duquesne would probably participate at the hearing and that conversations between Duquesne and the NRC Staff on various matters were, in effect, normal practice and routine. I take no position with respect to the accuracy or propriety of any of these communications.

I might add that any substantive communications that I may make to any party will be a matter of public record. See Commission Order (unpublished), dated July 1, 1987, at 2-3; 10 C.F.R. § 2.719; and my Memorandum and Order (Requesting Specification of Claims), dated July 15, 1987 (unpublished), at 2.

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Based on the foregoing, it is, this 25th day of August 1987, ORDERED  
That the three motions submitted by Mr. Morabito on July 20, 1987, be  
*denied.*

PRESIDING OFFICER

Charles Bechhoefer  
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,  
this 25th day of August 1987.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Dr. Thomas E. Murley, Director

In the Matter of

Docket No. 50-293

BOSTON EDISON COMPANY  
(Pilgrim Nuclear Generating Station)

August 21, 1987

Massachusetts State Senator William B. Golden and others (Petitioners) filed with the Nuclear Regulatory Commission a Petition requesting that Boston Edison Company be ordered to show cause why the Pilgrim Nuclear Generating Station should not remain closed or have its operating license suspended by NRC until the Licensee demonstrates that the issues raised by the Petitioners have been resolved. The Petitioners asserted as grounds for their request (1) numerous deficiencies in the Licensee's management, (2) inadequacies in the existing radiological emergency response plan, and (3) inherent deficiencies in the facility's containment structure. Insofar as it relates to the emergency preparedness and containment issues, the Petition is denied. A final decision with respect to the management issues is deferred.

**TECHNICAL ISSUES DISCUSSED: CONTAINMENT STRUCTURE**

The Director discusses (1) containment design philosophy and licensing requirements, (2) containment design issues raised by Dr. S.H. Hanauer in the early 1970s, (3) the Chernobyl accident, and (4) the capability of the Pilgrim containment to withstand a severe accident.

## INTERIM DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206

### INTRODUCTION

On July 15, 1986, Massachusetts State Senator William B. Golden and others (Petitioners) filed with the Nuclear Regulatory Commission a Petition requesting that the Director require Boston Edison Company (BECo, the Licensee) to show cause why the Pilgrim Nuclear Generating Station should not remain closed or have its operating license suspended by NRC until the Licensee demonstrates that the issues raised by the Petitioners have been resolved. The Petitioners also requested that NRC require the Licensee to submit a feasibility study related to certain structural modifications and that the NRC schedule a public hearing to address the issues raised by the Petitioners.

The Petitioners assert as grounds for their request (1) numerous deficiencies in the Licensee's management, (2) inadequacies in the existing radiological emergency response plan, and (3) inherent deficiencies in the facility's containment structure. The Petitioners assert that "the deficiencies cut a broad swath across the spectrum of safety requirements" and that, in the aggregate, these deficiencies compromise the reliability of the most important safety systems in the plant. Further, the Petitioners assert that the Licensee and the NRC have failed to resolve these safety issues.

On August 12, 1986, James M. Taylor, then Director of the Office of Inspection and Enforcement, acknowledged receipt of the Petition. He informed the Petitioners that the Petition would be treated under 10 C.F.R. § 2.206 of the Commission's regulations and that a formal decision would be issued within a reasonable time. Notice of receipt of the petition was published in the *Federal Register* (51 Fed. Reg. 29,728 (1986)).

On December 19, 1986, Mr. Taylor provided further response to the Petitioners in a letter to Senator Golden. He stated that it would be more meaningful to formally respond to the Petition after (1) the Licensee has had an opportunity to address the issues outlined in the Petition and (2) the NRC has had an opportunity to review the Licensee's actions. He also stated (1) that the Pilgrim Station will not be permitted to restart until the NRC determines that there is reasonable assurance that the public health and safety will be protected and (2) that the Staff will consider the management, emergency planning, and containment issues raised by the Petition.

Dr. Thomas E. Murley, then Regional Administrator of NRC Region I, sent additional letters regarding the Petition to Senator Golden on February 20 and April 1, 1987. The February 20 letter acknowledged that a meeting with the Petitioners had been delayed because the NRC first wanted to have



available the Licensee's report documenting why the Licensee believes that the Pilgrim Station can be restarted. The April 1 letter was in response to the Petitioners' letter of February 25, 1987, regarding a meeting between NRC and the Petitioners. Dr. Murley's April 1 letter provided clarification regarding the proposed meeting with Petitioners; it also noted that the plant has remained shut down and that considerable changes have occurred, and continue to occur, in the substantive areas outlined in the Petition.

On August 5, 1987, Massachusetts Public Interest Research Group (MASSPIRG) submitted "Health Surveillance of the Pilgrim Area" as an addendum to the Petition. This report provides results of the Massachusetts Department of Public Health (MDPH) study to determine whether there is excess risk of certain adverse health outcomes among residents in the communities surrounding the Pilgrim Station. The data revealed no disturbing trends in either the patterns of cancer mortality or in the expression of low birthrate and infant mortality, but indicated higher-than-expected incidence of leukemia. As stated in the MDPH study, radiation monitoring records did not suggest any significant levels of radiation that could have potentially exposed the residents in the communities surrounding the Pilgrim Station. The report was the result of a descriptive, first-step epidemiological study which acknowledged major gaps in understanding the relationship, if any, between the occurrence of leukemia and the Pilgrim Station. Consequently, no further consideration of this report by the NRC is merited at this time.

For the reasons discussed below, Petitioners' request insofar as it relates to the emergency preparedness and containment issues is denied. A final decision with respect to the management issues is deferred. However, to the extent Petitioners are requesting that Pilgrim remain shut down until the NRC is satisfied that management and emergency preparedness issues are dealt with to the Commission's satisfaction, the Petition is granted.

Petitioners also request that "the NRC, prior to making a decision pursuant to issuing an operating license suspension, schedule a comprehensive public hearing to address the issues raised by the Petitioners herein" (Petition at 39). In response to that request, the NRC Staff has agreed to meet with Senator Golden and other petitioners to discuss the issues raised in the Petition as well as the overall status of NRC regulatory activities at Pilgrim when the Licensee has completed those actions necessary for restart of the plant.

In addition, the Commission intends to hold a public meeting to be briefed by the Staff on the readiness of Pilgrim to resume operations before allowing restart. The filing of a 2.206 petition, however, does not require the NRC to hold formal evidentiary hearings with respect to issues raised by the Petition. *Illinois v. NRC*, 591 F.2d 12, 14 (7th Cir. 1979); *Porter County Chapter of the Izaak Walton League of America, Inc. v. NRC*, 606 F.2d 1363 (D.C. Cir. 1979); *Eddleman v. NRC*, 825 F.2d 46, 48 (4th Cir. 1987); *Lorion v. NRC*, 785 F.2d

1038 (D.C. Cir. 1986). See also *Florida Power & Light Co. v. Lorion*, 740 U.S. 729 (1985).

## BACKGROUND

The NRC Staff found the overall performance at the Pilgrim Station acceptable during the assessment period covered by the Systematic Assessment of Licensee Performance (SALP No. 85-99).<sup>1</sup> There was sufficient concern, however, about the facility's performance that Region I conducted a special in-depth Diagnostic Team inspection from February 18 to March 7, 1986 (Inspection Report No. 50-293/86-06, issued April 2, 1986). The team found that improvements were inhibited by (1) incomplete staffing, particularly operators and key mid-level supervisory personnel; (2) a prevailing (but incorrect) view in the organization that the improvements made to date had corrected the problems; (3) reluctance, on the part of the Licensee's management, to acknowledge some problems identified by the NRC; and (4) the Licensee's dependence on third parties to identify problems rather than implementing an effective program for self-identification of weaknesses. Nonetheless, in a letter from Region I to the Licensee, dated May 23, 1986, the Diagnostic Team inspection results confirmed the SALP Board conclusions for SALP No. 85-99. In that letter, Region I restated its belief that "performance in the operation of the facility was found acceptable although some areas were only minimally acceptable."

On April 12, 1986, the Licensee shut down the Pilgrim Station because of equipment problems and operational difficulties. The NRC Regional Administrator acknowledged this shutdown in Confirmatory Action Letter (CAL) 86-10, which was issued that same date. On July 25, 1986, the Licensee stated that the facility would remain shut down for the completion of various modifications and for refueling. In an August 27, 1986 letter to Mr. J. Lydon of BECo, Dr. Murley stated that, although the Licensee's actions in response to CAL 86-10 appeared to be thorough, additional issues had been identified that had to be resolved before restart of the facility. These issues included certain technical issues (overdue surveillances, malfunction of recirculation pump motor generator field breakers, seismic qualification of emergency diesel operator differential relays, and completion of Appendix R modifications) and programmatic matters (the Licensee's action plan for improvements, the role of the Licensee's safety

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<sup>1</sup>This Decision refers to two SALPs. The first is identified as SALP No. 85-99 and relates to the Licensee's performance during the period October 1, 1984–October 31, 1985. The report of this SALP was initially issued by Region I on February 18, 1986. It was the subject of further correspondence dated May 23, 1986, between Region I and BECo. The second SALP is identified as SALP No. 86-99 and relates to the Licensee's performance during the period November 1, 1985–January 31, 1987. The report of this SALP was initially issued April 8, 1987. It was issued as a final report on June 17, 1987.

review committees, and the readiness of the plant and corporate staffs to support restart). Further, Dr. Murley stated in the same letter, "[i]n light of the number and scope of the outstanding issues, I am not prepared to approve restart of the Pilgrim facility until you provide a written report that documents BECo's formal assessment of the readiness for restart operation."

At this time, the Pilgrim Station remains shut down. The Staff recently issued SALP Report No. 86-99 (April 8, 1987). Although this report identifies a number of performance problems (as did the previous SALP report), the Staff believes that the Licensee is beginning to deal effectively with these problems and is making progress toward improving their performance. For example, changes have been made to the radiological controls program; decontamination is in progress; fire protection modifications are being completed; and various surveillance, maintenance, and modification issues are being resolved. Offsite emergency planning issues have been evaluated by the Federal Emergency Management Agency (FEMA). These are reported in a FEMA report entitled "Self-Initiated Review and Interim Finding for the Pilgrim Nuclear Power Station," dated August 4, 1987. The Licensee has stated that the facility is not expected to be ready for restart before the end of September 1987.

NRC has asked the Licensee to submit a readiness assessment report at least 45 days before the planned restart of the plant. On July 30, 1987, the Licensee submitted a report entitled "Pilgrim Nuclear Power Station Restart Plan." This plan describes a portion of the programs, plans, and actions considered necessary by BECo management for safe and reliable restart and operation of Pilgrim. Portions of the plan will be updated 6 weeks before BECo's proposed restart, and final results will be submitted 3 weeks before the proposed restart. The plan is currently under Staff review.

A specific discussion of each of the three areas addressed in the Petition follows.

## DISCUSSION

### A. Management

The Petitioners allege numerous deficiencies in the Licensee's management. The Petition essentially states that (1) competent management is critical to ensure the safe operation of any nuclear power facility, (2) the Licensee's management of the Pilgrim Station is deficient, and (3) long-standing management deficiencies at Pilgrim Station have not been corrected.

As a basis for their Petition, the Petitioners have provided an extensive list of management deficiencies that have been documented in NRC inspection and SALP reports. The areas of concern include: plant operations, radiological controls, onsite emergency preparedness, maintenance and modifications, surveil-

lance testing, security and safeguards, refueling and outage management, licensing activities, and fire protection. The basic documents relied on by the Petitioners were SALP Report No. 85-99, issued February 18, 1986, and the Special NRC Diagnostic Team Inspection Report, issued on April 2, 1986. In addition, the Petitioners referred to the 1982 Civil Penalty and Order modifying the Pilgrim license and to news accounts of statements by Commissioner James Asselstine to the effect that Pilgrim is one of the worst-run and least-safe plants in the nation.

At the time the Petition was filed, the NRC felt that the Licensee had not successfully dealt with the problems that were identified in (1) the enforcement actions taken in 1982, as evidenced by SALP No. 85-99; and (2) the Diagnostic Team inspection findings. Although the Licensee had instituted programs intended to improve management and had made progress at certain times and in specific areas (such as in engineering and technical support), the letter transmitting SALP No. 85-99 expressed NRC's concern about the Licensee's apparent "inability to improve performance, or sustain improved performance once achieved."

Several management changes have taken place in the Licensee's organization since early 1986. The station manager was replaced on May 1, 1986, and was replaced again on February 1, 1987. On July 1, 1986, the Senior Vice President-Nuclear was transferred. At that time, the Chief Operating Officer assumed the responsibilities of the Senior Vice President-Nuclear, which he held until February 20, 1987, when the current Senior Vice President-Nuclear (Ralph G. Bird) assumed the responsibilities of this position. On March 26, 1987, the Chief Operating Officer and the Executive Vice President/Chief Financial Officer announced their intent to retire within the next year. On April 10, 1987, the Vice President for Nuclear Operations resigned; his responsibilities are being managed by the Senior Vice President-Nuclear, and a replacement has not been hired at this date.

The NRC has monitored management issues at Pilgrim Station since SALP No. 85-99 and the Diagnostic Team inspection. The most recent SALP evaluation, SALP No. 86-99, issued April 8, 1987, states: "The lack of a clear organizational structure, recurring management changes, and chronic staffing vacancies delayed the establishment of a stable licensee management team at the plant and inhibited progress during the assessment period."

Starting with CAL 86-10, issued April 12, 1986, the NRC has taken steps to ensure that the Pilgrim Station will not restart until adequate corrective actions have been taken. On July 30, 1986, Dr. Murley, at a meeting with the Licensee, informed the Licensee that, even when the technical issues set forth in CAL 86-10 had been resolved, he would not approve restart of the plant until the management issues discussed in SALP No. 85-99 also had been resolved. In addition, on August 27, 1986, in a letter to the Licensee, Dr. Murley stated that

restart of the Pilgrim Station would not be approved until the Licensee formally documented and NRC reviewed (1) an assessment of the Licensee's readiness for plant restart and (2) a restart program and schedule including well-defined hold-points at discrete milestones.

The NRC agrees with the Petitioners that significant management deficiencies have existed at Pilgrim Station. The NRC is continuing to observe and evaluate the Licensee's performance through ongoing inspections, bimonthly management meetings with the Licensee, and the SALP process. The NRC will conduct an independent team review of the Licensee's actions in response to the SALP findings and the findings of the Diagnostic Team inspection of February-March 1986. The NRC will evaluate the Pilgrim Restart Plan and other information to determine whether the issues raised by the Petitioners, including management issues, have been adequately resolved.

Because the Pilgrim Station is currently shut down and will not be allowed to restart until authorized to do so by the NRC, there is no additional safety assurance to be gained by granting Petitioners' request. Thus, the management deficiencies at the Pilgrim Station do not warrant a Show-Cause Order for the facility to remain closed or have its operating license suspended.

A final Director's Decision regarding management issues cannot be rendered until the management deficiencies have been suitably addressed by the Licensee and the Staff completes its assessment. That portion of the Petition will therefore be addressed in a subsequent final decision.

## **B. Radiological Emergency Response Plan**

The Petitioners allege inadequacies in the existing Radiological Emergency Response Plan (RERP) for the Pilgrim Station. The Petitioners essentially state that there are deficiencies in (1) the RERP, (2) the procedures for providing advance information to the public, (3) the systems for notification of the public during an accident, (4) the evacuation plans, (5) available medical facilities, (6) the size of the emergency planning zone, and (7) the coordination and prioritization of the RERP.

The emergency response plans for Pilgrim Station were submitted in response to the NRC requirements that resulted from the issuance of a revised emergency preparedness rule on August 19, 1980 (45 Fed. Reg. 55,402). After the revised rule was issued, FEMA reviewed the state and local response plans for the Pilgrim site and evaluated the March 3, 1982 joint full-participation exercise. On the basis of this review and evaluation, FEMA's Region I office issued interim findings in a report entitled "Joint State and Local Radiological Emergency Response Capabilities for the Pilgrim Power Station, Plymouth, Massachusetts," dated September 29, 1982. In this report, FEMA concluded that the Massachusetts state and local emergency plans and preparedness for

coping with the offsite effects of radiological emergencies that may occur at the Pilgrim Station were adequate to protect the public. With regard to the onsite portion of the March 3, 1982 exercise, the NRC determined that the emergency response actions taken by the Licensee were adequate to protect the health and safety of the public. Since that time, the Licensee has participated in additional emergency preparedness exercises where onsite and offsite response capabilities were demonstrated and evaluated by the NRC and FEMA. The most recent full-participation exercise was conducted on September 5, 1985. A remedial exercise, held on October 29, 1985, demonstrated that four deficiencies identified during the September exercise had been corrected. As a result, FEMA Region I concluded that there was reasonable assurance that appropriate offsite action can be taken in the event of a radiological emergency to adequately protect the public health and safety.

The relevant portions of the Petition relating to emergency preparedness were transmitted to the FEMA staff on August 4, 1986, and the NRC requested on August 11, 1986, that FEMA review offsite emergency planning and preparedness issues raised in the Petition. On December 22, 1986, the Secretary of Public Safety of the Commonwealth of Massachusetts sent FEMA a copy of the Office of Public Safety report entitled "Report to the Governor on Emergency Preparedness for an Accident at the Pilgrim Nuclear Power Station," dated December 1986. The Secretary of Public Safety also asked FEMA Region I to review a report entitled "Evaluation of Offsite Emergency Preparedness in the Area Surrounding the Pilgrim Nuclear Power Station," dated January 1987, which was prepared for the Licensee by the Impell Corporation.

On January 14, 1987, FEMA informed the NRC that the requests for a review of these reports might delay the completion of the FEMA evaluation of the issues raised in the Petition. In a memorandum to NRC, dated March 31, 1987, FEMA stated that it was also conducting a self-initiated review of the overall state of emergency preparedness at Pilgrim Station. FEMA said that it would prepare a consolidated evaluation that would address the Petition issues, the report submitted by the Office of Public Safety, the Impell Report, FEMA's self-initiated review, and other relevant available information. FEMA committed to make the production of their evaluation report a priority task. By memorandum dated April 29, 1987, the NRC provided FEMA with a copy of a report prepared by the Town of Plymouth Nuclear Committee entitled "Report to the Selectmen on the Plymouth Radiological Emergency Response Plan," dated March 1987, and asked FEMA to include this report in the ongoing review.

On June 4, 1987, BECo prepared reports regarding evacuation time estimates and beach population sheltering, mobility impaired, and special facilities. On June 12, 1987, BECo prepared a report regarding a northern reception center. NRC forwarded these reports to FEMA on July 1, 1987.

On August 6, 1987, FEMA forwarded their August report entitled "Self-Initiated Review and Interim Finding for the Pilgrim Nuclear Power Station, Plymouth, MA," to the NRC. This report included FEMA's July 29, 1987 analysis of the issues raised in the subject petition entitled "Analysis of Emergency Preparedness Issues at Pilgrim Nuclear Power Station Raised in a Petition to the NRC Dated July 15, 1986." In its analysis, FEMA individually addressed each of the seven issues in offsite emergency planning raised in the subject Petition and, one by one, found that the information in the Petition did not sustain the Petitioners' contentions when compared to the record at the time the Petition was reviewed. For convenience, FEMA's detailed analysis is provided as Attachment A (not published) to this Director's Decision. On the basis that FEMA's analysis of the Petition's specific issues did not sustain the contentions, this portion of Petitioners' request is denied. This denial notwithstanding, the Commission acknowledges that FEMA agrees with the general thrust of some of the conclusions of the Petition for reasons cited in FEMA's Self-Initiated Review and Interim Finding, dated August 4, 1987. Based on this latter report, FEMA has concluded that offsite radiological emergency planning and preparedness for Massachusetts are inadequate to protect the public health and safety in the event of an accident at the Pilgrim Nuclear Power Station. The issues that FEMA identified as a basis for this conclusion were:

1. Lack of evacuation plans for public and private schools and day-care centers.
2. Lack of a reception center for people evacuating to the north.
3. Lack of identifiable public shelters for the beach population.
4. Inadequate planning for the evacuation of the special needs population.
5. Inadequate planning for the evacuation of the transportation-dependent population.
6. Overall lack of progress in planning and apparent diminution in emergency preparedness.

In summary, while this portion of Petitioners' request is denied, the emergency planning issues identified by FEMA are a matter of serious concern. The determination whether to restart the Pilgrim plant will involve, in necessary part, consideration of the resolution of emergency planning issues identified by FEMA.

### C. Containment Structure

The Petitioners allege that there are numerous deficiencies in the General Electric (GE) Company Mark I containment structure. The Petitioners assert that the GE Mark I pressure-suppression system employed by the Pilgrim reactor contains inherent design flaws that raise questions about its ability to

withstand accidents. Generally, the concerns relate to (1) design issues raised by Dr. S.H. Hanauer in the early 1970s, (2) the Chernobyl accident, and (3) the capability of the Pilgrim containment to withstand severe accidents. These are addressed below. However, before discussing the adequacy of the Pilgrim containment, it would be useful to describe the design philosophy and licensing requirements that are the basis for reactor containments in the United States.

## ***1. Background***

Containment structures are an integral part of the U.S. reactor designs in that they form one part of a structured, tiered approach to public safety known as defense in depth. Concisely put, defense in depth is the process implemented by the AEC (later NRC) to ensure that multiple levels of assurance and safety exist to minimize risk to the public from nuclear plant operation.

A primary level of assurance are those activities to ensure that the plant is designed and constructed to high-quality standards. Guidance on plant design is provided in the *Code of Federal Regulations* and specified in the General Design Criteria (GDC). Specific information is provided in the NRC's Standard Review Plan (SRP) which details acceptable methods for complying with the requirements established in the GDC.

Early in the development of commercial nuclear power, it was recognized that these complex systems could not be expected to be immune from various failures and malfunctions, regardless of the quality of design, construction, and operation. Therefore, a further level of defense was established in that the plants were required to be designed for successfully coping with various equipment failures, transients, and postulated accidents. The scenarios for postulated accidents, to which all plants are designed to respond adequately, are known as design-basis accidents and are detailed in the NRC's Standard Review Plan, which is used to evaluate the design of each nuclear power plant prior to the granting of a construction permit or operating license.

Design-basis accidents were chosen to represent a wide spectrum of plant problems, some of which were expected to be experienced in the plant lifetime (such as failure of power systems), as well as events considered to be quite infrequent (such as major ruptures of piping systems).

Details of these design-basis accidents are found in Chapter 15 of the NRC Standard Review Plan, which also identifies acceptable plant protection standards for each postulated plant accident. The requirements and capabilities of plant safety systems necessary to prevent these design-basis accidents from leading to unacceptable radiological releases are specifically identified. Guidelines for judging the acceptability of the analytical results in response to these hypothetical scenarios are specified in NRC regulations. The plant design guidance required as a result of this approach results in the incorporation of multiple



and backup safety systems which will protect the reactor during the postulated failures of these various protection devices.

Notwithstanding the above, additional margins are required in the plant design to protect the public even in the event of very unlikely accidents. The reactor containment provides an additional level of safety. Design-basis accidents for containment reflect a number of arbitrary accident sequences developed from postulated events. For example, the containment structural design is based upon the effects of a concurrent earthquake and a rupture of major reactor coolant system piping. Concurrently, in order to assess the effectiveness of leaktightness, the safety systems are presumed to be not effective in cooling the reactor core, resulting in the release of fission products from the reactor core. Although the design-basis accidents discussed above are allowed to result in some failed fuel (less than 1%), they do not result in core damage. For the containment design, some independent failures of the protection systems are assumed to occur simultaneously with the occurrence of the accident they are intended to control. While the purpose of other safety systems is to shut down the reactor fission process and provide emergency cooling water to the reactor core, the containment has a required function of providing an essentially leaktight barrier to "bottle up" any radioactive material released to the containment through any rupture or break in the reactor coolant system. Given the release of the radioactive material and cooling water, the containment is required to retain this material and prevent significant releases to the environment. Consequently, the assessment of containment design adequacy assumes the postulated release of fission products to the containment irrespective of the performance of the core-cooling safety systems.

While design-basis accidents are used to determine the adequacy of plant systems' design and performance, a set of additional assumptions is imposed to further presume that these systems will not work as designed. The containment design basis reflects a combination of parameters incorporating several design-basis accidents for structural considerations, coupled with an assumed release of radioactive material to containment for assessing leaktightness.

In summary, the original design purpose of the reactor containment was to protect against postulated radioactive releases from hypothetical reactor accidents up to and including major ruptures of reactor coolant piping, where such events resulted in some degree of core damage. These hypothetical events postulated a release of fission products from the reactor core to the reactor coolant system and subsequently into the containment through the pipe break. This was considered one of the less likely, but possible, accidents and provided a straightforward means of providing additional margins for containment design.

One must also consider the concept of severe nuclear accidents and how they fit within the framework of protection from design-basis accidents.<sup>2</sup> For the last several years, as part of the NRC's efforts to continually evaluate and increase power plant safety, we have been studying the likelihood and consequences of extremely low probability incidents with attendant higher estimates of core damage and higher radiological releases from the core. This class of accidents is beyond the existing design basis and is known generally as severe accidents. This was first done comprehensively by the Reactor Safety Study (WASH-1400), which is known as a probabilistic risk assessment (PRA). The type of accidents studied in this evaluation are basically those where multiple backup safety systems fail, eventually resulting in damage to the nuclear fuel and considerable releases of radioactive material outside of the reactor cooling system. Depending on other failures and containment behavior, significant radiological releases into the environment could conceivably occur. Implicit in these scenarios is the development of a better understanding of containment performance and its failure mechanisms.

More detailed PRA studies have been conducted since the publication of WASH-1400 to better understand the probability of these unlikely events and also to better predict the magnitude of potential radiological releases into the environment, given a containment failure and attendant consequences. Considerable work has also focused on the behavior of reactor containments following a severe accident where molten reactor fuel could potentially melt through the reactor vessel. Results of such studies have generally confirmed the very low likelihood of such accidents and relatively low risk to the public even if such very-low-probability accidents were to occur. While not originally designed to protect against some of the severe accidents, reactor containments provide considerable benefit from their ability to reduce radiological releases to the public from such accidents. For example, the results of research work indicate that the actual pressure-retaining capability of most containments is well above their original design pressures. Studies also indicate that the massive containment structures may provide considerable retention of radioactive material even if they were to fail following a core-melt event. As discussed in § C.4, there exists considerable uncertainty regarding a Mark I containment's behavior during a core-melt accident. A recent study judged the probability of some form of containment failure, assuming a core melt had occurred, to be between 10 and 90%.<sup>3</sup>

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<sup>2</sup> Severe accidents are defined as those "in which substantial damage is done to the reactor core, whether or not there are serious offsite consequences." This definition is extracted from the "Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants," 50 Fed. Reg. 32,138 (Aug. 8, 1985).

<sup>3</sup> NUREG-1150, "The Reactor Risk Reference Document" (Draft).

Due to the very complex processes involved in a severe reactor accident, exact predictions of accident consequences are difficult. Considerable research is under way to give us additional information in this area. Results from such studies allow us to focus our attention in areas where improvements can be made to provide increased levels of safety from these very unlikely events. The purpose of these projects is to conduct hypothetical "what if" studies to understand ways public risk from nuclear operations can be justifiably reduced. Even though we strive to reduce public risk further, results of our studies indicate that risk from these severe accidents is very low and does not warrant immediate actions. More information on the adequacy of the Pilgrim containment and its adequacy with respect to severe reactor accidents is provided in § C.4.

For background information purposes, a brief description of the Pilgrim Mark I Containment Design is provided in Attachment B (not published). A discussion of the historical problems and the specific three assertions regarding deficiencies in the Mark I design is provided below. Section C.2 addresses the Hanauer issues, § C.3 addresses the Chernobyl issues, and § C.4 provides additional information on the Pilgrim containment's acceptability from a perspective of severe-accident risk.

## **2. *Hanauer Issues***

The Petitioners have expressed concerns that are based on memoranda written before 1978 by the staff of the Atomic Energy Commission (AEC) and the NRC (which succeeded the AEC in 1975). These concerns relate to the ability of the Mark I containment to respond adequately to its original design function (i.e., deal with a large loss-of-coolant accident). The key document cited is a memorandum written by Dr. S.H. Hanauer on September 20, 1972. This document raised seven concerns, all of which centered on the viability of the pressure-suppression containment concept. Portions of four of those concerns have been either directly or indirectly quoted in the Petition; they relate to steam-bypass susceptibility, valve reliability, lack of adequate testing, and volume limitations causing overcrowding.

When Dr. Hanauer's seven concerns were raised, the Staff evaluated each of them to determine whether adequate safety margins were being maintained on existing plants. Subsequently, the NRC Staff concluded that Dr. Hanauer's concerns had been properly considered, and documented its findings in NUREG-0474, "A Technical Update on Pressure Suppression Type Containments in Use in U.S. Light Water Nuclear Power Plants," issued in July 1978.

Enclosure A to NUREG-0474 summarizes NRC Staff actions related to each of the seven concerns identified in Dr. Hanauer's memorandum of September 20, 1972. For convenience, a copy of that enclosure is provided as Attachment C (not published) to this response. Each statement of concern was followed by

a response that reflected the NRC evaluation. In each case, the response showed that the NRC no longer considered the concern an unresolved safety issue.

It should be noted that while the concern reflected the views of Dr. Hanauer in September 1972, the NRC response reflected the status of the issue in July 1978. Moreover, by June 1978, Dr. Hanauer had changed his opinion regarding his 1972 concerns, as reflected in a memorandum dated June 20, 1978, in which he stated: "Thus while we may yearn for the greater simplicity of 'dry' containments, the problems of both 'dry' and pressure suppression containments are solvable, in my opinion, and the design safe, therefore licensable" (NUREG-0474).

Our review of the Petition issues that are based on correspondence dated 1978 or earlier indicates that all of these issues have been addressed in NUREG-0474. Although various changes have occurred since then, the fundamental safety conclusions stated in NUREG-0474 are essentially unchanged. The most notable of the changes has been the NRC position related to inerting the containment.<sup>4</sup> Since NUREG-0474 was issued, the regulations relating to this issue (10 C.F.R. § 50.44, "Standards for combustible gas control system in light-water-cooled power reactors") have been revised to require all Mark I and II containments to be inerted. The response to Dr. Hanauer's concern (see Item B of Attachment C to this response) indicates that most Mark I containments were already inerted. Pilgrim was inerted at the time NUREG-0474 was published; however, the reason for inerting was restricted to design-basis accident (DBA) considerations. With the issuance of the revised § 50.44, the Commission required all Mark I and II containments to be inerted to accommodate the degraded-core accident. Therefore, although the revision did not cause any immediate change to the Pilgrim plant operation, the change did alter the basic NRC requirements in this area. A review of this and other changes made since NUREG-0474 was issued indicates that in no case have the changes altered the fundamental Staff conclusions concerning safety contained in NUREG-0474.

The Petition references statements from NUREG-0474 that relate to differences between expected experimental results and actual test results. The Petitioners state that surprises repeatedly occurred during the course of the various, then-ongoing, test programs. The statements extracted from NUREG-0474 were made during 1978 when many of these test programs were in their early stages.

These test programs were initiated by utilities owning Mark I plants as part of a program in response to NRC letters that were transmitted in February and April 1975 to all utilities owning BWR facilities with Mark I-design containments (including the Licensee). The letters requested that the owners quantify the

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<sup>4</sup> An inerted containment is one in which oxygen is replaced by enough nitrogen to preclude combustion.

hydrodynamic and safety relief valve (SRV) discharge loads and assess the effect of these loads on the containment. (These loads had not been considered during the licensing of the individual plants because these loads (including pool swell) were identified in the period 1972 through 1974 as part of the review of the large-scale testing of the Mark III containment system design.)

As a result of these letters from the NRC and recognizing that the evaluation effort would be very similar for all Mark I BWR plants, the utilities (including the Licensee) formed an *ad hoc* Mark I Owners Group. The objectives of this Owners Group were to determine the magnitude and significance of these dynamic loads as quickly as possible and to identify actions to resolve any outstanding safety concerns. A series of generic test programs was created to accomplish these objectives.

Since NUREG-0474 was issued in July 1978, the generic test programs related to the Mark I containment design and the NRC assessment of the tests have been completed. The Staff evaluation of the generic test programs was reported in NUREG-0661, "Mark I Containment Long-Term Program Safety Evaluation Report," issued in July 1980. NUREG-0661 describes and presents Staff conclusions regarding the generic techniques for the definition of suppression-pool hydrodynamic loads in a Mark I system and the related structural acceptance criteria. As part of the acceptance criteria, the Staff required a plant-specific analysis.

The Licensee performed a plant-specific analysis on the Pilgrim Station. The Licensee submitted the Plant Unique Analysis Report (PUAR) of the Suppression Chamber-Mark I Containment Long-Term Program (TR-5310-1) on October 27, 1982, and the PUAR of the Torus Attached Piping-Mark I Containment Long-Term Program (TR-5310-2) on October 26, 1983. On the basis of this analysis, the Licensee proposed design changes to restore the intended safety margins. (The intended margin in this context simply means that the structural margin that was computed without consideration of the hydrodynamic and SRV loads would remain unchanged when the loads are included and the modifications completed.) The Staff reviewed these changes and approved them in a Safety Evaluation Report issued January 30, 1985. The modifications have been implemented, and the Licensee has demonstrated that the Pilgrim containment is capable of accommodating design-basis accidents with adequate margin.

The Petition refers to another concern that can be considered as related to Dr. Hanauer's concerns. The concern focused on the safety disadvantages of pressure-suppression containments. This issue is related to the possibility of steam bypassing the suppression pool in BWR pressure-suppression containments and was designated as Generic Issue 61, "SRV Line Break Inside the Wet Well Airspace of Mark I and II Containments." An evaluation of this issue was recently completed, and the results were presented in NUREG/CR-4594,

"Estimated Safety Significance of Generic Issue 61," which was issued in June 1986.

On the basis of these results, the Staff concluded that no new requirements were justified and, on the basis of an overall risk assessment, no further study of this safety issue was warranted.

In summary, the Petitioners have asserted that the pressure-suppression containment design is flawed from the perspective of its original design function, and they have questioned the viability of this containment type. We have shown that many of their specific concerns, and in particular those issues raised by Dr. Hanauer, were previously and satisfactorily addressed in NUREG-0474 and in various generic issues programs. For those concerns identified since NUREG-0474 was issued, generic programs were conducted to determine the magnitude of the design loads under investigation, and the Licensee, based on the program results, implemented design changes at Pilgrim to reestablish acceptable structural design margins. Consequently, these concerns are resolved.

### **3. *Chernobyl Accident***

The Petitioners express concern regarding the threat of a Chernobyl-type event at the Pilgrim Station as part of an overall reference to severe accidents.

Immediately upon learning of the event at the Chernobyl plant in the Soviet Union, the NRC formed a task force to thoroughly evaluate the accident to learn as much as possible about its causes, course, and consequences. The results of this effort were published in NUREG-1250, "Report on the Accident at the Chernobyl Nuclear Power Station." NUREG-1250 was prepared collaboratively by the NRC, other U.S. government agencies, and other groups.

Within the next few weeks, the NRC plans to issue for public comment a report entitled "Implications of the Accident at Chernobyl for Safety Regulation of Commercial Nuclear Power Plants in the United States," NUREG-1251 (August 1987). The facts of the Chernobyl accident relied on for this report are drawn from NUREG-1250 and its sources. NUREG-1251 presents an assessment of the implications with respect to a number of U.S. reactor safety regulatory issues. The issues selected for evaluation were those associated with significant factors that led to or exacerbated the consequences of the Chernobyl accident. Issues covered are in the areas of administrative controls and operational practice, design, containment, emergency planning, and severe-accident phenomena.

Notwithstanding important design differences between the Chernobyl reactor and U.S. commercial reactors, the findings from these reports add to our understanding of some of the phenomena that may be involved in a severe nuclear accident and provide some additional insights useful in guiding our severe-

accident programs. The findings and assessments provide us with conclusions regarding the vulnerability of plants such as Pilgrim to a Chernobyl-type event.

The Chernobyl accident was initiated by serious operator violations of safety procedures. However, the ensuing reactor damage resulted from basic design features of the RBMK 1000 reactor which are specifically prohibited in U.S. reactors. The RBMK reactor design does not use large steel reactor pressure vessels with water as a moderator, such as are employed in the U.S. designs. Rather, the RBMK utilizes a graphite-moderated pressure tube concept. For some conditions or modes of operation this design has an undesirable characteristic known as a positive void coefficient.

A positive void coefficient means that, for reactor incidents where rapid power increases vaporize cooling water in the pressure tubes, a further power increase is incited. This is known as negative control stability and occurred so quickly at Chernobyl that the operators or safety systems had no opportunity to respond, and an explosion resulted. In violation of operating procedures, some safety systems had also been deactivated. The RBMK design also possesses a slow-acting safety control rod system, which further contributed to the event.

As nuclear power was being developed in the United States, the importance of control stability and, specifically, negative void and negative power coefficients were recognized. The nuclear cores of U.S. reactors are specifically designed to prevent the power instability that caused the Chernobyl accident and also include fast-acting safety control rod systems. Fully complying with these design criteria, Pilgrim responds to an increase in voiding by a power reduction due to the inherent physics of its design. Additionally, it is worth noting that the accident at Chernobyl was exacerbated by the graphite fire that resulted. Since Pilgrim does not utilize graphite in its design, the concerns associated with a graphite fire are not applicable. Also of note is the fact that the reactor at Chernobyl is surrounded by a confinement structure as opposed to a containment, as in Pilgrim. The differences in design relate to the basis of the pressure-retaining capability of the two structures. The Pilgrim reactor containment would be expected to withstand an internal pressure resulting from an energy release many times the energy release that the Chernobyl reactor confinement could (by design and in fact) withstand.

As discussed above, the steam explosion in the reactor core, which ruptured the reactor core and surrounding building, was caused by a nuclear physics design vulnerability specifically prevented by the Pilgrim design. Due to that and other factors discussed above, we find that the contentions of the Petitioners regarding Chernobyl are without merit.

#### ***4. Capability of the Pilgrim Containment to Withstand Severe Accidents***

The Petitioners raised concerns regarding the possibility that the Pilgrim containment might fail in the event of a severe accident. The Petitioners assert that there is a tendency to underestimate the probability of various types of accidents; they cite, among other things, the recent accident at Chernobyl (see previous section). The Petitioners also conclude that there is a high probability that Pilgrim's Mark I containment structure will not stand various severe-accident scenarios.

As discussed at the initial introduction to this section (C.1), the NRC views probabilistic risk assessment as a structured method for investigating the likelihood and consequences of reactor accidents considered to have a very low frequency of occurrence. The perceived inability of the Pilgrim containment to survive a severe accident was identified by the Petitioners as a design flaw.

The evaluation of severe-accident vulnerability involves three distinct evaluations: first, the probability of an accident involving core damage; second, the likelihood of containment failure; and third, an assessment of the radiological consequences and public doses resulting from the accident. All three issues must be considered in making a determination on the magnitude of severe-accident risk and what actions should prudently be taken to reduce those risks.

The studies that have been conducted emphasize that the results inherently possess large uncertainties. The draft results of NUREG-1150 present the most recent program, whose intent is to accurately reflect the severe-accident risk at a number of U.S. nuclear power plants and also to properly reflect the areas of uncertainty. This study included an evaluation for Peach Bottom, a plant quite similar to Pilgrim in reactor design and containment. The study presented the estimated mean frequency of core damage to be approximately 1 chance in 100,000 per year of operation. Another comprehensive risk study conducted for the Limerick plant estimated a mean core damage probability of 1 in 10,000.

These results are consistent with NRC's belief that core-melt accidents are very unlikely. Draft NUREG-1150 also investigated the probability of early containment failure following a core melt. This study concluded that our ability to accurately predict the response of a Mark I containment was limited for situations where it was subjected to the harsh temperature and pressure conditions following a core-melt accident. As stated earlier, the report indicated that containment failure probability (for these extremely unlikely events) could likely range from 10 to 90%.

These uncertainties are currently the subject of research efforts to better predict the behavior of containments during severe accidents, so that a more complete risk perspective can be assembled for guiding our regulatory activities. However, it is important that these uncertainties be properly characterized. They are not identified deficiencies in the BWR Mark I containments,



which have been demonstrated to satisfy their design performance requirements (see Hanauer Issues, § C.2). Rather, these uncertainties are areas that guide our research investigations, whose goals are to provide improved understanding of very unlikely risk situations at nuclear power facilities. Results from these studies (including high containment failure probabilities) also allow us to calculate public risk estimates assuming that one element of the three that go into a risk assessment (containment failure) is less favorable.

Even allowing the large uncertainties that result in a high upper value for containment failure, the NUREG-1150 study estimated that the probability of a large reactor accident that results in one or more early fatalities ranged from one in one million to one in one billion. Given a severe accident, the probabilities of very high radiation exposure and the distances over which they would occur were also estimated to be reasonably small. The risk levels for Pilgrim would of course depend on its actual core-melt probability, containment behavior, the local demography, and could vary somewhat from the results presented in NUREG-1150. The results of this and related studies do, however, support our overall conclusion of low severe-accident risk at the Pilgrim utility. One contributing factor is the issue mentioned in § C.1, that the massive reactor containment structure may retain considerable radioactive material following a core melt even if its pressure boundary is failed. In this regard, containment failures include cracks or other phenomena that result in loss of pressure integrity that can result in leaks but should not be viewed solely as catastrophic failure of the containment structure. Plateout and deposition of material within containments, even though there may be leakage, also increase the time available to implement effective evacuation activities.

While we believe that severe-accident risks are low at operating nuclear plants, our goal is to pursue additional activities to achieve even lower levels of public risk. To ensure that our risk conclusions are applicable to all operating units, a number of programs are going forward to assess severe-accident likelihood and consequences. These programs include plant-specific studies to determine any severe-accident vulnerabilities, both from the perspective of accident frequencies and from containment performance following a core melt. Any problems will be dealt with if identified. This program is known as the individual plant examination (IPE) program, which is expected to commence later this year. These and related programs will be conducted to provide further assessments of severe accidents on a plant-specific basis, so that appropriately low risk levels can be maintained.

On July 25, 1986, the Licensee announced that it is voluntarily considering implementation of certain modifications to enhance the Pilgrim Station containment capabilities. In an April 30, 1987 letter from S. Varga to R. Bird, NRC asked the Licensee to provide details of the modifications and procedural changes. We have received the Licensee's response dated July 8, 1987, and it is

currently under review. The NRC does not view any of these modifications as necessary before the plant restarts. The NRC Staff will review these modifications to ensure that they do represent overall safety improvements and that they have no overall adverse safety impact on existing systems.

The Petitioners also requested that the NRC require the Licensee to submit a feasibility study on all possible structural modifications before NRC approves specific modification proposals. At the present time, neither the Licensee, nor the Staff, nor the Petitioners have identified any structural modifications to the Pilgrim containment that would be warranted by severe-accident considerations. Therefore, this request for a feasibility study is denied.

The Petitioners' assertions with respect to inherent design flaws in the pressure-suppression system utilized at the Pilgrim plant have been addressed above. The Licensee has implemented modifications to reestablish Pilgrim's intended containment design margins (see the discussion on the Pilgrim PUAR). Evaluations of the Mark I containment with respect to severe accidents are continuing through (1) the implementation of the Commission Policy Statement on Severe Accidents, (2) the NRC Staff and industry dialogue to improve containment severe-accident performance for all BWRs, and (3) the Licensee's voluntary initiative.

As indicated in the discussion on the Mark I containment, the Petitioners have not presented sufficient evidence to indicate that the Pilgrim Station should not operate while risk-reduction improvements are being considered. That is, there is not sufficient evidence of either design flaws at Pilgrim or high risk to warrant a show-cause order for the plant to remain closed or to suspend the operating license. Therefore, this portion of Petitioners' request is denied.

## CONCLUSION

The NRC has required, and will continue to require, that the Pilgrim facility remain shut down until the management and emergency preparedness issues are dealt with to the satisfaction of the NRC.

For the reasons discussed above, a decision cannot be made at this time regarding the management issues. This portion of the Petition will be addressed in a subsequent response.

For the reasons discussed above, the information identified by the Petition does not warrant the initiation of the requested proceedings in regard to the radiological emergency response plan. Based on the FEMA evaluation of the emergency preparedness issues raised by the Petitioners, the Petitioners' request for action pursuant to 10 C.F.R. § 2.206 on this issue is denied. However, in view of FEMA's interim finding that Massachusetts offsite radiological emergency planning and preparedness are inadequate to protect the public health and safety,

the Commission will consider, among other issues, corrective actions regarding emergency planning issues identified by FEMA before permitting the restart of the Pilgrim plant.

For the reasons discussed above, the information identified by the Petition does not warrant the initiation of the requested proceedings in regard to the containment issues. Accordingly, the Petitioners' request for action pursuant to § 2.206 on this issue is denied.

As provided in 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary for the Commission's review.

FOR THE NUCLEAR  
REGULATORY COMMISSION

Thomas E. Murley, Director  
Office of Nuclear Reactor  
Regulation

Dated at Bethesda, Maryland,  
this 21st day of August 1987.

**Attachments:**

- A. FEMA Analysis of Petition's Contentions
- B. Mark I Containment Design
- C. Summary of Staff Actions Related to Hanauer Issues

[The Attachments have been omitted from this publication but can be found in the NRC Public Document Room, 1717 H Street, NW, Washington, DC 20555.]



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman  
Thomas M. Roberts  
Frederick M. Bernthal  
Kenneth M. Carr  
Kenneth C. Rogers

In the Matters of

ADVANCED NUCLEAR FUELS  
CORPORATION  
(Import of South African  
Enriched Uranium Hexafluoride)

Docket No. 11003928  
(License Application  
No. ISNM-87005)

EDLOW INTERNATIONAL  
COMPANY  
(Import of South African  
Uranium Ore Concentrate)

Docket No. 11003929  
(License Application  
No. IU-87006)

EDLOW INTERNATIONAL  
COMPANY  
(Import of South African  
Uranium Hexafluoride)

Docket No. 11003930  
(License Application  
No. IU-87007)

EDLOW INTERNATIONAL  
COMPANY  
(Import of South African  
Enriched Uranium Hexafluoride)

Docket No. 11003931  
(License Application  
No. ISNM-87008)  
September 21, 1987

The Commission interprets § 309(a) of the Comprehensive Anti-Apartheid Act of 1986, 22 U.S.C. § 5059(a), to: (1) bar the import of uranium ore and uranium oxide, regardless of its intended end use; and (2) permit the importation

of South African-origin uranium ore and uranium oxide that are transformed into uranium hexafluoride, or other "substantially transformed" uranium compounds, before they are imported into the United States.

The Commission also concludes that uranium imports that do not fall within the prohibition of the Anti-Apartheid Act should not be barred on other grounds. In this regard, the proposed imports would not be inimical to the common defense and security of the United States or violate U.S. international legal obligations with respect to Namibia.

The Commission directs the NRC Staff to act on the four pending import license applications in accordance with these conclusions.

#### **RULES OF PRACTICE: EXTENSIONS OF TIME**

The Commission refuses to consider untimely filed submissions. The Commission has made clear that participants in its proceedings are expected to comply with applicable time limits. If parties cannot act within the specified time period, extensions are to be sought prior to the expiration date. *See Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), CLI-86-5, 23 NRC 125, 126 (1986).

#### **IMPORT LICENSES: SOUTH AFRICAN-ORIGIN URANIUM**

The Commission concludes that the proper interpretation of § 309(a) of the Comprehensive Anti-Apartheid Act of 1986 is one that gives effect to the plain language of the statute — that Congress intended to bar only uranium ore and uranium oxide; the bar does not extend to other forms of uranium.

#### **IMPORT LICENSES: SUBSTANTIAL TRANSFORMATION DOCTRINE**

The Commission concludes that South African-origin uranium ore or uranium oxide that is transformed into uranium hexafluoride or into enriched uranium hexafluoride in other countries should not be considered South African uranium ore or uranium oxide and is therefore not barred from importation. The Customs Service and the courts have commonly employed a three-part test in determining whether a product has been substantially transformed. They look to see whether as a result of the manufacturing processes a new and different article emerges, having a (1) distinctive name, (2) character, or (3) use that is different from that originally possessed by the article or material before being subject to the manufacturing process. *See, e.g.*, 19 C.F.R. § 10.14(b). Applying these

criteria, the Commission finds that uranium hexafluoride and enriched uranium hexafluoride are substantially transformed uranium products.

## DECISION

### I. BACKGROUND

On February 17, 1987, seven members of the U.S. House of Representatives (Congressmen Ronald V. Dellums, Mervyn M. Dymally, William H. Gray, III, Edward J. Markey, Charles B. Rangel, Bill Richardson, and Howard Wolpe), the Oil, Chemical and Atomic Workers International Union,<sup>1</sup> The Nuclear Control Institute, American Committee on Africa, Transafrica Inc., and the Washington Office of Africa ("Petitioners") filed a Petition for Leave to Intervene and Request for Hearing on eight import license applications.<sup>2</sup> Each of the Applicants seeks a license to import South African-origin uranium in various forms. Petitioners sought to intervene principally to argue that issuance of the proposed licenses would: (1) violate the Comprehensive Anti-Apartheid Act of 1986 (Pub. L. No. 99-440, 22 U.S.C. §§ 5001-5116) ("Anti-Apartheid Act"); (2) be inimical to the common defense and security of the United States; and (3) violate the international legal obligations of the United States with respect to Namibia.

On June 12, 1987, the Commission granted the petition for leave to intervene and hearing request. CLI-87-6, 25 NRC 891 (52 Fed. Reg. 23,091 (June 17, 1987)). The Commission invited the Petitioners, Applicants, Executive Branch, and any other member of the public to submit written comments to the Commission by July 13, 1987, on the issues raised by the eight import license applications.<sup>3</sup> Participants could file reply comments responding to the views of other participants by July 28, 1987. The Commission, at the request of Atlas Corporation, subsequently extended the date for submitting reply comments to August 4, 1987.

Although the Commission invited participants to address any issue they deemed relevant, the Commission indicated that it was particularly interested in receiving detailed legal analyses, based on a review of the legislative history of the Anti-Apartheid Act, on four questions: (1) Did Congress bar only the import of uranium ore and uranium oxide, or did Congress intend to bar all

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<sup>1</sup> The Union subsequently withdrew from the petition.

<sup>2</sup> Petitioners subsequently amended their petition to include three additional parties — Robert L. Chavez, New Mexico State Senator Carlos Cisneros, and Henry Isaacs.

<sup>3</sup> On July 29, 1987, Braunkohle Transport, USA, withdrew three of its applications, Nos. IU-87001, IU-87002, and ISNM-87003. Previously, on March 13, 1987, it had withdrawn Application No. ISNM-87004.

forms of uranium? (2) Does the import bar cover imported uranium regardless of its intended end use, or does it only bar the import of uranium that will be used domestically and not be reexported? (3) Did Congress bar South African-origin uranium ore and uranium oxide that have been "substantially transformed" into another form of uranium in countries other than South Africa? (4) Did Congress assign to the Executive Branch, or to the NRC, or to both, the responsibility for interpreting the scope of § 309(a) of the Anti-Apartheid Act and for implementing that section?

The Commission received fourteen timely filed initial comments and two timely filed reply comments.<sup>4</sup> Only three participants — Petitioners, Atlas Corporation ("Atlas"), and Advanced Nuclear Fuels Corporation ("ANF") provided the detailed legal analysis requested by the Commission. The other participants, with the exception of the Sequoyah Fuels Corporation, submitted short statements asserting that consistent with the objectives of the Anti-Apartheid Act, all imports of South African-origin uranium should be barred. Sequoyah Fuels Corporation argued that all uranium imports for domestic consumption should be barred. In its view, uranium imports for the purposes of processing and re-export should be permitted.

## II. REQUEST FOR ORAL ARGUMENT

In their comments, Petitioners requested that the Commission hold oral argument to permit them to explicate their positions on the legal issues raised by these applications and to permit them to respond to any questions that the Commission might have. The Commission has concluded that oral presentations are unnecessary. The participants have set forth their views in writing, and the Commission believes that based on these submissions it fully understands the positions of the participants and has sufficient information upon which to base its decision. Accordingly, the request for oral argument is denied.

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<sup>4</sup>The Commission has not considered comments that were not timely filed. For example, Taiwan Power Company submitted initial comments on July 29, 1987, and the U.S. Committee on Energy Awareness submitted its initial comments on August 7, 1987, long after the July 13 deadline for submitting initial comments. It would be unfair to Petitioners and the other commenters to consider these late comments because they were not given a reasonable opportunity to reply to them. The U.S. Committee on Energy Awareness comments in fact were not submitted until after the other participants had submitted their reply comments. Although Atlas had requested and received an extension until August 4 to submit its reply comments, it did not submit them until August 6. It should have sought another extension prior to August 4. The Commission has made clear that parties to its proceedings are expected to comply with applicable time limits. If parties cannot act within the specified time period, extensions are to be sought prior to the expiration date. See *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), CLI-86-5, 23 NRC 125, 126 (1986).



### III. SUMMARY OF DECISION

For reasons stated in this Decision, the Commission has concluded that § 309(a) of the Anti-Apartheid Act, 22 U.S.C. § 5059(a), bars the import of uranium ore and uranium oxide, regardless of its intended end use. Importation of other forms of uranium is not barred by § 309(a). South African-origin uranium ore and uranium oxide that are transformed into uranium hexafluoride, or other uranium compounds that are substantially transformed before they are imported into the United States, are also not barred. Because the Commission's interpretation of the scope of § 309(a) of the Anti-Apartheid Act is identical to that adopted by the Department of the Treasury, the Commission has not found it necessary to address issues that would have arisen had the two agencies adopted different interpretations of the Act.

The NRC Staff is directed to act on the four pending import license applications in accordance with this decision.

### IV. ANALYSIS OF PERTINENT ISSUES

Our analysis begins with a discussion of the four questions posed in the Commission's June 12, 1987 Order.

#### A. Did Congress Bar Only the Import of Uranium Ore and Uranium Oxide, or Did Congress Intend to Bar All Forms of Uranium?

##### 1. *Arguments of the Parties*

Section 309(a) of the Anti-Apartheid Act provides that "no—(1) uranium ore, (2) uranium oxide, (3) coal, or (4) textiles, that is produced or manufactured in South Africa may be imported into the United States."

A majority of the participants, including Petitioners and Atlas, contends that the literal language of the statute does not reflect congressional intent. They argue that Congress intended to bar all uranium imports, not just imports of uranium ore and uranium oxide. They contend that such an interpretation furthers the spirit, objectives, and policies of the Anti-Apartheid Act.

Petitioners argue that there is no rationale for limiting the scope of § 309(a) to the forms of uranium found only at the beginning and the end of the conversion and enrichment process, while allowing imports of intermediate forms of uranium, such as uranium hexafluoride (UF<sub>6</sub>). Petitioners submit that all that matters is whether the raw material originated in South Africa. Petitioners further argue that oxide and hexafluoride forms of uranium are essentially interchangeable in the marketplace. In this regard, Petitioners note that in 1985

most of the South African uranium entered the United States in oxide form, but that in 1986, in anticipation of the Anti-Apartheid Act, importers brought in most of the imported uranium as a hexafluoride. Accordingly, Petitioners assert that a narrow reading of §309(a) would permit the imports of  $UF_6$ , thereby effectively nullifying the congressional prohibitions, something Congress could not have intended.

Atlas also argues that Congress did not intend the terms uranium oxide and uranium ore to mean only ore in its natural state or chemical oxides, but instead used these terms to mean "processed" and "unprocessed" uranium. Atlas asserts that no other meaning can be rationally imputed, noting that uranium ore is typically processed into a nitrate or oxide form known generically as yellowcake (and referred to generally as uranium oxide ( $U_3O_8$ )). After conversion to uranium hexafluoride ( $UF_6$ ) for enrichment, the uranium is returned after enrichment to an oxide form for fuel fabrication. Atlas argues that the oxide step covers the entire fuel cycle from the extraction of the ore from the mine to the insertion of the fuel into the reactor core. In support of its position, Atlas cites floor statements of various Congressmen, which do not explicitly address the scope of the import bar, but which in Atlas' view can be reasonably construed to mean that the Congressmen thought the bar extended to all forms of uranium.

Finally, Petitioners and Atlas both note that in the Senate debate on the Dole Amendment, which would have deleted § 309, 132 Cong. Rec. S11851-53 (daily ed. Aug. 15, 1986), Senators Ford and McConnell of Kentucky spoke in favor of the amendment, claiming that a uranium import bar would eliminate jobs at government enrichment facilities in Kentucky and Ohio. The plant in Paducah, Kentucky, is an enrichment plant that uses  $UF_6$  as feed. Petitioners argue that if the bar did not apply to  $UF_6$ , then there would be no reason for Senators Ford and McConnell to oppose § 309 in order to protect the jobs of plant workers.

ANF reaches a different conclusion, arguing that Congress intended to bar only the import of uranium ore and uranium oxide, as reflected in the plain language of the statute. ANF argues that in the Anti-Apartheid Act when Congress wanted to bar a product and all of its by-products and derivatives, it did so quite explicitly. For example, in § 319 of the Act, Congress specified that no "agricultural commodity, product, by-product, or derivative thereof" may be imported from South Africa. ANF asserts that the U.S. Court of International Trade in *Springfield Industries Corp. v. United States*, 663 F. Supp. 128 (1987) had adopted this analytical approach in interpreting another section of the Anti-Apartheid Act.<sup>5</sup> There the Court held that § 320 of the Act, which bars imports of iron and steel, did not bar imports of South African wire strand, which is an advanced product made from steel.

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<sup>5</sup> The Government's appeal of this decision is pending. *United States v. Springfield Industries*, No. 87-1469 (Fed. Cir.).

## 2. Commission Decision

After evaluating the comments, the Commission has concluded that the proper interpretation of § 309(a) is one that gives effect to the plain language of the statute — that Congress only intended to bar uranium ore and uranium oxide; the bar does not extend to other forms of uranium. The Supreme Court has held that the plain meaning of a statute must prevail unless there is “clear evidence” of a “clearly expressed legislative intention” to the contrary. *Bread Political Action Committee v. Federal Election Commission*, 455 U.S. 577, 581 (1982). See *Chevron, U.S.A., Inc. v. Natural Resources Defense Council*, 467 U.S. 837, 842-43 (1983); *American Civil Liberties Union v. FCC*, No. 85-1666, slip op. at 37-40 (D.C. Cir. July 17, 1987).

Here Congress' explicit prohibition of uranium ore and uranium oxide, contrasted with its failure to include uranium hexafluoride ( $UF_6$ ), cannot simply be regarded as mere happenstance or oversight.

Uranium ore, uranium oxide ( $U_3O_8$ ), and  $UF_6$  are commonly used and understood technical terms which are accepted throughout the nuclear industry. They precisely and unambiguously identify completely different forms of uranium utilized at separate stages of the nuclear fuel cycle. Uranium ore consists of the raw mineral, which must be milled in order to produce uranium oxide,  $U_3O_8$ .  $U_3O_8$  is then converted in a separate process to uranium hexafluoride ( $UF_6$ ). As Petitioners, Atlas, and ANF all recognize,  $UF_6$  is an entirely different compound than  $U_3O_8$ .  $UF_6$  is enriched to increase the concentration of the radioisotope U-235. Enriched  $UF_6$  is then converted to an oxide form for subsequent compression and machining into fuel pellets. Entirely different industrial processes are utilized at each stage in the refining and enrichment chain of the fuel cycle. In fact, as Sequoyah Fuels Corporation, one of the two U.S. companies that converts  $U_3O_8$  to  $UF_6$ , noted in its comments, the user of nuclear fuel must obtain from separate and independent sources  $U_3O_8$ , unenriched  $UF_6$ , enriched  $UF_6$ , and fuel elements. Thus, uranium oxide and uranium hexafluoride are not essentially interchangeable as Petitioners contend.

When Congress uses technical terms with clear and precise meanings, such as uranium ore and uranium oxide, it must be presumed that Congress intended to use the terms in accordance with their traditional meanings. See *Corning Glass Works v. Brennan*, 417 U.S. 188, 201 (1974); *In re Ann Arbor Railroad Co.*, 414 F. Supp. 812 (E.D. Mich. 1976). Accordingly, we cannot presume, based on the facts set forth above, that Congress used the terms to include uranium hexafluoride.

Even if one looked beyond the text of the statute to ascertain congressional intent, the legislative history does not persuasively reveal that Congress intended to bar all uranium imports, as Petitioners and Atlas contend. The legislative history contains no references to uranium hexafluoride or to “processed” or

"unprocessed uranium." The pertinent Committee reports stated that the ban would extend to imports of "uranium ore and uranium oxide." There is no indication in these reports that these terms included all forms of uranium. See H.R. Rep. No. 638, Pt. 2, 99th Cong., 2d Sess. 6 (1986); S. Rep. No. 370, 99th Cong., 2d Sess. 14 (1986).

Various statements made by Congressmen during the floor debates before Congress initially passed the legislation or after the President vetoed the legislation, but before Congress overrode his veto, are inconclusive. In some instances the proposed sanctions were described to include "uranium," e.g., 132 Cong. Rec. H3873-74 (daily ed. June 18, 1986) (remarks of Rep. Richardson); 132 Cong. Rec. H6778 (daily ed. Sept. 12, 1986) (remarks of Rep. Wolpe); at other times, the bar was described to cover "uranium ore" and "uranium oxide." 132 Cong. Rec. 8660 (daily ed. Sept. 29, 1986) (remarks of Rep. Richardson). The legislative history cannot fairly be read to express a clear congressional intent different from the plain meaning of the statute. Under these circumstances, the plain meaning of the statute must prevail. The Commission thus concludes that only imports of uranium ore and uranium oxide are barred by § 309(a).<sup>6</sup> The Treasury Department has reached the same conclusion. See 31 C.F.R. § 545.211(a).

**B. Does the Import Bar Cover Imported Uranium Regardless of Its Intended End Use, or Does It Only Bar the Import of Uranium That Will Be Used Domestically and Not Be Reexported?**

At the time the Commission issued its June 12, 1987 Order soliciting public comments, this was a significant unresolved issue. In interim regulations published on March 10, 1987, the Treasury Department adopted a preliminary view that the import bar applied only to uranium ore and uranium oxide intended for domestic consumption. 52 Fed. Reg. 7272 (Mar. 10, 1987). However, after receiving public comments and more fully considering this matter, the Treasury Department allowed its interim regulations to expire. Accordingly, as things now stand, all uranium ore and oxide is barred pursuant to 31 C.F.R. § 545.211(a) regardless of its end use. 52 Fed. Reg. 25,578 (July 7, 1987).

Because Treasury Department regulations bar the import of South African-origin uranium ore and uranium oxide, regardless of its intended end use, the issue is now moot. Even if the Commission were to conclude that Congress did not intend to bar uranium ore and oxide imports if the material is brought in solely for further processing and reexport, the Treasury Department's current

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<sup>6</sup>The Commission notes that § 303 of the Anti-Apartheid Act prohibits the import of an article grown, produced, or manufactured by a "parastatal organization" of South Africa. In contrast to § 303(a), this section bars all uranium imports from parastatal organizations.

regulations would bar such imports. Accordingly, there is no live issue for the Commission to resolve. Moreover, our own review of this issue convinces us that the Treasury Department's interpretation is correct. The plain language of the statute bars the importation of uranium ore and uranium oxide regardless of its intended end use. Nothing in the legislative history compels us to adopt a contrary interpretation.

**C. Did Congress Bar South African-Origin Uranium Ore and Uranium Oxide That Have Been "Substantially Transformed" into Another Form of Uranium in Countries Other Than South Africa?**

***1. Arguments of the Parties***

The question before the Commission is whether South African-origin uranium ore or uranium oxide that is transformed into uranium hexafluoride or into enriched uranium hexafluoride in other countries should be considered South African uranium ore or uranium oxide and thereby barred from importation. In its regulations implementing the Anti-Apartheid Act, the Treasury Department has concluded that uranium hexafluoride and other articles that are produced from uranium ore or uranium oxide have been "substantially transformed" and are not subject to the import bar. 31 C.F.R. § 545.425.

The Petitioners and Atlas disagree with this Treasury Department finding. Petitioners argue that the substantial transformation doctrine cannot be invoked to evade the Anti-Apartheid Act's import prohibitions. They further contend that even if the doctrine were applicable,  $UF_6$  is not a substantially transformed product if the traditional three-part test used by the Customs Service is applied. They argue that conversion of uranium oxide into uranium hexafluoride is not a sufficient change in character to meet this part of the test; that uranium hexafluoride does not have a use that is distinct from its precursors because it is part of a continuous process that eventually leads to nuclear fuel fabrication; and that the change in name, normally the weakest evidence of substantial transformation, should not be given great weight.

Atlas asserts that there is nothing in the legislative history suggesting that South African material can be imported into the United States so long as it is processed abroad. It then argues that  $UF_6$  is not a substantially transformed product because the conversion of uranium ore to uranium hexafluoride is relatively easily done, this conversion is a trivial part of the cost of manufacturing nuclear fuel and does not change the end use of the uranium from its original state. Atlas further contends that to the extent that the Commission intends a technical inquiry into whether  $UF_6$  is a substantially transformed product, this is a factual issue that can only be resolved through use of formal adjudicatory

procedures. Accordingly, Atlas requests that the Commission order a formal adjudicatory proceeding to resolve this issue.

ANF takes a contrary position. It contends that to bar substantially transformed forms of uranium ore and uranium oxide would be contrary to the plain meaning of the statute, and that there is no legislative history to support a bar of substantially transformed uranium. It further argues that converting uranium oxide to uranium hexafluoride constitutes substantial transformation of the material. With respect to this point, ANF argues that the conversion of  $U_3O_8$  to  $UF_6$  is a significant step in the process of the eventual manufacture of nuclear fuel, noting that the conversion is performed in large chemical complexes. The cost of converting uranium oxide into enriched uranium hexafluoride according to ANF is higher than the cost of mining and milling the uranium. ANF states that the cost of converting and enriching uranium constitutes more than 50% of the final value of the enriched uranium, and that this 50% is normally added in Western Europe. ANF further asserts that uranium from various countries is commingled during the physical processing stage so that in normal circumstances enriched uranium hexafluoride produced in Western Europe cannot be physically traced to uranium of South African origin. Thus, it argues that uranium hexafluoride emerges from the manufacturing process as a substantially transformed product with a name, character, and use differing from the original material.

ANF also argues that Petitioners erroneously view the Anti-Apartheid Act as legislation imposing comprehensive and complete economic sanctions. In contrast, ANF views the Act as imposing only carefully selected, limited sanctions which do not encompass uranium hexafluoride imports. It asserts that if Congress had intended to impose comprehensive sanctions it would have enacted a complete trade embargo. Instead, Congress selected a limited number of products whose importation would be barred, as evidenced by the more than \$350 million worth of U.S. products that were imported from South Africa during the first quarter of 1987.

Petitioners in their reply comments claim that ANF provided misleading cost data because the ANF analysis includes the costs of both conversion and enrichment. Petitioners contend that it is only the cost of conversion that is relevant to this proceeding, and that conversion costs are generally between 2 and 4% of the cost of producing nuclear fuel. Petitioners assert that the cost of enriching uranium has no bearing on whether  $UF_6$  is or is not a substantially transformed product.

## **2. Commission Decision**

Under U.S. Customs Service regulations, absent a statutory exemption, every article of foreign origin imported into the United States must contain a conspicuous marking identifying the country of origin of the article. 19

C.F.R. § 134.11. The Customs Service defines the country of origin to be the country that manufactures, produces, or grows the article of foreign origin entering the United States. Further work or material added to an article in another country must effect a "substantial transformation" in order to render such other country the "country of origin." 19 C.F.R. § 134.1(b).

There is no litmus test for determining whether a product has been substantially transformed; each case must be decided on its own facts. The Customs Service and the courts have, however, commonly employed a three-part test in determining whether a product has been substantially transformed. They look to see whether as a result of the manufacturing processes a new and different article emerges, having a (1) distinctive name, (2) character, or (3) use, which is different from that originally possessed by the article or material before being subject to the manufacturing process. See, e.g., 19 C.F.R. § 10.14(b); *Anheuser-Busch Brewing Ass'n v. United States*, 207 U.S. 556 (1908); *Torrington Co. v. United States*, 764 F.2d 1563 (Fed. Cir. 1985); *Texas Instruments, Inc. v. United States*, 681 F.2d 778 (C.C.P.A. 1982); *Uniroyal Inc. v. United States*, 542 F. Supp. 1026 (Ct. Int'l Trade 1982), *aff'd*, 702 F.2d 1022 (Fed. Cir. 1983).

The Commission has concluded that the Treasury Department's finding that UF<sub>6</sub> is a substantially transformed product is a sound one and has reached the same conclusion. As discussed earlier, the plain language of § 309(a) bars the importation of uranium ore and uranium oxide. The legislative history does not reveal a congressional intent to bar the import of a potentially transformed uranium product from countries other than South Africa. Moreover, there is no indication that traditional customs law, including the substantial transformation doctrine described above, is not to be applied in implementing the Anti-Apartheid Act. Furthermore, the Commission believes that the doctrine of substantial transformation applies to uranium regardless of its chemical or physical form, when the commonly employed criteria for determining substantial transformation are met.

The Treasury Department, the Executive Branch agency responsible for implementing § 309(a) of the Anti-Apartheid Act under Executive Order 12571 (51 Fed. Reg. 39,505 (1986)), has concluded that UF<sub>6</sub> meets the traditional tests for determining whether a product has been substantially transformed. The Commission should and will give great deference to that finding since the Treasury Department has long experience and great expertise in applying the substantial transformation doctrine; the NRC has never previously been called upon to apply that doctrine.

Moreover, based on its familiarity with the uranium fuel cycle, the Commission believes that the Treasury Department finding is a reasonable one. Uranium oxide must be converted into uranium hexafluoride before it is enriched. In our view this is an independent step in the fuel fabrication process which changes the name, character, and use of the uranium. The technical, chemical name of the

product is changed from uranium oxide to uranium hexafluoride. Its character also changes. At room temperature,  $UF_6$  is a white, volatile solid. At a temperature approximately 147°F and a pressure of 22 pounds per square inch,  $UF_6$  melts to form a colorless liquid of high density. At somewhat higher temperatures the  $UF_6$  changes into a gaseous physical form. At this point the material has a new use. It can be used for uranium enrichment. The product of uranium enrichment, enriched uranium, could not have been made if the material had been left as uranium oxide.<sup>7</sup>

Several of the participants have commented on the costs of conversion, noting that some courts have taken this factor into account in applying the substantial transformation doctrine. *See, e.g., Uniroyal, supra*. The record generated on this issue contains conflicting information. However, the Commission believes that it is not necessary to make a finding on this matter, because that information is not essential to our analysis. Because it is so clear that the name, character, and use of the product have been changed, we find that  $UF_6$  is a substantially transformed product. No formal adjudicatory hearing is necessary to reach this factual conclusion.

**D. Did Congress Assign to the Executive Branch, or to the NRC, or to Both the Responsibility for Interpreting the Scope of § 309(a) of the Anti-Apartheid Act and for Implementing That Section?**

The Commission's interpretation of § 309(a) of the Anti-Apartheid Act is fully consistent with that of the Treasury Department, as reflected in that agency's regulations, 31 C.F.R. Part 545. Accordingly, the Commission need not resolve questions that would have been presented regarding the two agency's respective authorities had the NRC's interpretation of § 309(a) differed from that of the Treasury Department.

**E. Other Issues**

Petitioners assert that even if § 309(a) does not form a basis for denying the pending import license applications, their issuance would be inimical to the common defense and security of the United States and would violate U.S. international legal obligations with respect to Namibia.

The Commission disagrees with the Petitioners and refuses to make an inimicality finding. Congress has carefully considered the scope of the sanctions

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<sup>7</sup> We further note that, for purposes of the Tariff Schedules of the United States ("TSUS"), uranium ore, uranium oxide, and uranium hexafluoride are treated as separate products. Uranium ore is classified as a metal and is under Schedule 6, TSUS ITEM No. 601.57. Uranium oxide and uranium hexafluoride are classified as chemicals under Schedule 4, TSUS ITEM Nos. 422.50 (oxide) and 422.5220 (hexafluoride).



that are to be imposed against South Africa because of apartheid. It has not chosen to impose a trade embargo on all South African goods; instead it carefully selected those items that would be subject to import restrictions. The Commission finds no justification for making findings that neither Congress nor the Executive Branch have made. Congress and the Executive Branch are in a far better position than the Commission to determine whether South African imports are inimical to the common defense and security of the United States or should be barred to promote foreign policy objectives. Under the circumstances, the Commission is unwilling to find that imports not barred by the Anti-Apartheid Act are inimical to the common defense and security of the United States.

With respect to Namibia, under § 3(6)(B) of the Anti-Apartheid Act, 22 U.S.C. § 5001(6)(B), Namibia is treated as part of South Africa. Accordingly, under the Commission's interpretation of § 309(a) of the Anti-Apartheid Act set forth above, imports of uranium ore and uranium oxide from Namibia are barred. Again, Congress has made a judgment regarding which imports from Namibia are barred, and the Commission refuses to act in a manner inconsistent with congressional intent.

One other matter merits comment. In *Western Nuclear v. Huffman*, 825 F.2d 1430 (10th Cir. 1987), the Court of Appeals affirmed a lower-court opinion enjoining the Department of Energy from enriching foreign-source uranium for domestic end use. That decision has no legal bearing on the Commission's decision today. The issues before the Commission involve what forms of South African-origin uranium can be imported under § 309(a) of the Anti-Apartheid Act — not whether uranium that is permitted to be imported can be further processed by the Department of Energy.

## V. DIRECTIONS TO THE NRC STAFF

Based on the conclusions set forth above, the Director, Office of Governmental and Public Affairs, is directed to act promptly in accord with this Decision on each of the four pending import license applications. The Director is not required to consult with the Commission on this matter before acting.

Commissioner Roberts was unavailable to participate in this Order.  
It is so ORDERED.\*

For the Commission

SAMUEL J. CHILK  
Secretary of the Commission

Dated at Washington, D.C.,  
this 21st day of September 1987.

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\*Chairman Zech was not present for the affirmation of this Order. If he had been present, he would have approved it.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman  
Thomas M. Roberts  
Frederick M. Bernthal  
Kenneth M. Carr  
Kenneth C. Rogers

In the Matters of

EDLOW INTERNATIONAL  
COMPANY

(Import License for Enriched Uranium  
from a Country Not Specified)

Docket No. 11002967  
(License No. ISNM-82020)

TRANSNUCLEAR, INC.

(Import License for Enriched Uranium  
from a Country Not Specified)

Docket No. 11003111  
(License No. ISNM-83005)

WESTINGHOUSE ELECTRIC  
CORPORATION

(Import License for Enriched Uranium  
from a Country Not Specified)

Docket No. 11001002  
(License No. ISNM-80001)

EDLOW INTERNATIONAL  
COMPANY

(Import License for Nuclear Source  
Material from a Country Not  
Specified)

Docket No. 11000168  
(License No. IM-78019)

INTERNATIONAL ENERGY  
ASSOCIATES LTD.

(Import License for Enriched Uranium  
Hexafluoride from South Africa)

Docket No. 11003688  
(License No. ISNM-84012)

**SEPARATIVE WORK UNIT  
CORPORATION**  
(Import License for Enriched and  
Natural Uranium from a Country Not  
Specified)

**Docket No. 11002957  
(License No. ISNM-82016)**

**BRAUNKOHL TRANSPORT, USA**  
(Import License for Natural and  
Enriched Uranium from a Country  
Not Specified)

**Docket No. 11003204  
(License No. ISNM-83011)**

**ADVANCED NUCLEAR FUELS  
CORPORATION**  
(Import License for Natural and  
Enriched Uranium from a Country  
Not Specified)

**Docket No. 11003365  
(License No. ISNM-83025)**

**PHIBRO-SALOMON, INC.**  
(Import License for Natural and  
Enriched Uranium from South Africa)

**Docket No. 11002933  
(License No. ISNM-82015)**

**NEW YORK NUCLEAR  
CORPORATION**  
(Import License for Enriched Uranium  
from a Country Not Specified)

**Docket No. 11003097  
(License No. ISNM-83003)**

**TRANSNUCLEAR, INC.**  
(Import License for Special Nuclear  
Material from a Country Not  
Specified)

**Docket No. 11002593  
(License No. ISNM-81017)**

**September 21, 1987**

The Commission determines that since the issues raised in Petitioners' request for revocation of eleven existing uranium import licenses are identical to the issues raised by those same Petitioners with respect to four pending uranium import licenses, the guidance provided by the Commission in its September 21, 1987 decision on the pending South African-origin uranium import license applications resolves the issues with respect to the existing licenses. *See Advanced Nuclear Fuels Corp. (Import of South African Enriched Uranium Hexafluoride)*, CLI-87-9, 26 NRC 109. The Commission therefore directs the NRC Staff to review the existing licenses and to issue immediately effective orders to revoke, suspend, or modify those licenses to ensure that the

licenses bar imports of uranium ore and uranium oxide from South Africa and all uranium imports from parastatal organizations.

## ORDER

On February 17, 1987, seven members of the U.S. House of Representatives (Congressmen Ronald V. Dellums, Mervyn M. Dymally, William H. Gray, III, Edward J. Markey, Charles B. Rangel, Bill Richardson, and Howard Wolpe), the Oil, Chemical and Atomic Workers International Union,<sup>1</sup> the Nuclear Control Institute, American Committee on Africa, Transafrica, Inc., and the Washington Office of Africa ("Petitioners") filed a "Petition for Commencement of License Revocation Proceedings" seeking revocation of eleven existing uranium import licenses to the extent that they permit the import of South African-origin uranium. In their original petition and in a supplemental motion filed on May 13, 1987, the Petitioners also sought the immediate suspension of the licenses. The Director of the Office of Governmental and Public Affairs denied the request for immediate suspension in a decision dated May 27, 1987.

On March 10, 1987, Petitioners moved to amend their petition to include three additional parties — Robert L. Chavez, an unemployed uranium miner; Carlos P. Cisneros, a state senator from New Mexico; and Henry Eric Isaacs, a South African exile. On April 13, 1987, ANF filed an answer opposing Petitioners' motion to amend. On March 16, 1987, Advanced Nuclear Fuels Corporation ("ANF"), holder of License No. ISNM-83025, filed an answer opposing Petitioners' motion to amend. Previously, it had filed a response in opposition to the petition. No other Licensee filed a response to Petitioners' pleadings. After reviewing these submissions, the Commission grants the request to add three additional Petitioners because this action does not prejudice the affected Licensees.

With respect to Petitioners' substantive claims, the issues they seek to raise are identical to those that these same Petitioners raised with respect to four pending applications for licenses that would authorize the import of South African uranium. Today, the Commission issued a Decision, CLI-87-9, 26 NRC 109, setting forth its views on the issues relating to those pending import license applications. The Commission's resolution of the issues in CLI-87-9 also guides the resolution of the Petitioners' request for revocation of existing licenses. In accord with CLI-87-9, we are directing the Staff to issue orders, as necessary, to ensure that existing licenses bar imports of uranium ore and uranium oxide from South Africa and all uranium imports from parastatal organizations. To

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<sup>1</sup> The Union subsequently withdrew from the petition on February 20, 1987.

the extent that this action is consistent with the Petitioners' request, we have granted the petition. In all other respects, the petition is denied.<sup>2</sup>

Our decision in CLI-87-9 provides the substantive basis for our action on the issues, which are essentially of a legal nature, raised by the petition. Thus, further hearings on the petition are neither necessary, see *Eddleman v. NRC*, 825 F.2d 46, 48 (4th Cir. 1987), nor are they required by law. See *id.* at 5; *Illinois v. NRC*, 591 F.2d 12, 13-14 (7th Cir. 1979); *Porter County Chapter of the Isaac Walton League v. NRC*, 606 F.2d 1363, 1369 (D.C. Cir. 1979).

Based on the Commission's Decision in CLI-87-9, the Director, Office of Governmental and Public Affairs, shall review the licenses being challenged here and promptly issue appropriate orders to amend, suspend, or revoke those licenses, in accord with that Decision. Those orders should be immediately effective.

Commissioner Roberts was unavailable to participate in this Order.  
It is so ORDERED.\*

For the Commission

SAMUEL J. CHILK  
Secretary of the Commission

Dated at Washington, D.C.,  
this 21st day of September 1987.

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<sup>2</sup>In their original request for relief, Petitioners had also asked that the Commission ensure availability of "all pertinent data" regarding the issues raised in the petition and grant "reasonable discovery of relevant documents and persons." Although discovery was denied in the related proceeding on the import applications and is not a "right" under Commission practice with respect to consideration of petitions to modify, suspend, or revoke licenses, the NRC Staff did place pertinent documents in the Commission's possession in the NRC Public Document Room for public inspection and copying. See CLI-87-6, 25 NRC 891, 894 (1987). Petitioners had also requested consolidation of their petition for revocation with proceedings on their petition to intervene on the license applications. Consolidation was denied in the Commission's earlier Order, CLI-87-6, because the legal framework for acting on initial applications differs from that with respect to requests to modify, suspend, or revoke licenses. See generally *Illinois v. NRC*, 591 F.2d 12 (7th Cir. 1979).

\*Chairman Zech was not present for the affirmation of this Order. If he had been present, he would have approved it.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Gary J. Edles, Chairman  
Christine N. Kohl  
Howard A. Wilber

In the Matter of

Docket Nos. 50-424-OL  
50-425-OL

GEORGIA POWER COMPANY,  
*et al.*

(Vogtle Electric Generating  
Plant, Units 1 and 2)

September 15, 1987

On appeal by the intervenor in this operating license proceeding from a portion of a Licensing Board decision in favor of the applicants, LBP-87-28, 24 NRC 263 (1986), and various interlocutory rulings of that Board, the Appeal Board affirms each of the challenged rulings. The Appeal Board also denies the intervenor's request to reopen the record. Finally, the Appeal Board conducts a sua sponte review of the remainder of LBP-87-28 as well as the entirety of a second decision in applicant's favor, LBP-86-41, 24 NRC 901 (1986), *as modified*, ALAB-859, 25 NRC 23 (1987), and finds no error that warrants corrective action.

**RULES OF PRACTICE: BRIEFS**

The Commission's Rules of Practice require an appellant's brief to identify clearly errors of fact or law that are the subject of the appeal. For each issue appealed, the precise portion of the record relied upon in support of the assertion of error must be set out. 10 C.F.R. 2.762(d)(1). The brief must also

contain sufficient information and cogent argument to alert the other parties and the appellate tribunal to the precise nature of and support for the appellant's claims. *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-843, 24 NRC 200, 204 (1986).

#### **RULES OF PRACTICE: BRIEFS**

The Appeal Board does not generally entertain matters that are not fully briefed. *Public Service Electric and Gas Co.* (Salem Nuclear Generating Station, Unit 1), ALAB-650, 14 NRC 43, 49-50 (1981), *aff'd sub nom. Township of Lower Alloways Creek v. Public Service Electric & Gas Co.*, 687 F.2d 732 (3d Cir. 1982). It is not sufficient for a party merely to repeat a contention and its purported basis, or to reassert proposed findings or arguments and information rejected by the Licensing Board. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-841, 24 NRC 64, 69, *reconsideration denied*, ALAB-844, 24 NRC 216 (1986); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-827, 23 NRC 9, 11 (1986).

#### **RULES OF PRACTICE: BRIEFS**

Parties whose briefs fail to conform to Commission requirements must bear the risk of any shortcomings in their briefs.

#### **RULES OF PRACTICE: SUMMARY DISPOSITION**

The movant of a motion for summary disposition has the burden of proving the absence of genuine issues of material fact even if the motion is unopposed. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 752-54 (1977).

#### **APPEAL BOARD: SCOPE OF REVIEW**

Absent a serious substantive issue as to which a genuine problem has been demonstrated, arguments that could have been presented below, but were not, will not be entertained on appeal. *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, 7 NRC 341, 348 (1978).



## **RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)**

To be admitted in a licensing proceeding, a contention must have its basis set forth with reasonable specificity. 10 C.F.R. 2.714(b).

## **RULES OF PRACTICE: REOPENING OF RECORD**

To prevail on a request to reopen a record, a movant must show (1) its motion is timely; (2) the motion addresses a significant safety or environmental issue; and (3) a materially different result would be or would have been likely had the newly proffered evidence been considered. 10 C.F.R. 2.734. *See also Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-865, 25 NRC 430, 441 (1987).

## **TECHNICAL ISSUES DISCUSSED**

- Cumulative effects of radioactive releases;
- Seismic design (impact of Charleston earthquake);
- Construction quality assurance;
- Groundwater contamination through grouted wells;
- Reliability of Limitorque motor operators for valves;
- Degradation of polymers used in electric cable insulation;
- Surveillance and maintenance program for electric cables.

## **APPEARANCES**

**Douglas C. Teper**, Arlington, Virginia (**Howard Deutsch**, Atlanta, Georgia, on the brief), for intervenor Georgians Against Nuclear Energy.

**Bruce W. Churchill**, Washington, D.C. (with whom **Delissa A. Ridgway**, **David R. Lewis**, and **Rose Ann C. Sullivan**, Washington, D.C., and **James E. Joiner**, **Charles W. Whitney**, and **John R. Molm**, Atlanta, Georgia, were on the brief), for the applicants Georgia Power Company, *et al.*

**Bernard M. Bordenick** for the Nuclear Regulatory Commission staff.

## DECISION

This proceeding involves an application filed by Georgia Power Company on behalf of itself and several other co-owners for licenses to operate Units 1 and 2 of the Vogtle Electric Generating Plant in Burke County, Georgia. Intervenor Georgians Against Nuclear Energy (GANE) submitted numerous contentions dealing with environmental, technical, and emergency planning issues. Many of GANE's contentions were identical to some of another intervenor, Campaign for a Prosperous Georgia (CPG). CPG later withdrew from the proceeding and thus we dismissed its appeal.<sup>1</sup>

The Licensing Board admitted some contentions, rejected a number of others at the threshold, and considered one to have been withdrawn.<sup>2</sup> The applicants thereafter moved for summary disposition of all admitted contentions and the Board granted the motions with respect to all but three matters.<sup>3</sup> Hearings were held on those matters and, in due course, the Licensing Board issued two partial initial decisions in which it found in the applicants' favor on those counts as well.<sup>4</sup>

GANE appeals from a portion of the Licensing Board's first partial initial decision, in addition to numerous prior rulings rejecting certain of its contentions and granting most of the applicants' motions for summary disposition. GANE also asks that we reopen the record with respect to one contention earlier rejected by the Board. The applicants and the NRC staff oppose GANE's appeal. As explained below, we affirm each of the Board's challenged rulings and deny the request to reopen the proceeding. We have also conducted our usual *sua sponte* review of the entirety of both partial initial decisions and the underlying record<sup>5</sup> and find no error that warrants corrective action.

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<sup>1</sup> ALAB-851, 24 NRC 529 (1986).

<sup>2</sup> See, e.g., LBP-84-35, 20 NRC 887, *reconsideration denied*, LBP-84-49, 20 NRC 1457 (1984); Memorandum and Order of September 12, 1985 (unpublished).

<sup>3</sup> See, e.g., Memorandum and Order of August 21, 1985 (unpublished); Memorandum and Order of September 3, 1985 (unpublished); Memorandum and Order of October 3, 1985 (unpublished), *reconsideration denied*, Memorandum and Order of December 3, 1985 (unpublished); Memorandum and Order of November 5, 1985 (unpublished); Memorandum and Order of November 12, 1985 (unpublished), *reconsideration denied*, Memorandum and Order of January 6, 1986 (unpublished); Memorandum and Order of November 25, 1985 (unpublished); Memorandum and Order of May 5, 1986 (unpublished); Memorandum and Order of May 12, 1986 (unpublished); Memorandum and Order of May 15, 1986 (unpublished); Memorandum and Order of May 22, 1986 (unpublished); Memorandum and Order of July 17, 1986 (unpublished).

<sup>4</sup> See LBP-86-28, 24 NRC 263 (1986); LBP-86-41, 24 NRC 901 (1986), *as modified*, ALAB-859, 25 NRC 23 (1987).

<sup>5</sup> See ALAB-859, 25 NRC at 27 and cases cited; Appeal Board Order of February 2, 1987 (unpublished).

## I. MATTERS INADEQUATELY PRESENTED ON, OR PRESERVED FOR, APPEAL

A. As we have from time to time observed, the Commission's Rules of Practice require that an appellant's brief clearly identify the errors of fact or law that are the subject of the appeal. For each issue appealed, the precise portion of the record relied upon in support of the assertion of error must be set out.<sup>6</sup> The brief must also contain "sufficient information and cogent argument to alert the other parties and the appellate tribunal to the precise nature of and support for the appellant's claims."<sup>7</sup> We do not generally entertain matters that are not fully briefed.<sup>8</sup> In this connection, it is not sufficient for a party merely to repeat a contention and its purported basis, or to reassert proposed findings or arguments and information rejected by the Licensing Board.<sup>9</sup> Parties thus must bear the risk of any failure to brief matters adequately.<sup>10</sup> Our requirements in this regard are not unlike those of other administrative agencies and the courts.<sup>11</sup>

Among the matters GANE appeals is the Licensing Board's rejection of its contentions 1, 4, 6, 9, 10.2, 10.9, and 11 (in part). These concern, respectively, the accuracy of certain estimates of radiological releases in the applicants' Final Safety Analysis Report (FSAR); the health effects allegedly produced by transmission lines; thermal shock; the safety of a newly designed pipe restraint system; the synergistic effects of radiation, heat, and oxygen; the seismic qualification of plant equipment; and defects in the steam generator system.<sup>12</sup> In each case, however, GANE's brief simply sets forth a challenge to the Licensing Board's action in a cursory fashion or repeats assertions made at earlier stages of the proceeding without any genuine effort to address the Licensing Board's rationale for decision.<sup>13</sup> GANE also elected not to elaborate on its assertions at oral argument.

<sup>6</sup> 10 C.F.R. 2.762(d)(1).

<sup>7</sup> *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-843, 24 NRC 200, 204 (1986).

<sup>8</sup> *Public Service Electric and Gas Co.* (Salem Nuclear Generating Station, Unit 1), ALAB-650, 14 NRC 43, 49-50 (1981), *aff'd sub nom. Township of Lower Alloways Creek v. Public Service Electric & Gas Co.*, 687 F.2d 732 (3d Cir. 1982).

<sup>9</sup> *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-841, 24 NRC 64, 69, *reconsideration denied*, ALAB-844, 24 NRC 216 (1986); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-827, 23 NRC 9, 11 (1986).

<sup>10</sup> *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-785, 20 NRC 848, 870 n.76 (1984).

<sup>11</sup> *See, e.g., Bonne-Annee v. INS*, 810 F.2d 1077 (11th Cir. 1987); *Mitchel v. General Electric Co.*, 689 F.2d 877 (9th Cir. 1982).

<sup>12</sup> *See* LBP-84-35, 20 NRC at 911-13, 915-16, 897-98, 902-03, 903-04, 907; LBP-84-49, 20 NRC at 1458-59. Except in the case of contention 9 (which the Board treated as withdrawn), the Board determined that these contentions lacked adequate basis or specificity or both. *See* discussion *infra* p. 134 and note 24.

<sup>13</sup> *See* GANE Appeal, Brief and Proposed Findings (October 8, 1986) [hereinafter "GANE Brief"] at 2-3, 4, 6, 15, 16, 19, 19-20. We note that insofar as contention 11 is concerned, GANE's brief is confined to that portion — rejected by the Licensing Board at the outset — that concerns steam generator defects caused by stress corrosion

(Continued)

In denying the applicants' earlier motion to strike GANE's brief for, among other things, its failure to conform to the Commission's requirements, we noted that GANE would nevertheless have to "bear the risk of shortcomings in its brief."<sup>14</sup> That risk is now realized, for the circumstances oblige us to reject on the ground of inadequate briefing, and thus to treat as waived, GANE's arguments in regard to contentions 1, 4, 6, 9, 10.2, 10.9, and 11.<sup>15</sup>

B. GANE also appeals the Licensing Board's grant of the applicants' motions for summary disposition of contentions 10.3 (environmental qualification of EPR cable material in multiconductor configurations), 10.7 (environmental qualification of hydrogen recombiners), 13 (emergency planning), and 14 (reliability of TDI diesel generators).<sup>16</sup> Each of the applicants' motions was accompanied by one or more supporting affidavits and a statement of material facts for which it was alleged no hearing was required. The NRC staff supported all of the motions, supplying its own affidavits as well. After carefully evaluating these presentations in each instance, the Licensing Board found "no genuine issue as to any material fact" — the standard for summary disposition — and thus dismissed these four contentions.<sup>17</sup>

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cracking. GANE does not challenge, and thus we need not address, the Board's subsequent summary disposition of the remainder of the contention (i.e., defects attributable to vibration-induced fatigue cracking and bubble collapse). See *id.* at 19-20; Memorandum and Order of September 3, 1985.

GANE's "argument" with regard to contention 9 is particularly unavailing. This contention complained that the applicants had failed to provide "even the minimal information required to understand and assess the safety repercussions of [the] innovative design" of a certain pipe restraint system. LBP-84-35, 20 NRC at 902. The applicants agreed to provide GANE with the proprietary information in question (under protective order), after which GANE agreed to amend or to withdraw the contention. *Ibid.* See also Tr. 65-71. GANE received the information (GANE Brief at 15), but filed nothing with the Licensing Board. The Board accordingly and properly treated the contention as withdrawn. See LBP-84-35, 20 NRC at 902-03. See also 10 C.F.R. 2.707. GANE now objects that the applicants' information on this score is "preposterous," and implies that unspecified regulatory requirements have not been met. GANE Brief at 15. Not only does GANE wholly fail to explain its viewpoint (as in the case of contentions 1, 4, 6, 10.2, 10.9, and 11), it also impermissibly makes this cryptic claim for the first time on appeal. See *infra* p. 133.

<sup>14</sup> Appeal Board Memorandum and Order of October 27, 1986, at 3-4 (unpublished).

<sup>15</sup> GANE also briefly refers to the Licensing Board's rejection of its contention 3, which essentially concerned the fear and consequent psychological impact of living adjacent to a nuclear power plant. The Board found that this contention was prohibited by the Commission's Policy Statement on "Consideration of Psychological Stress Issues," 47 Fed. Reg. 31,762 (1982). The Board also noted the Supreme Court's holding in *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766 (1983) [hereinafter "*PANE*"], that the National Environmental Policy Act of 1969, 42 U.S.C. 4321, does not require consideration of the psychological impacts of living near a nuclear plant. LBP-84-35, 20 NRC at 915. GANE states that, if the Board is in fact constrained "from above" from admitting contention 3, then it does not appeal this issue. GANE Brief at 3-4.

The Licensing Board was, in fact, bound by the Commission's Policy Statement on psychological stress issues, and the Board correctly applied it in dismissing GANE's contention 3. Moreover, the Commission has recently revoked this Policy Statement as obsolete, noting that it has been superseded by the Court's decision in *PANE*. See 52 Fed. Reg. 20,592 (1987). Thus, psychological stress is not a litigable issue in NRC licensing proceedings.

<sup>16</sup> See, respectively, Memorandum and Order of August 21, 1985; Memorandum and Order of November 5, 1985; Memoranda and Orders of May 5, 12, 15, and 22 and July 17, 1986; Memorandum and Order of November 25, 1985.

<sup>17</sup> 10 C.F.R. 2.749(d).

The Commission's Rules of Practice explicitly invite replies to summary disposition motions, "with or without affidavits."<sup>18</sup> A failure to respond with *evidentiary* material to such a motion — although obviously risky — does not automatically signal a grant of summary disposition. The movant still retains the burden of proving the absence of genuine issues of material fact.<sup>19</sup> In the case of contentions 10.3, 10.7, 13, and 14, however, GANE filed no response whatsoever to applicants' motions for summary disposition, thereby depriving the Licensing Board of the benefit of GANE's views on the motions.<sup>20</sup> GANE therefore raises its arguments in connection with these four contentions for the first time on appeal. It is well-established in NRC proceedings that, absent "a serious substantive issue as to which a genuine problem has been demonstrated," arguments that could have been presented below, but were not, will not be entertained on appeal.<sup>21</sup> GANE's arguments here reveal no such serious issue. Indeed, it offers no real argument at all as to contentions 10.3 and 13, simply noting its disagreement with the Board's rulings.<sup>22</sup> As for contentions 10.7 and 14, the points GANE briefly mentions were, in fact, discussed by the Licensing Board in its summary disposition rulings, but GANE makes no attempt to *explain* why the Board erred in its analyses.<sup>23</sup> We therefore conclude that GANE's appeal from the Licensing Board's disposition of contentions 10.3, 10.7, 13, and 14 fails.

## II. OTHER CONTENTIONS REJECTED AT THE THRESHOLD

In addition to the contentions discussed in section I.A, GANE challenges the Licensing Board's refusal to admit contentions 2 and 5, relating to certain cumulative environmental effects and the seismic evaluation of the Vogtle plant,

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<sup>18</sup> 10 C.F.R. 2.749(a).

<sup>19</sup> *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 752-54 (1977) (citing *Adickes v. S.H. Kress and Co.*, 398 U.S. 144, 157-61 (1970)).

<sup>20</sup> GANE claims that it did reply to the motion for summary disposition of contention 14 and attempts to incorporate this alleged reply (for which it provides no date citation) by reference into its appellate brief. GANE Brief at 21. The applicants, NRC staff, and Licensing Board, however, all state that they never received this pleading. Applicants' Brief (November 14, 1986) at 68; NRC Staff Brief (November 26, 1986) at 42; Memorandum and Order of November 25, 1985, at 1-2. We have likewise searched the record and have found no reply by GANE to the applicants' motion for summary disposition of contention 14.

<sup>21</sup> *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, 7 NRC 341, 348 (1978).

<sup>22</sup> See GANE Brief at 16-17, 20. Hence, GANE's appeal on these two contentions also fails to conform to the Commission's briefing requirements. See *supra* p. 131.

<sup>23</sup> For instance, GANE argues that the "production model" of the Vogtle hydrogen recombiners (contention 10.7) "has never been tested." GANE Brief at 18. The Licensing Board, however, fully described the testing of this equipment and its adequacy. Memorandum and Order of November 5, 1985, at 3-6. GANE also complains that the problems with TDI diesel generators (contention 14), documented in thousands of pages of reports, have "not been rectified." GANE Brief at 21. But again, the Board adequately dealt with this matter, concluding that the TDI problems applicable to Vogtle either have been corrected already, or are being resolved in ongoing engineering reviews under a program that GANE did not challenge. Memorandum and Order of November 25, 1985, at 5.

respectively. The principal reason for the Board's rejection of these contentions (as well as those already discussed above) is their lack of basis and specificity, as required by 10 C.F.R. 2.714(b).<sup>24</sup> In each case, we uphold the Board's action.

A. GANE's contention 2 asserts that the cumulative environmental effects of "the addition of Plant Vogtle within 20 miles of the [Savannah River Plant]" have not been adequately quantified and assessed.<sup>25</sup> In support of this contention, however, GANE relied heavily on the fact that the Department of Energy (DOE) has for many years operated the Savannah River Plant (SRP) in connection with the production of nuclear weapons, and that DOE now proposes to reactivate its so-called "L-reactor" at SRP in order to increase the production of plutonium and tritium for the nation's defense program.<sup>26</sup> The Licensing Board found the contention inadmissible for essentially three reasons. First, it failed "to address, except in vague, unmeaningful terms, the incremental impact of Vogtle." Second, it failed to show "how or why the assessment of SRP releases contained in the Vogtle FSAR is in error or needs to be reexamined." Third, GANE's concerns are primarily with the SRP, over which the Department of Energy, rather than the NRC, has responsibility.<sup>27</sup> On appeal, GANE objects to the Licensing Board's "jurisdictional" ruling with regard to DOE and argues that contention 2 *did* focus on the *additional* impacts attributable to the *Vogtle plant*.<sup>28</sup> We agree, however, with the Board's rejection of the contention.

As the Licensing Board correctly pointed out, GANE's filings in connection with contention 2 consisted primarily of a discussion of radioactive releases from the Savannah River Plant and groundwater contamination resulting from those releases.<sup>29</sup> GANE did not challenge any applicant or NRC staff calculations regarding releases from the Vogtle plant. Although the contention cites NRC regulations, it does not explain how releases from Vogtle might exceed regulatory standards or result in any more than a *de minimis* impact on the environment overall. Apart from a highly generalized assertion that it is necessary to quantify properly the extent of the Savannah River Plant releases in order to be able to evaluate any incremental effect of releases from Vogtle in the event of an accident, GANE did not attempt to correlate the likely additional releases from

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<sup>24</sup> See *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 230-31 (1986) (discussing the basis and specificity requirements and citing *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21, *modified on other grounds*, CLI-74-32, 8 AEC 217 (1974)).

<sup>25</sup> Specifically, contention 2 reads: "Applicant has failed to assess the environmental and public health effects of the addition of Plant Vogtle within 20 miles of the SRP and to quantify this factor in its consideration in violation of 10 C.F.R. 20.103, 50.34(a)(4), 51.21, 51.23(b), 104, 105, 106 and 201." LBP-84-35, 20 NRC at 913.

<sup>26</sup> See GANE Supplement to Petition for Leave to Intervene and Request for Hearing (April 11, 1984) [hereinafter "GANE Supplement"] at 3; untitled GANE filing (June 13, 1984) [hereinafter "GANE's Amended Contention 2"].

<sup>27</sup> LBP-84-35, 20 NRC at 914.

<sup>28</sup> GANE Brief at 3.

<sup>29</sup> LBP-84-35, 20 NRC at 914. Over the applicants' objection, the Licensing Board allowed GANE to expand upon its original filing, both orally and in writing. *Id.* at 914 n.3.

Vogtle with any meaningful environmental effect. Its argument is simply that *any* radiological releases from Vogtle will aggravate another situation *already* unacceptable to GANE due to operations conducted at the Savannah River Plant, including, particularly, the proposed reactivation of the L-reactor. Thus, the Licensing Board fairly construed GANE's contention 2 as lacking a reasonably specific relationship to matters within the NRC's domain.

GANE has also conceded that DOE has evaluated the potential cumulative effects from the operation of SRP and Vogtle in light of its proposal to restart the L-reactor, and that, if DOE's assessment is correct, "the radiological health effects of [the Savannah River Plant] and Vogtle on the populations at risk are trivial by comparison to background radiation."<sup>30</sup> GANE, however, argued below that DOE's draft and final environmental impact statements are flawed and that, as a consequence, there is no way to measure any cumulative effects from the addition of Vogtle. But the Licensing Board correctly suggested that GANE direct such arguments to DOE, the agency responsible for SRP.<sup>31</sup> The NRC has no obligation — particularly here in the circumstances of the wholly unrelated Vogtle and SRP facilities — to duplicate DOE's review.<sup>32</sup>

B. GANE's contention 5 challenges the seismic evaluation of the Vogtle plant. More particularly, GANE argues that the applicants have not properly taken into account recent data regarding either the so-called Millett Fault or the 1886 Charleston earthquake.<sup>33</sup> After deferring its ruling, in part, pending the receipt of more information, the Board eventually rejected both aspects of contention 5 for lack of a basis.<sup>34</sup> We affirm the Board's rulings.

1. *Millett Fault*. As the Licensing Board explained, GANE rested its contention, in part, on information released in 1982 by the U.S. Geological Survey (USGS) relating to the postulated Millett Fault, about seven miles from the Vogtle site. Following issuance of that report, the applicants made a further study to determine if the fault exists and found no such evidence within the depths to which its study extended. The applicants also found that, even if a fault existed at a depth below which it investigated, such fault would not be "capable" in view of the age of the undisturbed overlying sediments.<sup>35</sup> This information was made available to USGS and, in a 1983 USGS report written by one of

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<sup>30</sup> GANE's Amended Contention 2, Statement of W.F. Lawless (June 7, 1984) at 3.

<sup>31</sup> LBP-84-35, 20 NRC at 914.

<sup>32</sup> See *Limerick*, ALAB-785, 20 NRC at 874. See also *Crounse Corp. v. ICC*, 781 F.2d 1176, 1194-95 (6th Cir. 1986).

<sup>33</sup> GANE Brief at 4-6.

<sup>34</sup> LBP-84-35, 20 NRC at 896-97; Memorandum and Order of September 12, 1985.

<sup>35</sup> A "capable fault" is a fault that has exhibited one or more of the following characteristics: movement at or near the ground surface at least once within the past 35,000 years or movement of a recurring nature within the past 500,000 years; macro-seismicity instrumentally determined with records of sufficient precision to demonstrate a direct relationship with the fault; a structural relationship to a capable fault such that movement on one could be reasonably expected to be accompanied by movement on the other. See 10 C.F.R. Part 100, Appendix A, III(g).

the authors of the earlier document, the Millett Fault was not included among documented faults in the eastern United States.<sup>36</sup> Noting that "GANE offered no basis in support of its allegation that the Millett Fault exists, is capable and should be considered," the Licensing Board thereafter rejected this portion of contention 5.<sup>37</sup>

GANE asserts that the Board should not have discounted the existence and capability of the Millett Fault. A licensing board, of course, may not reach the merits of a factual controversy when considering the admissibility of contentions.<sup>38</sup> But here, the contention rests squarely on a factual underpinning that has been essentially repudiated by its original source (USGS), and the intervenor offered no independent information to support its allegation. In the circumstances, the Licensing Board acted reasonably in dismissing the contention.

2. *Charleston Earthquake.* The large earthquake of 1886 at Charleston, South Carolina, dominates the seismic analysis for plants in the southeastern United States. In the 1974 proceeding authorizing the construction permit for Vogtle, the Licensing Board noted that the Charleston earthquake (the epicenter of which was 104 miles from Vogtle) produced an intensity *at the Vogtle site* of no greater than VII on the Modified Mercalli Intensity Scale. Given the consensus view of government agencies at the time that any repetition of a Charleston-type earthquake would be confined to the Charleston area,<sup>39</sup> the Board approved a plant design intended to withstand a recurrence of a Charleston-type event.<sup>40</sup> In 1982, however, the USGS clarified somewhat its position on the Charleston earthquake. It continued to acknowledge that there was no evidence to show that regions other than Charleston had experienced strong earthquakes and indicated, further, that the probability of strong ground motion due to an earthquake at other eastern seaboard locations "may be very low."<sup>41</sup> But it observed that "the historical record is not, of itself, sufficient grounds for ruling out the occurrence in these other regions of strong seismic ground motions similar to those experienced near Charleston in 1886."<sup>42</sup> USGS nonetheless reiterated its historic position that seismic engineering parameters

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<sup>36</sup> See Applicants' Response to GANE and CPG Supplements to Petitions for Leave to Intervene (May 7, 1984) at 33-35; Tr. 13.

<sup>37</sup> LBP-84-35, 20 NRC at 896.

<sup>38</sup> *Limerick*, ALAB-845, 24 NRC at 230.

<sup>39</sup> See Safety Evaluation of the Alvin W. Vogtle Nuclear Plant, Units 1, 2, 3, and 4 (Supp. 1, May 1, 1974), Appendix H (Letter from Director, USGS, to L. Manning Muntzing, Director of Regulation, U.S. Atomic Energy Comm'n). See generally *South Carolina Electric & Gas Co.* (Virgil C. Summer Nuclear Station, Unit 1), LBP-73-11, 6 AEC 213, 218, 225, *modified and aff'd*, ALAB-114, 6 AEC 253 (1973).

<sup>40</sup> See *Georgia Power Co.* (Alvin W. Vogtle Nuclear Plant, Units 1, 2, 3, and 4), LBP-74-39, 7 AEC 895, 914 (1974), *aff'd*, ALAB-375, 5 NRC 423 (1977).

<sup>41</sup> NRC Staff Response to Licensing Board Letter of July 12, 1984 (July 23, 1984) (attached letter (November 18, 1982) from James F. Devine to NRC).

<sup>42</sup> *Ibid.*



be predicated on the assumption that earthquakes similar to the Charleston event would occur only in the vicinity of Charleston, although it recommended that the Commission undertake evaluations of seismic hazard for individual plants. Pointing to that USGS clarification, GANE claims that the Licensing Board should have accepted its contention.

The Board, in fact, initially deferred ruling on this aspect of GANE's contention. Instead, it specifically solicited the staff's and other parties' comments on not only the 1982 USGS position on the Charleston earthquake but also a more recent report that considered Vogtle specifically, NUREG/CR-3756, "Seismic Hazard Characterization of the Eastern United States" (April 1984).<sup>43</sup> With the Board's permission, the staff addressed this matter in its subsequent Safety Evaluation Report (SER) for the Vogtle plant.<sup>44</sup> Despite being given the opportunity to comment on the SER, GANE did not do so.<sup>45</sup>

As the Licensing Board discussed, the SER expressly evaluates the USGS clarification, NUREG/CR-3756, and more recent reports and studies of the Charleston earthquake as recommended by USGS. The SER essentially reiterates, however, the staff position at the construction permit phase, that the seismic design of Vogtle is adequate in light of existing information concerning the Charleston earthquake.<sup>46</sup> The applicants' FSAR is to the same effect.<sup>47</sup> GANE does not challenge those analyses. We therefore agree with the Licensing Board — after its thorough consideration of the matter — that there is no basis for GANE's contention that "new" (i.e., 1982) "data" from the USGS have not been properly assessed.<sup>48</sup>

### III. QUALITY ASSURANCE CONTENTION

A significant portion of GANE's appellate brief (and virtually all of its oral argument before us) is devoted to a challenge to the Licensing Board's summary disposition of the contention dealing with alleged quality assurance deficiencies. GANE and former intervenor CPG tendered identical contentions alleging generally that the applicants had failed to enforce a quality assurance

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<sup>43</sup> LBP-84-35, 20 NRC at 896-97.

<sup>44</sup> See NUREG-1137, "Safety Evaluation Report Related to the Operation of the Vogtle Electric Generating Plant, Units 1 and 2" (June 1985) [hereinafter "June 1985 SER"].

<sup>45</sup> Memorandum and Order of September 12, 1985, at 2, 3.

<sup>46</sup> *Id.* at 4. See June 1985 SER at 2-36 to 2-38, 2-44 to 2-46.

<sup>47</sup> See Vogtle Final Safety Analysis Report (Amendment 7, May 1984), §§ 2.5.2.1, 2.5.2.3, 2.5.2.4.

<sup>48</sup> See LBP-84-35, 20 NRC at 896 (statement of contention 5); Memorandum and Order of September 12, 1985, at 4. We note that in *South Carolina Electric & Gas Co.* (Virgil C. Summer Nuclear Station, Unit 1), ALAB-710, 17 NRC 25, 26-27 (1983), we evaluated the same 1982 USGS position on the Charleston earthquake. We concluded that it provided no ground for reconsidering the Licensing Board's previous findings of adequacy of the seismic design of that South Carolina plant.

(QA) program (including quality control (QC)) at Vogtle.<sup>49</sup> They pointed to violations of Commission regulations, alleged defects in equipment, imposition of a civil penalty against the company, and allegations of drug and alcohol use at the construction site to illustrate what GANE described as "[t]he complete failure of the QA/QC program at Vogtle."<sup>50</sup> They also alleged that "[t]he number of past and continuing failures of the Georgia Power/Bechtel QA/QC program represents a pattern which indicates an undue risk to the health and safety of the public."<sup>51</sup>

Notwithstanding the applicants' and the staff's protests (including the claim that the proffered QA contentions were too vague for meaningful, focused litigation), the Licensing Board noted its concern that the matters cited by GANE and CPG might have an impact on the operational safety of the plant. The Board thus admitted the contentions but directed the parties to confer about more specific wording.<sup>52</sup> In due course, GANE's and CPG's contentions were consolidated, restated, and admitted, as follows:

Applicants have not and will not implement a quality assurance program for Plant Vogtle for welding, for properly documenting the placement of concrete, for adequately testing concrete, for the preparation of correct concrete quality test records, for procuring material and equipment that meet applicable standards, for protecting equipment and for taking corrective action as required, so as to adequately provide for the safe functioning of diverse structures, systems and components, as required by 10 C.F.R. Part 50, Appendix B, such that reasonable assurance exists that operation of the facility will not endanger the public health and safety.<sup>53</sup>

Thereafter, the applicants tendered a motion for summary disposition, accompanied by ten affidavits, a statement of assertedly undisputed material facts, and a host of reports, letters, and other information bearing on the issue of quality assurance.<sup>54</sup> The NRC staff filed an answer supporting the motion.<sup>55</sup> Its filing included affidavits from staff members with inspection responsibilities at Vogtle, attesting to the overall effectiveness of the quality assurance program.

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<sup>49</sup> See GANE Supplement at 16; CPG Supplement to Petition for Leave to Intervene and Request for Hearing (April 11, 1984) at 14. See generally 10 C.F.R. Part 50, Appendix B (quality assurance requirements).

<sup>50</sup> GANE Supplement at 21.

<sup>51</sup> *Id.* at 19.

<sup>52</sup> LBP-84-35, 20 NRC at 900-02. But see *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 466-67 (1982), *rev'd in part on other grounds*, CLI-83-19, 17 NRC 1041 (1983) (conditional admission of contentions is prohibited).

<sup>53</sup> LBP-84-49, 20 NRC at 1462.

<sup>54</sup> Applicants' Motion for Summary Disposition of Joint Interveners' Contention 8 (Quality Assurance) (June 24, 1985) [hereinafter "Summary Disposition Motion"].

<sup>55</sup> NRC Staff Response to Applicants' Motion for Summary Disposition of Contention 8 (August 5, 1985) [hereinafter "Staff Response"].

The intervenors opposed the motion but did not present any rebuttal affidavits.<sup>56</sup> Rather, relying on information earlier submitted, they presented three principal arguments. First, they claimed that the motion was premature because the NRC's Advisory Committee on Reactor Safeguards had not yet offered its views on the Vogtle project, and the intervenors had yet to identify their witnesses or to complete their investigation of alleged quality assurance breakdowns. They indicated that they would be prepared to rebut or to impeach the applicants' case by way of testimony or cross-examination when hearings on the contention were held. Second, they asserted that the applicants had improperly relied on their so-called Readiness Review Program in an effort to excuse a failure to comply with Commission quality assurance requirements.<sup>57</sup> In the intervenors' view, the discovery of quality assurance breakdowns by the Readiness Review Program, in fact, demonstrated a breakdown in the quality assurance program. Third, they alleged that material facts were in issue. In their view, the information they had submitted was sufficient to justify further exploration at a hearing. In this connection, the intervenors made clear that they were not suggesting that the quality assurance failures they presented as illustrations were individually of any concern.<sup>58</sup> Instead, they were disturbed over

the *pattern* of problems, not the specific examples of that pattern. That correction has been or will be performed for the specific examples cited by Intervenors is in no way a response to the contention concerning the pattern. . . .

The question of whether individual problems have been solved avoids the Intervenors' and the Board's concern about root causes and generic implications of the QA breakdowns.<sup>59</sup>

The Licensing Board granted the applicants' motion. As a threshold matter, it noted that the Advisory Committee on Reactor Safeguards had recently issued its report on Vogtle (which did not affect the QA issue). Next, it found that the applicants' statement of undisputed material facts was "correct and complete on the issues."<sup>60</sup> The Board indicated that the affidavits revealed that the quality assurance program met applicable regulatory requirements and functioned in accordance with the intent of the Commission's regulations. The Board took account of the alleged material facts on which the intervenors relied

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<sup>56</sup>Response to Applicants' Motion for Summary Disposition of Intervenors' Contention 8 (July 31, 1985) [hereinafter "Intervenors' Response"].

<sup>57</sup>The Readiness Review Program is described in the affidavit of W.C. Ramsey, the program manager, appended to the applicants' motion for summary disposition. It is characterized as a "pilot" program designed to "gain added assurance of the operational readiness of the Vogtle" plant. Summary Disposition Motion, Ramsey Affidavit at 3. According to the affidavit, the program is not intended to supplant the usual quality assurance program but is supposed "to increase the assurance that quality program activities at Plant Vogtle have been accomplished in accordance with regulatory requirements." *Id.* at 4-5.

<sup>58</sup>Intervenors' Response at 5.

<sup>59</sup>*Id.* at 12 (emphasis in original).

<sup>60</sup>Memorandum and Order of October 3, 1985, at 6.

but concluded that the intervenors' presentation, including the promise to provide further information, was insufficient to establish the existence of conflicting material facts. The Board observed:

Joint Intervenors offer nothing substantive and specific beyond the discrepant situations dealt with by Applicants, which they do not controvert; nor do they offer anything specific and probative in support of their allegation that the [quality assurance program] is not working.<sup>61</sup>

The Board also rejected the argument that the Readiness Review Program was simply a substitute for an adequate quality assurance program. It characterized this program as "an overlay to [the quality assurance] effort serving to increase the confidence of management in the operational readiness of [Vogtle]."<sup>62</sup> Finally, the Board evaluated the "discrepant situations" identified by intervenors and observed that "none . . . has been shown to carry any material safety significance with respect to plant operation nor does the totality of them indicate a pervasive breakdown of Applicants' [quality assurance program]."<sup>63</sup>

The intervenors sought reconsideration of the Board's determination "and/or a continuance of the Board's ruling . . . to permit proper affidavits to be prepared in response to Applicant's Motion for Summary Disposition."<sup>64</sup> The intervenors maintained that, contrary to the Board's finding, material facts were present. In this connection, they referred to "specific hardware deficiencies" and "undiscovered specific deficiencies to confirm a pervasive breakdown in the QA/QC program."<sup>65</sup> As to the former, the intervenors acknowledged that they had not presented evidence to challenge the applicants' representation that specific deficiencies had been corrected; they were unprepared, however, to concede that corrections had been made. As to the latter, the intervenors argued that, "if they were granted time to prepare for hearing[,] . . . former workers and/or site employees would testify to the pervasive breakdown by demonstrating specific, uncorrected deficiencies."<sup>66</sup> In this connection, they included as part of their submission an affidavit from the Director of the Environmental Whistleblower Protection Clinic. She asserted that she had been contacted by current and former Vogtle employees regarding deficiencies and that "[i]f the Board grants the Motion for Reconsideration all workers who have contacted GAP [the Government Accountability Project] or the Environmental Whistleblower Protection Project will be apprised of the opportunity to participate in [the] hearings"

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<sup>61</sup> *Id.* at 7.

<sup>62</sup> *Ibid.*

<sup>63</sup> *Id.* at 9.

<sup>64</sup> CPG/GANE Motion for Reconsideration (October 28, 1985) at 1.

<sup>65</sup> *Id.* at 8.

<sup>66</sup> *Id.* at 9.

and “[a]ffidavits from those who agree to participate will be submitted.”<sup>67</sup> The intervenors also reiterated their earlier assertion that the Board impermissibly relied on evidence about the Readiness Review Program to establish the applicants’ compliance with the Commission’s quality assurance requirements. In GANE’s view, the Readiness Review Program revealed deficiencies that demonstrated generic problems at Vogtle.<sup>68</sup>

The Board denied the request for reconsideration or a continuance.<sup>69</sup> It found that the intervenors had presented no rebuttal to the affidavits of the applicants and the NRC staff demonstrating that deficiencies had been discovered and resolved, that there had been no breakdown in the quality assurance program, and that the program was effective. The Commission’s regulations and case law, the Board remarked, “do not allow for successful opposition to the motion [for summary disposition] on the basis of unsupported allegations or on hopes of what may be developed if one could obtain additional time.”<sup>70</sup>

We find nothing in GANE’s presentation that undermines the Board’s determination. In reviewing the Board’s ruling and GANE’s arguments, it is necessary to bear in mind the standard by which quality assurance compliance is to be tested. As we noted in our *Callaway* opinion:

In any project even remotely approaching in magnitude and complexity the erection of a nuclear power plant, there inevitably will be some construction defects tied to quality assurance lapses. It would therefore be totally unreasonable to hinge the grant of an NRC operating license upon a demonstration of error-free construction. Nor is such a result mandated by either the Atomic Energy Act of 1954, as amended, or the Commission’s implementing regulations. What they require is simply a finding of reasonable assurance that, as built, the facility can and will be operated without endangering the public health and safety. . . .

. . . [T]his inquiry necessitates careful consideration of whether all ascertained construction errors have been cured. Even if this is established to be the case, however, there may remain a question whether there has been a breakdown in quality assurance procedures of sufficient dimensions to raise legitimate doubt as to the overall integrity of the facility and its safety-related structures and components. A demonstration of a pervasive failure to carry out the quality assurance program might well stand in the way of the requisite safety finding.<sup>71</sup>

The gist of the intervenors’ claim below, and GANE’s argument on appeal, is that the cited deficiencies are evidence of a pattern that suggests a high likelihood that some structure, system or component will eventually fail, and that, given a hearing, “whistleblowers” could confirm failings (including uncorrected

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<sup>67</sup> *Id.*, Affidavit of Billie Firner Garde at 2.

<sup>68</sup> *Id.* (Motion) at 9-10.

<sup>69</sup> Memorandum and Order of December 3, 1985.

<sup>70</sup> *Id.* at 6.

<sup>71</sup> *Union Electric Co.* (Callaway Plant, Unit 1), ALAB-740, 18 NRC 343, 346 (1983). See also *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-756, 18 NRC 1340, 1345 (1983).

deficiencies) in the Vogtle quality assurance program. But GANE's arguments are unpersuasive.

In the first place, both the applicants and the staff tendered extensive affidavits analyzing each of the supposed quality assurance deficiencies cited by the intervenors, and explaining how each had been resolved. GANE did not attempt to rebut by way of countervailing affidavits the applicants' assertion that no material issues were in dispute. Moreover, in its response to the motion for summary disposition, and in its brief on appeal and at oral argument, GANE has not demonstrated that any known construction defects have gone unattended. Indeed, it acknowledged at oral argument that it was not attacking the resolution of discrete errors uncovered during the course of construction.<sup>72</sup> We, too, are satisfied that all ascertained construction errors have been properly cured.

To be sure, as in any project of like magnitude, there were a number of deficiencies uncovered during the course of construction of the Vogtle plant. But, as noted earlier, the fact that deficiencies occur during the course of construction of a nuclear power plant does not mean that there has been a pervasive failure of the quality assurance program or that the plant is unsafe. At Vogtle, some of the deficiencies noted by the intervenors were uncovered by the applicants during the normal course of their quality assurance review. This constitutes evidence that the applicants' program was working as intended. Other deficiencies were uncovered by the NRC staff as part of its inspection responsibility, and notices of violation were issued. The applicants pointed out, however, that they never received any violations above Severity Level IV.<sup>73</sup> And the NRC staff submitted affidavits from staff employees with inspection responsibilities, indicating that the deficiencies were generally of a type to be expected in projects of this size and did not indicate a pervasive breakdown in quality assurance.<sup>74</sup> Those affidavits were un rebutted. GANE even seemed to concede at oral argument that the applicants have "done the big things correctly."<sup>75</sup> In the circumstances, we thus conclude that the Licensing Board properly found, from the information submitted, that all material evidence was known and uncontroverted and that no genuine challenge to the efficacy of the applicants' quality assurance program (i.e., no pervasive breakdown or pattern of failures) had been presented.

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<sup>72</sup> App. Tr. 13.

<sup>73</sup> Summary Disposition Motion at 78. The NRC divides violations into five levels of severity, with Severity Level I being the most severe and Level V the least severe. Violations at Levels I and II are considered to be of "very significant regulatory concern" and Level III violations are considered of "significant concern." Level IV violations are "less serious but more than minor concern," and Level V violations are considered to be of "minor safety significance." See 10 C.F.R. Part 2, Appendix C, III. See also *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-788, 20 NRC 1102, 1143 n.238 (1984).

<sup>74</sup> See, e.g., Staff Response, Affidavits of Edward H. Girard at 3-4, John R. Harris and Joseph J. Lenahan at 12-14, and William P. Kleinsorge at 2-4.

<sup>75</sup> App. Tr. 15.

We also believe that the Licensing Board was not required to defer the proceeding on the basis of the intervenors' unsupported promise that some potential witnesses might eventually step forward to lend support to their claim of quality assurance lapses. As GANE pointed out at oral argument, it began receiving information from Vogtle workers even before the licensing proceedings began.<sup>76</sup> The intervenors advised the Licensing Board as early as the 1984 prehearing conference that they were receiving allegations about the asserted inadequacy of the quality assurance program from individuals "inside the industry as well as once in a while people on the construction site."<sup>77</sup> Yet, more than a year later, they were unable to document these allegations in response to the applicants' motion for summary disposition. Indeed, as noted above, in their request for reconsideration of the Licensing Board's summary disposition ruling, the intervenors stated they could only promise that "[i]f the Board grants the Motion for Reconsideration all workers who have contacted GAP or the Environmental Whistleblower Protection Project will be apprised of the opportunity to participate in these hearings."<sup>78</sup> Although we are sensitive to the difficulties inherent in getting individuals to testify at public hearings about alleged QA problems, we cannot fault the Licensing Board's decision to decline to give intervenors still more time to demonstrate the need for a hearing on their QA contention. The Board simply had no assurance either that witnesses would testify in support of the intervenors' charges, or that their testimony would be pertinent.<sup>79</sup> Indeed, at oral argument, GANE acknowledged the difficulty it had in obtaining commitments from its potential witnesses. It observed:

So I will be very forthright in saying legally, I believe my organization has failed dramatically. I mean, the lower board gave us a lot of leeway knowing they were working with laymen as far as late filings. I believe even the Applicant was somewhat conscious of the fact that they were working with people who were not legal experts and were overwhelmed, I guess would be the point.<sup>80</sup>

In sum, we affirm the Licensing Board's summary disposition of contention 8.

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<sup>76</sup> App. Tr. 62.

<sup>77</sup> Tr. 50.

<sup>78</sup> CPG/GANE Motion for Reconsideration, Affidavit of Billie Pimer Garde at 2.

<sup>79</sup> This is not to say that a party is precluded from attempting to "make its case" solely by cross-examination of an opponent's witnesses. But, as the Licensing Board correctly observed, this assumes that such party has successfully resisted a motion for summary disposition — i.e., disputed issues of material fact, which must be resolved through hearing, have been demonstrated in the pleadings. Memorandum and Order of December 3, 1985, at 6.

<sup>80</sup> App. Tr. 64.

#### IV. GROUNDWATER CONTAMINATION

The Vogtle plant sits atop two major aquifers that contribute to public water supplies in the area.<sup>81</sup> These aquifers are separated from the plant by a 60-foot layer of dense clay, known as the Blue Bluff Marl (excavation has reduced the marl thickness to about 38 feet under the auxiliary building). The marl is classified as an aquiclude, i.e., it impedes the flow of water from the surface to the two aquifers. In addition, groundwater exists in shallow, discontinuous bodies referred to as the water-table aquifer.<sup>82</sup>

GANE was initially concerned that an accident at the plant could result in radioactive water seeping into the aquifers located below the marl and contaminating the water supplies. Contention 7, as admitted for litigation, reads:

Applicant has not adequately addressed the value of the groundwater below the plant site and fails to provide adequate assurance that the groundwater will not be contaminated as required by 10 C.F.R. 51.20(a), (b), and (c), 10 C.F.R. 50.34(a)(1), and 10 C.F.R. 100.10(c)(3).<sup>83</sup>

GANE's appeal, however, centers more narrowly on the Licensing Board's rejection of its hypothesis that certain wells and other exploratory holes filled with grout (a sealing material) could serve as a pathway for contamination. GANE argues that "[i]t was indisputably clear in the hearing that the Applicants had provided a route for contamination of the Aquifer by drilling wells through the marl beneath the site and into the aquifer."<sup>84</sup> In this connection, GANE attacks the Board's refusal to give weight to the judgment of its witness, William F. Lawless, that settlement of the plant above the marl could adversely affect the ability of the grouted wells to impede contamination of the aquifers. It also faults the Board for not relying on Mr. Lawless's testimony regarding supposedly similar contamination at the nearby Savannah River Plant. GANE claims that "Mr. Lawless is far more expert in these areas than are the witnesses for the Applicants or the Staff."<sup>85</sup> But as we explain below, GANE has provided no basis for rejecting the Board's decision.

We first observe, in passing, that our review of this aspect of the appeal has been particularly hampered by GANE's failure — once again — to direct our attention to those portions of the record that purportedly support its claim of Board error. Although the hearing lasted four days and covers several hundred pages of transcript, GANE refers us only to "the transcript of the hearings" as

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<sup>81</sup> LBP-86-28, 24 NRC at 271.

<sup>82</sup> *Ibid.*

<sup>83</sup> LBP-84-35, 20 NRC at 898.

<sup>84</sup> GANE Brief at 7.

<sup>85</sup> *Id.* at 8.



the evidentiary predicate for its appeal.<sup>86</sup> As we discussed above in connection with other portions of GANE's brief, the appeal of contention 7 issues could be dismissed for failure to comply with the NRC's Rule of Practice that a brief identify "the precise portion of the record relied upon in support of the assertion of error."<sup>87</sup> Nevertheless, because of the potential significance of the matter if GANE's generalized claims were supported, we have fully reviewed the record.

We find no basis for overturning the Licensing Board's ultimate conclusion that the various holes drilled in the marl will not provide a route for contaminants to the groundwater below. As a practical matter, the Board reached this determination in stages. The applicants originally sought summary disposition of contention 7 in its entirety.<sup>88</sup> In support of that request, they tendered an affidavit from three geologists discussing data obtained from the wells and other exploratory holes drilled through the marl. In rebuttal, the intervenors submitted an affidavit that, among other things, expressed concern over an apparent lack of information dealing with the closure of these exploratory holes.<sup>89</sup> The Licensing Board found, however, that the closure of the holes was documented in the applicants' affidavit; it indicated, in this regard, that all but three wells had been grouted closed in accordance with normal engineering practice.<sup>90</sup> It also determined that the three ungrouted wells present no risk of contamination to the water supply.<sup>91</sup> Although the intervenors criticized the method for closing the holes,<sup>92</sup> the Board, again relying on the affidavits of the applicants and the staff, was satisfied that the technique was adequate.<sup>93</sup> In sum, the Board decided that no issue of fact existed with respect to possible contamination of the aquifers through the exploratory wells or holes.<sup>94</sup>

The Board nevertheless declined to grant the motion for summary disposition in its entirety and, instead, set five issues of material fact for evidentiary exploration.<sup>95</sup> In addition, despite having summarily resolved issues dealing with the grouted wells, it permitted inquiry at the hearing into the impact that settlement of the Vogtle plant might have on the wells — characterizing this

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<sup>86</sup> *Id.* at 7.

<sup>87</sup> 10 C.F.R. 2.762(d)(1). *See supra* p. 131.

<sup>88</sup> *See Applicants' Motion for Summary Disposition of Joint Intervenors' Contention 7 (Ground-Water) (July 15, 1985) [hereinafter "Applicants' Contention 7 Motion"]*.

<sup>89</sup> *Intervenors' Response to Applicants' Motion for Summary Disposition of Contention 7 (August 9, 1985) [hereinafter "Intervenors' August 9 Response"]*, Affidavit of W.F. Lawless at 8.

<sup>90</sup> Memorandum and Order of November 12, 1985, at 21-23.

<sup>91</sup> *Id.* at 22.

<sup>92</sup> *Intervenors' August 9 Response*, Affidavit of W.F. Lawless at 6.

<sup>93</sup> Memorandum and Order of November 12, 1985, at 22.

<sup>94</sup> *Id.* at 22-23.

<sup>95</sup> Those issues were (1) the adequacy of the geological/hydrological exploration of the Vogtle site, (2) uncertainty in data on marl thickness and permeability, (3) data on marl continuity, (4) direction of groundwater flow, and (5) groundwater travel time. *Id.* at 30.

as "a collateral issue."<sup>96</sup> Following the hearing, the Board resolved all issues in the applicants' favor.<sup>97</sup> It adopted the applicants' estimate of marl permeability and concluded that there are no voids, fissures, or fractures that would allow radioactive material to penetrate the marl itself and get into the aquifers below.<sup>98</sup> The Board specifically found that settlement of the structures above the grouted wells could not result in the opening of any flow paths for contaminants through the marl.<sup>99</sup>

GANE does not now challenge the Board's determination that the method of grouting assures that the holes are completely filled. Instead, it presses a claim that, if additional settlement of the buildings atop the marl were to occur, certain physical characteristics or properties of the marl and the grouted wells would result in "differential motion" that could allow contamination to flow downward through the marl into the aquifers below. As Mr. Lawless testified:

Assuming the grouted wells under the [Vogtle] power block are one complete solid, then as the power block settles, those grouted wells directly under the block will be punched downward at a one-to-one rate, a rate that may be different ("differential") for the marl. Applicants have concluded that the marl is impermeable, but have not shown whether the marl is incompressible, or whether the marl will deform downward at the same rate as the grouted wells. The grouted wells are likely less compressible in a vertical direction than the more elastic marl. As these grouted wells settle, driven by the weight of the power block atop them, they act like spikes. With plastic deformation of the marl, it is possible that the bottom of the grouted wells may separate and core out at the bottom of the marl. If so, the integrity of the marl would be diminished.<sup>100</sup>

The Board rejected Mr. Lawless's scenario and we find its ruling well-founded. Mr. Lawless conceded on cross-examination that he did not know the relative compressive strengths of the grout and the marl and that, absent such knowledge, it was difficult to compare their elastic properties.<sup>101</sup> He likewise acknowledged that he was unfamiliar with the extent of settlement at the Vogtle plant.<sup>102</sup> Thus, his testimony postulated an entirely hypothetical situation. In contrast, the applicants' witness, Thomas W. Crosby, testified that (a) the marl is more rigid than the grout columns, (b) slippage of the grout columns is unlikely because of the significant frictional area between the marl and the columns, and (c) because of its physical properties, the marl would either resist penetration

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<sup>96</sup> LBP-86-28, 24 NRC at 284-85.

<sup>97</sup> *Id.* at 286.

<sup>98</sup> *Id.* at 281. Although the marl would not protect the water-table aquifer from contamination, the Board also found that any radioactivity that gets into that aquifer would flow into Mathes Pond or the Savannah River and become diluted, so as to pose no threat to public water supplies. *Ibid.* GANE does not challenge that aspect of the Board's decision on appeal.

<sup>99</sup> *Id.* at 286.

<sup>100</sup> Lawless, fol. Tr. 720, at 7-8 (December 15, 1985 submission).

<sup>101</sup> Tr. 747-48.

<sup>102</sup> Tr. 746-47.

by the grout columns or tend to close any openings that might occur.<sup>103</sup> The Licensing Board, reviewing all the testimony as well as an affidavit earlier submitted by another of the applicants' experts, Walter R. Ferris, concluded that the grout columns will not move at a rate different from that of the marl, and that there is thus no risk to the integrity of the marl.<sup>104</sup>

The Board's findings and conclusions rest essentially on the testimony and other documentation provided by the witnesses for the applicants and the NRC staff. We cannot agree with GANE either that the applicants' witnesses (whom GANE does not identify) acknowledged that they were not experts,<sup>105</sup> or that the Board improperly rejected Mr. Lawless's conflicting testimony.

To begin with, the Board relied in part on an affidavit submitted by Mr. Ferris during the prehearing phase of the case, indicating that the applicants had conducted a settlement monitoring program and that settlement had nearly ceased. By the time of the hearing, settlement was thus an "undisputed" issue.<sup>106</sup> Mr. Ferris is a civil engineer who is a specialist in soil mechanics.<sup>107</sup> GANE did not challenge his credentials. Furthermore, Mr. Ferris's conclusion was endorsed at the hearing by an NRC staff witness<sup>108</sup> whose qualifications were similarly not challenged.

The Board also relied on the testimony of Messrs. Crosby, Clifford R. Farrell, and Lewis R. West, who are geologists,<sup>109</sup> and Dr. Stavros S. Papadopoulos, who is a hydrologist.<sup>110</sup> Mr. Lawless himself characterized these individuals as "four reputable scientists."<sup>111</sup> To be sure, Mr. Crosby admitted that he was not an expert on the subject of settlement of structures,<sup>112</sup> and Dr. Papadopoulos acknowledged that he was not an expert in the elastic properties of the materials in question.<sup>113</sup> But the Board clearly relied on Mr. Crosby's testimony to ascertain the physical characteristics of the marl and the grout — matters within his expertise as a geologist — and not to make any findings regarding settlement.<sup>114</sup> The Board essentially cited Dr. Papadopoulos's testimony only as

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<sup>103</sup> Tr. 792-94, 796, 800-05, 818. The physical property that would seal any openings was variously referred to in the record as "elasticity" and "plasticity." Whether through elastic or plastic deformation, the weight of the buildings and overlying material will cause any open space that might develop around a grout column to be filled by the surrounding marl. See LBP-86-28, 24 NRC at 285.

<sup>104</sup> LBP-86-28, 24 NRC at 285.

<sup>105</sup> Referring to the March 14, 1985, testimony, GANE claims that "the witnesses admitted under cross-examination that they had testified on matters in which they were not expert." GANE Brief at 7.

<sup>106</sup> LBP-86-28, 24 NRC at 285 n.14. See Applicants' Reply to Intervenor's Response to Applicants' Motion for Summary Disposition of Contention 7 (September 9, 1985), Affidavit of Walter R. Ferris at 3.

<sup>107</sup> *Id.*, Exhibit A.

<sup>108</sup> Tr. 776-77.

<sup>109</sup> Tr. 250, 251.

<sup>110</sup> Tr. 252.

<sup>111</sup> Tr. 307.

<sup>112</sup> Tr. 794, 799, 814.

<sup>113</sup> Tr. 805.

<sup>114</sup> LBP-86-28, 24 NRC at 285 & n.14.

added support for Mr. Crosby's expert testimony on the geologic properties of the marl.<sup>115</sup> Thus, even if the cited portion of Dr. Papadopoulos's testimony could be regarded as beyond the strict confines of hydrology, it was not crucial to the Board's decision. We therefore find nothing in the record to substantiate GANE's vaguely articulated doubts about the qualifications of the applicant and staff witnesses on the subjects for which their testimony was used.

We also believe that the Board accorded fair treatment to Mr. Lawless and his views. It found him to be "conversant," but lacking "professional qualifications," in the area of groundwater hydrology.<sup>116</sup> Although Mr. Lawless is plainly familiar with the issues with which GANE is concerned, he candidly admitted that he is neither a geologist nor a hydrologist.<sup>117</sup> Moreover, as noted earlier, he did not know the compressibility of the marl or the grout columns or the extent of settlement of the Vogtle plant.<sup>118</sup> As a consequence, the Board viewed his testimony as sufficient to raise — but not to resolve — various questions regarding the likelihood that the physical properties of the marl and the grouted wells, when affected by the settlement of the buildings, could produce a conduit for contamination.<sup>119</sup> Relying on the testimony of other more appropriately qualified witnesses, the Board proceeded to resolve those questions. It was satisfied — and so are we — that the grouted wells will not affect the ability of the marl to serve as a barrier against contamination.

Contrary to GANE's implied argument, the Board's conclusion is not undermined by an experience at the Savannah River Plant. It is clear that there was some unanticipated contamination of an aquifer at the SRP, probably through "discontinuous" areas of the aquiclude there. At the summary disposition phase of the case, the Board gave the matter thorough consideration and acknowledged that it is possible that the unanticipated contamination experienced at SRP could be repeated at Vogtle. But because of the more extensive exploration in the Vogtle area, it believed that it was even more likely that discontinuities in the Blue Bluff Marl, if they existed, would be discovered. More important, the Board noted that no purpose would be served in examining the relevance of the SRP contamination to Vogtle, given that specific issues relating to the adequacy of the geological/hydrological exploration, and marl thickness, permeability, and

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<sup>115</sup> *Id.* at 285.

<sup>116</sup> *Id.* at 270.

<sup>117</sup> Tr. 721. Mr. Lawless is currently an assistant professor of mathematics at Paine College in Augusta, Georgia. Tr. 719. He served for a time as a senior project engineer at the Savannah River Plant in Georgia. Tr. 722. GANE criticizes the Board's evaluation of Mr. Lawless's expertise. As the Board noted, however, GANE did not submit any qualifications statement for Mr. Lawless (as is ordinarily required for a witness), so his credentials could be ascertained only through cross-examination. LBP-86-28, 24 NRC at 270. In the circumstances, we find the Board's description and assessment of Mr. Lawless's background and qualifications reasonable.

<sup>118</sup> Tr. 746-51.

<sup>119</sup> See Memorandum and Order of November 12, 1985, at 6.

continuity *at Vogtle* were to be litigated in any event.<sup>120</sup> The hearing record bears out the Board's conclusion about the relevance of the SRP contamination to Vogtle. After extensive consideration of these matters, the Board found that the geology and hydrology of the Vogtle site have been adequately explored, and that the Blue Bluff Marl will protect the underlying aquifers from contamination.<sup>121</sup> GANE has failed to attack these findings in any meaningful way. We therefore agree with the Licensing Board's summary disposition of the SRP issue.

## V. MOTION TO REOPEN THE RECORD

Contention 10.6 alleged that certain motor operators manufactured by Limitorque were not qualified against steam spray as required by the Commission's environmental qualification regulation.<sup>122</sup> In response to this proffered contention, the applicants notified the parties and the Licensing Board that new and qualified motor operators had been ordered as replacements.<sup>123</sup> Both GANE and CPG agreed to advise the Board whether they still intended to pursue the Limitorque motor operator issue.<sup>124</sup> CPG notified the Board that it would not pursue the issue, but GANE did not respond at all. In due course, the Board thus rejected the contention as moot.<sup>125</sup> GANE now asks that this issue be reopened in view of what it describes as "a history of continuing problems."<sup>126</sup> In support of its request, it refers us to four Information Notices issued by the Commission's former Office of Inspection and Enforcement, which it claims demonstrate problems associated with these components.<sup>127</sup> The applicants and the NRC staff oppose GANE's request.

To prevail on a request to reopen a record, a movant must show that (1) its motion is timely (although a board may consider in its discretion an exceptionally grave issue even if not timely presented); (ii) the motion addresses a significant safety or environmental issue; and (iii) a materially different result would be or

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<sup>120</sup> *Id.* at 17-21.

<sup>121</sup> See LBP-86-28, 24 NRC at 271-79.

<sup>122</sup> See 10 C.F.R. 50.49.

<sup>123</sup> Letter from George W. Trowbridge to Laurie Fowler (June 27, 1984), Affidavit of William C. Ramsey at 2.

<sup>124</sup> See Tr. 75-77.

<sup>125</sup> LBP-84-35, 20 NRC at 905.

<sup>126</sup> GANE Brief at 17.

<sup>127</sup> See IE Information Notice No. 85-20 (March 12, 1985), Motor-Operated Valve Failures Due to Hammering Effect; IE Information Notice No. 86-02 (January 6, 1986), Failure of Valve Operator Motor During Environmental Qualification Testing; IE Information Notice No. 86-03 (January 14, 1986), Potential Deficiencies in Environmental Qualification of Limitorque Motor Valve Operator Wiring; IE Information Notice No. 86-71 (August 19, 1986), Recent Identified Problems with Limitorque Motor Operators.

would have been likely had the newly proffered evidence been considered.<sup>128</sup> GANE has not satisfied these criteria.<sup>129</sup>

We find that the motion does not raise a significant safety issue, and that a different result would not be likely if the information were considered.<sup>130</sup> To begin with, the generic notices reflect only the results of customary, ongoing surveillance and do not suggest any significant compromise or safety threat in the performance of the motor operators. Indeed, none of the notices imposed new regulatory requirements or mandated any action or response from any licensee or applicant recipient.

Nonetheless, the applicants have taken prompt action in response to the notices. An affidavit from Robert M. Bellamy, Plant Support Manager at Vogtle, addresses each of the matters raised in the four notices.<sup>131</sup> As clarified by subsequent correspondence from the applicants,<sup>132</sup> that affidavit details their response to each of the notices and explains either how the problems have been corrected or why they are not likely to arise at Vogtle.<sup>133</sup> At oral argument, we explored those issues of concern to us.<sup>134</sup> We are now satisfied that all pertinent safety matters have been resolved and that no additional evidentiary exploration is needed.

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<sup>128</sup> 10 C.F.R. 2.734. See also *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-865, 25 NRC 430, 441 (1987).

<sup>129</sup> The applicants also claim that GANE seeks to address an issue not previously admitted for litigation and must therefore satisfy the separate criteria for tendering contentions late. Applicants' Brief at 60. See 10 C.F.R. 2.714(a)(1). We agree. Although GANE notes that the Board rejected the original contention, it does not expressly challenge that rejection. Rather, the gist of its argument is that the four Information Notices — which it describes as "new evidence" — warrant further examination of the issue. Because we find that GANE has not met the criteria for reopening the record, we need not consider whether it can satisfy as well the criteria for late-filed contentions. See generally *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-828, 23 NRC 13, 17 (1986); *id.*, ALAB-834, 23 NRC 263, 266 n.10 (1986).

<sup>130</sup> Given our determination that GANE has failed to meet two of the three reopening criteria, we need not decide whether the request is timely. We note, however, that all four of the notices on which GANE now relies were available while some or all of the case was still pending before the Licensing Board; indeed, three of the four notices were available many months before the Board issued its August 1986 partial initial decision. GANE does not explain why it waited until it filed its appellate brief to renew the issue. Cf. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), CLI-85-8, 21 NRC 1111, 1114 (1985) (absent some justification for not promptly requesting a reopening of the record, seven-month delay in seeking reopening after the receipt of pertinent information rendered request untimely).

<sup>131</sup> See Applicants' Brief, Affidavit of Robert M. Bellamy (November 14, 1986).

<sup>132</sup> Letter from David R. Lewis to Appeal Board (January 15, 1987); Letter from Bruce W. Churchill to Appeal Board (February 12, 1987).

<sup>133</sup> For example, the most recent notice, IE Information Notice No. 86-71, addresses burn damage to internal wiring in several motor operators at the Vogtle plant. The damage was discovered by the applicants and reported to the Commission's staff. The wires burned because of their proximity to heater elements. The applicants have inspected the motor operators and replaced or repaired damaged wire where necessary. To prevent recurrence of the problem, the heater elements have been disconnected in all safety-related motor operators. Because the heater elements were intended for use during storage of the motor-operated valves, they are not necessary to the safe operation of the equipment.

<sup>134</sup> App. Tr. 31-38, 40-41. In fact, the applicants' February 12, 1987, letter providing further clarification of their remedial actions ( *supra* note 132) was prompted by questions we raised at oral argument.

## VI. SUA SPONTE REVIEW

We have exercised our authority to review sua sponte the entirety of both Licensing Board partial initial decisions and the underlying record, even as to issues where no appeal was taken.<sup>135</sup> We find no errors that call for corrective action — only one matter that warrants some comment.

Polymers are used in various applications at nuclear power plants (e.g., in electric cable insulation). Some of these applications have a bearing on safe operation. Over an extended period of time, the molecular structure of a polymer can be affected by exposure to radiation, causing the polymer to become brittle or to lose its electrical insulation capability.<sup>136</sup> The Licensing Board originally admitted contention 10.1, dealing with the environmental qualification of certain polymer materials. Relying on a report from the Sandia National Laboratories, this contention alleged that certain safety-related equipment at Vogtle contained polymers that might experience greater degradation from lower dose rates of radiation than would be expected based on testing at higher dose rates. (This is termed a "dose rate effect.")<sup>137</sup> After hearing substantial uncontroverted testimony on contention 10.1, the Board ultimately concluded that it was without merit. Specifically, the Board found that

polymer materials destined for use in safety-related [Vogtle] applications have acceptably passed an adequate environmental qualification program. Additional assurance as to the adequacy of these polymers will derive from an operational surveillance program to be implemented by Applicants.<sup>138</sup>

Thereafter (on September 18, 1986), the applicants advised both us and the Licensing Board (as well as the parties) of newly discovered information regarding contention 10.1. They pointed out that the polymer that showed discernible dose rate effects in the Sandia study is a member of a group of polymers designated as XLPO (cross-linked polyolefin) and, in particular, is a co-polymer of ethylene and vinyl acetate (EVA). At the hearing before the Licensing Board, the applicants' witnesses testified that EVA was not used in any safety-related equipment at Vogtle. The applicants have now learned, however, that XLPO insulation of certain instrumentation cable at Vogtle contains a polymer classified as EVA. They state that they will identify which cable is affected and will subject it to the surveillance program already established and required for safety-related equipment. The applicants also express the view that,

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<sup>135</sup> See *supra* note 5.

<sup>136</sup> See generally *Perry*, ALAB-841, 24 NRC at 95.

<sup>137</sup> See LBP-84-35, 20 NRC at 903.

<sup>138</sup> LBP-86-28, 24 NRC at 293.

in any event, the Sandia conclusions about dose rate effects do not prevent XLPO insulation from performing its intended electrical function.<sup>139</sup>

GANE did not comment on the applicants' letter, but the NRC staff counsel eventually submitted an affidavit containing the results of the staff's review of the information disclosed by the applicants. The staff concluded that the information does not change its earlier favorable evaluation of the safety-related equipment and corresponding maintenance and surveillance program at Vogtle.<sup>140</sup>

GANE does not challenge the Licensing Board's disposition of contention 10.1.<sup>141</sup> However, the Licensing Board included in its subsequent concluding initial decision a condition designed to address the issue raised by the applicants' September 18 letter. The Board stated:

As a condition precedent to the issuance of any operating licenses, it would first have to be initially determined by appropriate authority that the changed information contained in Applicants' letter of September 18, 1986, pertaining to XLPO insulation that contains vinyl acetate, does not lead to a conclusion that is inconsistent with that of this Board on Contention 10.1.<sup>142</sup>

In ALAB-859, we ruled that the license condition imposed by the Board in its concluding partial initial decision was not a bar to the issuance of a low-power operating license because the Board lacked authority to impose the condition. We also announced our intention to review, on the merits, the disposition of contention 10.1 (including the related correspondence subsequent to the Licensing Board's decision on the issue), pursuant to our *sua sponte* responsibilities.<sup>143</sup> We have done so.

The discovery of EVA at Vogtle raised the question of whether the applicants' cable surveillance program remained adequate to detect polymer degradation before a safety problem might arise. The results of the Sandia study (illustrated in figures attached to applicants' testimony) indicate that EVA exhibits a somewhat greater dose rate effect than the three other polymers tested.<sup>144</sup> The cumulative degradation of EVA, however, is not significantly different from the other polymers for the total integrated dose estimated over the 40-year operating life of Vogtle.<sup>145</sup> Thus, any severe polymer degradation would not occur overnight, but would develop over several years. The staff reports that all cable insulated with EVA will be identified and subjected to the applicants' cable surveillance

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<sup>139</sup> Letter from David R. Lewis to Gary J. Edles, et al. (September 18, 1986).

<sup>140</sup> Letter from Bernard M. Bordenick to C. Jean Shoemaker (January 14, 1987), Affidavit of Armando Masciantonio [hereinafter "Masciantonio Affidavit"].

<sup>141</sup> See GANE Brief at 16.

<sup>142</sup> LBP-86-41, 24 NRC at 904. See also *id.* at 928.

<sup>143</sup> 25 NRC at 27.

<sup>144</sup> Kitchens, et al., fol. Tr. 561, Figures 1-4.

<sup>145</sup> *Ibid.*



program.<sup>146</sup> In the circumstances, we conclude that the identification of EVA polymer as insulation for certain electric cables at Vogtle is not a significant safety concern. As we have stated in the past, polymer degradation is a long-term issue that can be met by an adequate surveillance program. In particular, relying in part on the same Sandia study, we came to such a conclusion in our consideration of possible polymer degradation during the operating life of the Perry nuclear power plant.<sup>147</sup>

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LBP-86-28 and LBP-86-41, as modified by ALAB-859, are *affirmed*.  
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker  
Secretary to the  
Appeal Board

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<sup>146</sup> Masciantonio Affidavit at 6. The staff also reaffirmed its earlier acceptance of the applicants' cable surveillance program, even in light of the discovery of EVA polymer at Vogtle. *Ibid*.

<sup>147</sup> See Perry, ALAB-841, 24 NRC at 95-97.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL PANEL

Alan S. Rosenthal, Chairman

In the Matter of

Docket Nos. 50-275-OLA  
50-323-OLA

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

September 18, 1987

The Chairman of the Appeal Panel summarily denies, as interlocutory, an intervenor's appeal from a Licensing Board's order rejecting a late-filed contention of the intervenor in this operating license amendment proceeding.

**RULES OF PRACTICE: INTERLOCUTORY APPEALS**

10 C.F.R. 2.714a permits an interlocutory appeal from an order rejecting one or more contentions at the threshold only if the effect of the rejection is to deny in its entirety a petition for leave to intervene in the proceeding.

**APPEARANCES**

Marcia Preston, San Francisco, California, for the intervenor Sierra Club.

**MEMORANDUM AND ORDER**

This is a proceeding on the application of the Pacific Gas and Electric Company for amendments to the outstanding operating licenses for its Diablo

Canyon nuclear facility. The requested amendments would enable the applicant to increase the storage capacity of the facility's spent fuel pools.

While the proceeding was still pending before the Licensing Board, the intervenor Sierra Club sought the admission of an additional contention. In an interlocutory order entered on September 2, 1987,<sup>1</sup> the Board denied that relief. The Sierra Club now seeks to appeal that order under 10 C.F.R. 2.714a.

The appeal will not lie. In terms, section 2.714a permits an interlocutory appeal from an order rejecting one or more contentions at the threshold only if the effect of the rejection is to deny in its entirety a petition for leave to intervene in the proceeding.<sup>2</sup> In this instance, the September 2 order patently had no such effect.

This does not mean, however, that the Sierra Club has no appellate remedy available to it. On September 11, 1987, the Licensing Board rendered its initial decision in the proceeding, authorizing the issuance of the requested operating license amendments.<sup>3</sup> That decision is subject to an appeal as a matter of right under 10 C.F.R. 2.762(a). On any such appeal, the Sierra Club may challenge, if it is so inclined, the rejection of the contention in question.<sup>4</sup>

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*Appeal dismissed.*  
It is so ORDERED.

FOR THE APPEAL PANEL  
CHAIRMAN

Eleanor E. Hagins  
Secretary to the Appeal Panel

This action was taken by the Appeal Panel Chairman under the authority of 10 C.F.R. 2.787(b).

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<sup>1</sup> See LBP-87-24, 26 NRC 159.

<sup>2</sup> See, e.g., *Texas Utilities Generating Co.* (Comanche Peak Steam Electric Station, Units 1 and 2), ALAB-599, 12 NRC 1 (1980), and cases there cited.

<sup>3</sup> See LBP-87-25, 26 NRC 168.

<sup>4</sup> See ALAB-599, *supra*, 12 NRC at 2 n.1.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman  
Dr. W. Reed Johnson  
Howard A. Wilber

In the Matter of

Docket Nos. 50-456-OL  
50-457-OL

COMMONWEALTH EDISON  
COMPANY

(Braldwood Nuclear Power Station,  
Units 1 and 2)

September 25, 1987

The Appeal Board dismisses, on ground of mootness, intervenors' appeal from the Licensing Board's reaffirmance of its earlier denial of a late-filed contention and vacates both Licensing Board orders reflecting that rejection.

**RULES OF PRACTICE: DISMISSAL OF APPEAL (MOOTNESS)**

Where an appeal from a licensing board order is dismissed on the ground that the controversy underlying the order has become moot, it is established practice to vacate the licensing board order. *See e.g., Boston Edison Co.* (Pilgrim Nuclear Power Station, Unit 2), ALAB-656, 14 NRC 965 (1981); *Rochester Gas and Electric Corp.* (Sterling Power Project Nuclear Unit No. 1), ALAB-596, 11 NRC 867 (1980).

## APPEARANCES

Douglass W. Cassel, Jr., Chicago, Illinois, for the intervenors Bridget Little Rorem, *et al.*

Joseph Gallo, Washington, D.C., for the applicant Commonwealth Edison Company.

Elaine I. Chan for the Nuclear Regulatory Commission staff.

## MEMORANDUM AND ORDER

Pending before us is an appeal by the intervenors Bridget Little Rorem, *et al.* from a July 6, 1987 Licensing Board memorandum and order in this operating license proceeding involving the Commonwealth Edison Company's Braidwood nuclear facility in Illinois.<sup>1</sup> In that memorandum and order, the Board reaffirmed its earlier denial of the intervenors' May 6, 1987 motion to file a late contention addressed to the financial qualifications of potential new owners of the facility.<sup>2</sup> The motion had been triggered by the intervenors' understanding that Commonwealth Edison intended to apply for an amendment to, *inter alia*, the operating license for Unit 1 of the facility to reflect a new ownership arrangement proposed by that utility. Such an application was thereafter filed on May 28.<sup>3</sup>

In noting their appeal, the intervenors called attention to the fact that, on July 16, 1987, the Illinois Commerce Commission rejected the Commonwealth Edison proposal before it to restructure the ownership of Braidwood. This same development was mentioned in a July 30, 1987 letter from Commonwealth Edison to the Director of the NRC's Office of Nuclear Reactor Regulation, which letter went on to announce the utility's "desire" to withdraw the outstanding amendment application.<sup>4</sup> The July 30 communication was followed by a September 8

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<sup>1</sup> See LBP-87-22, 26 NRC 41.

<sup>2</sup> See LBP-87-19, 25 NRC 950 (1987).

<sup>3</sup> As recognized by the intervenors in a second motion filed by them on July 1 and denied in LBP-87-22, acceptance of the late contention would have necessitated reopening of the evidentiary record. That record had closed in December 1986. As a consequence, it was possible for the Licensing Board to issue its concluding partial initial decision on May 19, 1987. LBP-87-14, 25 NRC 461. That decision authorized the issuance of operating licenses for both units of the Braidwood facility. Although the intervenors have a pending appeal from the decision, no stay of its effectiveness was sought. Accordingly, an operating license for Unit 1 has issued. For its part, Unit 2 remains under construction.

<sup>4</sup> See Letter from S.C. Hunsader to Thomas E. Murley, provided to us as attachments to both the NRC Staff's Response to Appeal Board Order of July 21, 1987 (July 31, 1987) and Commonwealth Edison's Response to Intervenors' Request for Deferral of Further Appellate Proceedings (July 31, 1987).

letter in which Commonwealth Edison stated without qualification that it was withdrawing the amendment application.<sup>5</sup>

In light of this representation, it is manifest that the controversy with regard to the intervenors' late-filed contention is now moot. Thus, we adopt Commonwealth Edison's suggestion that the intervenors' appeal from the Licensing Board's rejection of the contention be dismissed on that ground.<sup>6</sup> In accordance with established practice in such circumstances,<sup>7</sup> we also must vacate both Licensing Board orders reflecting that rejection.<sup>8</sup>

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Appeal *dismissed* on the ground of mootness; LBP-87-19 and LBP-87-22 *vacated* for the same reason.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker  
Secretary to the  
Appeal Board

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<sup>5</sup> See Letter from S.C. Hunsader to Thomas E. Murley, enclosed with the September 14, 1987 letter from NRC staff counsel Elaine I. Chan to the members of this Board.

<sup>6</sup> See Response to Intervenors' Request for Deferral of Further Appellate Proceedings (July 31, 1987) at 2.

<sup>7</sup> See, e.g., *Boston Edison Co.* (Pilgrim Nuclear Power Station, Unit 2), ALAB-656, 14 NRC 965 (1981); *Rochester Gas and Electric Corp.* (Sterling Power Project Nuclear Unit No. 1), ALAB-596, 11 NRC 867 (1980).

<sup>8</sup> As earlier noted, the July 6 order (LBP-87-22) reaffirmed the rejection of the contention in the June 10 order (LBP-87-19).

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

B. Paul Cotter, Jr., Chairman  
Glenn O. Bright  
Dr. Jerry Harbour

In the Matter of

Docket Nos. 50-275-OLA  
50-323-OLA  
(ASLBP No. 86-523-03-LA)

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

September 2, 1987

In this Memorandum and Order, the Licensing Board denies admission of a contention concerning the consequences of a loss of coolant in the spent fuel pools at Diablo Canyon Units 1 and 2, finding that intervenor had failed to demonstrate a nexus between the generic study it relied upon and the high-density reracking of the Diablo Canyon spent fuel pools.

**ADMISSIBILITY OF CONTENTIONS: GENERIC ISSUES**

If an issue sought to be introduced is a generic issue (i.e., involving a subject of general applicability to all reactors, a nexus must be established between the generic issue and the license application in question. The party may not simply point to a newly issued Regulatory Guide or a report on the subject.

## **GENERIC ISSUES**

Generally, a generic safety issue does not describe a regulatory requirement that a license applicant must satisfy unless and until the generic issue is reduced to a regulation in Title 10 of the Code of Federal Regulations.

### **ADMISSIBILITY OF CONTENTIONS: BEYOND-DESIGN-BASIS ACCIDENT**

A contention based on a hypothesized event beyond the design basis of the plant is not admissible because the National Environmental Policy Act does not require that such an accident be considered.

## **MEMORANDUM AND ORDER** **(Ruling on Motion to Admit Contention)**

On June 16, 1987, at the outset of the hearing on the remaining issues in this proceeding concerning Pacific Gas and Electric Company's application to expand the spent fuel pools for its Diablo Canyon Units 1 and 2, Intervenor Sierra Club moved to admit a contention concerning the consequences of a possible loss of coolant in the pools and asked the Board to direct the Staff to prepare an environmental impact statement (EIS). Both the Applicant, Pacific Gas and Electric Company, and the Nuclear Regulatory Commission Staff ("the Staff") opposed the motion, and all parties briefed the issue in filings completed on August 14, 1987. In this decision, we find that the contention is not admissible.

Applicant has applied for a license to rerack the Diablo Canyon spent fuel pools in a high-density configuration that would increase the number of rack storage locations from 270 to 1324 for each unit. 51 Fed. Reg. 1451 (1986). The Sierra Club now asks the Board to direct the Staff to prepare "an Environmental Impact Statement concerning the possibility of and impact of Zircalloy cladding fires at the Diablo Canyon facility" and moves the admission of the following contention:

The proposed action significantly increases the consequences of loss of cooling accidents in that a loss of water in the spent fuel pools could lead to spontaneous ignition of zircalloy cladding of the fuel elements in the high density configuration with significant releases of radiation.

Motion to Include Issues Raised in Generic Issue 82 as Contentions in This Proceeding and to Direct Preparation of an Environmental Impact Statement. The basis for the contention proffered is a January 1987 draft report issued by



Brookhaven National Laboratory entitled "Beyond Design Basis Accidents in Spent Fuel Pools (Generic Issue 82)" ("the BNL Report").<sup>1</sup> Sierra Club Exh. 1. The parties were notified of the existence of the BNL Report by a March 27, 1987 Board Notification from the Staff containing a statement that the report did not pertain directly to then-active licensing proceedings.

The Sierra Club asserts that two of the report's four authors specifically recommend in an appendix against storing spent fuel as proposed for Diablo Canyon. Tr. 148-49; BNL Report, Appendix B at 3. Sierra Club argues that no mention has been made of the potential for fuel cladding fires heretofore and charges that the disclaimer statement in the Board Notification was false and misleading.

Sierra Club further argues that its proposed contention relates indirectly to, or is subsumed under, contentions already in the case, and that had it been aware of the contents of the report it would have offered the contention at issue here earlier. Alternatively, Sierra Club addresses the five factors governing admission of late-filed contentions under 10 C.F.R. § 2.714 (1987). Finally, Sierra Club argues that language in *San Luis Obispo Mothers for Peace v. NRC*, 799 F.2d 1268 (9th Cir. 1986), supports admission of the contention and preparation of an EIS. That decision held that the Commission had violated its own regulations when the Commission found no significant hazards considerations in the rerack work and authorized Applicant to proceed with the rerack before hearing. The Court did not reach the National Environmental Policy Act argument presented, but stated in dicta that:

With respect to petitioners' NEPA claims, however, we note that the site specific environmental assessment was based on a seven year old generic environmental assessment and that no worst case analysis, 40 C.F.R. § 1502.22, appears to have been conducted. We strongly suggest that any doubt concerning the need to supplement the NEPA documents be resolved in favor of additional documentation.

*Id.* at 1271.<sup>2</sup>

Applicant opposes the motion on two grounds. First, the proposed contention does not succeed in raising a significant safety issue because: (1) the contention is based on a draft generic report not directly related to the Diablo Canyon plants; and (2) the Sierra Club has not shown the necessary nexus between that

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<sup>1</sup> The final report, NUREG/CR-4982, "Severe Accidents in Spent Fuel Pools in Support of Generic Safety Issue 82" (July 1987) was sent to the Board on August 28, 1987. For the purposes of this decision, the final report does not differ significantly from the draft report.

<sup>2</sup> We are unsure as to what the Court meant in referring to a "worst case analysis," but find the reference not germane to the decision here. However, we note that the Commission's Statements of Consideration in issuing 10 C.F.R. Part 51 stated that the Commission is not bound by the CEQ "worst case analysis" requirement and would follow its own policy in that regard. 49 Fed. Reg. 9352, 9356 (1984). See also "Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969," 45 Fed. Reg. 40,101-14 (1980).

report and the Diablo Canyon spent fuel pools. Second, the contention is filed late and does not satisfy the requirements for a late-filed contention set out in 10 C.F.R. § 2.714. Supplemental Answer in Opposition to Intervenor's Motion to Admit Late Filed Contention. In response to this Board's query, Applicant argues further that a recent case, *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-869, 26 NRC 13 (1987), bars the admission of the contention, because, as in *Vermont Yankee*, the contention assumes an accident scenario that is beyond design basis. Applicant asserts that because such accidents are remote and speculative events, the National Environmental Policy Act of 1969, 42 U.S.C. § 4321 (1982), does not require the NRC to consider them. Applicant concludes that the *Vermont Yankee* case is directly on point.

The Staff also opposes the motion, in the first instance as unrelated to any issue in the proceeding and therefore not subsumed under an admitted contention. Staff asserts that no admitted contention addresses spent fuel pool failure, as the proposed contention must assume, and that the proposed contention goes far beyond any environmental issues in the proceeding. Next, Staff argues that the contention is late filed and does not satisfy the § 2.714 criteria for admission to the proceeding. Staff addresses each of the factors in § 2.714(a)(1) and concludes that the Sierra Club has failed to meet that five-pronged test for admitting the contention. Finally, Staff argues that the contention is not litigable because: (1) the report is generic and not directly applicable to the Diablo Canyon plant; and (2) Sierra Club has shown no nexus to connect the generic report to the plant at issue. Like Applicant, Staff also finds the *Vermont Yankee* case controlling and a bar to admitting the contention.

## APPLICABLE LAW

Section 2.714 of Title 10 of the Code of Federal Regulations governs the admission of contentions to our proceedings. It requires that intervenors must state "the bases for each contention set forth with reasonable specificity." 10 C.F.R. § 2.714(b) (1986). The basis and specificity referred to means that the contention must establish that it applies to the facility at issue and warrants further exploration. A contention may not attack applicable statutory requirements, nor may it challenge "the basic structure of the Commission's regulatory process." *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21 (1974). If the issue sought to be introduced is, as here, a generic issue (e.g., involving a subject of general applicability to all reactors), a nexus must be established to connect the generic issue to the license application in question. *Gulf States Utilities Co.* (River Bend Station,

Units 1 and 2), ALAB-444, 6 NRC 760 (1977). The party may not simply point to a newly issued Regulatory Guide or a report on the subject. *Id.* at 772.

In the normal course, contentions are to be filed early in the proceeding (10 C.F.R. § 2.714(b)) unless, *inter alia*, based on newly discovered evidence. A contention not filed at the outset of the proceeding is usually termed a "late-filed contention," and its admission is subject to the requirements of § 2.714(a)(1). Subsection (a)(1) requires the balancing of considerations including, *inter alia*, good cause for failure to file on time, other means to protect the intervenor's interest, assistance in developing a sound record, and whether the proceeding will be broadened or delayed.

## ANALYSIS

As noted, the threshold requirement for the admission of a contention to the proceeding is basis specifically stated. Sierra Club offers the BNL Report as the basis for the contention that a loss of coolant will cause a fuel rod cladding fire in the Diablo Canyon spent fuel pools.

The BNL Report was prepared under contract with the Nuclear Regulatory Commission as a part of its research and development effort to resolve what has become known as Generic Issue 82. Generally, generic issues are safety concerns that have not yet been resolved by the Commission. They are the objects of an ongoing program of study to quantify and qualify the risk they may present, if any, to the public health and safety. Generally a generic safety issue does not describe a regulatory requirement that a license applicant must satisfy unless and until the generic issue is reduced to a regulation in Title 10 of the Code of Federal Regulations. Generic Issue 82 was established as an unresolved safety issue with medium priority in November 1983. Sierra Club Exh. 1 at S-1. Generic Issue 82 is, in essence, an assessment of overall risk due to beyond-design-basis accidents involving spent fuel pool facilities through the performance of a probabilistic risk assessment. *See, generally*, the BNL Report.

Work on various aspects of the safety of spent fuel pool storage dates back many years. For example, the BNL Report refers to studies of zirconium in 1955 and to a Sandia National Laboratories study in 1979 titled "Spent Fuel Heatup Following Loss of Water During Storage" (NUREG/CR-0649, March 1979). BNL Report, Summary, nn.1 & 5; § 1.7, ref. 3. The BNL Report is but the latest in this ongoing series of studies.

The January 1987 revised draft of the BNL Report contains a number of caveats. The Abstract states in pertinent part that

These estimated risks (of health consequences) are comparable to the estimated risk posed by severe core damage accidents and appear to warrant further attention. However, the

*uncertainty in this estimate is large (greater than a factor of 10) and plant specific features may change the results considerably.*

*Preventive and mitigative measures have been evaluated qualitatively. It is suggested that for plants with similar risk potential to the two surrogate plants, the one measure which is likely to be effective in reducing risk is utilization of low density storage racks for recently discharged fuel. However, before such preventive measures are implemented a complete plant specific risk assessment for pool related accidents should be performed including a structured fragility analysis of the pool itself.*

BNL Report at iii (emphasis added). In estimating the risks in its report, BNL selected "two older-vintage plants" to serve as surrogates, Millstone-1 (BWR) and Ginna (PWR). BNL Report, Appendix A.

Sierra Club contends that "two of the authors specifically recommend against the storage of spent fuel in the manner proposed for Diablo Canyon." Sierra Club Motion; Sierra Club Exh. 1, Appendix B. Appendix B is an internal Brookhaven memorandum titled "Impact of Revised Reaction Rate Equation on the Likelihood of Zirconium Fires in a drained Spent Fuel Pool (Task 5)." The memorandum concludes that a computer formula, or code, developed by Sandia National Laboratories for representing self-sustained oxidation in a drained spent fuel pool is accurate and that the conditional probability for a self-sustaining cladding fire is in the broad range of 16% to 100%. The memorandum's authors then recommend, *inter alia*, that spent fuel not be stored in high-density configuration until it has been stored for 2 or more years in the old-style, low-density configuration. The memorandum, as an appendix, is a supporting document, partially incorporated in the BNL Report itself and subject to all its caveats.

Despite the surface appearance of relationship between the generic BNL Report and the Diablo Canyon spent fuel pools, we find that the contention proffered lacks a nexus with the BNL Report and thus lacks basis for admission to the proceeding. The Sierra Club points to the following facts: (1) the subject of the report is spent fuel pool accidents; (2) the report uses a pressurized water reactor (PWR), Ginna, as a model for some of the parameters in the study and the Diablo Canyon units are both PWRs; and (3) the report concludes that a significant preventive measure to reduce risk would be to use low-density storage racks rather than the high-density racks that are the subject of the instant proceedings.

However, the Sierra Club's proposed contention assumes a total loss of coolant in the Diablo Canyon spent fuel pools without specifying any accident scenario that would cause that loss. In contrast, the BNL Report postulates at least four accident-initiating events for Ginna that could cause coolant loss, including loss of water-circulating capability, structural failure of the pool, and cavity seal failures. BNL Report, Chapter 2. The BNL Report also notes that,

while there have been incidents, "there is no case on record of a significant loss of water inventory from a domestic, commercial spent fuel pool." BNL Report, S.1.2 at S-2. The Sierra Club suggests no mechanism or event that could cause a loss-of-coolant accident at the Diablo Canyon spent fuel pools. BNL Report at 2-1 to 2-17.

Secondly, the BNL Report used as a surrogate for pressurized water reactors ("PWRs") the Ginna reactor, a 470-megawatt (electrical) ("MWe") unit built in 1969. In contrast, the Diablo Canyon units are built to a *different* scale. They are much larger reactors generating 1086 MWe, were completed 15 years after Ginna in 1984, and were built to much stricter seismic safety criteria. In addition to the substantial differences among individual reactors in the United States and these two reactors in particular, the technological refinements during that 15-year period were substantial, with particular focus on new safety requirements following the Three Mile Island event in 1979. Beyond the very general observation that they are both PWRs, the Sierra Club offers no comparisons or data of any kind to suggest any similarities between the two reactors, particularly their spent fuel pools. Consequently, there is no link shown between the very generic conclusions drawn in the BNL Report from the theoretical, computer model based on the older Ginna reactor and the high-density reracking proposed for Diablo Canyon. In fact, the report warns against drawing specific conclusions as to individual reactors throughout its length. *Compare* BNL Report at iii (Abstract); S-2 (no case on record of loss of water inventory); S-3 ("the analyses are greatly simplified"); S-6 ("risk results are calculated for two surrogate plants and may not be applicable to generic pool types"); 1-5 ("[t]he configurations of spent fuel storage pools vary from plant to plant"); 3-13 (unvalidated natural convection calculation); 5-2 (uncertainty of exposure risk due to uncertainty in the likelihood of complete draining of the spent fuel pool, estimated to be an order of magnitude in either direction); and 6-3 ("plant specific evaluations should be performed before any changes are implemented at a given plant").

Given these caveats, the very broad-based recommendations and conclusions in the report, the lack of any evidence or reasoning to connect a generic report with the specific configuration at Diablo Canyon, and the absence of any suggestion of an accident initiator, we can find no nexus by which the contention might establish a specifically stated basis. Therefore, we must conclude that the contention proffered lacks the requisite basis and may not be admitted to this proceeding under 10 C.F.R. § 2.714. *River Bend, supra*.

Nor can we find that the contention lies within the penumbra of contentions already admitted to this proceeding. The Sierra Club refers to a contention rejected at the outset of the proceeding concerning "effects of the possible loss of cooling capacity on the spent fuel assemblies" and asserts that the BNL Report now furnishes the specificity found lacking at that time. *See* LBP-86-21, 23 NRC 849, 861-64 (1986). We have already found, above, that the BNL

Report, standing alone, fails to supply the necessary basis and specificity, and we note further that the BNL Report is predicated on the *complete loss of all coolant in the spent fuel pool*, not merely the loss of some indeterminate "cooling capacity." The BNL Report therefore does not supply the basis necessary to resurrect the contention rejected. *Id.* at 863.

Sierra Club's bald assertion that the proposed contention falls within a contention dealing with alternatives to the reracking proposal and structural failures during the postulated Hosgri earthquake is simply incorrect. Those contention bases were subsumed within Sierra Club's Contention II(A) which deals with the possibility of damage to the racks within the pool. *Id.* 864-65. There is no contention in this proceeding dealing with the loss of coolant from the spent fuel pools. The remainder of Sierra Club's argument is tautological. It assumes the loss of all coolant leading to a spent fuel rod cladding fire and its consequences, without suggesting how such a fire might occur, and then concludes that such a fire must be considered as an issue in this proceeding. Absent some scenario describing how the coolant loss might occur, there is no basis for this Board to assume that it will and thus no grounds for admitting any such contention.

Finally, we note that even if the Sierra Club had postulated an acceptable causative event, the contention, by its terms, is based on a hypothesized event that would be beyond the design basis of the plant. In the *Vermont Yankee* case, ALAB-869, *supra*, the admission of a contention in a spent fuel pool proceeding was reversed. Intervenors there alleged that a credible accident scenario would substantially increase the risk to the public health and safety, and, consequently, the license amendment sought amounted to a major federal action that required the Staff to issue an environmental impact statement ("EIS"). The scenario postulated was clearly a beyond-design-basis accident, and the Licensing Board found that no EIS had ever been required for a spent fuel pool licensing proceeding. *Id.*, 26 NRC at 28-29.

The Appeal Board rejected the contention on two grounds. First, it held as a matter of law that the scenario proposed was a severe, beyond-design-basis accident not required to be considered by the National Environmental Policy Act, citing *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26 (1986), *cert. denied*, \_\_\_ U.S. \_\_\_, 107 S. Ct. 330 (1986). *Vermont Yankee*, 26 NRC at 30. Secondly, the case held that the Nuclear Regulatory Commission's Interim Policy on "Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969," 45 Fed. Reg. 40,101 (1980) ("the NEPA Policy Statement") does not apply to spent fuel pool proceedings by its terms. The Appeal Board stated:

Thus, before the NEPA Policy Statement is even invoked, there must be some basis for requiring an EIS *other than* a claim of increased risk from a beyond design-basis accident scenario. In contrast, intervenors' claim here is just that: i.e., the proposed action (expansion

of the spent fuel pool) will significantly affect the environment, thereby requiring an EIS, because of the risks of the beyond design-basis accident scenario they have described.

*Vermont Yankee*, 26 NRC at 31 (emphasis in original). The Sierra Club's position is even weaker than the intervenor's in the *Vermont Yankee* proceeding because the Sierra Club has failed to describe any kind of accident scenario whatsoever. The lack of any nexus between the generic BNL Report and the high-density reracking of the Diablo Canyon spent fuel pools makes it impossible to accept the Sierra Club's "bootstrap" logic.

Having been unable to discover any nexus between the BNL Report and the Diablo Canyon spent fuel pools, we cannot find "any doubt concerning the need to supplement the NEPA documents . . . ." *San Luis Obispo, supra*, 799 F.2d at 1271. Although we view the 9th Circuit's language as dicta, we would exercise whatever discretion we have to direct the production of additional environmental documentation, if there were any doubt in this case. However, we find none.

In light of the foregoing, we do not find it necessary to address whether the contention is "late filed" and whether it fails to satisfy the requirements of 10 C.F.R. § 2.714 for a late-filed contention.

For all the foregoing reasons and based upon consideration of the entire record in this matter, admission of the Sierra Club's contention concerning loss-of-cooling accidents and its request that an EIS be prepared are denied.

THE ATOMIC SAFETY AND  
LICENSING BOARD

B. Paul Cotter, Jr.  
ADMINISTRATIVE JUDGE

Glenn O. Bright  
ADMINISTRATIVE JUDGE

Jerry Harbour  
ADMINISTRATIVE JUDGE

Bethesda, Maryland  
September 2, 1987

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

B. Paul Cotter, Jr., Chairman  
Glenn O. Bright  
Dr. Jerry Harbour

In the Matter of

Docket Nos. 50-275-OLA  
50-323-OLA  
(ASLBP No. 86-523-03-LA)

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

September 11, 1987

In this Initial Decision, the Licensing Board finds Intervenor's contentions unfounded and authorizes the issuance of the license applied for.

**SPENT FUEL POOLS**

NRC regulations permit sliding, tilting, and impacts of racks if impact loading is properly quantified and rack motions are suitably constrained.

**SPENT FUEL POOLS**

Freestanding spent fuel storage racks have several advantages over anchored or braced racks. They reduce stress to the pool liner caused by thermal loads from heat generated by the spent fuel; they may slide, thus dissipating seismic energy; they require no welding for installation; and they can be inspected and replaced more simply than fixed racks.



# INITIAL DECISION

## I. INTRODUCTION

The Sierra Club has challenged an application by Pacific Gas and Electric Company ("Applicant" or "PG&E") to substantially increase the storage capacity in each of the two spent fuel pools at the Diablo Canyon Nuclear Power Plant. The Sierra Club contends that the application fails to meet regulatory requirements and threatens the public health and safety and the environment in four major respects: (1) relevant data are missing concerning the velocity and displacement of the spent fuel pools and the spent fuel racks in the pools during an earthquake; (2) the impact forces an earthquake would create on the spent fuel pools and the racks they contain are significantly underestimated; (3) collisions between the racks, groups of racks, and the spent fuel pool walls during an earthquake would cause the release of large quantities of radiation which would contaminate the plant, the environment, and all living things in the vicinity; and (4) the Applicant failed to consider other, safer alternatives to the high-density reracking applied for. For the reasons set out below, we find that the Sierra Club's contentions are unfounded, and we authorize the Director of Nuclear Reactor Regulation, pursuant to the requirements of governing regulations, to issue the license as applied for.

## II. HISTORY OF THE CASE

### A. The Diablo Canyon Plant

On October 30, 1985, Applicant filed requests to amend its license to operate Units 1 and 2 of its Diablo Canyon Nuclear Power Plant, located 12 miles southwest of San Luis Obispo, California. The amendments would authorize Applicant to increase the number of spent fuel rod assemblies to be stored in each of two spent fuel pools from 270 to 1324. Appl. Exhs. 1 and 2; 51 Fed. Reg. 1451 (1986).

The Diablo Canyon plant consists of two large pressurized water reactors, capable of generating up to 1084 (Unit 1) and 1106 (Unit 2) megawatts of electrical energy. Unit 1 began commercial operation in May 1985, and Unit 2 began commercial operation in March 1986. Both units use steam generators and turbines to produce electricity. The steam is created by heating water through energy originating in the nuclear reaction of uranium oxide pellets contained in 20-foot-long, narrow rods. The fuel pellets are encased in an exterior cover, or cladding, of Zircaloy. The rods are assembled in "bundles," or fuel assemblies, in the reactor core of each unit.

## **B. The Spent Fuel Pools**

Each unit has a spent fuel pool for storing up to 270 fuel assemblies after their useful reactivity has burned up and they have been removed from the reactor core. The spent fuel pools are separate, but identical, large concrete structures located at opposite ends of the Diablo Canyon auxiliary building. Each pool is approximately 35 feet wide, 37 feet long, and 40 feet deep. The pool walls are of concrete, 6 feet thick, except around the full transfer canal where the walls are 5 feet thick. The pools rest on a reinforced concrete foundation at least 5 feet thick; the foundation, in turn, sits on 5 additional feet of lean concrete set directly on bedrock. The pool walls are lined with stainless steel,  $\frac{1}{4}$ -inch thick on the floor and  $\frac{1}{8}$ -inch thick on the walls.

## **C. The Racks**

Under the license amendment sought, sixteen modules, or "racks," of differing sizes would be placed in each pool. Each rack is a large, rectangular, stainless steel "canister" approximately 17 feet high and weighing from 15,000 to 28,000 pounds. Each rack contains from 24 to 110 storage cells. Each cell is approximately 8.85 inches square, and each will store one Westinghouse spent fuel assembly. Stainless steel gap channels are welded between the cells to create a rigid, "honeycomb" structure to resist impact and seismic loads.

The racks are free standing at the bottom of the water-filled pool, so that the top of the spent fuel is approximately 23 feet below the water's surface. They are surrounded by, and filled with, water. The racks have no rigid structural member attaching them to the pool floor or walls or any adjacent rack. The racks stand on feet, large round steel dowels approximately 2 feet in diameter and 5 inches high, located near the four corners of each rack. Those feet, in turn, rest on bearing plates on the pool floor. Each rack has an exterior steel girdle bar welded near the top of all four sides of the "canister." The girdle bars serve as a designated impact location designed to accommodate impact loads that may occur during a seismic event. The girdle bars also maintain a specified minimum gap between the cell walls of adjacent racks for all loading conditions.

## **D. The 9th Circuit Stay**

On May 30, 1986, after petitions to intervene had been filed herein, Staff made a finding of "no significant hazards consideration." 10 C.F.R. § 50.92 (1986). Based on that finding, NRC approved the license amendments requested and made them immediately effective. One of the then parties to this proceeding appealed the finding. *San Luis Obispo Mothers for Peace v. NRC*, 799 F.2d 1268 (9th Cir. 1986).

Pursuant to the "Sholly" amendment to the hearing requirement of the Atomic Energy Act, the Court found that the NRC finding of "no significant hazards consideration" violated the statute and implementing regulations. 42 U.S.C. § 2239(a)(2)(A) (1986 Supp.); *San Luis Obispo* at 1271. The Court reversed, staying any further work on the spent fuel pools and barring Applicant from depositing any spent fuel rods therein, except in accordance with the pools' original configuration, until the conclusion of this proceeding. *San Luis Obispo* at 1271.

## E. Status of the Contentions

The Sierra Club's contentions, as restated by this Board, were admitted to this proceeding in 1986.<sup>1</sup> LBP-86-21, 23 NRC 849 (1986). The first contention, I(A), alleged that relevant data on six designated subjects was not contained in the license amendment application and subsequent communications. The Board held that the contention "goes to the availability of the data cited, not its accuracy or adequacy," and urged the parties to settle the matter and report on their efforts within 30 days. *Id.* at 861. As a result of the information subsequently made available, the Sierra Club reported that four of the six subjects had been resolved by the information supplied by Applicant, leaving only two still in dispute. The two subjects still at issue, items 3 and 4, generally concerned data on the expected velocity and displacement of the spent fuel pools and the racks during the postulated Hosgri earthquake. Memorandum and Order dated August 28, 1986, at 2 (unpublished).

Two other contentions remain.<sup>2</sup> In the first, Contention I(B), Sierra Club alleges that the license amendment application failed to consider certain relevant conditions, phenomena, and alternatives necessary to verify health and safety and environmental claims made as they relate to four items: (1) the consequences of the resonant behavior of the spent fuel assemblies in the racks during an earthquake; (2) alternatives to onsite storage; (3) anchoring or bracing the freestanding racks; and (4) the use of Boraflex neutron-absorbing material for all spent fuel racks. That part of the contention concerning Boraflex was withdrawn during the hearing. Tr. 173-74.

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<sup>1</sup>Two other parties initially admitted to the proceeding, Consumers Organized for Defense of Environmental Safety and the San Luis Obispo Mothers for Peace, subsequently withdrew from the case, and their contentions were dismissed. Memorandum and Order issued January 30, 1987, at 4 (unpublished).

<sup>2</sup>At the outset of the hearing, Sierra Club moved the admission of two additional contentions which were taken under advisement pending subsequent filings by the parties. Tr. 142-74. The first, concerning the possibility of cladding fires, was denied by the Board in a Memorandum and Order issued September 2, 1987, LBP-87-24, 26 NRC 159 (1987). The second, concerning a Boraflex neutron absorber, was not pursued by the Sierra Club and is deemed withdrawn. See Board Finding 10, *infra*.

The second, Contention II, has two parts. In Part A, Sierra Club contends that collisions between the racks and the pool walls during an earthquake will cause damage to the racks and spent fuel assemblies, resulting in radioactive contamination of the Diablo Canyon plant, the environment, and all living things in the vicinity. Part B alleges similar results from collisions between groups of racks with each other and the pool walls.

### III. ANALYSIS

#### A. Contention I(A)

Contention I(A) reads as follows:

It is the contention of the Sierra Club, Santa Lucia Chapter (Sierra Club), that the report submitted to the Nuclear Regulatory Commission (NRC) entitled Reracking of Spent Fuel Pools, Diablo Canyon Units 1 and 2 and other communications between Pacific Gas and Electric Company (PG&E) and the NRC, which are available to the public on the same subject (the Reports), fail to contain certain relevant data necessary for independent verification of the claims made in the Reports regarding consistency of the proposed reracking with the protection of the public health and safety, and the environment.

In particular, the Reports fail to contain data regarding:

\* \* \*

- 3) The expected velocity and displacement of the spent fuel pools (pools) as a function of time in three dimensions during the postulated Hosgri earthquake (PHE);
- 4) The expected maximum velocity and displacement of the racks obtained from the computer modeling of rack behavior during the PHE.

Both Applicant and Staff concede the truth of Sierra Club's Contention I(A) allegation that the reracking report (PG&E Exh. 2) did not contain *separately stated* values of velocity and displacement for the fuel pools and fuel racks, respectively, during the postulated Hosgri earthquake (PHE). The PHE is the maximum earthquake that can be expected at the Diablo Canyon plant and sets the outer limit for seismic forces that certain plant structures must be able to withstand. However, both Applicant and Staff argue that it is not necessary to show the values separately because of the method of analysis used in designing the pools.

Their expert witnesses testified that the calculation methods employed for analysis and design do not use these particular values, but rather depend upon the acceleration time-histories of the PHE itself. The values of velocity and displacement can be derived from these acceleration time-histories but were omitted in the reracking report as being unnecessary. *See* Board Findings 16-19.

The Board finds the explanation of Staff and Applicant experts persuasive. We find that a separate statement of the values in question was not required. Accordingly, Contention I(A) is denied.

## B. Contention I(B)

Sierra Club's Contention I(B) has three parts which we address *seriatim*. The first, I(B)(2), provides as follows:

It is the contention of the Sierra Club that the Reports fail to include consideration of certain relevant conditions, phenomena and alternatives necessary for independent verification of claims made in the Reports regarding consistency of the proposed reracking with public health and safety, and the environment, and with federal law.

In particular, the Reports fail to consider:

\* \* \*

- 2) The resonant behavior of the spent fuel assemblies in the racks in response to the PHE and the consequences of such behavior . . . .

Sierra Club's Contention I(B)(2) alleges that the PG&E's reracking report did not consider resonant behavior of the fuel assemblies in the racks during a PHE. Although resonance phenomena were not explicitly addressed, the design-basis analysis performed by the Applicant would have revealed such behavior were it to exist. The absence of any resonance is not surprising, as it typically appears only in linear response systems free to vibrate without damping, whereas the rack-fuel assembly system at issue here is highly nonlinear.

In any event, the amplitude of any resonant behavior of the fuel assemblies would be constrained by the 0.302-inch water-filled gap between the assembly and the cell inside the rack. Staff's experts testified that PG&E's analysis is appropriate and that no resonance effects are expected. Board Findings 22 and 23. The Sierra Club proposed no findings on this contention.

The Board agrees with Applicant and Staff that the analysis performed by Applicant would have detected any resonance effects if such effects existed. We therefore find the contention to be without merit, and it is denied.

Contention I(B)(7) provides as follows:

It is the contention of the Sierra Club that the Reports fail to include consideration of certain relevant conditions, phenomena and alternatives necessary for independent verification of claims made in the Reports regarding consistency of the proposed reracking with public health and safety, and the environment, and with federal law.

In particular, the Reports fail to consider:

\* \* \*

7) Alternative on-site storage facilities including:

- (i) construction of new or additional storage facilities and/or;
- (ii) acquisition of modular or mobile spent nuclear fuel storage casks;

In Contention I(B)(7) the Sierra Club maintains that the Reracking Report should have considered alternative methods of onsite fuel storage, namely, provision of new fuel pools or spent fuel storage casks. Both Applicant and Staff argue that consideration of these fuel storage modes is not an NRC requirement.

Applicant's experts testified that PG&E had analyzed and compared its options for greater storage capacity before making its decision to use high-density reracking, as was only prudent. Applicant concluded that neither of the two alternatives mentioned by the Sierra Club had any safety advantage over reracking, and that there were probably some safety concerns that weighed against the alternatives, such as the necessity for greater fuel handling. The time frame in which new fuel pools would be needed, the lack of suitable sites for their location, and the projected expense also weighed against construction of new or additional storage facilities. The Staff review essentially agreed with the PG&E position. Board Findings 25-30. Sierra Club's testimony presented no concrete evidence that PG&E had failed to adequately consider alternative onsite storage. Board Findings 31-33.

The only specific NRC requirements are consideration of offsite storage or reprocessing of the fuel and of shutting the reactor down. PG&E Exh. 12, V-1. These comparisons are included in the Reracking Report. Board Finding 34. The Board finds that the alternative comparisons presented in the Reracking Report comply fully with NRC rules. Consequently, Contention I(B)(7) is denied.

Contention I(B)(8) provides as follows:

It is the contention of the Sierra Club that the Reports fail to include consideration of certain relevant conditions, phenomena and alternatives necessary for independent verification of claims made in the Reports regarding consistency of the proposed reracking with public health and safety, and the environment, and with federal law.

In particular, the Reports fail to consider:

\* \* \*

- 8) the use of anchors, braces, or other structural members to prevent rack motion and subsequent damage during the PHE;

Sierra Club Contention I(B)(8) claims that Applicant did not consider the use of structural members to prevent rack motion and possible damage during the PHE. Both Applicant and Staff argue that the design of the proposed racks satisfies NRC criteria and guidance applicable to spent fuel storage racks, and

that anchors, braces, or other structural members are not needed. They also point out that the use of freestanding racks has several advantages over anchored or braced racks. Board Findings 36, 37.

The Sierra Club presented no specific findings on this contention. The Board can only conjecture that either Sierra Club no longer has an interest in this contention or that whatever interest it had was subsumed in Contention II, which follows. A great deal of testimony, cross-examination, and findings were presented on Contention II, the thrust of which was the alleged inadequacy of the PG&E's analysis of the freestanding racks. On this basis, we rule herein that on the narrow point that since, as Staff and Applicant agree, the freestanding racks satisfy NRC guidance and criteria (*see infra* Contention II), there is no need to consider structural members for the stabilization of the racks. Contention I(A)(8) is denied.

### C. Contention II

Contention II has two parts: Part A addresses possible collisions between the racks and the pool walls, and Part B addresses such collisions between groups of racks with each other and the pool walls. Each part has nine subparts. We address them here, *seriatim*.

#### Contention II(A)

Contention II(A), subparts 1 to 3, states as follows:

It is the contention of the Sierra Club that the proposed reracking is inconsistent with the protection of the public health and safety, and the environment, for reasons which include the following:

- A) during the PHE, collisions between the racks and the pool walls are expected to occur, resulting in:
  - 1) impact forces on the racks significantly larger than those estimated in the reports;
  - 2) impact forces on the racks significantly larger than those expected to damage the racks;
  - 3) significant permanent deformation and other damage to the racks and pool walls;

The first three parts of Contention II(A) challenge the seismic design of the freestanding, high-density fuel storage racks proposed for reracking of the Diablo Canyon fuel storage pools. The two main prongs of the Sierra Club's challenge are: (1) an assertion that NRC regulations and guidance prohibit sliding and

tilting of the fuel storage racks during earthquakes thus prohibiting rack-to-rack and rack-to-wall impacts; and (2) assertions that the complex analytical and modeling procedures used in deriving the earthquake-induced impact forces, loads, and stresses were based on inadequately demonstrated theory or practice; were inadequately performed; and were nonconservative in certain respects.

Because the remaining parts of Sierra Club Contention II (i.e., reduction of the spacing between fuel elements and an increase in the nuclear criticality coefficient  $k_{\text{eff}}$  above 0.95, with concomitant generation of heat and release of radioactivity) would be a consequence only of serious damage and deformation of the racks during the postulated Hosgri earthquake (PHE), the first three parts of Contention II are crucial to the Sierra Club's position.<sup>3</sup>

The Applicant maintains that its design procedures fully meet NRC seismic design requirements and guidance contained in the Standard Review Plan (primarily found in §§ 9.1.2 and 3.8.4 of Appendix D) and in the NRC Office Technical (OT) Position Paper, "OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications," dated April 14, 1978. PG&E contends that the NRC criteria permit rack sliding and rack-to-rack and rack-to-wall impacts and provide specific guidance on how such impacts are to be incorporated in the rack design.

The Staff view on its OT Position Paper is that there is no dispute that sliding, tilting, and impacts are permitted, so long as impact loading is quantified and that sliding and tilting motions are contained within suitable geometric constraints. Inter-rack and rack-to-wall boundaries constrain rack movement and prevent overturning of racks.

The Sierra Club's position that NRC regulations or guidance do not permit sliding, tilting, and impact of the racks with each other or with the pool walls was supported only by the interpretation of its witness, who was not persuasive in this regard. *See* Finding 45. Accordingly, we find that NRC regulations and guidance permit sliding, tilting, and impacts of the racks if impact loading is properly quantified and rack motions are suitably constrained.

The Sierra Club's challenge to the analytical and modeling procedures used in the design of the racks largely reduces to several assertions apparently related to the complexity of the models themselves and simplifying assumptions used by Applicant to predict rack motions.

In regard to the effect of fluid forces upon the racks, the Sierra Club asserts that, during closure of the gap between opposite-moving racks, fluid forces would be great enough to cause bowing of the rack, and that bowing would allegedly alter the fluid coupling forces (by increasing the gap width) and thus

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<sup>3</sup> Sierra Club's Contention II(B), *see infra*, asserts the same deficiencies and potential consequences as II(A), but as a result of collisions of groups of racks with each other and with the pool walls. *See also* Sierra Club's Final Proposed Findings of Fact 6 at 3.



increase the impact velocity and impact forces upon collision. The Sierra Club also asserts that PG&E's assumption of the fuel elements as solid objects is not conservative and that a more realistic model with water flowing through the fuel elements would result in larger but unknown impact forces. The Sierra Club also argues that the validity of the fluid coupling assumptions used in modeling the seismic response of the racks is in doubt and has been accepted by the Staff with little or no argument.

The use of two widely spaced coefficients of friction, 0.8 and 0.2, in the seismic response modeling is questioned by the Sierra Club on the grounds that denting of the bearing or bridge plates might occur during rack-to-floor impacts, and could result in spatially varying coefficients of friction. However, it is not argued that the resulting friction coefficients would be outside the range utilized by Applicant, or that such effects would affect rack sliding or acceleration response so as to result in design loads or stresses different from those obtained in Applicant's design analyses. Staff maintains that use of the bounding coefficient values (0.8 and 0.2) would cover possible effects of spatially varying coefficients of friction. Finding 52.

Testimony of the Applicant and Staff expert witnesses flatly contradicts the Sierra Club assertions in regard to fluid coupling effects. Applicant argues in each of the examples cited above that its assumptions and modeling procedures treat fluid coupling forces so as to maximize impact loads and stresses in the racks; i.e., they increase, rather than decrease, conservatism. Additional conservatism is provided by neglecting fluid damping and form drag effects on rack motions in the models. Staff concurs. In regard to the applicability of the fundamental hydrodynamic concepts, Applicant demonstrated that the procedures are well established and based on long-standing principles. Further, Applicant points to many areas of conservatism incorporated into its overall design of the freestanding high-density racks. Findings 49a-g, 52-54, 57, 60-61.

According to the Applicant's calculations, the largest calculated impact force between a storage cell and a fuel assembly is 249,000 pounds, or 28% of the allowable 883,000 pounds, and the maximum calculated impact force between racks is 105,000 pounds, which is 60% of the allowable 175,000 pounds. Finding 63.

The Sierra Club does not maintain that its calculations that yielded impact forces larger than the allowables listed in the reports are accurate and reliable or show rack failure. Finding 62.

The Board finds that the design of the proposed high-density racks meets applicable NRC requirements and that the racks will withstand the effects of the postulated Hosgri earthquake without incurring significant permanent deformation and other damage to the racks or pool walls. Thus Sierra Club Contention II(A) subparts 1, 2, and 3 are without merit and must fail.

Sierra Club's subparts 4 through 9 of Contention II(A) read as follows:

It is the contention of the Sierra Club that proposed reracking is inconsistent with the protection of the public health and safety, and the environment, for reasons which include the following:

- (A) during the PHE, collisions between the racks and the pool walls are expected to occur resulting in:
  - 4) reduction of the spacings between fuel assemblies;
  - 5) increase in the nuclear criticality [*sic*; reactivity] coefficient  $k(\text{eff})$  above 0.95;
  - 6) release of large quantities of heat and radiation;
  - 7) radioactive contamination of the nuclear power plant and its employees above the levels permitted by federal regulations;
  - 8) radioactive contamination of the environment in the vicinity of the nuclear power plant above the levels permitted by federal regulations; and
  - 9) radioactive contamination of humans and other living things in the vicinity of the nuclear power plant above the levels permitted by federal regulations.

Because the effects alleged in Contention II(A), subparts 4-9, are postulated to result only from significant permanent deformation and damage of the racks and pool walls during the PHE, an assertion we have found, *supra*, to be without merit, subparts 4-9 must also fail.

The Sierra Club offered no testimony on subparts 5-9 of its Contention II(A), and its testimony on subpart 4 was incidental to that on subparts 1-3.

In its Safety Evaluation (Staff Exh. 1 at 3-6), the Staff found that the Applicant had demonstrated compliance with General Design Criteria (GDC) 61 and 62, 10 C.F.R. Part 50, Appendix A, § VI. GDC 61 requires that fuel storage facilities be designed so that adequate safety margins under normal and postulated accident conditions are assured. GDC 62 requires that criticality in fuel storage and handling systems be prevented. Because of demonstrated compliance with these criteria, no analysis of a criticality event in the spent fuel pools is required. However, we make findings, based on analyses performed by Applicant and Staff, to illuminate the considerations bearing on reactivity with and without boric acid water in the pools under normal and abnormal conditions. See Findings 67-70.

We also make certain findings on Contention II(A)(6) concerning evidence evaluating the structural integrity of the fuel assemblies. We find that failure mechanisms other than significant permanent deformation of the storage racks will not cause rupture of the cladding. Thus, without rupture of the cladding, there will be no release of radioactivity. Findings 72-74.

## **Contention II(B)**

Contention II(B) provides as follows:

- II. Is is the contention of the Sierra Club that proposed reracking is inconsistent with the protection of the public health and safety, and the environment, for reasons which include the following:
  - (B) during the PHE, collisions between groups of racks with each other and/or with the pool walls are expected to occur with results similar to those described in II(A) above.

As in Contention II(A), the issues here stem largely from the complexity of the design models and simplifying assumptions used in them to predict rack motions. Different models predicted different motions, forces, loads, and stresses, because different assumptions and parameters were utilized.

At Staff's request, Applicant performed several parametric studies utilizing two-dimensional multirack models to demonstrate the conservatism of its three-dimensional single-rack model. While some cases analyzed predicted higher impact forces than predicted in the single-rack model, the predicted impact loads were comparable and well within the allowable impact loads used in the rack design. All potential collision conditions under the postulated Hosgri event are thus bounded by the loads for which the racks have been seismically qualified.

Because of the dissimilarity of the racks in terms of mass, geometry, tolerances, and gap spacings, it is highly unlikely that the different racks would respond identically to earthquake motions or that groups of racks would move as a unit during the random motions of an earthquake.

We have found, therefore, that the evidence provides reasonable assurance that the potential effects of multiple rack impacts with each other and with the pool walls are bounded by those predicted in the single-rack design-basis models. Findings 78-82. Therefore, the assertions in Sierra Club Contention II(B) are rejected as unsupported.

## **IV. FINDINGS OF FACT AND CONCLUSIONS OF LAW**

For all the foregoing reasons and based upon consideration of the entire record in this matter, we make the following findings of fact:

## General

1. Pacific Gas and Electric Company ("Applicant") is a California utility duly licensed to own and operate the Diablo Canyon Nuclear Power Plant under applicable state and federal laws.

2. The Sierra Club is a nonprofit, environmental organization admitted to this proceeding through the petition of its Santa Lucia Chapter pursuant to 10 C.F.R. Part 2.

3. The Diablo Canyon Nuclear Power Plant consists of two pressurized water reactors ("PWR") located 12 miles west southwest of San Luis Obispo, California. The units have a design electrical rating (Net MWe) of 1086 for Unit 1 and 1119 for Unit 2. Unit 1 achieved initial criticality on April 29, 1984, and began commercial operation on May 7, 1985. Unit 2 achieved initial criticality on August 19, 1985, and began commercial operation on March 13, 1986.

4. The spent fuel pools at Diablo Canyon are located at each end of the east side of the auxiliary building. Each pool is approximately 35 feet wide, 37 feet long, and 40 feet deep. The normal water level in the pool provides a minimum of 23 feet of water above the top of the stored fuel. The concrete pool walls are 6 feet thick except around the fuel transfer canal where the walls are 5 feet thick. The reinforced concrete foundations of the pools have a minimum thickness of 5 feet and are founded on approximately 5 additional feet of lean concrete placed directly on rock. The pool walls and floors are lined with stainless steel plate with a thickness of 0.25 inch on the floor and approximately 0.125 inch on the walls. Shiffer *et al.*, ff. Tr. 179, at 14. As originally constructed, each pool could store 270 spent fuel assemblies.

## The License Amendment Application

5. On October 30, 1985, Applicant filed requests to amend its licenses for Units 1 and 2 at Diablo Canyon to authorize high-density reracking of the spent fuel pools to increase the number of rack storage locations for spent fuel rod assemblies in each pool. PG&E Exh. 1; 51 Fed. Reg. 1451 (1986).

6. The high-density spent fuel racks proposed for each of the Diablo Canyon fuel pools consist of a total of 16 racks of various sizes, with a total of 1324 fuel assembly storage cells plus 10 miscellaneous storage locations. The number of storage cells ranges from 24 in the smallest racks to 110 in the largest racks. Individual storage cells have an 8.85-inch (nominal) square cross-section, and each is sized to contain and protect a single Westinghouse-type PWR 17 × 17 fuel assembly. The cells are arranged with a 10.93-inch center-to-center spacing in the rack modules. Stainless steel gap channels are welded between the cells to provide a "honeycomb" type structure which provides considerable

rigidity and resistance to impact as well as to seismic shaking loads. PG&E Exh. 2; Shiffer *et al.*, ff. Tr. 179, at 12-13.

7. Each fuel assembly consists of a  $17 \times 17$  array of cylindrical rods of which 264 rods contain fuel pellets. The assembly is approximately 8.4 inches square and 13.3 feet in length. Each fuel rod is a Zircaloy tube containing uranium dioxide fuel pellets. Grids are positioned at vertical intervals along the length of the fuel assembly to maintain the rod spacing. Shiffer *et al.*, ff. Tr. 179, at 39; PG&E Exh. 2.

8. The active fuel region is the region within the fuel assembly that contains fuel pellets. This region extends 144 inches, from approximately 3 inches above the bottom of the fuel assembly nozzle, which rests on the rack baseplate, to approximately 10 inches below the rack girdle bars. Shiffer *et al.*, ff. Tr. 179, at 39.

9. The racks are freestanding, with no connection to the pool floor, walls, or adjacent rack modules. The rack support feet rest on bearing (or bridge) plates on the pool floor. Each module is equipped with a girdle bar on the outside of each of the modules' four sides, near the top. Each girdle bar serves as a designated impact location and each is designed to accommodate impact loads that may occur during a seismic event. They also maintain a specified minimum gap between the cell walls of adjacent rack modules for all loading conditions. *Id.* at 11.

10. The rack modules are specifically designed for storage of spent fuel with different amounts of burnup. Three modules (290 cells) are designated as Region 1 in each pool; these utilize a neutron-absorbing material, Boraflex, on all four sides of the individual storage cells in the rack module. These cells in the Region 1 modules are designed for two kinds of storage, i.e., new fuel assemblies with enrichments up to 4.5 weight percent U-235, and spent fuel that has not achieved a specified minimum burnup. There are thirteen modules (1034 cells) designated as Region 2 in each pool; spent fuel stored in this region would be required by Technical Specifications to have a specified minimum burnup and, thus, no Boraflex is used in the Region 2 modules. *Id.* at 13-14.

## The Contentions

11. Three of Sierra Club's contentions challenging various health and safety aspects of the application were admitted to the proceeding. LBP-86-21, *supra*. Four of six issues in the first contention, Contention I(A), were resolved prior to hearing. Memorandum and Order dated August 28, 1986, at 2. A portion of Contention I(B) was deemed resolved during the hearing and withdrawn. Tr. 173-74.

12. Both Staff and Applicant presented expert witnesses concerning each of the Sierra Club's contentions. The witnesses were either employees of, or

consultants to, their proponents, and the witnesses' expertise included structural, nuclear, civil, and reactor operations engineering. Their expert qualifications were not challenged by the Sierra Club. *See, e.g.*, Tr. 179.

13. The Sierra Club offered one witness on all contentions, Dr. Richard B. Ferguson. On *voir dire*, Dr. Ferguson conceded that he was not an expert in the following technical subjects as they relate to the design and analysis of spent fuel racks: nuclear engineering; nuclear systems; nuclear criticality; seismic design; and federal laws, codes, and regulations. Tr. 424-26. He further stated that he has never taken courses in the following areas: nuclear engineering; nuclear systems; finite-element analysis; and spent fuel storage technologies. Tr. 426-31. Dr. Ferguson's testimony and his professional qualifications clearly indicate that, other than his involvement with the proposed reracking at Diablo Canyon, he has limited or no experience with any of the technical subjects at issue in this proceeding. Accordingly, his testimony is given the weight that the Board feels is appropriate considering his doctorate in physics and over 13 years of teaching physics at the University of California at Los Angeles and California Polytechnic State University.

#### *Contention I(A)*

14. Contention I(A) originally consisted of six subparts. Subparts I(A)(1), I(A)(2), I(A)(5), and I(A)(6) were withdrawn by the Sierra Club in their Report to the Board dated August 15, 1986. Memorandum and Order dated August 28, 1986.

15. Contention I(A)3 reads as follows:

It is the contention of the Sierra Club, Santa Lucia Chapter (Sierra Club), that the report submitted to the NRC entitled *Reracking of Spent Fuel Pools, Diablo Canyon Units 1 and 2* and other communications between Pacific Gas and Electric Company (PG&E) and the NRC, which are available to the public on the same subject (the Reports), fail to contain certain relevant data necessary for independent verification of the claims made in the Reports regarding consistency of the proposed reracking with the protection of the public health and safety, and the environment.

In particular, the Reports fail to contain data regarding:

\* \* \*

- 3) The expected velocity and displacement of the spent fuel pools (pools) as a function of time in three dimensions during the postulated Hosgri earthquake (PHE);

16. The design process for the racks utilized the postulated Hosgri earthquake acceleration time-histories for the base of the spent fuel pool. Velocity and displacement information can be derived from the acceleration time-histories used in the design, which are contained in the Reracking Report, Figures 6.1.1,

6.1.2, and 6.1.3. Shiffer *et al.*, ff. Tr. 179, at 24; Fishman *et al.*, ff. Tr. 519, at 6-7; PG&E Exh. 2.

17. Data regarding the velocity and displacement of the fuel pools as a function of time in three dimensions for the postulated Hosgri earthquake is not necessary for rack analysis or review by the NRC Staff in evaluating the technical adequacy of the rack design because the postulated Hosgri earthquake acceleration time-histories are used for that purpose. Consequently, the velocity and displacement time-history data for the fuel pools were not included in the Reracking Report because a record of such data was not required during the design process. Shiffer *et al.*, ff. Tr. 179, at 24; Fishman *et al.*, ff. Tr. 519, at 6-7; PG&E Exh. 2.

#### *Contention I(A)(4)*

18. Contention I(A)(4) provides as follows:

It is the contention of the Sierra Club, Santa Lucia Chapter (Sierra Club), that the report submitted to the NRC entitled *Reracking of Spent Fuel Pools, Diablo Canyon Units 1 and 2* and other communications between Pacific Gas and Electric Company (PG&E) and the NRC, which are available to the public on the same subject (the Reports), fail to contain certain relevant data necessary for independent verification of the claims made in the Reports regarding consistency of the proposed reracking with the protection of the public health and safety, and the environment.

In particular, the Reports fail to contain data regarding:

\* \* \*

- 4) The expected maximum velocity and displacement of the racks obtained from the computer modeling of rack behavior during the PHE;

19. The maximum velocity of the racks is not documented in the Reports because it is not a value needed for design of the racks. However, the maximum displacement for a loaded rack module is included in the Reracking Report in Table 6.8.2. Shiffer *et al.*, ff. Tr. 179, at 24-25; PG&E Exh. 2. *See also* Finding 40, *infra*.

#### *Contention I(B)*

20. Contention I(B) originally consisted of ten subparts. Of these, the Board found that subparts I(B)(1), I(B)(5), and I(B)(10) were subsumed in Contention II. Subparts I(B)(3), I(B)(4), and I(B)(6) were rejected by the Board as not meeting the basis and specificity requirements of 10 C.F.R. § 2.714(b) (1986). LBP-86-21, *supra*, 23 NRC at 861-64. I(B)9 was withdrawn by the Sierra Club during the hearing. Tr. 173-74.

21. Of those subparts remaining, Contention I(B)(2) provides as follows:

It is the contention of the Sierra Club that the Reports fail to include consideration of certain relevant conditions, phenomena and alternatives necessary for independent verification of claims made in the Reports regarding consistency of the proposed reracking with public health and safety, and the environment, and with federal law.

In particular, the Reports fail to consider:

- 2) The resonant behavior of the spent fuel assemblies in the racks in response to the PHE and the consequences of such behavior;

22. The rack analysis performed by PG&E considered potential resonant behavior of fuel assemblies in that the design-basis analysis performed to evaluate the fuel racks utilized a mathematical representation of the various components and their response behavior. Since resonant behavior is a fundamental condition described by the equations of motion, and since the equations of motion were appropriately represented, the analysis considered the possibility of resonant behavior. Shiffer *et al.*, ff. Tr. 179, at 26.

23. The design-basis analysis demonstrated that, due to the specific conditions present, the fuel assemblies do not experience resonant behavior. These conditions include the nonlinearities of the system (including the presence of water, the movement of the fuel assemblies within the fuel racks, and the presence of friction at the fuel rack base). The analysis appropriately represented these physical conditions and demonstrated that the integrity of the racks is maintained. As a practical matter, resonance will not occur since the displacement amplitude cannot increase beyond the 0.302-inch clearance between the fuel assembly and cell wall. Shiffer *et al.*, ff. Tr. 179, at 27; Fishman *et al.*, ff. Tr. 519, at 10-11.

**Contention I(B)(7)**

24. Contention I(B)(7) provides as follows:

It is the contention of the Sierra Club that the Reports fail to include consideration of certain relevant conditions, phenomena and alternatives necessary for independent verification of claims made in the Reports regarding consistency of the proposed reracking with public health and safety, and the environment, and with federal law.

In particular, the Reports fail to consider:

- 7) alternative on-site storage facilities including:
  - (i) construction of new or additional storage facilities and/or;
  - (ii) acquisition of modular or mobile spent nuclear fuel storage equipment, including spent nuclear fuel storage casks;



25. PG&E had compared the two methods of onsite storage facilities mentioned in the contention with the proposed reracking. The evaluation was brief because these two specific methods, i.e., additional storage facilities and acquisition of modular storage equipment, do not offer any increase in safety over high-density racks, and they involve technical, regulatory, and other disadvantages when compared with high-density racks. Shiffer *et al.*, ff. Tr. 179, at 28; Cleary, ff. Tr. 604, at 2-3; PG&E Exh. 2, Ch. 9.

26. An additional storage pool was considered less attractive because it would not provide any added safety for spent fuel storage than with properly designed high-density racks in the existing pools. Moreover, the costs of constructing a new seismically qualified structure and auxiliary support systems would obviously be very high compared with reracking. Finally, this would involve increased handling of the spent fuel. Shiffer *et al.*, ff. Tr. 179, at 29; Cleary, ff. Tr. 604, at 3-5.

27. Acquiring modular storage equipment was considered less attractive because such equipment would not provide any added safety over and above properly designed high-density racks. Further, modular equipment such as dry-cask storage was not a licensed concept at the time the reracking decision was made by PG&E, and casks were still being tested. In any event, dry-cask storage is not a viable option for Diablo Canyon based upon the design of the dry casks currently available. The dry casks are designed to store only fuel that has been discharged from the reactor at least 5 years prior to cask storage. Thus, this storage method could not be used for at least 5 years following the first refueling outage. Cleary, Tr. 617. See 10 C.F.R. Part 72 (1986).

28. The existing low-density racks at Diablo Canyon were originally designed, in accordance with early NRC guidelines, to accommodate spent fuel discharged from one refueling (roughly 70 assemblies), plus a reserve capacity of a full-core offload (193 assemblies) in the event a full-core discharge were necessary. Shiffer *et al.*, ff. Tr. 179, at 29.

29. The storage space associated with one refueling discharge is currently occupied at Diablo Canyon Units 1 and 2 after the first refueling outages. Based upon operating schedules and the desirability of maintaining full-core discharge capability, it is necessary that the spent fuel storage capacity for both units be increased. Further, the cost of the casks, assuming their availability, that would be required for the needed capacity at Diablo Canyon would be high compared with the reracking alternative. At the time that PG&E made the reracking decision, there were no plants in the United States using modular storage facilities for spent fuel storage. Subsequently, two plants were licensed to use modular storage facilities such as dry casks, but these plants did so only when all of the storage space in existing pools had been filled after they had been previously reracked with high-density racks. Shiffer *et al.*, ff. Tr. 179, at 29-30; Cleary, ff. Tr. 604, at 5-9.

30. The Staff reviewed PG&E's fuel pool amendment with regard to alternatives and presented its findings in the Environmental Assessment. Staff Exh. 2. They agreed that PG&E's proposed reracking would have no significant environmental impacts, whereas the Sierra Club's asserted alternatives of new or additional storage facilities or use of modular or mobile fuel storage racks would have specific, although not significant, environmental impacts. They also found that reracking the existing fuel pools has clear financial advantages over the asserted alternatives. Cleary, ff. Tr. 604, at 2-9.

31. The Sierra Club did not present any affirmative evidence to show that PG&E had failed to consider other alternatives to reracking. Rather, this contention is based only on opinion. Dr. Ferguson conceded as much when he stated that the particular contention "is just an opinion" he had reached. Ferguson, Tr. 443.

32. The Sierra Club's testimony on Contention I(B)(7) was amended by its only witness, Dr. R. Ferguson, who conceded that PG&E did, in fact, consider other alternatives to reracking, though not in his opinion "seriously." He stated that he wished to amend his testimony to say that PG&E "failed to consider them [other alternatives] seriously." Moreover, Dr. Ferguson acknowledged that during the discovery process, the Sierra Club received documents from PG&E that considered other alternatives. Specifically, he admitted that "[t]here were some documents provided related to cask storage." Ferguson, Tr. 444.

33. Applicant produced evidence that showed that it did review "four or five alternatives" before selecting reracking. PG&E Exh. 13. Dr. Ferguson admitted that Exhibit 13 contains "a brief summary of descriptions of some factors involved with the alternatives" considered. Ferguson, Tr. 446-47.

34. The Diablo Canyon plant was designed to store spent fuel for a nominal period of 1 year and then ship the fuel off site for reprocessing or disposal. Due to the unavailability of fuel reprocessing facilities and of permanent disposal sites, the spent fuel must now be stored for an extended period of time at Diablo Canyon. Therefore, the alternatives that must be considered, in addition to onsite storage, consist of various methods of storing the spent fuel off site or shutting down the reactor. The consideration of alternatives, including offsite shipment of spent fuel and shutdown of the reactor, was documented in the Reracking Report, Chapter 9. While the onsite storage alternative was chosen, there are no regulations that specify the nature of onsite storage methods that must be considered or documented. The discussion included in the Reracking Report was sufficient to comply with NRC requirements. PG&E Exh. 2, Chs. 9 and 12, v-1.

### **Contention I(B)(8)**

35. Contention I(B)(8) provides as follows:

It is the contention of the Sierra Club that the Reports fail to include consideration of certain relevant conditions, phenomena and alternatives necessary for independent verification of claims made in the Reports regarding consistency of the proposed reracking with public health and safety, and the environment, and with federal law.

In particular, the Reports fail to consider:

\* \* \*

- 8) the use of anchors, braces, or other structural members to prevent rack motion and subsequent damage during the PHE;

36. The use of anchors, braces, or other structural members to prevent rack motion is not discussed in the reports because freestanding racks meet safety requirements without such structural members. Shiffer *et al.*, ff. Tr. 179, at 31; Fishman *et al.*, ff. Tr. 519, at 11-12.

37. Structural anchors, braces, or other structural members are not required to prevent rack motion and potential subsequent rack damage. The freestanding racks satisfy NRC criteria and guidance applicable to spent fuel storage racks. Fishman *et al.*, ff. Tr. 519, at 11-12. The design accommodates the calculated rack motion during the postulated Hosgri earthquake and shows that the racks have sufficient safety margins. In addition, freestanding racks have several advantages over anchored or braced racks. Particularly, freestanding racks reduce the stress on the liner caused by thermal loads from the heat generated by the spent fuel. Further, sliding provides a very effective means to dissipate energy. A freestanding rack is, therefore, considered a better design to absorb seismic energy and, thus, has a distinct advantage over anchored or braced racks. Further, no welding is required to install the freestanding racks. Finally, inspection, and replacement of racks if necessary, is simplified by the use of freestanding racks. Shiffer *et al.*, ff. Tr. 179, at 31.

### **Contention II(A)**

38. Subparts 1 to 3 of Contention II(A) provide as follows:

It is the contention of the Sierra Club that the proposed reracking is inconsistent with the protection of the public health and safety, and the environment, for reasons which include the following:

- A) during the PHE, collisions between the racks and the pool walls are expected to occur, resulting in:
  - 1) impact forces on the racks significantly larger than those estimated in the reports;

- 2) impact forces on the racks significantly larger than those expected to damage the racks;
- 3) significant permanent deformation and other damage to the racks and pool walls.

39. The design process for the racks utilized the postulated Hosgri earthquake acceleration time-histories for the base of the spent fuel pool. The artificial time-history utilized is the one that was previously developed in the 1977 time frame and used in the 1983 Independent Design Verification hearings. *Id.* at 24; Fishman *et al.*, ff. Tr. 519, at 6-8, Fig. 1; White, Tr. 410-11.

40. An artificial time-history is developed as the superposition of sine waves with different amplitudes, frequencies, and random phase-shifts. It is mathematically derived to correspond to a specified response spectrum. The vibratory characteristics of an actual earthquake tend to oscillate about zero, whereas artificial time-histories may show the development of large cumulative values of acceleration, velocity, or displacement. The artificial acceleration time-histories for the PHE were computed by the Applicant using a modified version of the computer program SIMQKE. Using the acceleration time-histories provided by the Applicant, the Staff consultant performed baseline corrections in accordance with a branch of SIMQKE and developed corrected acceleration, velocity, and displacement time-histories. Fishman *et al.*, ff. Tr. 519, at 9-10, Figs. 1, 2, 3. The corrected final displacement from the PHE would be 4.83 inches in the east-west direction, and the maximum displacement amplitude would be 16.21 inches at 16.1 seconds. *Id.*, Fig. 3. Based upon these baseline corrections, the Board concludes that the low magnitude of the spent fuel pool displacement (when compared with the uncorrected values) would not significantly alter the results of the structural analyses of the racks performed by the Applicant.

41. The high-density spent fuel racks, when fully loaded with spent fuel, would increase the overall mass of the auxiliary building by less than 1%. The liner plate and pool structures were evaluated for the new loading conditions and were found to be adequate to support and transfer the high-density rack reaction loads. Shiffer *et al.*, ff. Tr. 179, at 14-15.

42. The NRC has established acceptance criteria and design guidance for safe storage of spent fuel. The seismic design criteria and guidance are primarily contained in §§9.1.2 and 3.8.4, Appendix D, of the Standard Review Plan ("SRP"), and in the NRC Position Paper, "OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications" ("Position Paper"), dated April 14, 1978. PG&E Exh. 12; Shiffer *et al.*, ff. Tr. 179, at 15.

43. SRP § 9.1.2, ¶ III.3.a, requires that spent fuel storage racks be classified and designed to Seismic Category I requirements. The criteria for seismic design and fuel assembly impact loads are provided in § IV(3) of the OT Position

Paper. Section IV(5) of the OT Position Paper states that SRP § 3.8.4 provides acceptable procedures for modeling and analyzing the seismic responses of the spent fuel racks. Further, § IV(2) of the OT Position Paper identifies either of two industry codes, § III of the American Society of Mechanical Engineers (ASME) Code or the American Institute of Steel Construction (AISC) Specification, as being acceptable for deriving the allowable stress criteria for the racks. Other codes are acceptable based on a case-by-case review. Structural acceptance criteria are provided in § IV(6) of the Position Paper. The criteria permit rack sliding and rack-to-rack impacts and provide specific guidance on how such impacts are to be incorporated in the rack design. Shiffer *et al.*, ff. Tr. 179, at 15-16; Fishman *et al.*, ff. Tr. 519, at 12-13; Ashar, Tr. 591, 595, and 596.

44. Staff interprets the OT Position Paper to allow “the possibility of collision of the racks with each other and with the spent fuel pool walls.” Staff’s position, as stated in the Position Paper, is that “impact loading should be quantified and that sliding and tilting motions will be contained within suitable geometric constraints.” Staff witnesses testified that there is no dispute that the Position Paper permits sliding, tilting, and impacts of racks, including rack-to-rack, rack-to-wall, and rack-to-floor impacts. Fishman *et al.*, ff. Tr. 519, at 12-13; Ashar, Tr. 591-92 and 595-96.

45. Sierra Club’s contention that the SRP prohibits sliding and tilting of the spent fuel storage racks, as well as rack-to-rack and rack-to-wall impacts, is not supported except by Dr. Ferguson’s interpretations of the SRP and OT Position Paper. On cross-examination, Dr. Ferguson testified that it is possible that his interpretations are incorrect. Ferguson, ff. Tr. 442, at 8-11; Ferguson, Tr. 465-70.

46. The Diablo Canyon high-density racks comply with the applicable seismic design criteria in that:

- a. The racks were designed as Seismic Category I components in accordance with SRP § 9.1.2, ¶ III.3.a.
- b. The allowable stress criteria for the racks were derived from the § III, subsection NF requirements of the ASME Code for Class 3 component supports. Construction materials conform to subsection NF of the ASME Code and were selected to be compatible with the fuel pool environment.
- c. The seismic excitation was simultaneously applied in three orthogonal directions. Increased damping of fuel racks due to submergence in the spent fuel pool was not considered. Local impact of the fuel assemblies within the spent fuel rack cells was considered in a manner that maximized forces acting on a rack module.
- d. The procedures used for modeling and analyzing the seismic responses of the Diablo Canyon spent fuel racks were consistent with

the requirements of the Position Paper. The models were developed based on current engineering practices.

- e. The possibility of gross sliding, tilting, and rack impacts under the postulated Hosgri event were evaluated in accordance with the acceptance criteria specified in § IV(6) of the Position Paper.
- f. No exceptions to acceptance criteria were taken for the design of the high-density spent fuel racks.

Shiffer *et al.*, ff. Tr. 179, at 16-17.

- 47. The analytical process used in the design of the racks consisted of:
  - a. Development of a nonlinear dynamic model of a rack module consisting of inertial mass elements, hydrodynamic coupling, and gap and friction elements;
  - b. Generation of the equations of motion and inertial coupling and solution of the equations using a computer program, DYNAHIS, to determine rack forces, moments, and displacements;
  - c. Computation of the detailed stress field in the rack (at the critical locations) and in the support legs using the forces, moments, and displacements calculated in the previous step.

Shiffer *et al.*, ff. Tr. 179, at 19-20.

48. Using the methodology described above, Applicant calculated the potential loads on the racks. These calculations were performed in conformity with the loading combinations and acceptance criteria specified in the NRC Staff's Position Paper and § 3.8.4, Appendix D, of the Standard Review Plan. The loading combinations included the combined effects of dead load, live load, thermal interaction within the pool, and inertia loads due to seismic events. A series of rack loading cases (fully loaded, partially full) was considered in order to establish the design loads. The resulting stresses in the racks were determined to be lower than the allowable stress values permitted by acceptance criteria. These allowable values provide a sufficient factor of safety when compared with the ultimate capacity of the racks. Shiffer *et al.*, ff. Tr. 179, at 20.

49. Conservatisms were incorporated into the modeling and analysis performed for the high-density racks in terms of modeling assumptions, postulated loadings, and safety margins on stress allowables. Several of the conservatisms inherent in the design-basis analysis are:

- a. Adjacent racks were assumed to move in a manner equal and opposite (out of phase) to the rack module being analyzed, thereby maximizing the potential for rack-to-rack impact.
- b. A value of 4% structural damping was used between the fuel assemblies and racks, between adjacent racks, and between racks and walls. A value of 10% for impact damping (in addition to structural damping) has been used at other plants licensed by the NRC. The analyses neglected fluid damping.

- c. The impacts between cell walls and the fuel assemblies were assumed to occur in phase. In reality, the fuel assemblies exhibit complex and random behavior. However, they were all assumed to move in unison so that the maximum response could be obtained.
- d. The form drag due to the geometric shape of the racks opposing their motion within the pool water was conservatively neglected.
- e. The fluid coupling coefficients were calculated based on the conservative assumption that the adjacent rows of racks are an infinite distance away (the distance measured perpendicular to the direction of rack movement). This reduces the "cross-coupling effect" of the adjacent rows of racks and yields conservative displacements and impact forces.
- f. The calculation of fluid inertial effects included an underestimate of the fluid kinetic energy and resulted in a conservative overestimate of rack displacement.
- g. Hydrodynamic coupling coefficients used in the analysis neglected certain nonlinearities of the motion. Studies in the literature show that incorporation of these nonlinear effects would significantly lower rack response.

*Id.* at 20-22; Fishman *et al.*, ff. Tr. 519, at 21; Singh, Tr. 197.

50. The racks were designed and constructed using the approved acceptance criteria to maintain the spent fuel assemblies in a safe configuration for normal and abnormal loads, including potential impacts between racks and between the racks and the fuel pool walls, which may occur during a Hosgri event. Shiffer *et al.*, ff. Tr. 179, at 17.

51. The analytical model developed by Applicant for high-density rack analysis was a nonlinear dynamic model and appropriately considered the potential effects of the following possibilities: movement of the fuel assemblies, frictional resistance at the base of the rack, rack sliding and rocking behavior, rack uplift and subsequent impact on the bearing plate, and rack impacts with adjacent racks and pool walls. In addition to the potential rack movements addressed in the analysis, fluid effects, known as hydrodynamic coupling, were also considered. Shiffer *et al.*, ff. Tr. 179, at 17.

52. In addressing rack sliding behavior in the model, friction coefficients of 0.8 and 0.2, which bound known experimental data, were used in the analysis to maximize the inertial force and horizontal displacement, respectively, of the racks. This wide range of friction values is typically used in the industry for rack design. *Id.* at 18. While spatially varying coefficients of friction were not explicitly utilized in the model, use of the bounding values (0.8 and 0.2) would cover possible effects of varying coefficients of friction as a function of position. Fishman, Tr. 586.

53. Fluid inertial effects, produced by rack motion, were also addressed in the model. In particular, the accelerating fluid mass results in two types of inertial effects. As a rack starts to slide, the water inside and surrounding the rack is set in motion. This produces an additional inertial force on the rack, which was addressed in the analysis by adding an appropriate amount of water mass, known as "virtual mass," to the mass of the rack and fuel assemblies. The second effect of the accelerating fluid mass is hydrodynamic coupling. As the space between moving racks or between the racks and adjacent walls is reduced, the fluid between the bodies is expelled from that space. This causes fluid pressures to develop on the surfaces bounding the fluid mass, which retards the seismic motion of the racks. The effects of the fluid motion on rack displacements are determined by the kinetic energy of the fluid. By underestimating the kinetic energy of the fluid, rack displacements are necessarily overestimated. If the kinetic energy of the fluid were ignored completely (e.g., assuming the absence of fluid), the rack displacements would be grossly overestimated. The calculation method used for rack analysis includes fluid motion but underestimates the fluid kinetic energy and, accordingly, overestimates rack displacements; i.e., the calculation method is conservative. PG&E's use of virtual mass and hydrodynamic coupling in the analysis is based on the fundamental principles of fluid dynamics. Shiffer *et al.*, ff. Tr. 179, at 18-19.

54. Fluid coupling effects in the model were derived based on the fundamental theories of hydrodynamics, known for well over 100 years, in terms of Lagrange's equations of motion and continuity for frictionless fluids. In the derivations for various rack-to-rack, rack-to-wall, and fuel-to-cell wall configurations, the kinetic energy of the fluid flowing between the components was computed using calculation methods that linearize the fluid coupling coefficients and underestimate the fluid kinetic energy. Since the seismic energy must be balanced by the kinetic energy of the fluid in the pool and rack components, the dynamic motion of the components is overestimated, which, contrary to the position of the Sierra Club, overestimates rack impact forces and resultant stresses calculated in the model. Further, the calculation methods employed other conservative assumptions, including the assumption that adjacent rows of racks are an infinite distance away, reducing "cross-coupling" effects. Fishman *et al.*, ff. Tr. 519, at 21; Fishman, Tr. 596-97; DeGrassi, Tr. 597-98; Shiffer *et al.*, ff. Tr. 179, at 21-23; Singh, Tr. 222-23, 248-51, 261; Ashar, Tr. 598-99.

55. Several parametric studies were performed by Applicant that included both simplified and complex two-dimensional, single- and multirack analytical models, as well as enhancements to the original design-basis, three-dimensional, single-rack model. The results of these studies confirm in all cases that rack impact loads and stresses due to the postulated Hosgri earthquake are below allowable values. Fishman *et al.*, ff. Tr. 519, at 22. Therefore, the design-basis evaluation was conservative, and the high-density spent fuel racks satisfy



acceptance criteria and will maintain their integrity for the postulated Hosgri event. Shiffer *et al.*, ff. Tr. 179, at 34-36.

56. While impact forces are important to the design process, the stress ratios are more significant in that they better reflect the effect of impacts on the racks. The controlling stress ratios for the racks have an allowable value of 2.0. The highest stress ratio for the impacts determined from the design-basis analysis was 1.436. For the impacts determined from the parametric studies, the highest stress ratio was 0.743. Thus, the design-basis evaluations were shown to be conservative and bounding, and the racks were shown to accommodate the impact with acceptable margins. *Id.* at 36; DeGrassi, Tr. 526-27.

57. In evaluating the walls and the rack components, impact loads were conservatively assumed to be static. No credit was taken for the short duration of the loading. Stresses derived from these calculated forces were significantly smaller than the stresses that the racks and walls are capable of withstanding without any adverse effect. Shiffer *et al.*, ff. Tr. 179, at 36-37.

58. Because of the conservative assumptions and methods used to analyze rack-to-rack and rack-to-wall impact forces, the resulting impact forces on the racks bound those that might occur during the postulated Hosgri event. *Id.* at 37; Fishman *et al.*, ff. Tr. 519, at 15-16.

59. If a rack should impact an adjacent rack or the wall, the impact force would occur at the girdle bar or at the baseplate. The fuel rack strength at the girdle bar level is significantly greater than that required to resist the design loads. As the rack impacts the wall, the rack girdle bars perpendicular to the wall would be loaded in compression by direct bearing. These bars can sustain a direct impact load greater than 175,000 pounds each before the onset of yielding, and incipient failure occurs at a load of at least twice the yield force. The impact resistance along the girdle bar that impacts flat against the wall is greater than 20,000 pounds per storage cell. With regard to the baseplate, its resistance is substantially greater than that for the girdle bars. Shiffer *et al.*, ff. Tr. 179, at 37; *see* Ferguson, Tr. 488-89.

60. Rack failure would not necessarily occur even with impact loads larger than the allowable loads. The NRC Staff agrees with PG&E in that such failure is highly unlikely due to the reserve margin between the onset of yielding and incipient failure. This yield-to-failure relationship is typical of ductile structural materials. Fishman *et al.*, ff. Tr. 519, at 16.

61. Between the allowable impact force and the force required to cause large permanent deformation of the racks, there is a large reservoir of energy-absorbing capacity in the rack modules. *Id.* at 13-15; DeGrassi, Tr. 526-28; Shiffer *et al.*, ff. Tr. 179, at 34-39; PG&E Exh. 2; Singh, Tr. 204-05, 210-11, 213; § 6.9 in PG&E Exhs. 3-7.

62. The Sierra Club no longer maintains that its calculations that yielded impact forces larger than the allowables listed in the reports are accurate and reliable, and show rack failure. Ferguson, Tr. 478-79.

63. From Table 6.8.2 of the Reracking Report (PG&E Exh. 2), it can be determined that the largest calculated impact force between a storage cell and a fuel assembly is 249,900 pounds or 28% of the allowable 883,000 pounds. Similarly, the maximum calculated impact force between racks is 105,000 pounds, which is 60% of the allowable 175,000 pounds. Therefore, significant permanent deformation and other damage to the racks and pool walls will not occur as a result of the PHE. Fishman *et al.*, ff. Tr. 519, at 14-15; Shiffer *et al.*, ff. Tr. 179, at 35-39; PG&E Exh. 2, §§ 6.9.1 and 6.9.2, Tables 6.8.1 and 6.8.2; PG&E Exhs. 3-7; Singh, Tr. 211, 213.

#### **Contention II(A)(4)**

64. Contention II(A)(4) provides as follows:

It is the contention of the Sierra Club that the proposed reracking is inconsistent with the protection of the public health and safety, and the environment, for reasons which include the following:

- A) during the PHE collisions between the racks and the pool walls are expected to occur resulting in:

\* \* \*

- 4) reduction of the spacings between fuel assemblies.

65. While there may be minor local deformation to the racks or pool walls during the postulated Hosgri event, there would be no permanent deformation or other damage that would lead to criticality, damage to the fuel, increases in heat generation, or radiological releases. Shiffer *et al.*, ff. Tr. 179, at 38-41; Fishman *et al.*, ff. Tr. 519, at 14-18, 32-33; *see* Findings 39-63, *supra*.

#### **Contention II(A)(5)**

66. Contention II(A)(5) provides as follows:

It is the contention of the Sierra Club that the proposed reracking is inconsistent with the protection of the public health and safety, and the environment, for reasons which include the following:

- A) during the PHE, collisions between the racks and the pool walls are expected to occur resulting in:

\* \* \*

- 5) increase in the nuclear criticality [*sic*; reactivity] coefficient  $k_{eff}$  above 0.95;

67. Criticality analyses were performed for the Diablo Canyon high-density spent fuel storage racks to ensure that a  $k_{\text{eff}}$  equal to or less than 0.95 is maintained when the racks are fully loaded with fuel of the highest anticipated reactivity in each of two regions and when the pool is flooded with *unborated* water at a temperature corresponding to the highest reactivity. Fishman *et al.*, ff. Tr. 519, at 32. The maximum calculated reactivity includes a margin for uncertainty in reactivity calculations and in mechanical tolerances, statistically combined, such that the  $k_{\text{eff}}$  will be equal to or less than 0.95 with a 95% probability at a 95% confidence level. Shiffer *et al.*, ff. Tr. 179, at 40.

68. The Diablo Canyon spent fuel pools will be continually maintained at a boron concentration of at least 2000 ppm as required by the plant Technical Specifications. This soluble boron not only provides an additional and very large subcriticality margin under normal storage conditions, but precludes the possibility of exceeding a  $k_{\text{eff}}$  of 0.95 under credible abnormal conditions, including the postulated Hosgri event. Shiffer *et al.*, ff. Tr. 179, at 40-41; Fishman *et al.*, ff. Tr. 519, at 31.

69. The spacing requirement to maintain  $k_{\text{eff}}$  less than 0.95 without *borated* water is essentially the fuel assembly spacing in the rack design (10.93 inches), based upon the criticality analysis described in § 4.0 of Applicant's Reracking Report. PG&E Exh. 2. With borated water normally present in the spent fuel pool, the  $k_{\text{eff}}$  would not reach 0.95 until the water gap between storage cells in Region 1 (nominally 1.786 inches) has been reduced to less than 0.1 inch uniformly everywhere, an implausible condition. While analyses have demonstrated that significant rack deformation would not occur, even if it were assumed that there was zero gap between storage cells, the resulting configuration would still not be critical. In Region 2, reducing the gap between storage cells to zero from the nominal 1.9 inches would not result in  $k_{\text{eff}}$  exceeding 0.95. Shiffer *et al.*, ff. Tr. 179, at 41.

70. With unborated water in the spent fuel pool, the highest  $k_{\text{eff}}$ , including an allowance for uncertainties and manufacturing tolerances, was calculated to be 0.920 in Region 1 and 0.938 in Region 2. Both calculations are based upon conservative specifications of fuel enrichment and burnups and provide subcriticality margins greater than that required by NRC regulations. With the normal concentration of soluble boron present (2000 ppm), the safety margin below criticality is much larger, with the maximum  $k_{\text{eff}}$  being less than 0.75 in both regions. There are no postulated collisions or plausible reductions in spacing that could result in  $k_{\text{eff}}$  exceeding the limit of 0.95. *Id.* at 41-42; Fishman *et al.*, ff. Tr. 519, at 34-35.

## **Contention II(A)(6)**

71. Contention II(A)(6) provides as follows:

It is the contention of the Sierra Club that the proposed reracking is inconsistent with the protection of the public health and safety, and the environment, for reasons which include the following:

- A) during the PHE, collisions between the racks and the pool walls are expected to occur resulting in:

\* \* \*

- 6) release of large quantities of heat and radiation;

72. Any postulated condition that would cause the release of radiation would require the fuel cladding to rupture; however, fuel cladding rupture cannot occur unless the fuel assembly grids are crushed. For Diablo Canyon, the calculated impact forces are not large enough to cause crushing of the grid and rupture of the cladding. Shiffer *et al.*, ff. Tr. 179, at 42.

73. During the postulated Hosgri event at Diablo Canyon Units 1 and 2, due to the motion of the rack module relative to the motion of the fuel assemblies, the fuel assemblies in the spent fuel pool storage racks could contact the stainless steel walls of the storage cells. However, the maximum impact force on a fuel assembly grid has been calculated to be only approximately 1700 pounds, and the maximum fuel rod bending stress has been calculated to be only approximately 800 psi. *Id.* at 42-43.

74. The structural integrity of the fuel assembly was evaluated by comparing the calculated forces against capacity determined from analytical and experimental data. Specifically, the maximum impact force on the grid, the fuel rod bending stresses due to flexure, and the fuel rod local-contact forces at the grid supports were evaluated. The calculated local stress levels caused by the reaction force were well below the allowable stress levels in the fuel rods, ensuring that the integrity of the fuel cladding will be maintained during the Hosgri event. Thus, the integrity of fuel assemblies stored in the high-density spent fuel racks at Diablo Canyon will be maintained, and there can be no resulting release of large quantities of heat and radioactive material. *Id.*; Fishman *et al.*, ff. Tr. 519, at 31.

## **Contention II(A) (7), (8), and (9)**

75. Contention II(A)(7), (8), and (9) provides as follows:

It is the contention of the Sierra Club that the proposed reracking is inconsistent with the protection of the public health and safety, and the environment, for reasons which include the following:

- A) during the PHE, collisions between the racks and the pool walls are expected to occur resulting in:

\* \* \*

- 7) radioactive contamination of the nuclear power plant and its employees above the levels permitted by federal regulations;
- 8) radioactive contamination of the environment in the vicinity of the nuclear power plant above the levels permitted by federal regulations; and
- 9) radioactive contamination of humans and other living things in the vicinity of the nuclear power plant above the levels permitted by federal regulations.

76. The racks have been qualified to withstand the impact loads that may result from collisions between racks and pool walls during the postulated Hosgri earthquake. Therefore, no damage to the fuel would occur, and there can be no resulting releases of large quantities of heat and radioactive material. Additionally, the racks will maintain the fuel assemblies in a subcritical configuration even during any such collisions, and releases due to criticality in the pools cannot occur. Consequently, no radioactive contamination of humans and other living things in the vicinity of the plant above the levels permitted by federal regulations would result from collisions between the racks and the pool walls during the postulated Hosgri earthquake. Shiffer *et al.*, ff. Tr. 179, at 45.

#### **Contention II(B)**

77. Contention II(B) provides as follows:

It is the contention of the Sierra Club that the proposed reracking is inconsistent with the protection of the public health and safety, and the environment, for reasons which include the following:

\* \* \*

- B) during the PHE, collisions between groups of racks with each other and/or with the pool walls are expected to occur with results similar to those described in II(A) above.

78. Because of the dissimilarity of the racks (in terms of geometry, tolerances, and gap spacings) it is highly unlikely that groups of racks would move as a unit under a random seismic motion. Shiffer *et al.*, ff. Tr. 179, at 46; Fishman *et al.*, ff. Tr. 519, at 19.

79. As a result of questions raised by the Brookhaven National Laboratory in the context of its review of the Commonwealth Edison Company application to rerack the Byron spent fuel pool, the Applicant was requested by the Staff to perform a number of analyses to demonstrate the conservatism of its single-rack model. In particular, the Staff was concerned that the impact forces due to

multirack impacts could exceed the forces computed by use of the single-rack model. Fishman *et al.*, ff. Tr. 519, at 21, 23-24; DeGrassi, Tr. 526-28; Singh, Tr. 329-33, 335-36.

80. The Applicant conducted several multirack parametric studies and submitted these to the Staff for review. PG&E Exhs. 3-8. These analyses were reviewed by the Staff and its consultants FRC and BNL, as reflected in their respective Technical Evaluation Reports (TERs). Staff Exhs. 1-A and 1-B; Fishman *et al.*, ff. Tr. 519, at 22-23.

81. The parametric studies on multirack interactions utilized realistic modeling assumptions and evaluated variations of all key parameters that might affect the qualification of the racks. Some of these parameters include loading of the racks, hydrodynamic coupling coefficients as they apply to the specific location of the rack, manufacturing tolerances, and friction coefficients. These studies show that the loads on the racks are comparable to those predicted by the design-basis analysis, and, in all cases, these loads are significantly lower than the allowables. Thus, the parametric studies confirm that Applicant's modeling assumptions in the design-basis analysis adequately represent potential group behavior of the racks. All potential collision conditions under the postulated Hosgri event are bounded by the loads for which the racks have been qualified. Shiffer *et al.*, ff. Tr. 179, at 46-47.

82. The Staff concluded, on the basis of its review, that the rack-to-rack, fuel assembly-to-rack and rack-to-wall impact loads were within the respective allowable impact loads. Fishman *et al.*, ff. Tr. 519, at 18-24; Ashar, Tr. 598-99. The Board finds that the Staff's review confirms the acceptability of the proposed rack design.

## CONCLUSIONS OF LAW

This Board concludes as a matter of law that:

1. With respect to Contention I(A), Pacific Gas and Electric Company has submitted sufficient information and data in support of its license amendment application to verify that the reracking is consistent with the protection of the public health and safety, particularly with regard to the expected velocity and displacement of the spent fuel pools and the racks during the postulated Hosgri earthquake;

2. With respect to Contention I(B), Pacific Gas and Electric Company has submitted sufficient information and data concerning relevant conditions, phenomena, and alternatives to conclude that the reracking proposed will adequately protect the public health and safety, particularly with regard to: alleged resonant behavior of the spent fuel assemblies in the racks during the postulated Hosgri earthquake; the absence of alternative onsite storage facilities;

and the absence of structural members allegedly necessary to prevent rack motion during the postulated Hosgri earthquake;

3. With respect to Contention II, the proposed reracking is consistent with the protection of the public health and safety and the environment, and neither the postulated collisions between the racks and the pool walls nor between groups of racks with each other or the pool walls has been shown to result in the harmful consequences alleged in the contention; and

4. The evidence adduced in this proceeding demonstrates that, with respect to the contentions considered, Pacific Gas and Electric Company's application to rerack the spent fuel pools at Diablo Canyon in a high-density configuration will adequately protect the public health and safety and the environment and that the application otherwise meets or exceeds the requirements of 10 C.F.R. Parts 50 and 51 and related Nuclear Regulatory Commission regulations and requirements.

## ORDER

For all the foregoing reasons and upon consideration of the entire record in this matter, it is, this 11th day of September 1987, ORDERED:

1. That pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's rules and regulations, the Director of Nuclear Reactor Regulation is authorized to issue to Pacific Gas and Electric Company amendments to its Diablo Canyon Power Plant Facility Operating Licenses Nos. DPR-80 and DPR-82 which revise the Technical Specifications to reflect the installation of the new spent fuel storage racks applied for;

2. That pursuant to 10 C.F.R. § 2.760 of the Commission's Rules of Practice, this Initial Decision shall become effective immediately. It will constitute the final decision of the Commission forty-five (45) days from the date of issuance, unless an appeal is taken in accordance with 10 C.F.R. § 2.762 or the Commission directs otherwise. See also 10 C.F.R. §§ 2.764, 2.785, and 2.786 (1987); and

3. That any party may take an appeal from this Decision by filing a Notice of Appeal within ten (10) days after service of this Initial Decision. Each appellant must file a brief supporting its position on appeal within thirty (30) days after filing its Notice of Appeal (40 days if the Staff is the appellant). Within 30 days after the period has expired for the filing and service of briefs of all appellants (forty (40) days in the case of the Staff), a party who is not an appellant may file a brief in support of, or in opposition to, the appeal of

any other party. A responding party shall file a single, responsive brief *only*, regardless of the number of appellants' briefs filed. See 10 C.F.R. § 2.762.

THE ATOMIC SAFETY AND  
LICENSING BOARD

B. Paul Cotter, Jr., Chairman  
ADMINISTRATIVE JUDGE

Glenn O. Bright\*  
ADMINISTRATIVE JUDGE

Jerry Harbour  
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,  
this 11th day of September 1987.

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\*Judge Bright participated in the writing of this Decision and concurs in the result but was not available to sign the Initial Decision at the time of issuance.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulies, Chairman  
Dr. Jerry R. Kline  
Mr. Frederick J. Shon

In the Matter of

Docket No. 50-322-OL-3  
(ASLBP No. 86-540-08-OL)  
(Emergency Planning)

LONG ISLAND LIGHTING  
COMPANY

(Shoreham Nuclear Power Station,  
Unit 1)

September 17, 1987

The Licensing Board denies Applicant's second renewed motion for summary disposition of the "legal authority" issues for failing to meet the requirements of 10 C.F.R. §2.749; denies Applicant's motion for leave to file a reply to Intervenor's answer to Applicant's motion for summary disposition filed under § 2.749 for failing to make the necessary threshold showing; reviews applicable law on summary disposition; and interprets rulings made by the Commission in CLI-86-13, 24 NRC 22 (1986), involving the remand of the realism argument as it pertains to the "legal authority" issues, and the effect had on the motion for summary disposition.

**MEMORANDUM AND ORDER**  
**(Ruling on Applicant's Motions of March 20, 1987,**  
**for Summary Disposition of the Legal Authority Issues**  
**and of May 22, 1987, for Leave to File a Reply and**  
**Interpreting Rulings Made by the Commission in CLI-86-13**  
**Involving the Remand of the Realism Issue and**  
**Its Effect on the Legal Authority Question)**

**INTRODUCTION**

On March 20, 1987, LILCO filed a motion, pursuant to 10 C.F.R. § 2.749, for summary disposition of Contentions 1 through 10, the "legal authority" issues. It requests that the Board decide the issues in LILCO's favor, on the ground that no genuine triable issue of material fact exists and that LILCO is entitled to a judgment as a matter of law. As part of its motion, Applicant requested that the Board allow it to file a reply, within 10 days of receipt of Intervenor's answer, in order for it to address "whatever novel theory the Intervenor create."

Intervenor on May 11, 1987, filed an answer alleging that the motion for summary disposition is defective and frivolous and requesting that it be denied. In a separate response filed the same date, Intervenor asserted that Applicant's request to file a reply to Intervenor's answer was premature and that, *inter alia*, the way for Applicant to proceed was by a motion for leave to reply, filed after Intervenor had answered Applicant's motion for summary disposition.

On May 22, 1987, LILCO filed a motion for leave to file a reply to Intervenor's answer to Applicant's motion for summary disposition. The motion renewed LILCO's request to file a reply. Attached to the motion was its proposed reply.

Intervenor on June 1, 1987, filed a response to the LILCO motion for leave to file a reply. The governments asserted that the reply is unauthorized and must be rejected summarily and that no consideration should be given to the proposed reply.

Staff, which had not responded to the March 20, 1987 motion for summary judgment, filed a response to the LILCO motion to file a reply. It supported the motion, alleging that there was good cause to permit the filing of the reply.

In this Memorandum and Order, the Board rules that LILCO not be granted leave to file a reply to Intervenor's answer to the motion for summary disposition. The Board further rules that the March 20, 1987 motion for summary disposition be denied. In so ruling, the Board interprets Commission holdings in CLI-86-13, 24 NRC 22 (1986), the decision that remanded to the Licensing Board the matter of LILCO's realism argument and its effect on the legal authority issues.

### A. The LILCO Motion for Leave to File a Reply

In its May 22, 1987 motion to file a reply, LILCO concedes that Intervenor's answer says little that is new as to the facts. It premises its request on other grounds that there is good cause for the Board to accept a reply. Applicant states that it could not have anticipated in its motion that Intervenor would ignore the requirements of the summary disposition regulations as to issues of fact and would instead try to recast the issues into legal ones. Further, it claims that a reply is necessary to help make sense of the Intervenor's answer, and to focus the issues and to correct statements. Also, Applicant claims it could not have anticipated that Intervenor's arguments would for the most part challenge the Commission's decision in CLI-86-13, *supra*, as well as other Commission decisions and regulations and federal court decisions. Attached to Applicant's motion is the proposed reply, which it seeks permission to file.<sup>1</sup>

In their answer of June 1, 1987, Intervenor claims that 10 C.F.R. § 2.749(a) bars the filing of reply. They further assert that even assuming that the Board has authority to consider LILCO's motion it must be denied because LILCO has demonstrated no compelling need to overcome the § 2.749 prohibition on replies. Intervenor contend that the Board has no need for additional assistance from LILCO to make sense of Intervenor's answer and to focus the issues. They further contend that legal argument is the essence of summary disposition filings, LILCO having to prove that as a matter of law it is entitled to a ruling in its favor.<sup>2</sup> They state that if Applicant could not, or did not, anticipate that legal argument would be included in the governments' answer then LILCO must face the consequences as set forth in the regulations governing summary disposition. Intervenor further contend that Applicant's proposed reply contains incorrect and misleading factual and legal assertions and that the governments must reply to them "unless the Board provides assurance that It will not review the proposed Reply *at all*." Intervenor ask that in addition to denying the LILCO motion and rejecting the proposed reply, "the Board make it clear that it will give absolutely no consideration to the proposed Reply."

Staff, in a June 8, 1987 response to the LILCO motion to file a reply, supports Applicant for the reasons offered by LILCO. Staff concludes that Intervenor's answer to the motion for summary disposition raises legal issues that could not have been anticipated and that must be resolved in deciding the subject motion; and that there are compelling reasons for permitting LILCO to file a reply to address Intervenor's legal arguments.

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<sup>1</sup> Intervenor introduced the procedure in this proceeding of attaching to a motion for leave to file a reply the proposed reply sought to be introduced. See Suffolk County and State of New York Motion for Leave to File Reply to LILCO's Answer and NRC Staff's Response to Motion to Admit New Contention, March 20, 1985.

<sup>2</sup> 10 C.F.R. § 2.749(d).

Based upon the authorized filings, the Board denies Applicant's motion to file a reply and rejects the proffered proposed reply.

Pertinent to the issue of the possible granting of leave to file a reply to an answer to a motion for summary judgment is § 2.749(a). It provides:

Any party to a proceeding may move, with or without supporting affidavits, for a decision by the presiding officer in that party's favor as to all or any part of the matters involved in the proceeding. . . . Any other party may serve an answer supporting or opposing the motion, with or without affidavits, within twenty (20) days after service of the motion. . . . The opposing party may within ten days after service respond in writing to new facts and arguments presented in any statement filed in support of the motion. No further supporting statements or responses thereto shall be entertained.

Also pertinent is 10 C.F.R. § 2.718(e) which provides boards with the general authority to "regulate the course of the hearing and the conduct of the participants" in the proceeding.

The Board has in the past modified the application of the provisions of § 2.749(a). Using the authority in § 2.718(e), we granted Intervenor's an extension of time beyond the 20-day period for the regulations to serve an answer opposing the motion for summary disposition. Memorandum and Order (Ruling on Intervenor's Motion to Convene Conference of Counsel, and Other Relief), April 10, 1987 (unpublished), at 7-8. It is noted that Intervenor's in seeking the extension of time to file an answer beyond that prescribed in § 2.749(a) did not consider the matter of permitting the filing of a reply to an answer to the motion to be jurisdictional. Intervenor's took the position that should the Board grant Intervenor's the extension they requested, "the governments have no objection to LILCO being granted an opportunity to reply." Suffolk County, State of New York, and Town of Southampton Motion for Conference of Counsel and for Licensing Board Clarification of Procedures, or in the Alternative, for Additional Time to Respond to LILCO's Summary Disposition Motion, April 7, 1987, at 11 n.6.

In response to a Staff motion filed April 8, 1987, seeking permission to reply to both LILCO's motion for summary disposition of March 20, 1987, and Intervenor's answer to the motion, this Board ruled that as a threshold requirement before considering the matter of whether the Board could grant leave for filing a reply, there should be established by the movant that it have a compelling reason for doing so. Staff never satisfied the threshold requirement, and the motion was denied. Memorandum and Order (Ruling on Staff's Motion of April 8, 1987, to File Reply), April 22, 1987 (unpublished), at 3-4.

The procedure previously employed by this Board, of requiring a movant to establish a compelling reason to lift the prohibition in § 2.749(a) against the filing of replies, before the Board decides whether it has the authority to do so, is a reasonable approach and we will continue to follow it here. The Board

does not find, after considering the authorized filings of the parties, that the Applicant has made the threshold showing, so that we need make the decision on our jurisdiction to do so.

Applicant's asserted need to file a reply is premised on its inability to have anticipated Intervenor's answer to its motion for summary disposition and in order to focus issues and to correct misstatements. The claim of surprise and the need to correct the record should be viewed in the context of the history of the legal authority and realism issues.

The very caption of Applicant's motion, "LILCO's Second Renewed Motion for Summary Disposition of the 'Legal Authority' Issues (Contentions EP-1)" indicates a long and repetitive history. LILCO's original motion for summary disposition was filed in August 1984 and its first renewed motion in February 1985. Much involving the current motion for summary disposition repeats what has gone before. It extends to LILCO filing on March 26, 1985, a motion seeking leave to reply to Intervenor's response to Applicant's first renewed motion for summary disposition and to Intervenor's proffering on April 8, 1985, an answer to Applicant's motion for leave to file a reply.

The Board found that there was no need for a reply by LILCO because of the already exhaustive filings and arguments on the issue. Therefore, it denied the motion. The proffered document of Intervenor was found to be without a useful purpose and was rejected. LBP-85-12, 21 NRC 644, 899 (1985).

The current situation is not dissimilar to the prior one. The parties have been afforded the opportunity called for by the regulations to make their cases, and the Board has sufficient information to reach a decision in the matter. The parties do not propose to present to the Board anything by way of additional facts but of argument of which we have had enough. It should be remembered that a primary purpose of summary disposition is to avoid the cost and delay of unnecessary litigation. Summary disposition should not be employed in a way that would add to cost and delay.

The most important occurrence involving the legal authority issue since the Board decided the last renewed motion for summary disposition was the Commission's issuance on July 22, 1986, of its decision, CLI-86-13, *supra*, in which the Commission expressed new views on the realism issue, which affects the legal authority question. Of course, from the history of the proceeding, it could only be expected that Applicant and the Intervenor would interpret the Commission's holdings differently and that they would emphasize different areas in making their cases on summary disposition.

Applicant construed CLI-86-13 as limiting Intervenor to utilizing the LILCO plan. Intervenor's interpretation, with its unbridled resistance to the plan, is to the contrary. Applicant emphasized from a factual standpoint Intervenor's capacity to implement the utility plan while Intervenor relied extensively on legal interpretations that do not require them to do so.

The positions the parties took were quite predictable. There are no surprises. Each side made its strongest case in the single pleading allowed by the regulation. The Board has no need for additional argument to reach its determination. At this point, we need no assistance in keeping the record straight on the issues, this third time around on the motion for summary disposition on the legal authority issues. Applicant has not provided the Board with a compelling reason for the need to file a reply, and the motion is denied.

Similarly, we have no need for a filing from Intervenorors to set the record straight. Further, the denial of Applicant's motion renders moot any requirement for a further filing by Intervenorors on the subject. The request is denied. As to Intervenorors' other pleas, which in effect proclaim to the Board not to include extra-record matters (Applicant's proposed reply) in our considerations and to confirm that we have not done so, those unnecessary pleas are patently ridiculous and are denied.

## **B. The Second Renewed LILCO Motion for Summary Disposition of the Legal Authority Issues**

### **1. Background**

The legal authority issues are those contained in Intervenorors' first ten contentions which allege that LILCO lacks, under New York law, legal authority to perform ten functions that had been relied upon by Applicant to carry out the offsite emergency plan for the Shoreham Nuclear Power Station.<sup>3</sup>

Applicant has, *inter alia*, defended against the legal authority issues on the basis of its realism argument. The argument is that the legal authority issue is an academic issue of no practical importance. It asserts that the local governments in an emergency would try to protect the public and that since those with legal authority to protect the public would respond to the emergency, there would be no gaps in legal authority.

The legal authority issue was twice litigated before this Board. In the first instance, the Board on October 22, 1984, issued a Memorandum and Order (unpublished) finding that seeking summary disposition at that time was premature. On February 27, 1985, LILCO renewed its motion, and after review

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<sup>3</sup>They are: (1) guiding traffic; (2) blocking roadways, erecting barriers in roadways, and channeling traffic; (3) posting traffic signs in roadways; (4) removing obstructions from public roadways, including towing private vehicles; (5) activating sirens and directing the broadcasting of emergency broadcast system messages; (6) making decisions and recommendations to the public concerning protective actions; (7) making decisions and recommendations to the public concerning protective actions for the ingestion exposure pathways; (8) making decisions and recommendations to the public concerning recovery and reentry; (9) dispensing fuel from tank trucks to automobiles along roadsides; and (10) performing access control at the Emergency Operations Center, the relocation centers, and the EPZ perimeters.

we decided against the Applicant, as reported in the Partial Initial Decision of April 17, 1985, LBP-85-12, 21 NRC 644, 919.

The Board found on the basis of *Cuomo v. LILCO*, Consol. Index No. 84-4615 (N.Y. Sup. Ct., slip op., Feb. 20, 1985), that the actions cited in Contentions 1-10 to be implemented in the emergency plan were prohibited by state law.<sup>4</sup> The Board further found that LILCO's realism argument was predicated on the State and County authorizing LILCO to act as called for in the emergency plan and that, because under New York law the utility could not be authorized to exercise police powers, the realism argument was without merit. The Board concluded, based on the governments' opposition to the plan, that any government response would be on an uncooperative, uncoordinated *ad hoc* basis which did not provide reasonable assurance that adequate protective measures could and would be taken in the event of a radiological emergency.<sup>5</sup>

LILCO pressed its realism argument before the Appeal Board, which then upheld the Licensing Board. ALAB-818, 22 NRC 651, 673-76 (1985). LILCO petitioned the Commission for review of ALAB-818, and the Commission approved. It resulted in the Commission, on July 24, 1986, reversing and remanding for further evidentiary hearings issues raised by LILCO's realism argument.<sup>6</sup>

The Commission in CLI-86-13 said that the LILCO plan should be measured against a standard that would require protective measures that are generally comparable to what might be accomplished with government cooperation. The Commission assumed that should the plant go into operation and were there to be a serious accident requiring protective actions, there would be a "best effort" State and County response and that as part of the "best effort" they would utilize the LILCO plan as the best source for emergency planning information and options. Statements by the Governor of New York and the County Executive of Suffolk County denying that they ever would or could cooperate with LILCO were not accepted by the Commission at face value. The statements caused the Commission to view the LILCO plan as an interim plan that will be superseded or supplemented by the State and County if Shoreham is permitted to operate at full power.

The Commission would not assume, as LILCO would have it do, that the assumed "best-effort" government response would necessarily be adequate. In its decision, the Commission saw that there were open questions as to the effectiveness of a government response. The Commission concluded that to answer those questions more information was needed about the shortcomings of the LILCO plan in terms of possible lesser dose savings and protective actions

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<sup>4</sup> LBP-85-12, *supra*, 21 NRC at 899.

<sup>5</sup> *Id.* at 909-12.

<sup>6</sup> CLI-86-13, *supra*, 24 NRC at 24.

foreclosed, assuming a "best-effort" State and County response using the LILCO plan as the source for basic emergency planning information and options. The Board was directed to use the existing evidentiary record to the maximum extent possible but to take additional evidence where necessary.

## **2. The LILCO Position on Summary Disposition**

For purposes of its motion, LILCO considers itself prohibited by state law from performing the ten functions enumerated in Contentions 1-10.<sup>7</sup> LILCO asserts that the Commission accepted LILCO's realism argument in CLI-86-13, Applicant stating that "since everyone with 'legal authority' would respond to the emergency, there would be no gap in legal authority."

Applicant argues that, considering the presumptions in CLI-86-13 that the State and County would use their best efforts and that the LILCO plan, if allowed to operate without the State and County, complies with NRC requirements, therefore, the State and County cannot oppose the motion without showing how they themselves, doing their best, would spoil an adequate plan and harm the public. LILCO further argues that this is something Intervenors cannot do, considering the governments' resources.

Applicant contends that all that it needs from the State and County is the intangible resource of legal authority, and that can be provided by telephone. LILCO asserts that so long as there is a means of contacting the State and County in an emergency, the "best-efforts" presumption compels the conclusion that the emergency response would be about as prompt as under the LILCO-only response already litigated.

Applicant stated that it wished that it were understood that realism does not mean that the State or County would step in at the time of an accident and take over the plan using State and County employees and send LERO home. It stated that realism contemplates a partnership in which LERO would continue, with emergency approval, to manage the emergency response, with the State and County providing legal authority and whatever resources they could provide on short notice. The utility's position was that the local governments could override a LERO decision and that ultimate authority resided with the governments.

Attached to Applicant's motion is a statement alleging sixty-three material facts as to which LILCO contends that there is no genuine issue to be heard on Contentions 1-10.<sup>8</sup> They pertain to State and County resources employable

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<sup>7</sup> The New York State Supreme Court, Appellate Division, Second Department, in 511 N.Y.S. 2d 867 (1987) affirmed the lower court decision, *Cuomo v. LILCO*, *supra*, that held that LILCO lacks the legal authority to perform the functions. LILCO will appeal.

<sup>8</sup> Applicant asserts that Contentions 3, 9, and 10 have been mooted either wholly or substantially. Contention 3 addresses the posting of traffic (trailblazer) signs on the roadways. This has been eliminated from the plan. Contention 9 relates to dispensing fuel from tank trucks to automobiles along the roadway. The Licensing

(Continued)



in a radiological emergency that relate to the functions described in the legal authority contentions. In its motion Applicant describes how the State and County, making a best effort and employing their resources in conjunction with LILCO, will provide a satisfactory emergency response in the areas encompassed by the legal authority contentions.

### 3. *The Governments' Position on Summary Disposition*

Intervenors assert that LILCO's renewed motion does not address the issues raised in Contentions 1-10 and does not support summary disposition of those contentions. They allege that Staff, the Licensing Board, the Appeal Board, as well as the Commission in CLI-86-13 have rejected the realism argument. The Commission is said to have done so by concluding that LILCO could not perform those functions and thereafter focusing its attention on the adequacy of a hypothesized government response. Intervenors assert that Applicant's motion essentially reargues its realism position, ignoring its conceded lack of authority, and that LILCO, without legal justification, claims that the present record establishes that a hypothesized *ad hoc* "best-effort" governmental response would be adequate under NRC regulations and that, on that basis, LILCO is entitled to summary disposition of Contentions 1-10.<sup>9</sup>

The State of New York and Suffolk County claim that LILCO's realism argument has no fixed meaning and that it has been consistently rejected in all of its permutations. The realism argument is said to have taken the form that (1) LILCO will implement its plan under a delegation of powers by or pursuant to a deputization from the State or County; (2) LILCO and the governments will engage in a spontaneous cooperative effort in which the government will provide LILCO with an umbrella of legal authority; (3) that the governments would in fact implement the LILCO plan using LILCO's advice and LERO resources or even permitting LILCO to make all necessary decisions; or (4) that the governments will respond to an emergency on their own and that LILCO's lack of legal authority to carry out its own plan would be rendered academic.

It is alleged that LILCO's latest version of the realism argument is inconsistent with the holding in *Cuomo v. LILCO* because the State cannot authorize LILCO to implement its plan or to perform the functions embraced by Contentions 1-10. Further, it is asserted that LILCO's realism argument is incon-

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Board has ruled that this function is not required by NRC regulations or guidelines. Contention 10 concerns performing "access control" at the Emergency Operations Center, the relocation centers and the EPZ perimeter. The Emergency Operations Center and the relocation centers are on LILCO property and it can control access to its own facilities. (If security difficulties arose, it would call the police.) As to the EPZ, LILCO has not proposed stopping anyone from entering but only discouraging them from doing so.

<sup>9</sup> Intervenors and Applicant agree that Contention 3 is moot because it is no longer part of the LILCO plan to post traffic signs on highways.

sistent with the Commission's decision in CLI-86-13, in that nowhere was it said that the governments would implement the LILCO plan. Intervenor claim that, presumptively, the Commission felt that it could not predict, much less declare as a presumption, what sovereign governments would do in exercising their police powers on an *ad hoc* basis.

Intervenor additionally assert that LILCO ignored the Commission's clear acknowledgment that more information is needed and questions must be answered about what an *ad hoc* "best-effort" government response would be and whether it would be adequate.

The State and County claim that the affidavits submitted by the governments and the existing evidentiary record not only establish the existence of factual disputes on material issues but demonstrate that summary relief should be granted to the governments. They state that the present evidentiary record does not indicate how the State and County would respond in an emergency or what effect that response might have upon the overall implementation of LILCO's offsite plan. It is asserted that to make rulings concerning the nature, adequacy, or regulatory compliance of a plan, other than for the already-litigated LILCO plan, would constitute a violation of due process and deprive the governments of their right to a hearing.

Intervenor argue that, in CLI-86-13, the Commission itself identified specifically the need for more information on factual issues in order to rule on the remanded realism issue. They state that LILCO would require the Board to answer, without factual or record basis, not only the questions the Commission identified as requiring more information but also innumerable additional questions as to which there are no facts in the record or otherwise available to the Board.

The State and County assert that the affidavits submitted by the governments, and the existing evidentiary record, demonstrate that they would not implement the LILCO plan; would not respond to a Shoreham emergency in concert or in partnership with LILCO; would not rely upon LILCO recommendations or advice; and would not authorize LILCO personnel to perform the functions in Contentions 1-10. They say they would likely respond to a Shoreham emergency in ways, not further identified, that are very different from those set forth in the LILCO plan. In support of the foregoing assertions, Intervenor rely on affidavits from the Governor of the State of New York, the Suffolk County Executive, and the Presiding Officer of the Suffolk County Legislature to that effect. Also appended is an affidavit of the Deputy Chief Inspector with the Suffolk County Police Department stating reasons why the police department could not effectively utilize or be integrated into the LILCO plan.

Intervenor claim that testimony in this proceeding prohibits the finding sought by LILCO. They point to testimony from State and County witnesses to the effect that the LILCO plan is seriously and fundamentally flawed and is

inadequate and unworkable. They state that in the face of consistent testimony of government officials, over a period of 3 1/2 years, that the LILCO plan is no good, no reasonable person could conclude that in a radiological emergency those officials would turn around and attempt to implement the very proposals that they or their staffs have determined would not protect the public. (Much of the testimony relied upon to establish that the plan is unworkable was found not to be meritorious in the Licensing Board's prior decisions, but Intervenor's position is that regardless of the Board's findings, one could not rely on the officials to implement proposals they deem worthless.)

Intervenor's further claim LILCO's material facts fail to support its motion because the recitations of Intervenor's capacities have nothing to do with whether the State or County would or could implement the provisions that are referenced in Contentions 1-10, as LILCO assumes in its motion. Intervenor's assert that several of LILCO's material facts are wrong. They further claim that the underlying premise of LILCO's motions, that its plan has been approved or found adequate, is without basis. The State and County list issues that were resolved against Applicant or remain open, including the litigation concerning the results of its February 13, 1986 exercise of its plan.

In opposing the motion, Intervenor's also rely on *Guard v. NRC*, 753 F.2d 1144 (1985) for the proposition that the Court rejected the concept that the basic licensing standard established by the Commission can be satisfied by "assumptions" that currently unidentified resources and responses will be provided to protect the public.

In their answer, Intervenor's go through each of the legal authority contentions (except Contention 3) alleging where the Applicant misstates the issues and ignores the record.

Attached to Intervenor's answer as its statement of material facts to which there exists a genuine issue to be heard is a listing of fifty-four issues. Most of these pertain to whether assuming an *ad hoc* best-efforts government response, certain regulations, NUREG-0654, or provisions of the plan would be complied with.

#### **4. Applicable Law on Summary Disposition**

The following discussion of the law on summary disposition succinctly sets forth its requirements. It is contained in an unpublished Memorandum and Order (Ruling on Motion for Summary Disposition of Contention 8 re: Vogtle Quality Assurance), October 3, 1985, at 2-3, in *Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), Docket Nos. 50-424-OL and 50-425-OL.

The law pertaining to summary disposition under 10 C.F.R. § 2.749 is well established. Licensing Boards are empowered to grant summary disposition on the pleadings on motion of a party to a proceeding if materials before the Board show that there is no outstanding genuine issue of material fact and that the moving party is entitled to a decision as a matter of law. The Commission has encouraged the use of summary disposition so that hearing time is not unnecessarily devoted to matters as to which no genuine issue of material fact exists. *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 457 (1981).

The party seeking summary disposition must carry the burden of proving the absence of any genuine issue of material fact, *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753 (1977), with the record viewed in the light most favorable to the motion's opponent, *Dairyland Power Cooperative* (LaCrosse Boiling Water Reactor), LBP-82-58, 16 NRC 512, 519 (1982). A party opposing a motion may not rely upon a simple denial of material facts stated by the movant, but must set forth specific facts showing that there is a genuine issue of fact remaining. *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 453 (1980).

A party cannot avoid summary disposition on the basis of guesses or suspicions or on the hope that at the hearing the licensee's evidence may be discredited or that something may turn up. *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), LBP-75-10, 1 NRC 246, 248 (1975).

All material facts adequately set forth in a motion and not adequately controverted by the responses are deemed to be admitted, § 2.749(a); however, the proponent of a motion must meet the burden of proof in establishing that there is no genuine issue of material fact, even if the opponent fails to controvert the conclusions reached in the motion's supporting papers. (*Perry, supra*, at 754).

## 5. CLI-86-13 and Its Effect on the Summary Disposition Motion

The Commission's decision in CLI-86-13 reversed the Appeal Board on LILCO's realism argument and remanded the matter to the Licensing Board for further proceedings. In so doing, the Commission made new rulings on the issue which require our analysis in order to determine whether or not LILCO has sustained its burden on the motion for summary disposition.<sup>10</sup>

The Commission found that the Boards, in deciding that the LILCO plan does not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, presumed that the LILCO plan must essentially achieve all that a fully coordinated plan can achieve. It decided that was erroneous and that the LILCO plan should be measured against a more flexible standard that would require protective measures that are generally comparable to what might be accomplished with governmental cooperation.

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<sup>10</sup> The Commission has inherent, *sua sponte*, authority to step into a proceeding and provide guidance on important issues of law if it concludes that guidance may be useful in avoiding error or misunderstanding. See *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 516-17 (1977). See also *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), CLI-86-22, 24 NRC 685, 691 n.3 (1986).

LILCO's realism argument before the Commission was that if LILCO lacked legal authority, the State and County would respond in a real emergency either by implementing the plan themselves or by deputizing LILCO personnel to implement the plan.

In considering the LILCO plan under 10 C.F.R. § 50.47(c), which provides for licensing notwithstanding noncompliance with the NRC's regular planning standards, if the defects are "not significant," if there are "adequate interim compensating actions," or if there are "other compelling reasons," the Commission found the LILCO plan to be an interim plan because the utility intended it as such and LILCO stands ready to cooperate with the governments in preparing a fully coordinated plan. The Commission looked upon the interim plan as one "which likely will be superseded or supplemented by the State and County if Shoreham is permitted to operate at full power."<sup>11</sup>

The Commission accepted LILCO's argument that in an emergency the governments would participate in responding to it. The Commission assumed that it would be a "best-effort" response and that the governments as part of that response would utilize the LILCO plan as the best source,<sup>12</sup> or the only available comprehensive compendium<sup>13</sup> of emergency planning information and options. No other statement was made by the Commission as to how a "best-effort" response would utilize the LILCO plan.

The Commission was unwilling to assume, as LILCO would have it do, that the "best-effort" government response, as specified, would necessarily be adequate. It had questions directed at how effective the response of the State and County would be and what those results would be insofar as meeting emergency planning requirements. The Commission remanded the realism argument to the Licensing Board for further proceedings in accord with the decision. The Board was directed to use the existing evidentiary record to the maximum extent possible and to take additional evidence where necessary.

We conclude from the foregoing that the Commission's "best-effort" assumptions, including the use of the LILCO plan for planning information and options, are not restrictive so as to make indisputable what the participation by the governments will be and what will be accomplished. Employing the assumptions as the Commission did, the assumptions leave open to question how the governments will respond and whether that response will fulfill regulatory requirements. To answer the questions, we are directed to supplement the existing record by further proceedings to the extent necessary. Thus, we are fully satisfied that the "best-effort" assumptions made by the Commission are not conclusive as to establishing a single method of response by Intervenor.

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<sup>11</sup> CLI-86-13, *supra*, 24 NRC at 29 n.9.

<sup>12</sup> *Id.* at 31.

<sup>13</sup> *Id.* at 33.

Because the Commission recognized that there are open questions pertaining to the realism argument and directed the taking of additional evidence where necessary, does not, *ipso facto*, mean that the parties are guaranteed a full evidentiary hearing on the matters. Successful employment of § 2.749, the regulation governing summary disposition, can result in dispensing with the holding of the hearing called for, but in order for this to be accomplished, the regulatory requirements must be met. The resolution of the motion for summary disposition of the realism argument will affect the extent of any evidentiary hearing to be conducted under the remand.

The concept behind Applicant's motion for summary disposition must be viewed against the Commission's holding in CLI-86-13. As stated previously, LILCO argues that considering that the LILCO plan, if allowed to operate without the governments, complies with NRC requirements and that the presumptions in CLI-86-13 provide that the State and County would use their best efforts, the governments cannot oppose the motion without showing how they themselves, doing their best, would spoil an adequate plan and harm the public. Applicant contends that the governments cannot do this, considering the extent of their resources.

This position of Applicant's is flawed in a number of respects. Its claim that its plan complies with NRC requirements is contrary to the record. This Board found that the LILCO plan was fatally defective on two grounds. The first was that it did not have the legal authority to implement all of the plan that it submitted. The second was that the opposition of the State and County to the plan had created a situation where at any given time it is not known whether the plan would be workable. Although the Commission reversed these findings, which had been upheld by the Appeal Board, the matters were only remanded for further proceedings on the issues. The Commission in CLI-86-13 never resolved the issues in Applicant's favor. They remain open and are yet to be decided. Thus, it does not automatically follow that a "best-effort" response by the governments will ensure the plan's adequacy, as Applicant would have us conclude.

## **6. *Decision on the Issues***

The crux of Applicant's motion is that LILCO has undisputed facts that establish what Intervenor's response would be if there were a radiological emergency at Shoreham and that response would overcome the deficiencies in the LILCO plan as established by the Legal Authority Contentions. These undisputed facts are said to establish: that Intervenor would act in partnership with the Applicant; that LERO would continue to act with government authorization to manage the emergency response; that the governments would bestow legal authority and

whatever resources were needed on short notice; and that the State and County would retain veto power over LERO decisionmaking. Motion at 9.

This claim that the State and County's response would take the form of authorizing LILCO to act for them was previously rejected by this Board in our partial initial decision on the basis of *Cuomo v. LILCO, supra*, which holds that Applicant cannot be delegated the authority to perform the functions enumerated in Contentions 1-10.<sup>14</sup> Nothing in CLI-86-13 alters the *Cuomo* decision which so far has been upheld on appeal. See note 7, above. Applicant's claim that the governments' response will be on a basis of what has been found contrary to law is meritless.

Further, Applicant's reliance on the "best-efforts" assumptions in CLI-86-13 does nothing to support LILCO's claim that the only way Intervenor will respond will be to cooperate with the governments using the LILCO plan. As we discussed previously, the "best-effort" assumptions do not formulate a single response. They leave open to question how the governments will respond and whether their response will be adequate in fulfilling regulatory requirements. The scenario that Applicant presents as to what form Intervenor's response would be during an emergency at Shoreham is unsupported by CLI-86-13, or otherwise in this record.

Applicant does not premise its assertion on what the governments' response will be on undisputed fact. Rather, it is based on the supposition of what the Applicant expects the State and County would do considering that they would have access to what the LILCO plan offers, something which in Applicant's view is an important resource. Thus, the response theorized is without factual basis.

Applicant has not submitted to this Board convincing evidence that there is no genuine issue of material fact on the question of what the State and County response to a radiological emergency would be and that as a matter of law LILCO is entitled to a decision on the Legal Authority Contentions by virtue of its realism argument.

No one has more knowledge than the State and County on how they would respond to an emergency at Shoreham. By affidavit they dispute each claim LILCO makes as to how they would react.

The Board recognizes that parties are capable of making self-serving statements, and, also, that the Commission for the purposes of its decision in CLI-86-13 was unwilling to take at face value similar but unverified statements that the State and County would not cooperate with LILCO in implementation of its plan. Despite the foregoing, there is a genuine dispute as to what the Intervenor will do, and that also disqualifies Applicant from having its motion granted.

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<sup>14</sup> LBP-85-12, *supra*, 21 NRC at 911.

The Commission in its remand in CLI-86-13 expects the Board to determine what the Intervenor's response will be. We can only do that in hearing and weighing the positions of the parties on this disputed matter. It is evident that the Commission's refusal to take the prior statements of the Governor of the State of New York and the Suffolk County Executive at face value was not meant to be *res judicata* on this question.

The Board finds that, on the record before us, Applicant has not made a *prima facie* showing, as required by § 2.749 that there is no genuine issue of fact as to how Intervenor would respond to a radiological emergency at Shoreham. Further, Intervenor has established by sufficiently convincing direct evidence, i.e., the affidavits of State and County officials, that the material facts Applicant claimed to be without dispute are in fact disputed and there exists a genuine issue to be heard. This also requires denial of the motion under § 2.749.<sup>15</sup>

A separate discussion is in order in regard to Applicant's claim that there is no material issue of fact as regards the capacity of Intervenor to respond to an emergency at Shoreham. The argument of the State and County that these material facts have nothing to do with how they will react in an emergency is erroneous. Intervenor's capacities have a direct bearing and are relevant in regard to the response the State and County are capable of making in an emergency. It is a matter fully at issue. The adequacy of a response is dependent on the capacity of the performers to conduct it. Although the motion for summary disposition does not turn wholly on whether Intervenor has an adequate capacity to conduct a response, it is a material fact at issue. To the extent Intervenor has not contradicted the capacities Applicant has established as to Intervenor's capabilities to respond, they will be made a matter of record.

In the following section, the Board will describe the factual disputes that continue to exist on Applicant's version as to how the State and local governments would respond to a radiological emergency at Shoreham in regards to the relevant contentions. At this stage of the proceeding, Intervenor did not go beyond stating that that which Applicant described as their response was not what they would do. This tack was sufficient to meet the requirements of § 2.749 in regard to overcoming Applicant's motion. We expect that in connection with the remanded hearing where the Commission requires that it be established what the State and County response would be, Intervenor will be fully forthcoming so that the facts will be developed.

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<sup>15</sup> There is no basis to grant the motion on the legal authority issues in Intervenor's favor as a matter of law. No one assumes at this stage of the proceeding that LILCO is not prohibited from performing the State or County roles as enumerated in the contentions. See CLI-86-13, *supra*, 24 NRC at 30. The matter for decision is whether the realism argument overcomes the LILCO disability. In Intervenor's establishing that there are material facts in dispute on the issue, it helps defeat Applicant's motion for summary disposition but does not entitle Intervenor to judgment on that issue as a matter of law. The disputed issues are yet to be determined in accordance with the remand.



The contentions involving the disputed responses are next considered in the basic order that the parties considered them.

## ***7. The Contentions and the Disputed Response***

### ***Contention 5 (Sirens)***

We are here confronted with conflicting statements on the parts of Applicant and Intervenor concerning whether or not the sirens would be sounded and by whom. Applicant cites the fact that the sirens are already in place, the fact that they can be activated from several control points, and Applicant's own interpretation of the Commission's decision in CLI-85-12, 21 NRC 1587, 1589 (1985) as compelling the conclusion that the State and County would, in an emergency, promptly authorize the use of the existing siren system. Motion at 9-11.

Intervenor, on the other hand, flatly deny that the governments involved would simply authorize the sounding of the sirens, and they submit affidavits of the heads of those governments to that effect. Answer at 48-51. Intervenor take the position that the record is completely barren of any information on the exact response of the governments during an emergency, asserting that all that has so far been established is that the governments would not use LILCO's plan. *Id.*

Intervenor further point out that there is inherent in their Contention 5 and the regulatory requirements cited therein a challenge to the entire process by which the sounding of the sirens would proceed, a process that includes various elements of information transfer and decision making, none of which have been elucidated on the record in the face of the affidavits they present. *Id.* at 52-53.

It is true that the facts alleged by the Applicant (existence of the sirens and the RECS line, operability of the sirens) are uncontroverted. We cannot, however, reach any reasoned conclusion regarding the Commission's mandate to us to discover the effect of a "best-efforts" response on such things as dose if we do not know whether, when, or by whom the sirens would be activated. We are thus unable to grant summary disposition on this part of the contention.

### ***Contention 5 (EBS Messages)***

This portion of Contention 5 confronts us with essentially the same situation as that which we met in dealing with the question of sounding the sirens, *viz.*, the Applicant believes that the Commission's directive to assume a "best-efforts" reaction on the governments' part and the availability of a group of acceptable EBS messages combine to ensure an acceptable response (Motion at 11-14), while the Intervenor point out that the affidavits of the Governor and the County

Executive disclaim the governments' willingness to use any portion of LILCO's plan (Answer at 50).

Here LILCO makes an additional point: There exists a New York State Emergency Broadcast System independent of the system developed by LILCO; that system has a Common Program Control Station and a large number of primary stations (including those in the LILCO plan), offering adequate coverage of the entire EPZ. Motion at 12.

That may be true. Nonetheless, the presence in our record of the affidavits presented by the Intervenor leaves it unclear whether the New York State system, the LILCO system, some other system, or no system at all would be used in the event of an emergency. It is also unclear whether the messages prepared by LILCO or some other as yet unapproved set of messages would be used. Further, it is unclear who would decide when to broadcast the EBS messages and by what system.

As with the siren sounding issue, we cannot resolve the questions surrounding the effect on the public health and safety of *ad hoc* government participation without a more exact picture of the governments' intended behavior. What EBS system will be used? How and at whose direction will it be activated? What messages will it broadcast? We shall require evidence on these matters.

#### *Contention 6 (Decisions and Recommendations)*

LILCO asserts that the question concerning emergency decisions and recommendations "boils down" to whether the State or County would be able to make a timely decision regarding sheltering or evacuation in a radiological emergency. LILCO then examines this limited question, again using its own interpretation of the Commission's "best-efforts" assumption. The State, LILCO argues, is fully prepared to cope with a radiological emergency by virtue of its plan for such emergencies at other plants in New York. If the County is unable or unwilling to take charge, the State's plan requires that the State do so. In the event of a fast-breaking accident, the State would necessarily accept LILCO's recommendation, and in the event of a more slowly developing accident, there would be adequate time to consider alternative courses of action by County and State. In LILCO's view, the "best-efforts" assumption would require that the State and County stay in "more or less continuous contact" with LILCO and would allow LILCO to guide the local officials through any unfamiliar procedures. Motion at 16-22.

The Intervenor maintains that the State and County would not follow LILCO's recommendations nor would they respond in a manner that would be the same as, or even consistent with, the manner outlined in the LILCO plan. Answer at 54-60. They offer, *inter alia*, the Governor's statement to the effect that "the State could not and would not rely upon LILCO, its emergency plan, or its

advice in the event of a radiological emergency at Shoreham.” Answer, Exh. A to Attach. 1. The existence of a generic state plan for radiological emergency responses at other plants does not, in Intervenor’s view, ensure a response at Shoreham tailored to Shoreham. Answer at 61. The Intervenor’s stress that there is again no clear definition in the record of the way in which the response to an emergency would be handled.

LILCO would have us take the Commission’s assumption of “best-efforts” and the Commission’s belief that local officials would rely on the LILCO plan as a “compendium” to compel the conclusion that any local official who assumed the burden of decisionmaking would make decisions identical to those mandated by LILCO for LERO. That leap of logic we cannot make. In order to decide the fundamental issues in this case, we require additional evidence on the questions: Who will assume charge in the event of a radiological emergency at Shoreham? Who will decide when protective actions are required? What criteria will the decisionmaker (or decisionmakers) use to determine the appropriate protective actions?

### *Contentions 1 and 2 (Traffic Control)*

LILCO assures us that there would be no delay in the start of traffic control, arguing that the LERO Traffic Guides would arrive at their posts but need not begin directing traffic; they could await the arrival of police, then either proceed themselves or let the police proceed. LILCO cites testimony by the Suffolk County Police Department to the effect that police could arrive on the scene at least as quickly as the LERO Guides. LILCO further opines that the police could easily assume the job of guiding traffic since the instructions concerning preferred traffic directions would be readily available to them and police officers are well-trained in directing traffic. For very fast-breaking accidents, LILCO argues, Traffic Guides would not arrive in time at any event; for other accidents, participation by the police could not hurt and might well help. Thus under the “best-efforts” assumption, the direction of traffic would be accomplished at least as well as in the LILCO plan, and there could be no additional hazard to the public. Motion at 23-25.

Intervenor’s first make the point that LILCO has really addressed only the Contention 1 (traffic guidance) aspect of the problem. Thus they see no ground for even considering disposition of the Contention 2 (blocking roads, channelization, road barriers) aspects. Answer at 65. This seems to the Board to be splitting hairs. The traffic guidance and physical barrier aspects are fundamentally intertwined and equivalent as far as their implications for traffic control and their “legal authority” aspects are concerned. The Intervenor’s do, however, make other points: They assert that LILCO has not addressed the implications that the *ad hoc* response might have for evacuation

implementability, evacuation time estimates, or regulatory compliance. Nor do they concede that the simple lack of additional "traffic delays" beyond those of the LILCO plan would ensure dismissal of all implications inherent in the two contentions. They also assert that the LILCO reasoning is based on assumptions flatly contradicted by "sworn testimony in this record, and the law of Suffolk County." *Id.* at 67. They urge us to reject "LILCO's assertion that the Suffolk County Police Department would implement the very traffic control scheme which it has rejected, which it has not been trained to implement, and which it cannot lawfully implement under County law." *Id.* at 68 (footnote omitted).

In dealing with Contentions 1 and 2, the Board finds some difficulty separating the Applicant's "realism" and "immateriality" arguments. Clearly, if the guidance and control of traffic contribute little or nothing to the safety of the public, then the manner in which such guidance is accomplished is of no great consequence. When we last considered the notion that an uncontrolled evacuation might suffice to protect the public, we found: "It is evident that the unplanned evacuation . . . will not meet the regulatory requirements . . . ." LBP-85-12, *supra*, 21 NRC at 917. The Commission's subsequent remand of the issue of immateriality has made that concept less "evident." Nevertheless, Applicant has not raised immateriality as a ground for summary disposition, and we are ruling solely on the Applicant's motion. Further, our previous statement was not made in a vacuum. We prefaced it with the notion, acknowledged by the Applicant, that the time differential between controlled and uncontrolled evacuation might serve to limit the optional protective measures in such a way as to increase dose. *Id.* We found that a guided evacuation is a safety feature, and that finding has not been overturned. The question of how traffic will be guided and by whom is indeed material, and we cannot rule on the ultimate issues in this case while so much uncertainty surrounds that question. Thus we cannot grant summary disposition on these contentions.

#### *Contention 4 (Removing Road Obstructions)*

Concerning this contention, LILCO rather perfunctorily states that "[t]he Suffolk County or State government would either take it upon themselves to remove obstructions, authorize LERO to do so, or use both their own resources and LERO's — whichever was the 'best-effort' . . . ." Motion at 30. Intervenor note that LILCO's lack of authority makes it impossible to implement LILCO's plan. Answer at 69-70.

We note that, as with Contentions 1 and 2, the ability to remove road obstructions is clearly a safety feature. Equally clearly, one cannot say from the present record, is how these obstructions would be removed, who would remove them, or how their removal would be coordinated with such other functions as guiding traffic and selecting alternate evacuation routes. It is not clear who

would be in overall charge of a clear and well-planned response. We cannot grant summary disposition.

### *Contentions 7 and 8 (Post-Emergency Functions)*

These contentions concern the implementation of protective actions for the ingestion pathway (Contention 7) and activities relating to recovery and reentry (Contention 8). LILCO argues that, to begin with, decisions connected with these activities will be made in an atmosphere without much time pressure, an atmosphere that does not entail immediately life-threatening situations or require immediate response. Motion at 26-27. Intervenor counter that the timing of the response and the pressure under which such a response must be made are irrelevant to the principal matter at issue, *viz.*, whether acceptable plans exist now for dealing with the post-emergency situation, the existence of such prepared plans being a regulatory requirement precedent to the issuance of a full-power license. Answer at 70-71.

We must agree with the Intervenor on this point. The timing has no bearing on the requirements that the regulations impose.

Applicant further argues that, with regard to Contention 7, there exist acceptable planned actions which, if implemented, would be effective in preventing the public from eating contaminated foodstuffs. Motion at 26, *citing* the Partial Initial Decision, 21 NRC at 876. Thus LILCO reasons that the only bar to such actions is the lack of authority on the part of the utility to impose protective controls as a matter of law. That lack, LILCO argues, has already been considered and found to be no bar to a reasonable assurance finding. *Id.*, *citing* 21 NRC at 878.

We did indeed examine, under the rubric of Contention 81, whether the plan's provisions concerning the ingestion pathway could be implemented absent the legal authority to compel producers and processors of food to discard the food. We noted LILCO's stated willingness to purchase and destroy the food and concluded that the lack of legal authority was not a bar to implementation. 21 NRC at 877-78. The Appeal Board saw no inconsistency, and the New York Supreme Court, ruling on the legal authority issues, made no mention of the subtle difference that might be seen to exist between the status of Contention 7 and that of the other "legal authority" contentions. Now, however, we are confronted with a question quite apart from the one that confronted us then. There we decided that LILCO, acting alone and armed only with the power to offer to purchase foodstuffs, could give reasonable assurance that contaminated food would not enter the general market. Here the question is one concerning exactly what would occur if LILCO proceeded independently while the State and local governments did something unspecified to further the same ends.

It is by no means clear to the Board at this time that the two groups would not work at cross purposes, nor is it clear that, if LILCO simply withdrew, the resulting actions by the governments, presently unspecified, would comply with NRC regulations. Thus we cannot grant summary disposition on Contention 7.

Addressing Contention 8, the Applicant alleges that this Board has already found that recovery and reentry decisions would be made by a committee, that LILCO would invite participation on that committee by State and local authorities, and that the committee would have time to deliberate and decide what it should recommend. Given these findings and a "best-efforts" assumption, Applicant says, there exists no litigable issue over whether the plan would work. Motion at 27, *citing* LBP-85-12, *supra*, 21 NRC at 880. We see no logical nexus. The possible participation by local authorities and the "best-efforts" assumption do not combine to ensure that proper reentry and recovery procedures will either evolve or be enforced without some knowledge concerning who will decide and by what standards. We must agree with the Intervenor's position that the record does not support a conclusion that the proper decisions, recommendations, or actions concerning recovery and reentry would materialize. Answer at 70-73.

#### *Contention 9 (Dispensing Fuel)*

Here LILCO's argument is that the Board has already ruled that dispensing fuel is not required by the regulations and guidance. Motion at 28, *citing* 21 NRC at 816. True enough, so we did. However, we also ruled that "[a]lthough the functions specified by Contentions 1-4, 9, and 10 are not specifically listed as regulatory requirements . . . they are material elements comprising the Plan LILCO submitted for the purpose of satisfying the regulations and guidelines . . . which LILCO cannot lawfully perform." 21 NRC at 917-18. As with those other contentions, we regard the subject of Contention 9 as a safety feature. It is presently unclear how this safety feature would function, or, indeed, whether it would function at all. We cannot grant summary disposition.

#### *Contention 10 (Access Control)*

It appears that the Intervenor's concede that the access control to such places as the relocation centers can be achieved by LILCO since the centers are now on LILCO property. The only thing at issue is the control of access to the EPZ during the time when people are supposed to stay out. LILCO points out, quite correctly, that we accepted the notion that LILCO does not intend to restrict access to the EPZ in any forceful way, intending only to "discourage" entry while the area is contaminated. Intervenor's argue, in effect, that LILCO only abandoned the idea of controlling access because it had *no authority* to do so. They believe that the notion of limiting action to "discouraging" entry is

simply insufficient. Taken together these two arguments raise an issue that is essentially one of immateriality: whether it matters that LILCO cannot enforce the abandonment of a contaminated area, but can only urge people to stay out. We shall consider immateriality in all its aspects in connection with the remand of these issues, but we are not at that juncture yet. Whether or not the public can effectively be kept out of contaminated areas or areas threatened with imminent contamination is clearly a health and safety issue. What would occur if the local authorities were attempting to enforce one situation while LILCO was "advising" another; what standards would the local authorities use for exclusion and over how wide an area; how would these organizations interact and to what end? All these questions must be answered before we can properly decide whether we have reasonable assurance that health and safety will be protected.

#### **8. *LILCO's Statement of Material Facts***

The ultimate standard that LILCO must meet to gain approval of its plan is set forth in 10 C.F.R. § 50.47(a)(1): "no operating license for a nuclear power reactor will be issued unless a finding is made by NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." We must apply that standard to LILCO's motion and also apply the regulations and case law governing summary disposition cited above. Thus if we are to grant LILCO's motion we must find that there is no genuine issue to be heard with respect to whether the actions specified in Contentions 1-10 can and will be done adequately in a response to an emergency at Shoreham.

LILCO appended to its motion a "Statement of Material Facts as to Which LILCO Contends There Is No Genuine Issue to Be Heard on Contentions EP 1-10." The list contained sixty-three statements of fact. All of the facts stated by LILCO address the issue of capability of itself or of the State or County governments to implement an effective emergency response under the Commission's assumption in CLI-86-13 that the governments would respond to an emergency at Shoreham with their best efforts and that they would use the LILCO plan as the source for basic emergency planning information and options.

The governments in their response take a twofold approach in their opposition to LILCO's Statement of Material Facts. First, they claim that LILCO's facts do not address the important issues that must be resolved before summary disposition could be granted, and, second, they submit evidence that they claim controverts five of LILCO's facts and is in itself sufficient to deny the motion. Specifically, Intervenor claim that LILCO's material facts do not establish LILCO's legal authority to implement the provisions of Contentions 1-10; the facts do not establish that the State or County could or would implement the

plan; they do not establish that "best efforts" of the State or County would be adequate or sufficient to meet regulatory requirements set forth in Contentions 1-10. The governments appended to their response fifty-four statements that they claim constitute genuine issues to be heard.<sup>16</sup> Each statement raises a separate question as to the nature and adequacy of an *ad hoc* "best-efforts" government response. In the Intervenor's view it was unnecessary to specifically controvert all sixty-three facts posed by LILCO because "they simply do not advance LILCO's argument, because they are not the facts which are material to the decision being sought by LILCO . . . ." Intervenor then presented reasons that in their view controverted only five of LILCO's material facts: Nos. 40, 41, 42, 43, and 58. All of the remaining material facts asserted by LILCO went unanswered by the governments. To the extent that the governments addressed the remaining material facts asserted by LILCO they stated: "While some of these so-called facts are wrong (for the reasons discussed in section III.4.b below and in the Affidavits attached hereto), the majority of those facts, even if true, are irrelevant to the issues raised by Contentions 1-10 as to which LILCO seeks summary disposition."

Intervenor, however, submitted specific facts and affidavits to controvert LILCO's facts 40, 41, 42, 43, and 58 in which LILCO attempts to demonstrate that State and County officials and the County police department are familiar with LILCO's plan and that they are in possession of a specified number of controlled copies. Intervenor replied with affidavits that assert that State and County officials have reviewed limited portions of the plan but that none is sufficiently knowledgeable to implement all or any portion of it with or without LILCO assistance. Furthermore, say the governments, none of their personnel have been drilled or trained regarding the LILCO plan. In their challenge to LILCO's facts 42 and 43, Intervenor dispute LILCO's assertion of the number of controlled copies of the plan in their possession and further assert that none of the copies that they admit to possessing are possessed by State officials who would direct or participate in a response to a Shoreham emergency or by the County Executive or his staff. Intervenor also challenge LILCO's assertion in fact 58 that the Suffolk County police are familiar with the plan. They reply by affidavit that the Suffolk County police department is not familiar with the traffic control provisions of the plan. While certain police officers have testified to the inadequacies of the plan in this proceeding, this does not mean that they are sufficiently knowledgeable to implement it.

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<sup>16</sup>The governments' statement of issues to be heard is acknowledged here because it helps confirm that LILCO's material facts were insufficient to warrant summary disposition even though they do not directly controvert LILCO's facts. It was unnecessary to consider the governments' statement of issues further to reach a decision on this motion and we do not adopt the governments' issues as the ones that will be considered in any future hearing. The parties will be afforded an opportunity to advise the Board on the appropriate specification of issues for hearing at a later time.



Upon consideration of the foregoing arguments and affidavits of the parties, the Board concludes that Intervenor has controverted LILCO's material facts pertaining to the familiarity of State and County officials with the LILCO plan. Accordingly, we cannot grant summary disposition relative to LILCO's material facts numbered 40, 41, 42, 43, and 58. The issue of the familiarity of the State and County governments with the plan and how they will respond to a future radiological emergency is one that will be heard in any future hearing on remanded issues in this case.

We turn next to LILCO's remaining facts which were not controverted by Intervenor. Section 2.749(a) states: "All material facts set forth in the statement required to be served by the moving party will be deemed to be admitted unless controverted by the statement required to be served by the opposing party." With the exception of the facts enumerated above, none of LILCO's material facts have been controverted in the reply of Intervenor. Accordingly, the action called for is to deem LILCO's material facts as admitted with the exceptions noted, and we so find.

LILCO's facts that we have deemed to be admitted all go to establishing in one form or another the physical capability of LILCO, the State, or the County to take action essential to successful implementation of responses specified by the ten legal contentions. We therefore disagree with Intervenor and find that the admitted facts are material to the resolution of the issues before us because they constitute new information which tends to show that the State and County have the capability to respond effectively in an emergency.

We agree with Intervenor, however, that the truth of LILCO's facts would not save its motion for summary disposition even if none of its facts had been controverted, because they establish only that specified aspects of emergency planning *can* be done but do not establish what *will* be done as required by § 50.47(a) cited above. LILCO, in its motion, would have the Board accept that all questions related to how a response specified by the ten contentions *will* be implemented is to be answered by reliance on the Commission's "best-efforts" assumption under which the governments would have no choice but to respond in conformance to LILCO's plan and delegate to it the authority it needs to implement a response. LILCO's Statement of Facts contains nothing that would compel that conclusion.

We have found that the "best-efforts" assumption is rebuttable in this case to the extent that it leaves open the question of the adequacy of response. We do not accept LILCO's argument because we are not free to gloss over important factual matters by assumption without inquiry into the factual basis for that assumption. The Commission itself was unwilling to take that step in CLI-86-13 where it raised factual questions relating to the adequacy of performance of the State and County governments in an emergency response under the "best-efforts" assumption. Our analysis of the ten contentions earlier in this decision

reaches the conclusion that there remain factual questions of adequacy of the governments' response for each of them. Furthermore, LILCO's belief that the "best-efforts" assumption compels but a single conclusion favorable to itself has been controverted by the Intervenor in their response to LILCO's motion because, while the State and County governments do not deny that they would respond to an emergency with their best efforts, they assert that there is no basis in this motion or in the record thus far compiled for determining the nature and adequacy of their response.

We are also persuaded by Intervenor that LILCO's material facts do not resolve the question of how LILCO would acquire the legal authority to implement the actions specified in Contentions 1-10. The "best-efforts" assumption is of no assistance to LILCO in the face of sworn affidavits from Intervenor asserting that they would not and could not delegate their police powers to LILCO. Affidavit of Mario M. Cuomo, Governor of the State of New York; Affidavit of Michael Logrande.

We found no basis for concluding that an effective emergency response on Long Island is impossible in our Concluding Partial Initial Decision. LBP-85-31, 22 NRC 410, 427 (1985). Except to the extent that we found that the plan was fatally defective in two areas and that there were other specifically identified deficiencies or omissions, we found the LILCO plan otherwise workable. In answers to the motion for summary disposition, the governments have urged us to accept positions on factual matters that they have taken before us in the past for which we had found that there was no merit and as to which the Board has not been reversed on appeal or had the issues remanded. For example, the affidavit of Karla J. Letsche includes two exhibits that cite in tabular form past testimony on numerous contentions that have been heard and ruled upon. Likewise the affidavit of Richard C. Roberts references such matters as evacuation shadow and inaccurate evacuation time estimates which we have considered and decided previously. Answer, Attach. 3, Exhs. B and C. We consider these efforts to be improper.

It may well be that the governments continue to believe that an emergency response in conformance with NRC regulations is impossible on Long Island. However, to the extent that the Board has held to the contrary and has been upheld on appeal, those matters are now settled in this proceeding. The governments are no longer free to press their views on matters that have been decided against them absent a successful motion to reopen the record. The matters in controversy now lie elsewhere and it will not advance the position of any party to attempt to relitigate previously decided issues. The Board will only hear evidence and decide issues on which the record remains open.

Any position of the parties in the motion for summary disposition or in the answer not responded to directly or inferentially by the Board is rejected as unsupported in fact or law or is unnecessary to the rendering of this decision.

The parties will be afforded, at the appropriate time, the opportunity to present their views on the issues that are to be heard in the remanded CLI-86-13.

### **C. Order**

Based upon all of the foregoing, the Board hereby ORDERS:

1. That "LILCO's Second Renewed Motion for Summary Disposition of the 'Legal Authority' Issues (Contention EP 1-10)" of March 20, 1987, be, and is, hereby denied; and

2. That the LILCO "Motion for Leave to File a Reply on 'Realism' " of May 22, 1987, be, and is, hereby denied and the attached tendered Reply is rejected.

THE ATOMIC SAFETY AND  
LICENSING BOARD

Morton B. Margulies, Chairman  
ADMINISTRATIVE LAW JUDGE

Jerry R. Kline  
ADMINISTRATIVE JUDGE

Frederick J. Shon  
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,  
this 17th day of September 1987.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman  
Dr. Walter H. Jordan  
Dr. Kenneth A. McCollom

In the Matter of

Docket Nos. 50-445-OL-2  
50-446-OL-2  
(ASLBP No. 79-430-06-OL)  
Docket No. 50-445-CPA  
(ASLBP No. 86-528-02-CPA)

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

September 24, 1987

In this case, in which the owners of the Comanche Peak Steam Electric Station are locked in litigation before other courts and regulatory bodies, a minority owner of the project sought a declaration from the Licensing Board that: (1) the lawyer for the majority owner should serve as a lawyer for the minority owner, or (2) that it was entitled to have its own lawyer in these proceedings without risk of civil liability for violating its obligations under the Ownership Agreement, entered into by all the owners of the project.

The Licensing Board chose not to deal with the issue as framed by the minority owner. Instead it dealt with its concern with the obligations of parties to respond to discovery requests. The Licensing Board stated that all the owners have independent responsibilities to respond fully to discovery requests and to keep the Board fully and accurately informed. This means that the majority owners, who need not provide counsel to minority owners, do have an obligation

to keep them sufficiently informed as that they may meet their independent obligations.

The Licensing Board stated that it would deal with minority owners' need to be represented by attorneys on a case-by-case basis.

## **RULES OF PRACTICE: REPRESENTATION BY ATTORNEY**

When a minority owner of a nuclear project is capable of hiring its own attorney, it is not entitled to a declaration that the attorney for the majority owner must represent it even against the will of the attorney. The Licensing Board did not consider whether or not the majority's attorney had a contractual obligation to represent the minority owner.

## **RULES OF PRACTICE: DISCOVERY**

Multiple owners of a nuclear project have independent responsibilities to see to the completeness of responses to discovery requests and to the completeness of the record. The majority owner must keep the minority owners well-enough informed so that they may fulfill their obligation.

# **MEMORANDUM AND ORDER** **(Brazos' Motion for a Declaratory Order)**

## **MEMORANDUM**

Brazos Electric Power Co., Inc. (Brazos), a minority owner in the Comanche Peake project, filed a Motion for Declaratory Order on August 14, 1987.<sup>1</sup> The standing of Brazos to file this motion and its standing to file the related notices of special appearance for counsel, have not been challenged; and we treat the motion as properly before us.<sup>2</sup>

Brazos' motion has two alternatives. The first deals with its relationship to Ropes & Gray, which is counsel for the Project Manager for the Comanche Peak Steam Electric Station, which is owned by Texas Utilities Electric Company, *et*

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<sup>1</sup> We have considered Texas Utilities Electric Company, *et al.*'s (Applicants') "Response to Brazos' Motion for Declaratory Order" (Applicants' Response), September 8, 1987; the "NRC Staff Response to Brazos Electric Power Cooperative's Motion for Declaratory Order" (Staff Response), September 14, 1987; CASE's Answer to 8/14/87 Motion for Declaratory Order by Brazos Electric Power Cooperative, Inc., September 8, 1987; and Motion for Protective Order by Texas Municipal Power Agency, August 14, 1987.

<sup>2</sup> Brazos has filed a "Motion for Permission to File Written Response and Request for Oral Argument," September 17, 1987. However, the Board feels that it is adequately informed on the pending questions, and the motion and request are therefore denied.

*al.*, pursuant to a document called "The Joint Ownership Agreement."<sup>3</sup> This part of the motion asks that the Atomic Safety and Licensing Board enter an order declaring that the law firm of Ropes and Gray "shall continue to represent Brazos in these proceedings with full recognition, acceptance and discharge of its fiduciary obligations to Brazos." Alternatively, Brazos asks that the Licensing Board issue an order permitting Brazos to obtain independent counsel to represent it in these proceedings without becoming subject to suit by Texas Utilities Electric Co. (TUEC) under the joint ownership agreement.

We agree with Ropes & Gray that it would be improper for us to order it to become an attorney for a party under circumstances when it does not wish to become attorney for that party and when other attorneys are already available to the party. The only real issue appears to be whether the Board would interpret the Joint Ownership Agreement by providing Brazos with an order requiring Ropes & Gray to become the attorneys for Brazos over the objection of Ropes & Gray. No issue of safety or of procedural due process is presented. We agree with TUEC that Brazos' potential liability under its own contractual agreement is not a responsibility of this Board.

What this Board is concerned about is that it obtains full and accurate information. It is the obligation of TUEC and of the minority owners to see that the Board's information is full and accurate. The Project Manager, who is represented by Ropes & Gray, has the independent responsibility to present us with a full and accurate record (including providing full and accurate answers to discovery requests), consisting of documents under its control and of documents of whose existence they are aware. The minority owners also must, to the extent they are able, present us with a full and accurate record.

The circumstances here are unusual because of the lack of cooperation among the members of the ownership group. Under these circumstances, the Project Manager must assist the Board by keeping minority owners sufficiently well informed to fulfill their obligation to the Board. It would reflect adversely on the character of the Project Manager, acting for all the Applicants, if it were not diligent in fulfilling their obligations to the Board, including its obligation to keep the minority owners informed. Furthermore, it must not impede minority owners in the fulfillment of their obligations.

We note that in the circumstances of this case, we do not know enough about the documents in the hands of the minority owners to know whether anyone has been remiss in responding to discovery requests. In particular, we do not know whether the documents are relevant to outstanding discovery requests.

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<sup>3</sup> See Brazos' Motion for Declaratory Order at 17 n.24. Note that the Project Manager acts "as agent for the Parties." However, the interpretation of this clause in the unexpected circumstance now existing, where the parties no longer see their interests as congruent, may be a very delicate matter about which we choose not to act.

We have stated that Brazos has a legal obligation to this Board and to the public, regardless of the financial consequences.<sup>4</sup> It is similar to other obligations of applicants, who may often be required to take costly actions in order to fulfill their legal obligations. On the other hand, if the information is disclosed pursuant to the Brazos' obligations to this Board, we would not expect TUEC to file a law suit against them.

We agree with TUEC that

No known impediment prevents Brazos' lawyers from filing appearances on its behalf. Indeed, they have done so regularly, including six separate appearances in connection with the current "Motion" alone.<sup>5</sup>

We also continue to adhere to our own language<sup>6</sup> that

We recognize the obligation of minority applicants, apart from any Board order, "to provide accurate, relevant, and complete information" to both the Staff of Commission and to this Board. No contractual agreement can negate that obligation.

We find that minority members are responsible for assuring the completeness of our factual record and the adequacy of factual responses to discovery . . . Applicants must either transmit to the Board the differing views of minority Applicants concerning factual matters or must permit, without threat of legal action, minority applicants to bring factual information to the parties and the Licensing Board.

In this respect, we find that Texas Utilities Electric Company has an obligation that goes beyond its representations to us. Minority owners have independent responsibilities to this Board. Texas Utilities must not interfere with them in any way in fulfilling those responsibilities.

We also note that there has been no objection to Brazos' special appearance.<sup>7</sup> Under the circumstances, Brazos' motion shall be denied.

## ORDER

Upon consideration of the filings of the parties and the entire record in this matter, it is, this 24th day of September 1987, ORDERED:

The Motion for Declaratory Order filed by Brazos Electric Power Co., Inc. (Brazos), a minority owner in the Comanche Peak project, on August 14, 1987, is *denied*, except to the extent that the discussion in the accompanying

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<sup>4</sup> If TUEC or other Applicants claim privilege for a document, other Applicants may await a Board determination before filing the document themselves.

<sup>5</sup> Applicants' Response at 8-9.

<sup>6</sup> Memorandum and Order, Appointment of Legal Counsel; Clarification of Discovery, unpublished, May 4, 1987, at 4-5.

<sup>7</sup> We do not anticipate permitting a general appearance by any minority member, but we will consider motions for special appearances one at a time.

memorandum may have clarified issues concerning which Brazos requested a declaratory order.

**THE ATOMIC SAFETY AND  
LICENSING BOARD**

**Peter B. Bloch, Chairman  
ADMINISTRATIVE JUDGE**

**Dr. Walter H. Jordan (by PBB)  
ADMINISTRATIVE JUDGE**

**Dr. Kenneth A. McCollom (by PBB)  
ADMINISTRATIVE JUDGE**

**Bethesda, Maryland**



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

Docket Nos. 50-440  
50-441

CLEVELAND ELECTRIC ILLUMINATING  
COMPANY, *et al.*

(Perry Nuclear Power Plant,  
Units 1 and 2)

September 14, 1987

On November 7, 1986, Terry J. Lodge, on behalf of Sunflower Alliance, Inc. (Petitioner), submitted to the U.S. Nuclear Regulatory Commission (NRC) a Motion to reopen the record in the Perry Nuclear Power Plant operating license proceeding and consider new contentions related to emergency planning or, alternatively, for the Commission to issue an order to show cause why the facility's operating license should not be modified or revoked on the basis of alleged offsite emergency planning deficiencies. The deficiencies included the adequacy of certain care centers that are to support emergency planning efforts for the Perry facility; the adequacy of commitments with school districts for the provision of buses, personnel, and facilities for use during an emergency; and the adequacy of the Ashtabula County Medical Center for the decontamination and treatment of exposed emergency workers. On February 25, 1987, the NRC notified the Petitioner that the Motion would be considered as a Petition pursuant to 10 C.F.R. § 2.206.

The Director of the Office of Nuclear Reactor Regulation denied the Petition based largely upon the evaluation of the Federal Emergency Management Agency (FEMA) which evaluated each of the areas of emergency planning related to the issues raised and found the state of emergency planning adequate.

## **TECHNICAL ISSUE DISCUSSED: EMERGENCY PLANS**

Written commitments from school districts to provide facilities, personnel, and equipment, particularly buses, in the event of an emergency are found sufficient. Legally binding documents to determine what response would be available in an emergency are not required. Public institutions are to be aware of the role they may be called upon to play in an emergency and to formally recognize that likelihood.

## **DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206**

### **INTRODUCTION**

On November 7, 1986, Terry J. Lodge, on behalf of Sunflower Alliance, Inc. (Petitioner), submitted to the U.S. Nuclear Regulatory Commission (NRC) a Motion to reopen the record in the Perry Nuclear Power Plant (Perry) operating license proceeding and consider new contentions related to emergency planning or, alternatively, for the Commission to issue an order to show cause why the facility's operating license should not be modified or revoked on the basis of alleged offsite emergency planning deficiencies. The operating license for Unit 1 of the Perry facility was issued on November 13, 1986, to Cleveland Electric Illuminating Company (CEI), *et al.* (Licensees). On February 25, 1987, the NRC notified the Petitioner that the Motion would be considered as a Petition pursuant to 10 C.F.R. § 2.206.

The Petition raises a number of issues. The Petition alleges that certain "care centers" that are to support emergency planning efforts for the Perry facility have inadequate provisions and arrangements to ensure that the centers will perform adequately in the event of an emergency. The Petition also questions the adequacy of "commitments" with school districts for the provision of buses, personnel, equipment, and facilities for use during an emergency. The Petition notes that, in October 1986, the Northeast District of the Ohio Association of Public School Employees, American Federation of State, County, and Municipal Employees, AFL-CIO (OAPSE), voted not to participate in any drill or actual evacuation activities involving the Perry facility. Finally, the Petition questions whether the personnel and facilities of the Ashtabula County Medical Center are adequate for the decontamination and treatment of exposed emergency workers.

On January 20, 1987, the Licensees submitted "Licensees' Response to § 2.206 Petition of Sunflower Alliance" (Licensees' Response). On March 3, 1987, the NRC requested that the Federal Emergency Management Agency (FEMA) address the issues raised by the Petitioner. FEMA's Report on "Sun-

flower Alliance 2.206 Petition" dated July 14, 1987 (FEMA Report) is attached hereto as Exhibit A. My final decision in this matter now follows.

## BACKGROUND

The Commission's regulations in 10 C.F.R. § 50.54(q) and (s) require the submission and implementation of licensee and state and local governmental emergency plans that meet the standards in 10 C.F.R. § 50.47(b) and Appendix E to 10 C.F.R. Part 50.<sup>1</sup> As described in the Memorandum of Understanding between FEMA and the NRC (50 Fed. Reg. 15,485 (Apr. 18, 1985)), FEMA has lead responsibility for assessing offsite radiological emergency response plans and preparedness.<sup>2</sup> NRC assesses onsite emergency planning and reviews FEMA's assessment of offsite plans for the purpose of making findings on the overall state of emergency preparedness. See 10 C.F.R. § 50.47(a). The NRC must find reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at a nuclear facility licensed pursuant to 10 C.F.R. Part 50.

For nuclear power plants licensed to operate after the NRC final rule on emergency planning became effective (November 3, 1980), the NRC bases its reasonable assurance finding for each operating reactor on (1) a review of the FEMA findings and determinations as to whether state and local plans are adequate and whether there is reasonable assurance that they can be implemented, (2) a review of the onsite plans by the NRC, (3) a comprehensive appraisal conducted by the NRC at the operating reactor site to verify the implementation of the licensee's plan, and (4) the evaluation of a joint exercise involving the licensee and state and local governmental organizations.

The Licensees' onsite emergency plan was submitted to the NRC in May 1981. The emergency preparedness implementation appraisal of the Licensees' plan was conducted at Perry from February 25 to March 7, 1985. Certain appraisal areas (fifty-two specific items) were identified as requiring either correction or improvement. All identified items were reviewed during subsequent inspections in 1985 and 1986 and found to be satisfactorily resolved. The Perry offsite plan was submitted in March 1983 by Ohio to FEMA for review and evaluation in accordance with 44 C.F.R. Part 350.<sup>3</sup> On March 1, 1984, FEMA

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<sup>1</sup> NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," provides guidance for the implementation of the standards in § 50.47.

<sup>2</sup> In addition to reviewing offsite emergency preparedness as requested by the NRC with respect to nuclear facilities, FEMA has in place procedures set forth in 44 C.F.R. Part 350 for the assessment of the offsite plans submitted by state and local governments.

<sup>3</sup> The FEMA process for formal approval of offsite plans is set forth in 44 C.F.R. Part 350. However, this formal process need not be completed for the purpose of NRC licensing reviews either for operating plants or plants being  
(Continued)

provided an interim report to the NRC on the offsite emergency plans for Perry. FEMA concluded that, based on its review of the Ohio and Ashtabula, Geauga, and Lake Counties' offsite radiological emergency preparedness plans, there was reasonable assurance that the plans were adequate and capable of being implemented in the event of an accident at the Perry site. A full-participation exercise involving the Licensees and state and local organizations was conducted on November 28, 1984. The NRC and FEMA evaluated the implementation of the Licensees' onsite and offsite plans, respectively. The onsite portions of such exercises are observed by the NRC; the offsite portions are observed by FEMA and other members of the Regional Assistance Committee (RAC).<sup>4</sup> On January 31, 1985, FEMA provided the NRC with its findings on the exercise. FEMA reported that there were no deficiencies affecting public health and safety; however, there were twenty-two other deficiencies of a lesser nature that required corrective action by the State of Ohio and Lake, Ashtabula, and Geauga Counties. On May 23, 1985, FEMA reported that the State of Ohio had submitted an acceptable schedule of corrective actions for all of the identified deficiencies. A partial-participation exercise involving the Licensees and state and local organizations was conducted on April 15, 1986. On September 5, 1986, FEMA reported to the NRC that no deficiencies were found during the April 1986 exercise and that the 1984 exercise deficiencies had been corrected.

In addition, Atomic Safety and Licensing Board (ASLB) hearings were held on the Perry offsite plans, and contentions were litigated during the period April 9-12, 1985. The Petitioner was a party to this proceeding. The ASLB issued a Partial and Concluding Initial Decision on September 3, 1985.<sup>5</sup> The ASLB authorized issuance of an operating license subject to the Licensees' satisfying certain conditions related to offsite emergency planning.

In Supplement No. 7 to the Perry Safety Evaluation Report,<sup>6</sup> the NRC approved the Licensees' overall state of emergency preparedness subject to resolution of certain conditions of the September 3, 1985 ASLB Decision related to

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licensed. The fact that FEMA approval of offsite plans in accordance with Part 350 has not been received for a particular facility does not mean that an inadequate level of emergency preparedness exists. During the approval process, FEMA may issue interim findings of reasonable assurance that adequate measures can be taken in the event of a radiological emergency, which are based on reviews of emergency plans and exercise observations.

<sup>4</sup>There exists in each of the 10 standard federal regions a Regional Assistance Committee (RAC) (formerly the Regional Advisory Committee) chaired by a FEMA regional official and having members from the Nuclear Regulatory Commission, Department of Health and Human Services, Department of Energy, Department of Transportation, Environmental Protection Agency, Department of Agriculture, and Department of Commerce. The RACs assist state and local government officials in the development of their radiological emergency response plans and review plans and observe exercises to evaluate the adequacy of these plans and related preparedness. This assistance does not include the actual writing of state and local government plans by RAC members.

<sup>5</sup>LBP-85-35, 22 NRC 514 (1985). The Atomic Safety and Licensing Appeal Board affirmed this decision. ALAB-841, 24 NRC 64 (1986).

<sup>6</sup>NUREG-0887, "Safety Evaluation Report Related to the Operation of Perry Nuclear Power Plant, Units 1 and 2," Docket Nos. 50-440 and 50-441, Supplement No. 7, November 1985.

offsite emergency planning. On February 4, 1986, FEMA provided its supplemental findings on the offsite emergency preparedness conditions specified in the ASLB Decision. FEMA concluded that the emergency preparedness issues as specified in the ASLB Decision have been satisfactorily resolved.

On November 7, 1986, the Nuclear Regulatory Commission voted 4-1 to authorize the NRC to issue a full-power operating license for Perry Nuclear Power Plant, Unit 1. In reaching its decision, the Commission explicitly considered and approved emergency planning for the Perry facility.<sup>7</sup>

## DISCUSSION

The Petition raises the following four specific issues calling into question the adequacy of offsite emergency planning for the Perry facility:

- (1) The adequacy of Geauga County reception/congregate care centers;
- (2) The effect of the July 14, 1986 Jefferson Area Local School District Superintendent's Letter;
- (3) The effect of the Resolution of the Northeast District of OAPSE;
- (4) The adequacy of the Ashtabula County Medical Center.

With respect to the first issue, the claim raised by the Petitioner is based on the Affidavit by Mrs. Theresa M. Burling. Mrs. Burling cites a lack of stored food, clothing, cots, or bedding at the schools that will serve as reception/congregate care centers in the event of an evacuation of the area near the Perry site. Mrs. Burling also raises the issue of failure of contact and/or discussion between the American Red Cross and school administrators. Finally, Mrs. Burling's Affidavit specifies that 12,891 evacuees are proposed to be housed in these care centers. The FEMA Report indicates that an apparent misunderstanding exists on the part of Mrs. Burling in that there is no requirement that the supplies referred to be stored in these reception/congregate care facilities in advance of an emergency at the Perry plant. FEMA stated that the current arrangements (i.e., a letter of agreement between the Red Cross and Geauga County specifying that the Red Cross will provide cots, blankets, and other items at the care centers and the use of the school food supply in addition to local purchase for feeding purposes) are similar to other arrangements around the country and that FEMA finds these arrangements to be adequate. All primary (four each) and alternate (six each) designated reception/congregate care centers other than Kent State University — Burton, a state-operated institution designated as a reception center for about 200 people, have entered into an agreement with Geauga County and have copies of the Geauga County plan. These arrangements are satisfactory to FEMA. The Geauga County Emergency Operations

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<sup>7</sup>CLI-86-22, 24 NRC 685 (1986).

Center's Operation Group Staff includes the Geauga County School Superintendent and a liaison from the Red Cross. The Berkshire High School and West Geauga High School facilities were evaluated by federal observers during the 1984 full-participation and 1986 partial-participation exercises, respectively. The exercises confirmed the availability and adequacy of these facilities as care centers. Regarding the capacity of the care centers, FEMA reports that the Geauga County plan notes that approximately 2000 residents of Thompson Township (Gauga County) live within the 10-mile emergency planning zone (EPZ) of the Perry plant. The capacity of the four primary and six alternate care centers, as specified in the Geauga County plan, is 12,891, well in excess of the 2000 Geauga residents within the 10-mile EPZ. On the basis of its review of the Geauga County plan, FEMA concluded that there was excess capacity in the Geauga County centers.

With respect to the second issue, the Petition bases its argument on the assertion that the NRC has required licensees to have in place before an operating license is issued written agreements or commitments from nearby school districts to provide facilities, personnel, and equipment, particularly buses, in the event of an emergency. The Petition also included a July 14, 1986 letter from the Superintendent of the Jefferson Area Local School District that the Petitioner alleges formally withdrew a previous commitment letter and indicated that there is a lack of authority to make commitments for buses, personnel, equipment, and facilities for use during an emergency. The Petitioner has mischaracterized the July 14, 1986 letter. In that letter, the Superintendent focused on his legal authority regarding facilities and personnel in the event of an emergency. In essence, the Superintendent noted that he was without legal authority to permit the use of school district resources in an emergency situation. The NRC recognizes this as the case, and has not in the past required legally binding documents to determine what response would be available in an emergency. Historically, public institutions have an outstanding record of response in emergencies. What is important is for the appropriate institutions to be aware of the role they may be called upon to play in an emergency and to formally recognize that likelihood. A legal contract is not needed. The Superintendent's letter reflects that a legal contract does not exist. In fact, subsequent to the July 14, 1986 letter, the Jefferson Area Local School District reaffirmed its willingness to assist in an emergency. See ¶ 6 of the Hulbert Affidavit attached to the Licensees' Response. Also, FEMA contacted the Superintendent on March 2, 1987, to discuss the July 14, 1986 letter. According to FEMA, the Superintendent pointed out that his letter of July 14, 1986, was written to clarify a legal point and should not be taken to mean that the Jefferson Area Local School District would not cooperate in disaster planning in response to an accident at the Perry plant.

Regarding the remainder of commitment/agreement documents on file wherein the Petitioner alleges that facilities, personnel, and buses have not been committed in a legally recognizable fashion, as stated above, legal contracts are not required. It is the view of the NRC that the purpose of written commitments is to reasonably determine and confirm the available resources and to ensure that the providers are capable of providing those resources. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), LBP-85-14, 21 NRC 1219, 1273 (1985). Historically, providers have responded when called upon to do so.

The issue of letters of agreement for school buses was first raised by the Petitioner and litigated before the ASLB during the Perry emergency planning hearings in April 1985. In its decision of September 3, 1985, LBP-85-35, *supra*, the ASLB directed CEI to obtain letters of agreement from all school districts regarding the supply of buses for evacuation purposes. On February 4, 1986, FEMA notified the NRC that the State of Ohio had obtained letters of agreement from the ten school districts identified in the Ashtabula County Radiological Emergency Response Plan, the eight educational institutions in Geauga County, and the ten school districts participating in Lake County. FEMA concluded that these documents satisfied the terms of the ASLB decision.

In my view, the issue is not whether a particular institution believes it has legal authority to perform some aspect of planning and preparedness. The issue is whether the institution is likely to cooperate in disaster planning and whether facilities, personnel, and buses will likely be available in the event of a radiological emergency. Based on the above discussion, it appears reasonable that the appropriate institutions, including the Jefferson Area Local School District, are prepared to do their part.

With respect to the third issue, the Petitioner argues that the Resolution of the Northeast District of the OAPSE calls into question the availability of emergency workers in the event of an emergency at the Perry facility. FEMA had previously investigated a similar resolution passed by the Northwest District of the OAPSE in response to a petition pursuant to 10 C.F.R. § 2.206 related to the Davis-Besse Nuclear Power Station.<sup>8</sup> In its letter of November 14, 1986, FEMA described that resolution as a nonbinding resolution and provided a status report.<sup>9</sup> FEMA also noted that the Ohio Disaster Services Agency (ODSA) and the Toledo Edison Company were meeting with the involved school systems and union members to discuss the resolution and to schedule additional training. In FEMA's view, the union members were willing to cooperate, attend meetings, and participate in training related to their emergency duties. Based on these events, FEMA had not revised its position that there was reasonable assurance

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<sup>8</sup> *Toledo Edison Co.* (Davis-Besse Nuclear Power Station, Unit 1), DD-86-17, 24 NRC 753 (1986).

<sup>9</sup> Memorandum from Richard W. Krimm, FEMA, to Edward L. Jordan, NRC, dated November 14, 1986.

that adequate protective measures can be taken in the event of a radiological emergency at the Davis-Besse facility.

With regard to the instant Petition, based on a November 13, 1986 letter from the ODSA and a March 5, 1987 training status report from CEI, FEMA reported that similar training of union members in their emergency duties had taken place around the Perry plant. According to the CEI status report, twelve bus driver training sessions involving 339 bus drivers had been conducted as part of Perry offsite planning during 1986-1987. In addition, other training sessions had been conducted for superintendents, transportation supervisors, building principals, teachers, and custodians. In FEMA's view, the union members are willing to cooperate, attend meetings, and participate in training related to their emergency duties. As of this time, FEMA has not changed its position that there is reasonable assurance that adequate protective measures can be taken in the event of a radiological emergency at the Perry facility.

With respect to the fourth issue, the Petition alleges that the equipment, personnel, and facilities at Ashtabula County Medical Center (ACMC) fail to meet the requirements of the Joint Commission on Accreditation for Hospitals (JCAH). Specific problems alleged include a joint ventilation system for the hospital and the emergency room area in which contamination victims would be treated; no isolated, designated area for holding of contamination victims; lack of adequate training of emergency room and other staff of ACMC in the care of contaminated victims; and inadequate preparations for ambulance transport of contamination victims from ACMC to other hospitals in the event of a severe radioactive release from the Perry plant in the direction of Ashtabula.

The issue of the adequacy of medical services was litigated before the ASLB in the operating license proceeding. The Petitioner there sponsored a contention asserting deficiencies in this area and presented evidence. The ASLB rejected the contention and found that the training, personnel, and equipment at designated hospitals within the emergency planning zone (EPZ) as well as the medical resources available outside the EPZ were adequate. This finding included arrangements for medical services of contaminated individuals.<sup>10</sup> The ASLB specifically noted that ACMC is accredited by the State of Ohio for handling contaminated individuals. Furthermore, the Petitioner's assertion that ACMC is not accredited by the JCAH is simply incorrect. See ¶ 9 of the Hulbert Affidavit attached to the Licensees' Response.

FEMA has also evaluated medical services in the event of an emergency at the Perry facility. According to the FEMA Report, the medical staff at ACMC demonstrated its capabilities and the adequacy of the hospital during the November 28, 1984 full-participation exercise. The one 1984 exercise deficiency at

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<sup>10</sup> LBP-85-35, *supra*, 22 NRC at 523-25 and 564-66.



ACMC reported by FEMA — all equipment necessary to handle a contaminated victim was not demonstrated — was resolved during the 1986 exercise. FEMA concluded that ACMC is capable of treating victims of radiological accidents. FEMA also reported that training sessions were conducted for the staff at ACMC under the program, "Managing the Emergency Care of Radiation Accident Victims," on February 19-20, 1987. In addition, FEMA reported that, since ACMC is outside the Perry 10-mile EPZ, it is not necessary to make preparations for ambulance transport of contaminated victims from ACMC to other hospitals in the event of a severe radioactive release from the Perry plant in the direction of Ashtabula. The FEMA Report concluded that ACMC is capable of treating victims of a radiological accident. In light of these findings, I find the Petitioner's allegations to be without merit.

## CONCLUSION

The Petitioner seeks the institution of a show-cause proceeding pursuant to 10 C.F.R. § 2.202 to modify or revoke the operating license for the Perry facility. The institution of proceedings pursuant to § 2.202 is appropriate only where substantial health and safety issues have been raised. See *Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 175 (1975), and *Washington Public Power System* (WPPS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). This is the standard that I have applied to the concerns raised by the Petitioner in this decision to determine whether enforcement action is warranted.

For the reasons discussed above, I find no substantial basis for taking the actions requested by the Petitioner. Rather, based upon the lengthy oversight and review of emergency planning efforts at Perry by both the NRC and FEMA, including the consideration of issues raised in the present Petition, and the consideration given to the emergency planning area by the Commission and its Licensing and Appeal Boards, I continue to be of the view that emergency planning and preparedness for the Perry facility are adequate. Accordingly, the Petitioner's request for action pursuant to 10 C.F.R. § 2.206 is denied. As

provided in 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary for the Commission's review.

**FOR THE NUCLEAR  
REGULATORY COMMISSION**

**Thomas E. Murley, Director  
Office of Nuclear Reactor  
Regulation**

**Dated at Bethesda, Maryland,  
this 14th day of September 1987.**

**[The attachments have been omitted from this publication but can be found in  
the NRC Public Document Room, 1717 H Street, NW, Washington, DC 20555.]**

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF THE EXECUTIVE DIRECTOR FOR OPERATIONS

Victor Stello, Jr., Executive Director for Operations

In the Matter of

Docket No. PRM 73-6

WISCONSIN ELECTRIC POWER  
COMPANY, *et al.*

August 20, 1987

The Nuclear Regulatory Commission is partially denying a petition for rule-making submitted on behalf of Wisconsin Electric Power Company *et al.* which included three proposals: (1) elimination of the requirement that armed security personnel carry an extra pair of corrective lenses, (2) reduction of the mandated frequency of medical examinations for personnel under age 39, and (3) elimination of the requirement that armed security personnel undergo a medical examination within the 30-day period preceding the annual physical fitness test. The Commission has determined that granting the petition in its entirety would not result in maintenance of the present level of assurance that the national security and public health and safety would be protected. The Commission is denying the petition insofar as the first two proposals are concerned. However, the Commission intends to issue a rule that would implement the third part of the petition requesting deletion of a specified link between the timing of the medical examination and the physical fitness test.

TECHNICAL ISSUES DISCUSSED

Physical qualifications for security personnel (10 C.F.R. Part 73, "Physical Protection of Plants and Materials," Appendix B, "General Criteria for Security Personnel").

# DENIAL OF PETITION FOR RULEMAKING

## I. BACKGROUND

The Nuclear Regulatory Commission is responding to a petition for rulemaking dated December 2, 1981, filed by Shaw, Pittman, Potts, and Trowbridge on behalf of the Wisconsin Electric Power Company, the Public Service Electric and Gas Company, the Commonwealth Edison Company, the Yankee Atomic Electric Company, the Northern States Power Company, and the Sacramento Municipal Utility District. The petition requested changes in the qualifications for armed security personnel set out in 10 C.F.R. Part 73, Appendix B, "General Criteria for Security Personnel." Specifically, the Petitioners requested changes to criteria I.B.1.b(1)(a), I.C, and I.E.

The changes the Petitioners requested would eliminate the requirement that, at nuclear power plants or other facilities licensed to handle special nuclear material, armed security personnel who need corrective lenses carry an extra pair and the requirement that security personnel undergo a medical examination within 30 days preceding an annual physical fitness test.

The Petitioners, in an accompanying memorandum in support of the petition, state that "the requirement for security personnel to carry an extra pair of corrective lenses is an unnecessary nuisance to those personnel. It also makes them subject to harassing inspections to check for their second set of eyeglasses or contact lenses." The Petitioners also state that other federal and state agencies, including:

the military services, the FBI, the Immigration Service, ATF, the Customs Service, the GSA, nor the District of Columbia Police Department or the Maryland State Police [do not] require security personnel to carry an extra pair of corrective lenses if their uncorrected eyesight falls below a certain level. This NRC requirement thus appears overly stringent. Moreover, the requirement is often difficult to satisfy because carrying an extra pair of glasses often leads to breakage or loss. Consequently, compliance can become an ineffective yet costly exercise.

Regarding the requirement that security personnel undergo an annual medical examination within 30 days of an annual physical fitness test, the Petitioners "suggest that the two types of tests need not be tied to the same schedule, and that the frequency of medical examinations should vary with age. . . . The Petitioners [do] recognize the importance of regular physical fitness testing and medical examinations for security personnel" and state that, under the revised language proposed in the petition, "existing requirements for additional medical examinations following serious illness, injury, disease or operation would not be affected." The Petitioners reviewed the physical fitness and medical examination

requirements of the various branches of the military service, the FBI, and similar enforcement-related organizations with

responsibilities of equal or greater sensitivity than those of security officers at nuclear power plants . . . [and conclude] that the present NRC requirements are excessively strict. In view of the requirements in the military and at other federal and state agencies, the petitioners recommend elimination of the Commission's present requirement tying medical examinations to physical fitness testing schedules and modification of the Commission's overly rigid medical examination schedule for young employees while maintaining all other requirements in the existing qualification program.

The Petitioners included proposed amendments to the text of portions of Appendix B to Part 73.

## **II. PUBLIC COMMENTS**

### **A. Description of Comments Received on Petition**

The petition was published for comment in the *Federal Register* on February 16, 1982 (47 Fed. Reg. 6659). The NRC received thirteen comment letters. The sources were as follows: Congress, 1; General public, 1; and Nuclear industry, 11.

Ten of the comment letters supported the petition, yet none of them contained any technical information beyond that in the petition. One commenter argued that broken eyeglasses are meaningful only if the entire guard force is engaging in a response and pointed out that there has never been a callup of the total guard force on site. Another commenter expanded on the medical examination issue by describing the practices of certain other state and federal agencies.

### **B. Response to Petition**

On the first proposal regarding the requirement for the extra pair of glasses, neither Staff reevaluation nor public comments have identified substantive ways in which the proposed changes would either benefit the public or result in the same level of protection provided by current regulations. While the need to carry an extra pair of corrective lenses is not commonly required by persons charged with public safety and protection, a requirement for a minimum acceptable uncorrected vision is common.

A few examples of those public agencies whose regulations require extra corrective lenses for their operational personnel are as follows. The Department of Energy requires that armed personnel who need corrective lenses carry an extra pair. Federal Motor Carrier Safety regulations provide that persons who drive motor vehicles on behalf of motor carriers and who use contact lenses

carry a spare pair on their person. The Coast Guard requires that a pilot (i.e., marine pilot) who needs corrective lenses have a spare pair available on the vessel. Since the pilot is normally on the vessel bridge, a considerably smaller area than a nuclear facility, this situation approximates actually carrying them.

On the other hand, most agencies charged with the protection of the public set minimum uncorrected as well as corrected vision standards for their armed personnel.<sup>1</sup> The NRC does not. It sets only corrected vision standards. In a published report,<sup>2</sup> the importance of good visual acuity for police officers is documented. Officers deprived of optical correction are shown to have suffered impaired performance in some tasks such as the use of firearms and pursuit of criminals. With regard to pursuit, the experience of the Columbus, Ohio Police Department is reported. In the period from December 1977 to June 1979, eleven instances of damaged eyewear were reported, including one involving a fall and six involving pursuit and apprehension of prisoners. One instance resulted in a suspect not being apprehended. With regard to the use of firearms, the study makes the statement that "point shooting was extremely poor at night with visual acuities over 20/30."<sup>3</sup> The experience of the New York City Police Department shows that 20% of officer gunfights occur at distances greater than 20 feet. The importance of having an assured level of visual acuity is stressed by the authors.<sup>4</sup>

In March 1987, another study of the Columbus, Ohio Police Department was published and provided further evidence that police officers must periodically function with impaired vision. Also included in this published study were results of a survey of police officers who routinely wear corrective lenses on duty. Of the officers responding to the survey, 52% reported that their glasses had become "dislodged" while performing their duties.<sup>5</sup>

Although agencies such as the Secret Service do not require that armed personnel with vision problems carry an extra pair of corrective lenses, the personnel themselves commonly do so. Moreover, the Secret Service and similar agencies have stringent noncorrected vision standards for weapons-carrying personnel. The Secret Service, for example, requires new recruits to have at least 20/40 uncorrected vision.

A minimum vision standard was suggested in one of the public comments to 10 C.F.R. Part 73 when it was published as a proposed rule. The commenter suggested a vision standard as a substitute for the requirement to carry an extra pair of corrective lenses. However, this proposed alternative, which suggested

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<sup>1</sup> Richard N. Holden, "Vision Standards for Law Enforcement: A Descriptive Study," *Journal of Police Science and Administration*, 12 (1984), at 125.

<sup>2</sup> James E. Sheedy, "Police Vision Standards," *Journal of Police Science and Administration*, 8 (1980), at 18.

<sup>3</sup> Holden, *supra* note 1, at 125.

<sup>4</sup> Sheedy, *supra* note 2, at 18.

<sup>5</sup> Gregory W. Good and Arol R. Augsburg, "Uncorrected Visual Acuity Standards for Police Applicants," *Journal of Police Science and Administration*, 15 (1987), at 18.

an uncorrected vision of 20/67 in the better eye, was rejected as making the vision requirements too restrictive for NRC licensee guard force employment.

Since NRC has no noncorrected vision standards for armed personnel and has not determined that a need exists to place such restrictions on licensee guard personnel, the requirement to carry an extra pair of corrective lenses is necessary to maintain the current level of protection. Furthermore, the need for good vision standards for armed personnel is well recognized in the above-cited studies. Therefore, in the absence of any minimum uncorrected vision requirement, and in view of the Commission's determination not to reduce the present level of protection, the NRC's current requirement for carrying an extra pair of glasses by armed personnel will be retained.

With respect to the second proposal, NRC finds that an annual medical examination is necessary to ensure that the guard force personnel are physically able to perform their duties and that there are no contraindications to participation in the annual physical fitness testing. Annual or "preparticipation" medical examinations are common practice for young people who engage in sports or strenuous physical activity. The Department of Energy, Secret Service, and U.S. Marshal Service all require annual medical examinations regardless of age, as does the Department of Labor for its mine rescue team testing. The Petitioners have not presented persuasive evidence that a 3-year examination period will provide the same degree of assurance achieved by the current annual requirement.

With respect to the third proposal, the Commission recognizes that the timing between medical examinations and a physical fitness test is primarily a scheduling matter in which the licensee requires discretion for efficient management. The present regulation requires the physical examination to be scheduled within 30 days of the physical test. The Commission agrees with the Petitioners that there is no necessary relationship between this schedule interval and the level of protection. The latter is satisfied in demonstrating physical ability by an annual examination and an annual test. Accordingly, the Commission recognizes that the timing between medical examinations and physical fitness testing is primarily a scheduling matter in which the licensee requires discretion for efficient management. The current rule denies this discretion. The Commission intends to implement this change by amending the appropriate sections of Appendix B to 10 C.F.R. Part 73. However, as a matter of prudence to protect the well-being of the guard force personnel, the Commission believes that the interval between the medical examination and the physical fitness tests should be minimized.

### **III. FINDINGS**

Consideration of the petition and the public comments did not result in a conclusion that granting the petition in its entirety would result in maintaining the present level of assurance that the national security and public health and safety would be protected. Since the Commission does not intend to change its present policy, it is prudent to require that replacements for corrective lenses be immediately available to armed security personnel in an emergency situation and to require the continuance of annual medical examinations for all armed security personnel. The NRC, therefore, denies the two parts of the petition proposing those changes in the requirements.

For the Nuclear Regulatory  
Commission

Victor Stello, Jr.,  
Executive Director for  
Operations

Dated at Bethesda, Maryland,  
this 20th day of August 1987.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman  
Thomas M. Roberts  
Frederick M. Bernthal  
Kenneth M. Carr  
Kenneth C. Rogers

In the Matters of

ADVANCED NUCLEAR FUELS  
CORPORATION  
(Import of South African Enriched  
Uranium Hexafluoride)

Docket No. 11003928  
(License Application  
No. ISNM-87005)

EDLOW INTERNATIONAL  
COMPANY  
(Import of South African Uranium  
Ore Concentrate)

Docket No. 11003929  
(License Application  
No. IU-87006)

EDLOW INTERNATIONAL  
COMPANY  
(Import of South African  
Uranium Hexafluoride)

Docket No. 11003930  
(License Application  
No. IU-87007)

EDLOW INTERNATIONAL  
COMPANY  
(Import of South African Enriched  
Uranium Hexafluoride)

Docket No. 11003931  
(License Application  
No. ISNM-87008)  
October 26, 1987

The Commission denies Intervenor's application for a stay, pending judicial review, of CLI-87-9, 26 NRC 109 (1987), which held that § 309(a) of the Anti-

Apartheid Act bars the importation of uranium ore and uranium oxide but not other forms of uranium.

The Commission finds that Intervenor has made no showing of irreparable injury sufficient to justify the issuance of a stay, nor have they demonstrated the likelihood that they will prevail on the merits of their appeal.

## ORDER

On September 21, 1987, the Commission issued CLI-87-9, 26 NRC 109, holding that § 309(a) of the Anti-Apartheid Act, 22 U.S.C. § 5059(a), bars the importation of uranium ore and uranium oxide into the United States. In that decision the Commission also held that (1) importation of other forms of uranium is not barred by the Anti-Apartheid Act; and (2) importation of South African uranium ore and uranium oxide that are transformed into uranium hexafluoride, or other uranium compounds that are substantially transformed before importation into the United States, is not barred by the Act. On September 24, 1987, Intervenor filed an Application for a Stay of that decision, seeking a stay pending judicial review.

The Commission hereby denies Intervenor's Application for a Stay. Intervenor has made no showing of irreparable injury sufficient to justify the issuance of a stay. Moreover, Intervenor has failed to demonstrate that they are likely to prevail on the merits of their appeal. Accordingly, Intervenor's request for a stay is denied.

It is so ORDERED.

For the Commission\*

SAMUEL J. CHILK  
Secretary of the Commission

Dated at Washington, D.C.,  
this 26th day of October 1987.

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\*Section 201 of the Energy Reorganization Act, 42 U.S.C. § 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Roberts and Rogers were not present when this item was affirmed. Accordingly, the formal vote of the Commission was 3-0 in favor of the decision. Commissioners Roberts and Rogers, however, had previously indicated that they would approve this paper and had they been present they would have affirmed their prior votes.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman  
Gary J. Edles  
Howard A. Wilber

In the Matter of

Docket Nos. 50-443-OL-1  
50-444-OL-1  
(Onsite Emergency Planning  
and Safety Issues)

PUBLIC SERVICE COMPANY OF  
NEW HAMPSHIRE, *et al.*  
(Seabrook Station, Units 1  
and 2)

October 1, 1987

The Appeal Board affirms in part, and reverses and remands in part, the Licensing Board's partial initial decision (LBP-87-10, 25 NRC 177), authorizing the issuance of a license for low-power operation (up to five percent of rated power) of Unit 1 of the Seabrook facility.

**RULES OF PRACTICE: STAY APPLICATION**

An application for a stay *pendente lite* shall be no longer than ten pages, exclusive of affidavits. 10 C.F.R. 2.788(b).

## **EMERGENCY PLANS: LOW-POWER LICENSE (STANDARD FOR ISSUANCE)**

Commission regulations explicitly authorize the issuance of a low-power operating license in advance of NRC or Federal Emergency Management Agency review, findings, or determinations concerning the state of offsite emergency preparedness or the adequacy of and capability to implement state and local offsite emergency plans. 10 C.F.R. 50.47(d).

## **APPEAL BOARDS: AUTHORITY (RELATION TO COMMISSION)**

Appeal Boards lack the authority to strike down a Commission regulation. *See* ALAB-865, 25 NRC 430, 439. Within the agency, only the Commission itself has that power. *See* 10 C.F.R. 2.758(a); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 2), ALAB-456, 7 NRC 63, 65, 67 n.3 (1978); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-410, 5 NRC 1398, 1402 (1977).

## **RULES OF PRACTICE: CHALLENGE TO COMMISSION REGULATION**

Under the Commission Rules of Practice, a waiver or exception from an applicable rule or regulation in a licensing proceeding is allowed only where special circumstances with respect to the subject matter of the particular proceeding are such that application of the rule or regulation (or provision thereof) would not serve the purposes for which the rule or regulation was adopted. 10 C.F.R. 2.758(b).

## **RULES OF PRACTICE: CHALLENGE TO COMMISSION REGULATION**

Upon receipt of a petition for a waiver or exception from the application of a rule or regulation and all submissions in support of or in opposition to it, it becomes the presiding officer's duty to determine whether a *prima facie* showing has been made that application of the rule or regulation would not serve the purposes for which the rule or regulation was adopted. Upon a finding of *prima facie* showing to that effect, the presiding officer must certify the matter of the grant of the petition directly to the Commission for ultimate action. 10 C.F.R. 2.758(d).

## **NEPA: ENVIRONMENTAL IMPACT STATEMENT**

In the discharge of its responsibilities under the National Environmental Policy Act (NEPA), the Commission requires that environmental impact statements (EIS) be prepared by its staff with regard to every nuclear power facility.

## **REGULATORY GUIDES: STATUS**

Regulatory guides do not have the force of regulations. Regulatory guides are issued for the basic purpose of providing guidance to applicants with respect to, *inter alia*, acceptable modes of conforming to specific regulatory requirements. *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 772-73 (1977).

## **NEPA: POLICY STATEMENT ON SEVERE ACCIDENTS**

The Commission's Interim Policy Statement on "Nuclear Power Plant Accident Considerations under the National Environmental Policy Act of 1969," 45 Fed. Reg. 40,101 (1980), calling for the consideration in environmental impact statements of the more severe kinds of very low probability accidents is not required by NEPA but is a matter of Commission discretion. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 697-99 (1985) (citing *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1301 (D.C. Cir. 1984), *vacated in part and reh'g en banc granted on other grounds*, 760 F.2d 1320 (D.C. Cir. 1985)).

## **NEPA: ENVIRONMENTAL IMPACT STATEMENT (SABOTAGE)**

A facility's environmental review need not consider the effects of sabotage. See ALAB-819, 22 NRC at 697-701.

## **TECHNICAL ISSUES DISCUSSED**

- Steam generator tube integrity;

- Degradation of heat transfer capability of cooling water systems because of accumulation of aquatic organisms or debris;

- Important to safety versus safety-related in the scope of quality assurance programs;

- Safety Parameter Display System;

- Consideration of severe accidents in environmental impact statements;
- Environmental qualification of equipment.

## APPEARANCES

Donald S. Bronstein, Boston, Massachusetts (with whom Carol S. Sneider and Allan R. Fierce, Boston, Massachusetts, were on the brief), for the intervenor James M. Shannon, Attorney General of Massachusetts.

Diane Curran, Washington, D.C., for the intervenor New England Coalition on Nuclear Pollution.

Robert A. Backus, Manchester, New Hampshire, for the intervenor Seacoast Anti-Pollution League.

Thomas G. Dignan, Jr., Boston, Massachusetts (with whom George H. Lewald and Kathryn A. Selleck, Boston, Massachusetts, were on the brief), for the applicants Public Service Company of New Hampshire, *et al.*

Edwin J. Reis (Gregory Alan Berry on the brief) for the Nuclear Regulatory Commission staff.

## DECISION

Before us are the appeals of intervenors Attorney General of Massachusetts (on behalf of that Commonwealth), New England Coalition on Nuclear Pollution (Coalition), Seacoast Anti-Pollution League (SAPL), and Town of Hampton, New Hampshire, from the Licensing Board's March 25, 1987 partial initial decision in the onsite emergency planning and safety issues phase of this operating license proceeding involving the Seabrook nuclear facility.<sup>1</sup> In that decision, the Board authorized the issuance of a license for low-power operation (up to five percent of rated power). The appeals challenge not only determinations made in the decision but, as well, several earlier interlocutory rulings.<sup>2</sup>

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<sup>1</sup> See LBP-87-10, 25 NRC 177. The phase of the proceeding involving offsite emergency planning issues remains before a differently constituted Licensing Board.

<sup>2</sup> In contrast to the other three intervenor appellants, Hampton did not file a brief in support of its appeal. Rather, in a May 5, 1987 submission in connection with its application for a stay of the effectiveness of the partial initial decision, Hampton "relie[d] upon and incorporate[d] by reference" the appellate briefs of the Attorney General "[b]y way of further support for [the stay] request." Town of Hampton's Memorandum in Support of Application for a Stay of Licensing Board Order Authorizing Issuance of a License to Conduct Low Power Operation at 2. That action scarcely was a satisfactory substitute for a brief in support of its appeal from the decision and Hampton did not participate in the oral argument.

Some, but not all, of the claims of error now at hand were also presented to us in the context of the intervenors' applications for a stay *pendente lite* of the effectiveness of the March 25 decision. In exploring whether the intervenors had demonstrated a likelihood of success on the merits of their appeals (one of the traditional stay criteria now embodied in the Commission's Rules of Practice),<sup>3</sup> we examined each of those claims. Our conclusion was that the intervenors had failed to establish the requisite degree of probability that one or more of the claims would succeed.<sup>4</sup>

In reaching that conclusion, we stressed that it did not follow that the appeals were "necessarily doomed to failure." As we observed:

To begin with, even on the issues raised in the stay applications, it is possible that a full briefing will persuade us that the intervenors should prevail. All that we now decide is that the stay papers do not themselves demonstrate the requisite high probability of such success. Moreover, we do not consider on a stay application any possible Licensing Board error not asserted by the movants. Presumably, the intervenors will advance in their appellate briefs claims of error that, perhaps because of the ten-page limit imposed by 10 C.F.R. 2.788(b), were not included in their stay applications.<sup>5</sup>

It has turned out that full briefing and oral argument of the appeals have provided no cause to alter our views on the previously considered issues.<sup>6</sup> As forecast, however, the intervenors advanced in their briefs and at argument several assertions not presented in support of the stay applications. We have found some of those assertions to be meritorious and to require a remand to the Licensing Board for further proceedings.

We now examine the claims before us *seriatim*.

A. As the Coalition and the Attorney General acknowledge, 10 C.F.R. 50.47(d) explicitly authorizes the issuance of a low-power operating license in advance of NRC or Federal Emergency Management Agency "review, findings, or determinations concerning the state of offsite emergency preparedness or the adequacy of and capability to implement State and local offsite emergency

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<sup>3</sup> See 10 C.F.R. 2.788(e).

<sup>4</sup> See ALAB-865, 25 NRC 430, 439-44 (1987). Determining that a balancing of all four of the stay criteria set forth in 10 C.F.R. 2.788(e) did not favor a grant of the sought relief, we denied the applications. Although they were thereafter renewed before the Commission, it has not been necessary for that body to act upon them. This is because, on June 11, 1987, the Commission entered an order denying the applicants' motion to vacate a previously-entered order that, by reason of offsite emergency response planning considerations having nothing to do with the issues considered and decided in the March 25 partial initial decision, barred the authorization of low-power Seabrook operation. See CLI-87-3, 25 NRC 875. As matters now stand, irrespective of the outcome of the appellate review of the partial initial decision, such operation cannot be commenced unless and until the Commission accepts a recent applicants' filing as constituting a "bona fide utility offsite emergency plan for Massachusetts that satisfies the Commission's threshold requirements." *Id.* at 876. See *infra* note 102.

<sup>5</sup> ALAB-865, *supra*, 25 NRC at 444.

<sup>6</sup> Shortly after oral argument, however, we entered an order with respect to the two such issues concerned with the adequacy of siren sound levels in certain portions of the Seabrook plume exposure pathway emergency planning zone. See *infra* pp. 273-75.

plans." Notwithstanding this provision, both of those parties maintain that the Licensing Board should not have authorized the issuance of such a license here prior to the resolution of the still pending offsite emergency planning issues. In the view of the Coalition, section 50.47(d) deprives it of hearing rights guaranteed by section 189a.(1) of the Atomic Energy Act<sup>7</sup> and, accordingly, is invalid. For his part, the Attorney General insists that the Licensing Board erred in denying his petition seeking a waiver under 10 C.F.R. 2.758 of the application of section 50.47(d) in this case.

1. The Coalition's claim need not detain us long. As we noted in denying the stay applications,<sup>8</sup> we lack the authority to strike down a Commission regulation.<sup>9</sup> Within the agency, only the Commission itself has that power. Should the Coalition be dissatisfied with the ultimate result reached in this decision, it will, of course, be free to renew its argument respecting the invalidity of section 50.47(d) in a petition seeking further Commission review.

2. The Attorney General's insistence that his waiver petition was erroneously denied stands on scant firmer footing. In light of the terms of section 2.758(b), the provision in the Rules of Practice concerned with waivers of regulations, that petition necessarily rested on the proposition that "special circumstances with respect to the subject matter of the particular proceeding are such that application of the . . . regulation . . . would not serve the purposes for which the . . . regulation was adopted." Upon receipt of the petition and all submissions in support of or in opposition to it, it became the Licensing Board's duty to determine whether the Attorney General had made a *prima facie* showing to that effect, with the consequence that the matter of the grant of the waiver petition should be certified directly to the Commission for ultimate action.<sup>10</sup> That Board answered that question in the negative and, accordingly, denied the petition.<sup>11</sup> An examination of the Attorney General's explanation of the foundation of his waiver theory makes manifest that this disposition was compelled.

In his brief to us, the Attorney General directs attention specifically to paragraph 11 of his filing below, which is said by him to contain the "gravamen" of the waiver claim.<sup>12</sup> That paragraph alleges that "there is no assurance that [Seabrook] operation at full power will ever occur and if it does occur will

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<sup>7</sup> 42 U.S.C. 2239(a)(1).

<sup>8</sup> See ALAB-865, *supra*, 25 NRC at 439.

<sup>9</sup> See 10 C.F.R. 2.758(a); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 2), ALAB-456, 7 NRC 63, 65, 67 n.3 (1978); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-410, 5 NRC 1398, 1402 (1977).

<sup>10</sup> See 10 C.F.R. 2.758(d).

<sup>11</sup> See LBP-86-25, 24 NRC 141 (1986).

<sup>12</sup> Attorney General James M. Shannon's Brief in Support of Reversal of Licensing Board's Partial Initial Decision Authorizing Issuance of a Low-Power Operating License (May 6, 1987) [hereafter "Attorney General's Brief"] at 30.



not occur for nearly a year, or possibly years." Thus, the paragraph goes on to assert, "any possible benefits to be attained from commencing low-power testing at this time will be far outweighed by the significant and irreversible adverse consequences of such operation."

Given these asserted facts, the Attorney General tells us, the waiver criterion set forth in section 2.758(b) is met. Invoking a 1985 Commission decision in *Shoreham* as his source,<sup>13</sup> the Attorney General observes that "[t]he purpose of allowing low-power operation to commence in advance of determination of emergency planning issues is to allow for the testing and evaluation of plant systems so that if a problem is discovered full-power operation will not be delayed."<sup>14</sup> Such a purpose, the argument proceeds, is not served "where, as here, full-power operation is at least one year away, if ever."<sup>15</sup> This is because "low-power operation typically lasts only three or four months and lengthy delays between issuance of a low-power [license] and a full-power license require that certain tests be performed again."<sup>16</sup>

In assessing the substantiality of this chain of reasoning, we may assume without deciding that, as he maintains, the Attorney General established below by affidavit that, *inter alia*, full-power operation is "at least a year away" because of the refusal of Massachusetts communities and officials to participate in emergency planning for that portion of the Seabrook plume exposure pathway emergency planning zone (EPZ) located within the Commonwealth. For indulging in such an assumption does not advance the Attorney General's cause. Crucial to his thesis is the unspoken premise that any problem detected during low-power testing will be susceptible of rectification within a matter of a few months after that testing takes place. But in the very *Shoreham* decision to which the Attorney General pointed in identifying the "purpose of allowing low-power operation to commence in advance of determination of emergency planning issues," the Commission exploded that premise. Immediately after stating that the "primary benefit of early low-power operation is that it will allow the early discovery and correction of unforeseen but possible problems which may prevent or delay full-power operation," the Commission added the following footnote:

We note that low-power test programs for recently licensed reactors have identified problems which have taken many months to correct and consequently have delayed full-power operation. At Palo Verde, a pressurized water reactor, for example, a coolant pump design problem identified during initial testing took over 1 year to correct.<sup>17</sup>

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<sup>13</sup> *Long Island Lighting Co.* (Shoreham Nuclear Power Station), CLI-85-12, 21 NRC 1587, 1590.

<sup>14</sup> Attorney General's Brief at 31.

<sup>15</sup> *Ibid.*

<sup>16</sup> *Ibid.*

<sup>17</sup> CLI-85-12, *supra*, 21 NRC at 1590 & n3.

In short, as the Commission itself has laid bare, experience teaches that early testing may fulfill its intended purpose of avoiding possible delay in full-power operation even if conducted a year or more in advance of the earliest time at which such operation might be authorized. It need be added only that, as observed in our stay opinion,<sup>18</sup> in that same decision the Commission laid to rest any suggestion that the possibility that full-power operation might never be authorized could serve as a sufficient basis for precluding low-power testing.<sup>19</sup>

B. In the discharge of its responsibilities under the National Environmental Policy Act (NEPA), the Commission requires that environmental impact statements (EIS) be prepared by its staff with regard to every nuclear power facility. The basic statement is developed in connection with the construction permit application. On the operating license level, a second statement is issued which in essence is a supplementation of the earlier statement.<sup>20</sup>

In fulfillment of this requirement, the staff issued in December 1982 an EIS (labeled a final environmental statement or FES) covering Seabrook operation. The Attorney General contends that, because there have been changed circumstances since that time, the staff was obliged to prepare yet another separate or supplemental EIS, addressed to low-power operation, prior to the issuance of a license authorizing such operation.

On this score, we are referred specifically to the September 1986 announcement of the Governor of Massachusetts to the effect that, because of his conclusion that the Seabrook EPZ could not be adequately evacuated, he would not submit emergency response plans for the Commonwealth. This decision, the Attorney General insists, poses "a significant, and perhaps insuperable, obstacle to licensure."<sup>21</sup> As the Attorney General sees it, the resultant uncertainty that full-power Seabrook operation will ever take place obligated the staff in the fulfillment of its NEPA responsibilities "to weigh the costs and benefits of low-power operation."<sup>22</sup> Inasmuch as the previously issued FES assertedly did not undertake that task, the Attorney General reasons that a supplemental statement is necessary.

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<sup>18</sup> See ALAB-865, *supra*, 25 NRC at 446.

<sup>19</sup> In common with the Coalition, the Attorney General asserts that section 50.47(d) is invalid because it is inconsistent with hearing rights guaranteed by the Atomic Energy Act. Although recognizing that 10 C.F.R. 2.758(a) precluded the Licensing Board from entertaining a challenge to that section, the Attorney General nonetheless urges that the "Board could have, and should have, considered arguments set forth by the intervenors concerning the invalidity of the regulation in deciding whether waiver was warranted." Attorney General's Brief at 32 n.11. This claim is without merit. Section 2.758(b) expressly provides that the "sole ground" for a waiver is that, in the "special circumstances" of the particular proceeding, the application of the regulation sought to be waived would not serve the purposes for which that regulation was adopted.

<sup>20</sup> See 10 C.F.R. 51.20, 51.75, 51.95.

<sup>21</sup> Attorney General's Brief at 9.

<sup>22</sup> *Id.* at 11.

The principal and decisive difficulty with this line of argument is that, as observed in our stay decision,<sup>23</sup> it was examined and rejected in the *Shoreham* proceeding not merely by the Commission but by the Court of Appeals for the District of Columbia Circuit as well.<sup>24</sup> The Attorney General acknowledges this consideration but offers a factual distinction between that case and this one: whereas Massachusetts and its political subdivisions within the Seabrook EPZ "have stated their refusal to participate [in emergency planning] cogently and consistently," the county in which the Shoreham EPZ is located had adopted an "arguably equivocal stance" which indicated that it "might well cooperate in emergency planning."<sup>25</sup> That attempt to avoid the impact of the *Shoreham* outcome is unavailing. True, the Commission did take note of an apparent difference of opinion between the Suffolk County Attorney and some county legislators respecting whether the county would participate in the Shoreham emergency planning process.<sup>26</sup> But immediately thereafter, it stated that "[r]egardless of what is 'the County's' position . . . we do not believe that uncertainty over the pending full-power issues mandates a Supplemental Environmental Impact Statement or some renewed cost/benefit analysis."<sup>27</sup>

The short of the matter is that there is nothing in the decisions of the Commission and District of Columbia Circuit to suggest that either tribunal hinged its conclusion that a supplemental EIS was not mandated by NEPA upon a belief that the obstacles to full-power Shoreham operation would likely be soon removed.<sup>28</sup> Nor, as we stressed in the stay decision,<sup>29</sup> is there cause to hazard a guess respecting the relative degrees of uncertainty that Shoreham and Seabrook will ever operate. To repeat what was there said, such speculation is "not decisionally relevant."<sup>30</sup>

C. At the threshold, the Licensing Board rejected a number of the contentions advanced by the Coalition. On its appeal, the Coalition maintains that four of those rejected contentions should have been accepted by the Board for litigation. We agree as to two of the contentions.<sup>31</sup>

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<sup>23</sup> See ALAB-865, *supra*, 25 NRC at 439.

<sup>24</sup> See CLI-85-12, *supra*, 21 NRC at 1589; CLI-84-9, 19 NRC 1323, 1326 (1984); *Cuomo v. NRC*, 772 F.2d 972, 974-76 (D.C. Cir. 1985).

<sup>25</sup> Attorney General's Brief at 13.

<sup>26</sup> See CLI-85-12, *supra*, 21 NRC at 1588.

<sup>27</sup> *Id.* at 1589.

<sup>28</sup> At oral argument, the Attorney General pointed out that the *Cuomo* decision was rendered by the Court of Appeals on a stay motion and that there has been no "ultimate determination" on the merits of the controversy in that case. App. Tr. 83. But that consideration does not mean that the conclusions reached in the decision are not entitled to our respect. In any event, we are obliged, given the absence of a contrary judicial determination, to accord full effect to applicable Commission pronouncements.

<sup>29</sup> See ALAB-865, *supra*, 25 NRC at 436.

<sup>30</sup> *Ibid.*

<sup>31</sup> We need not and do not consider the rejection of those contentions not embraced by the Coalition's appeal.

1. Appendix A to 10 C.F.R. Part 50 contains a number of general design criteria (GDC) that must be met by nuclear power facilities. Among others, GDC 14, 15, 31 and 32 are concerned with the maintenance of the integrity of the reactor coolant pressure boundary. The rupture of a steam generator tube is one of the events that will cause a breach of that boundary.

Coalition Contention I.V. asserted that the applicants had not demonstrated compliance with GDC 14, 15, 31 and 32 "insofar and to the extent that those GDC require a program for the inservice inspection of steam generator tubes."<sup>32</sup> This claim rested principally on the proposition that the applicants' commitment to follow the procedures set forth in Revision 1 of Regulatory Guide 1.83, entitled "Inservice Inspection of Pressurized Water Reactor Steam Generator Tubes," is not enough to ensure the integrity of the Seabrook steam generator tubes. To support this proposition, the Coalition pointed to the 1982 steam generator tube rupture at the Ginna nuclear facility, which had utilized the Regulatory Guide 1.83 procedures in the surveillance of its tubes.<sup>33</sup>

On September 13, 1982, the Licensing Board rejected the contention.<sup>34</sup> It held that:

Regulatory guides are not mandatory but when an applicant voluntarily accepts one as a method of complying with GDC, then a Petitioner cannot be permitted to argue that this one method of complying with this Commission's requirements would not be sufficient to meet its demands.<sup>35</sup>

In a subsequent decision responding to the Coalition's objection to that ruling, the Board stated that:

Even if Applicants' compliance with Reg. Guide 1.83 is not conclusive as to compliance with the underlying regulations (10 CFR Part 50, App. A, GDC 14, 15, 31, and 32), it is at least presumptive. Moreover, Intervenors have failed to specify how Applicants are in non-compliance, and thus have failed to satisfy the pleading requirements.<sup>36</sup>

We agree with the Coalition that neither this reasoning nor the result can stand and, thus, that Contention I.V. must now be admitted. To begin with, it is

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<sup>32</sup> Tr. 419 (July 15, 1982).

<sup>33</sup> Tr. 419-20 (July 15, 1982). See also NECNP Supplemental Petition for Leave to Intervene (April 21, 1982) at 51-52; NUREG-0896, "Safety Evaluation Report Related to the Operation of Seabrook Station, Units 1 and 2" (March 1983) at 5-20; and NUREG-0909, "NRC Report on the January 25, 1982 Steam Generator Tube Rupture at R.E. Ginna Nuclear Power Plant" (April 1982) at 7-8 to 7-9.

In addition to its reliance upon the Ginna incident, the Coalition noted the occurrence of problems at other facilities possessing steam generators produced by the concern that manufactured both the Ginna and Seabrook steam generators.

<sup>34</sup> See LBP-82-76, 16 NRC 1029, 1067-68 (1982).

<sup>35</sup> *Id.* at 1068.

<sup>36</sup> LBP-82-106, 16 NRC 1649, 1659 (1982).

manifest that regulatory guides do not have the force of regulations. Rather, as explained in our *River Bend* decision:

For their part, and as their title suggests, regulatory guides are issued for the basic purpose of providing guidance to applicants with respect to, *inter alia*, acceptable modes of conforming to specific regulatory requirements. But they are not regulations *per se* and are not entitled to be treated as such; they need not be followed by applicants; and they do not purport to represent that they set forth the only satisfactory method of meeting a specific regulatory requirement. Indeed, quite the contrary is true; the cover page of each guide states that

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.

In other words, a guide sets forth one, but not necessarily the only, method which an applicant may choose to employ in order to conform to a regulatory standard. While the staff will accept such a method, an applicant is not precluded from utilizing some other method which it can demonstrate is appropriate in the particular case. *Nor are other parties precluded from demonstrating that the prescribed method is inadequate in the particular circumstances of the case.*<sup>37</sup>

In light of this consideration, the question becomes whether the Coalition's reference to the Ginna accident provided a sufficiently specific basis for the contention. We entertain no difficulty in answering this question in the affirmative. Despite its observance of the procedures set forth in Regulatory Guide 1.83, the Ginna facility experienced a steam generator tube rupture. True, as the applicants note, although manufactured by the same concern the Ginna and Seabrook steam generators are not identical. But the difference in models is totally irrelevant for present purposes. Regulatory Guide 1.83 describes a generic surveillance program that is said to be applicable to all pressurized water reactor steam generators, irrespective of manufacturer or model. Thus, the Ginna incident gives rise to a possible inference that adoption of the regulatory guide's surveillance program at Seabrook might not prevent a tube rupture that would breach the facility's reactor coolant pressure boundary.

2. At Seabrook, tunnels between the facility and the Atlantic Ocean provide a pathway for the intake and discharge of ocean water used both to condense the steam exhausted from the plant turbines and to remove heat from various structures, systems and components.<sup>38</sup> In the event that these tunnels are unable to provide cooling water flow during an emergency, the cooling tower at the

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<sup>37</sup> *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 772-73 (1977) (emphasis supplied) (footnote omitted). See also *Consumers Power Co.* (Big Rock Point Nuclear Plant), ALAB-725, 17 NRC 562, 570 (1983) (it may be appropriate in certain circumstances to require a higher level of performance or more stringent measures of compliance than those established in regulatory guides).

<sup>38</sup> See Seabrook Final Safety Analysis Report (FSAR) (Amendment 61, November 1986) §§ 9.2.5, "Ultimate Heat Sink," 10.1, "Summary Description," and 10.4.5, "Circulating Water System."

facility will be used as a source of fresh water to help remove heat from the reactor and essential plant equipment.<sup>39</sup> Although the two means of heat removal have separate sources of water (i.e., the Atlantic Ocean and the basin associated with the cooling tower), they rely upon the same set of heat exchangers to transfer heat from safety-related structures, systems, and components.<sup>40</sup>

In its Contention IV, the Coalition stated:

The Applicant must establish a surveillance and maintenance program for the prevention of the accumulation of mollusks, other aquatic organisms, and debris in cooling systems in order to satisfy the requirements of GDC 4, 30, 32, 33, 34, 35, 36, 38, and 39, which require the maintenance and inspection of reactor cooling systems. The design, construction, and proposed operation of Seabrook fail to satisfy these requirements.

The Coalition based this assertion on a May 19, 1982 *Federal Register* notice in which the Commission discussed the accumulation of aquatic organisms and debris in cooling systems.<sup>41</sup> In that notice, the Commission indicated that, as a result of such accumulation, degradation of the heat transfer capabilities of safety systems had occurred at several nuclear power plants.

The Licensing Board rejected the contention on the dual grounds that it lacked basis and that the cooling system had been litigated in the construction permit proceeding.<sup>42</sup> We disagree and conclude that the contention should have been admitted.

Both below and in the briefs filed on the Coalition's appeal, much of the discussion concerning the admissibility of the contention focused on the cooling water tunnels. But the contention extends more broadly to the possible degradation of the heat removal capability of cooling water systems at Seabrook as a result of the accumulation of marine organisms or debris.

It is undisputed that the Seabrook facility has a separate source of water (the cooling tower basin) that is relied upon in the event that the normal source (the Atlantic Ocean) is unavailable because of a failure of the cooling water tunnels. But these two methods of heat removal are not independent because, as noted above, the heat exchangers used by the cooling tower system are also employed to transfer heat to ocean water under normal conditions. Thus, the accumulation of marine organisms or debris in those heat exchangers could prevent the removal of heat by either method. Such accumulation in heat exchangers at nuclear power plants was one of the concerns expressed in the Commission's May 19, 1982 *Federal Register* notice. The reference to this

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<sup>39</sup>The emergency feedwater system uses cooling water from another source. See *id.*, §§6.8, "Emergency Feedwater System," and 9.2.6, "Condensate Storage Facility."

<sup>40</sup>See *id.*, Figure 9.2-7, "Ultimate Heat Sink." See also App. Tr. 124.

<sup>41</sup>See 47 Fed. Reg. 21,653.

<sup>42</sup>See LBP-82-76, *supra*, 16 NRC at 1075.

notice by the Coalition therefore provided a sufficient basis for the contention.<sup>43</sup> In addition, inasmuch as all of the events giving rise to the concern expressed in the notice occurred in or after 1980, that concern scarcely could have been addressed in the construction permit proceeding conducted in 1975.

3. The remaining two of its rejected contentions brought to us by the Coalition — II.A.1 and II.B.2 — are directed to the scope of the applicants' quality assurance programs for the design, construction and operation of the Seabrook facility.<sup>44</sup> As these contentions have the same basic thrust, we treat them together. In contrast to our conclusions on the contentions regarding the steam generator tube inservice inspection program and the cooling system surveillance program, we agree with the Licensing Board that the quality assurance contentions were not admissible at the threshold.<sup>45</sup>

Those contentions brought to the fore two different portions of the Commission regulations concerned with quality assurance: Appendix B to 10 C.F.R. Part 50 and GDC 1 in Appendix A to the same Part. Appendix B is addressed to *safety-related* structures, systems and components — i.e., those elements of the nuclear facility that must remain functional in the event of a Safe Shutdown Earthquake to assure:

- (1) [t]he integrity of the reactor coolant pressure boundary,
- (2) [t]he capability to shut down the reactor and maintain it in a safe shutdown condition, or
- (3) [t]he capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the guideline exposures of [Part 100].<sup>46</sup>

For all such structures, systems and components, Appendix B establishes specific criteria governing, for example, the control of design activities, documents, and materials; the performance of inspections and audits; and the maintenance of quality assurance records.

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<sup>43</sup> At oral argument, the applicants discussed actions taken to prevent the accumulation of marine organisms or debris. App. Tr. 108-11, 123-24, 128-29. The consideration of these actions, however, goes to the merits of the contention and not its admissibility. See *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 543, 547-49 (1980) (at contention stage, licensing boards should determine only if the contention meets the basis and specificity requirements of 10 C.F.R. 2.715(a) and, thus, should not reach the merits).

<sup>44</sup> Contention II.A.1 focuses upon design and construction; Contention II.B.2 upon operation.

<sup>45</sup> The Licensing Board rejected Contention II.A.1 on the ground that the applicants' design and construction quality assurance program had been found satisfactory in the construction permit proceeding. See LBP-82-76, *supra*, 16 NRC at 1069-70. Contention II.B.2 was found to lack specificity. *Id.* at 1072. As will be seen, our affirmation of the Licensing Board's result is on entirely different grounds.

<sup>46</sup> See Appendix A to 10 C.F.R. Part 100; see also *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-788, 20 NRC 1102, 1112-13 (1984).

For its part, GDC 1 is addressed to a broader category of structures, systems, and components: those that are *important to safety* (i.e., “provide reasonable assurance that the facility can be operated without undue risk to the health and safety of the public”<sup>47</sup>). In contrast to Appendix B, GDC 1 does not set forth any specific quality assurance criteria that must be observed. Rather, it requires merely that there be a quality assurance program that provides confidence that the “important to safety” elements of the facility will satisfactorily perform their safety functions.

As we read Contentions II.A.1 and II.B.2, there is no claim therein that the applicants’ design, construction, and operation quality assurance programs failed to apply the Appendix B criteria to those structures, systems and components coming within the definition of “safety-related” contained in Appendix A to 10 C.F.R. Part 100. Rather, the gravamen of the contentions appears to be that those criteria should have been applied to *all* elements of the facility having some safety function, whether or not meeting the Part 100 definition. In the basis supplied for the contention, the Coalition listed several such elements that it deemed to warrant application of the criteria. Among them were, to cite but one example, the motors for the reactor coolant pumps. While those motors well may fall within the “important to safety” classification, they are not needed to accomplish any of the objectives of a “safety-related” component.

In the circumstances, Contentions II.A.1 and II.B.2 constituted an impermissible attack upon a Commission regulation and, as such, were subject to the summary rejection they received.<sup>48</sup> There is simply nothing in the terms of Appendix B to Part 50 to support the Coalition’s thesis that the Commission intended the quality assurance criteria contained therein to apply to each of the multitude of facility structures, systems and components that perform some safety function. Indeed, as we observed several years ago in *Shoreham*, the Commission has made it quite clear that that was not its purpose.<sup>49</sup>

D. In the wake of the 1979 accident at the Three Mile Island facility, the Commission imposed, through a “TMI Action Plan,” a number of new requirements applicable to reactor operation. Among them was the directive to install a Safety Parameter Display System (SPDS) in each nuclear power

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<sup>47</sup> Introduction to Appendix A to Part 50.

<sup>48</sup> See *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20, modified on other grounds, CLI-74-32, 8 AEC 217 (1974).

<sup>49</sup> See ALAB-788, *supra*, 20 NRC at 1118-19 (citing CLI-84-9, *supra*, 19 NRC at 1325). See also *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-84-14, 20 NRC 285 (1984). It is true that the Commission has left the door open for “a particularized showing of clearly identified safety concerns” warranting special quality assurance treatment for some “important to safety” item. 19 NRC at 1325. But, suffice it to say, the Coalition’s contentions did not offer the prospect of such a “particularized showing.” In this connection, our examination of the Commission’s January 1982 Regulatory Agenda (to which the Coalition referred) disclosed nothing that might suggest special quality assurance treatment for any of the equipment that the Coalition included in the statement of the basis for the contentions.



facility's control room.<sup>50</sup> The principal function of the SPDS is to aid the control room personnel during abnormal and emergency situations in determining the safety status of the plant and in assessing whether plant conditions warrant corrective actions to prevent damage to the reactor core. This function is to be accomplished by providing in a convenient location a concise display of critical plant data.

In its Supplemental Contention 6, SAPL asserted broadly that the Seabrook control room design did not comply with Commission requirements. In this connection, SAPL referred to the provision in the TMI Action Plan relating to the SPDS.

The hearing on the SPDS portion of Supplemental Contention 6 focused upon eleven identified deficiencies in the operation of the SPDS. More particularly, the evidence addressed the safety implications, if any, of a deferral of the actions necessary to correct the deficiencies. On the basis of that evidence, the Board concluded that some corrective action was necessary with respect to three of the deficiencies prior to operation above the level of five percent of rated power. The remaining eight deficiencies were found either to have already been corrected or to be of sufficient lack of significance that corrective action could be deferred to the first refueling outage without undue risk to the public health and safety.<sup>51</sup>

In denying its stay application, we rejected SAPL's argument that the TMI Action Plan mandates that all SPDS deficiencies be corrected before the facility receives its low-power authorization.<sup>52</sup> Nothing advanced in SAPL's brief or at oral argument prompts us to reconsider that determination. Nor are we persuaded that the Licensing Board erred in denying SAPL's request that all NRC project managers for Seabrook since April 1983 be compelled to testify respecting any agreements between the Commission and the applicants related to the time at which there must be a fully functional SPDS. The short answer to SAPL's claim in that regard is that it has not established the possible relevance of that testimony to either (1) whether the TMI Action Plan allows the deferral of corrective actions if no undue risk to the public health and safety will result therefrom; or (2) whether, in fact, there is reasonable assurance that the deferral permitted by the Licensing Board will not adversely affect the public health and safety.

On the latter score, SAPL maintains that such reasonable assurance is not present with respect to three corrective measures that, according to the Licensing Board, need not be accomplished prior to the first refueling outage. Those measures pertained to (1) the containment isolation display, a device that depicts

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<sup>50</sup> See NUREG-0737, "Clarification of TMI Action Plan Requirements" (November 1980) at 2-5, 3-54. See also Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability" (Generic Letter No. 82-33) (December 1982), at 7-9.

<sup>51</sup> See LBP-87-10, *supra*, 25 NRC at 183-87, 194-205.

<sup>52</sup> See ALAB-865, *supra*, 25 NRC at 443-44.

the open and closed status of valves that come into play when there is a need for the sealing of the containment; (2) the data validation algorithms, a procedure for treating several measurements of the same parameter (e.g., steam generator water level) to obtain the desired signal for the SPDS; and (3) the tests of SPDS computer response time under heavy loading.

Turning first to the containment isolation display, at present such a display is available on the main control board but is not incorporated into the SPDS. By the first refueling outage, the display must be so incorporated. Witnesses for both the applicants and the staff testified that, for the interim, a modified display on the main control board would suffice.<sup>53</sup> SAPL does not refer to this testimony, let alone explain why the Licensing Board erred in relying upon it. Moreover, we were informed at oral argument that NRC staff personnel have verified that the applicants had modified the display on the main control board in the manner previously recommended by the staff.<sup>54</sup>

Moving on to the data validation algorithms, the staff's safety evaluation expressed the concern that they *might* "not be sophisticated enough to ensure valid data are displayed to the operator."<sup>55</sup> This concern appeared to be limited to the case where an off-normal signal might lead to a faulty measurement of one of the parameters displayed by the SPDS. A staff witness indicated that, if such a signal should change enough to affect adversely the information conveyed by the SPDS, it would most likely activate an alarm on the main control board that would alert the operators to the off-normal situation.<sup>56</sup> Moreover, the operators do not rely on SPDS information alone but are required to corroborate any SPDS data with other control room information before taking any corrective action.<sup>57</sup> Still further, Supplement No. 1 to NUREG-0737 requires that the operators be trained to cope with emergencies even if the SPDS is not available.<sup>58</sup>

Finally, SAPL insists that, before plant operation, the SPDS must be tested under conditions of heavy computer loading to ensure that the SPDS provides its data with the desired promptness. Two applicants' witnesses testified without contradiction, however, that some level of plant operation is required to load the computer to provide a test that will give representative SPDS response times.<sup>59</sup>

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<sup>53</sup> Tr. 771-72, 965-66 (except where otherwise indicated "Tr." citations are to the Licensing Board's September-October 1986 hearing). Following a staff review, the main control board display was changed to eliminate the random positioning of the indicators of containment isolation valve status, thus correcting the most serious potential source of confusion for operators. Tr. 771-72.

<sup>54</sup> App. Tr. 142. We note this fact because, in its brief, SAPL stressed that, at the time of the hearing below, the staff had not ascertained that the modifications had been accomplished.

<sup>55</sup> Eckenrode, fol. Tr. 822, Second Attachment at 10.

<sup>56</sup> Tr. 985.

<sup>57</sup> Walsh and Thomas, fol. Tr. 739 at 2, 6; Eckenrode, fol. Tr. 822 at 2.

<sup>58</sup> Walsh and Thomas, fol. Tr. 739 at 2.

<sup>59</sup> *Id.* at 7.

Additionally, a staff witness expressed doubt that the use of a simulated load would produce meaningful results.<sup>60</sup>

In light of the foregoing considerations, we conclude that the Licensing Board correctly determined that the measures in question could await the first refueling outage.<sup>61</sup>

E. As noted in Section B above, the Commission requires that an environmental impact statement be prepared by its staff with regard to the operating license application for every nuclear power facility. On June 13, 1980, the Commission published an Interim Policy Statement calling for the consideration in those environmental impact statements of the more severe kinds of very low probability accidents.<sup>62</sup> The Seabrook facility's Final Environmental Statement (FES) documents the analysis performed by the staff in compliance with this directive.<sup>63</sup>

In its Supplemental Contention 3, SAPL claimed generally that the requirements of the Commission's Interim Policy Statement have not been met. Both SAPL and the applicants moved for summary disposition of the contention. For its part, SAPL maintained that the severe accident analysis set forth in the FES was deficient. The applicants insisted that the analysis was adequate in all respects.

The Licensing Board viewed the summary disposition motions as raising questions of law and not of fact.<sup>64</sup> After reviewing the FES, the Licensing Board determined, as a matter of law, that the FES complied with the Interim Policy Statement. Accordingly, the Board denied SAPL's motion and granted that of the applicants.<sup>65</sup>

SAPL and the Attorney General contest this outcome. At the threshold, SAPL asserts that the applicants' summary disposition motion raised issues of material fact respecting the adequacy of the FES and, thus, an evidentiary hearing on the matter was required. And focusing upon the specific content of the severe

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<sup>60</sup>Tr. 989.

<sup>61</sup>SAPL attacks the qualifications of a staff witness who testified with respect to two other deficiencies (relating to residual heat removal system flow and containment hydrogen concentration) that the Licensing Board concluded need not be corrected prior to low-power operation (but must be rectified by the time a full-power license is issued). The Board did not accept, however, the staff position (advanced by that witness) that the corrective action for those deficiencies could be deferred until the first refueling outage. And SAPL does not explain why the Board was compelled to adopt its view that the deficiencies had to be cured before any level of operation was authorized.

<sup>62</sup>See 45 Fed. Reg. 40,101. As we have previously observed, this special attention given to such highly improbable severe accidents is not required by NEPA but is a matter of Commission discretion. See *Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2)*, ALAB-819, 22 NRC 681, 697-99 (1985) (citing *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1301 (D.C. Cir. 1984), *vacated in part and reh'g en banc granted on other grounds*, 760 F.2d 1320 (D.C. Cir. 1985)).

<sup>63</sup>See NUREG-0895, "Final Environmental Statement Related to the Operation of Seabrook Station, Units 1 and 2" (December 1982), at 5-47 to 5-71 and Appendices E and F.

<sup>64</sup>See Licensing Board Memorandum and Order (May 11, 1983) (unpublished) at 30.

<sup>65</sup>*Id.* at 34-35.

accident analysis presented in the FES, both SAPL and the Attorney General argue that the analysis is inadequate in several respects.<sup>66</sup>

Our examination of the severe accident analysis contained in the FES has given us no cause to upset the Licensing Board's determination. To be sure, the analysis and the discussion of that analysis in the FES could have been more extensive. But the same can be said of *any* analytic undertaking. All that the Interim Policy Statement requires is "a reasoned consideration of the environmental risks (impacts) attributable to [severe] accidents."<sup>67</sup> We are fully satisfied that the FES in issue fulfilled that requirement. Accordingly, an evidentiary hearing on the intervenors' contrary claim would have served no useful purpose.

In their appellate briefs, SAPL and the Attorney General list a substantial number of alleged deficiencies in the severe accident analysis. We confine our discussion here to the claims in this respect that are accompanied by some explanation of their foundation.

To begin with, SAPL and the Attorney General contend that the staff was obliged to select a single "worst case" accident for analysis and to emphasize the environmental consequences of such an accident (e.g., early fatalities and latent cancers) without regard to the degree of probability that the accident would occur. They thus object to the staff's discussion of environmental consequences in the context of the likelihood of an accident bringing about those consequences.<sup>68</sup> The objection is baseless. As above noted, the Interim Policy Statement requires an analysis of the environmental *risks* associated with severe accidents. As is commonly understood, and as the FES itself observed,<sup>69</sup> risk is the product of the probability of an accident *and* the consequences of that accident should it occur. A one-dimensional presentation directed only to consequences would not have accurately reflected the risks attendant upon the accident(s) considered.<sup>70</sup>

Both SAPL and the Attorney General complain of the failure of the staff to take account of such external events as earthquakes and sabotage that might initiate, or exacerbate the consequences of, a severe accident. The staff's explanation of its position on this matter was that:

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<sup>66</sup> In his request for a stay of the Licensing Board's March 25, 1987 partial initial decision, the Attorney General asserted that the FES had failed to include an analysis of severe accidents. In ALAB-865, we rejected that assertion based on an initial review of the FES. At that time, however, we took no position on the adequacy of the staff's analysis or the overall propriety of the Licensing Board's summary disposition determination. See 25 NRC at 440.

<sup>67</sup> 45 Fed. Reg. at 40,103. The Interim Policy Statement applies to all accidents but SAPL and the Attorney General challenge only the staff's analysis of severe accidents.

<sup>68</sup> See FES at 5-52 to 5-58.

<sup>69</sup> *Id.* at 5-64.

<sup>70</sup> Contrary to SAPL's belief, the accident scenarios included in the staff's analysis were sufficient to comply with the Interim Policy Statement mandate that there be a "reasoned consideration" of severe accident risks. And there is no greater merit to SAPL's claim that the staff's approach offended current Council on Environmental Quality regulations. Nor is SAPL's reliance on past regulations of that Council any more persuasive. See ALAB-819, *supra*, 22 NRC at 699-700.

It is the staff's judgment that the radiological consequences of such events would not be different in kind from those which have been treated. Moreover, there are design requirements in 10 CFR 50, Appendix A, relating to effects of natural phenomena, and safeguards requirements in 10 CFR 73, ensuring that these potential initiators are in large measure taken into account in the design and operation of the plant. The data base for assessing the probabilities of events more severe than the design bases for natural phenomena or sabotage events is beyond the state-of-the-art of probabilistic risk assessment. In addition, the staff judges that the additional risk from severe accidents initiated by natural events or sabotage is within the uncertainty of risks presented for the sequences considered here.<sup>71</sup>

We find that explanation satisfactory. It is now settled that a facility's environmental review need not consider the effects of sabotage.<sup>72</sup> With regard to a severe reactor accident being accompanied by an earthquake, the Court of Appeals for the District of Columbia Circuit has held that such a simultaneous occurrence is of such low probability that it need not be factored into emergency response planning.<sup>73</sup> That being so, there is no reason why a combination of a severe accident and a seismic event need be postulated in an environmental risk analysis. In any event, in Appendix F the FES does contain an estimate of the increase in early fatalities were evacuation delayed for one day (the most likely consequence of a major earthquake having a destructive effect upon evacuation routes).<sup>74</sup>

Finally, we reject SAPL's challenge to (1) certain of the assumptions contained in the staff's probabilistic risk assessment; and (2) the staff's discussion of the major uncertainties present in its severe accident analysis. Suffice it to say, on neither score has SAPL demonstrated an infirmity that might cast significant doubt upon the staff's ultimate conclusions regarding the environmental risk associated with severe accidents — the probability of such an accident during reactor operation and the consequences of the accident should it occur.

F. The Coalition complains of the Licensing Board's disposition of its Contention I.B.2. That contention was directed to whether the applicants had satisfied the requirement set out in GDC 4 in Appendix A to 10 C.F.R. Part 50 that

Structures, systems, and components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents.

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<sup>71</sup> FES at 5-48.

<sup>72</sup> See ALAB-819, *supra*, 22 NRC at 697-701.

<sup>73</sup> See *San Luis Obispo Mothers for Peace, supra*, 751 F.2d at 1305-09.

<sup>74</sup> That estimate also contradicts the Attorney General's claim that the FES does not account for delays in the evacuation of the facility's EPZ. The Attorney General also appears to suggest that the staff should have estimated the number of early fatalities that would occur if evacuation of the EPZ never took place. We see no reason, however, why the staff was required to indulge in such a patently unrealistic assumption. Although evacuation might be impeded by weather conditions or some other external force, it is scarcely likely that it would be foreclosed indefinitely.

More particularly, as litigated, the contention focused upon the capability of equipment subject to GDC 4 to continue to perform its intended function for such period after the accident as might be necessary — i.e., whether the equipment is “environmentally qualified.”

1. One component in issue below was the RG58 coaxial cable, used for data transmission in the facility’s computer systems. Under the Commission’s regulations, there are four different methods by which it might be demonstrated that a component is environmentally qualified. In the case of the various types of cable supplied by the vendor International Telephone and Telegraph Corporation (ITT), two of those methods were employed. Specifically, for the RG11 and RG59 coaxial cables, the applicants “[t]est[ed] an identical item of equipment under identical conditions or under similar conditions with a supporting analysis to show that the equipment to be qualified is acceptable.”<sup>75</sup> For the RG58 coaxial cable, however, the applicants purported to invoke the method of “[t]esting a similar item of equipment with a supporting analysis to show that the equipment to be qualified is acceptable.”<sup>76</sup>

The Coalition does not dispute that the RG11 and RG59 coaxial cables were properly demonstrated to be environmentally qualified. It claims, however, that, contrary to the finding of the Licensing Board,<sup>77</sup> there was not such a demonstration with regard to the RG58 cable.

It appears from the applicants’ equipment qualification file (EQF) pertaining to ITT cables<sup>78</sup> that the RG58 cable was deemed environmentally qualified solely on the basis of the tests performed on the RG59 cable. According to a letter sent by the cable vendor to Seabrook’s architect-engineer and constructor, the RG59 and RG58 cables have “similar construction details,” with the consequence that the vendor was “confident” that the RG58 cable “would have been approved” had it been tested.<sup>79</sup> Beyond the text of that letter, we have found nothing in the file that could possibly provide any additional support for a conclusion that the RG58 cable is environmentally qualified.<sup>80</sup>

We agree with the Coalition that the vendor letter was insufficient to establish that the RG58 cable is environmentally qualified. As noted above, it was incumbent upon the applicants to provide an analysis that demonstrated that the test of the RG59 cable proved that the RG58 cable is acceptable. The mere statement by the vendor that the two cables have “similar construction details”

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<sup>75</sup> See 10 C.F.R. 50.49(f)(1).

<sup>76</sup> See 10 C.F.R. 50.49(f)(2).

<sup>77</sup> See LBP-87-10, *supra*, 25 NRC at 211.

<sup>78</sup> By virtue of 10 C.F.R. 50.49, the applicants were required to maintain EQFs which must, *inter alia*, record the manner in which particular equipment is determined to be environmentally qualified.

<sup>79</sup> Coalition’s Exhibit 4, Electrical Equipment Qualification File No. 113-19-01, Reference 4, Letter from Joel T. Sibley (ITT) to George Morris, United Engineers & Constructors, February 11, 1983.

<sup>80</sup> The applicants’ Environmental Qualification Assessment Report, which is included in the file, refers (at 4, 9) to the contents of the vendor letter but otherwise does not address the RG58 cable.

hardly constitutes such an analysis. Nor is there cause to attach weight to the vendor's expression of "confidence" that the RG58 cable would have passed muster had it been tested.

In this connection, while the RG58 and RG59 cables contain the same materials, there are significant differences in the dimensions of their conductors and insulation. More particularly, the #24 AWG (American Wire Gage) conductor in the tested RG59 cable has approximately one-half the cross-sectional area of the #21 AWG conductor in the untested RG58 cable.<sup>81</sup> And the insulation of the former is over fifty percent thicker than that of the latter.<sup>82</sup>

In light of the foregoing, there is no apparent basis for the Licensing Board's conclusion that the environmental qualification of the RG58 cable was "adequately documented" in the applicants' EQF.<sup>83</sup> Insofar as we can determine from its decision, the Licensing Board relied for that conclusion exclusively upon the vendor's letter and the data submitted in connection with the tests performed on the RG59 cable — characterized by the Board as the "manufacturer's certification."<sup>84</sup> At the very least, the Board was obliged to identify the portion of the EQF in which (in the Board's view) it was clearly shown that the dimensional differences between the RG59 and RG58 cables were of such little importance that the test results for the RG59 cable could serve to qualify the untested RG58 cable.

Accordingly, the segment of the environmental qualification issue concerned with the RG58 cable must be returned to the Licensing Board. If unable to point to anything in the existing record that establishes that the differences in the two cables are unimportant for present purposes, the Board is to reopen the record for a further exploration of the question whether the RG59 cable test results can serve as the foundation for the environmental qualification of the RG58 cable.

2. We find a lack of comparable merit in the Coalition's insistence that the Licensing Board erroneously determined that the staff's review of the applicants' environmental qualification program was sufficient to assess the completeness and adequacy of the program.

As a first step in that review and in order to ascertain the readiness of the program for an audit, the staff examined in excess of one hundred EQFs, identified numerous deficiencies, and presented those deficiencies to the applicants for corrective action.<sup>85</sup> Subsequently, the staff conducted a detailed audit of twelve of the EQFs (in the instance of some of the files for the purpose, *inter alia*, of determining whether those previously identified deficiencies had been cor-

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<sup>81</sup> See Coalition Exhibit 4, Reference 1, at A1-A2; see also *Standard Handbook for Electrical Engineers*, § 4-80 (D. Fink & J. Carroll, 10th ed. 1969).

<sup>82</sup> See Coalition Exhibit 4, Reference 1, at A1-A2.

<sup>83</sup> LBP-87-10, *supra*, 25 NRC at 211.

<sup>84</sup> *Ibid.*

<sup>85</sup> See Coalition Exhibit 13; Tr. 696.

rected).<sup>86</sup> Six of the twelve files were found to contain deficiencies, summarized by the Licensing Board as follows:

Of the six files, four called for supporting or clarifying information. They were: (a) one file (#113-01-01) should be updated to include test information that had been provided by Applicants during the audit, (b) a second file (#174-15-01) should be supplemented to include additional information justifying the use of a test sequence different from that specified in IEEE 323-1974, (c) a third file (#113-06-01) should include a statement specifying that submergence qualification was not required, (d) a fourth file (#236-11-06) should be supplemented to include clarifying test report data in the equipment summary evaluation. (NECNP Exh. 11 at 2.) Two of the six audit deficiencies addressed two specific equipment items observed during a plant walkdown conducted as part of the audit. They were (e) three internal wires and a terminal block in a Limitorque Motor Operator (EQ File #248-37-01) were not identifiable and must be replaced with qualified components, and (f) an ASCO Solenoid Valve (EQ File #NSSS-220-02) had two different equipment identification numbers on it, which situation must be rectified.<sup>87</sup>

The Coalition's primary claim is that, given these disclosed deficiencies in half of the audited EQFs, the Licensing Board should not have accepted the environmental qualification program as adequate. We think otherwise.

To begin with, as the Board observed, four of the six deficiencies "merely called for [the] addition of clarifying or supporting information already in [the] applicants' possession."<sup>88</sup> The Coalition regards this as a major deficiency because, in its view, 10 C.F.R. 50.49(j) mandates that all records pertaining to the environmental qualification of a particular component be contained in a single EQF. But section 50.49(j) does not explicitly set forth any such mandate and the statement of consideration that accompanied its promulgation notes that, although it must be maintained in "an auditable form," the record of qualification need not be kept "in a central file."<sup>89</sup> Indeed, the Commission observed, certain records can be kept "at the vendor's shop."<sup>90</sup> This being so, if qualifying as deficiencies at all, these four were of little significance.

One of the two remaining deficiencies relied upon by the Coalition was equally insignificant. A temporary tag placed on a valve bore a wrong identification number. Before the valve was put into operation, that tag would be removed. The permanent tag that would be left on the valve reflected the correct number.<sup>91</sup>

Thus, only one of the six deficiencies in question — that relating to the three unidentified wires and a terminal block in a Limitorque motor operator — was

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<sup>86</sup> Tr. 697-98.

<sup>87</sup> LBP-87-10, *supra*, 25 NRC at 208-09.

<sup>88</sup> *Id.* at 188.

<sup>89</sup> 48 Fed. Reg. 2729, 2732 (1983).

<sup>90</sup> *Ibid.*

<sup>91</sup> Salvo, Thomas and Woodward, fol. Tr. 357, Exhibit 7 at 2.



of any consequence. The applicants are committed to rectifying this deficiency<sup>92</sup> and we do not believe that, standing alone, it is sufficient to condemn the entire Seabrook environmental qualification program. As we pointed out several years ago in the context of quality assurance deficiencies:

In any project even remotely approaching in magnitude and complexity the erection of a nuclear power plant, there inevitably will be some construction defects tied to quality assurance lapses. It would therefore be totally unreasonable to hinge the grant of an NRC operating license upon a demonstration of error-free construction. Nor is such a result mandated by either the Atomic Energy Act of 1954, as amended, or the Commission's implementing regulations. What they require is simply a finding of reasonable assurance that, as built, the facility can and will be operated without endangering the public health and safety. 42 U.S.C. §§ 2133(d), 2232(a); 10 C.F.R. § 50.57(a)(3)(i). Thus, in examining claims of quality assurance deficiencies, one must look to the implication of those deficiencies in terms of safe plant operation.<sup>93</sup>

These considerations are equally applicable to deficiencies in the documentation of environmental qualification.<sup>94</sup>

G. Finally, we are confronted with challenges to the Licensing Board's rejection in separate interlocutory orders of two late-filed contentions concerning the adequacy of emergency notification siren sound levels in certain portions of the Seabrook EPZ.<sup>95</sup> One of those contentions, sponsored by the Attorney General, was addressed to the sirens installed in the Town of Merrimac in Massachusetts. The other, put forth by SAPL, focused upon the sirens in the Town of East Kingston, New Hampshire.

1. In our stay decision, we determined, *inter alia*, that there had not been a sufficient showing of a likelihood of success on the merits of the attack upon the disposition below of the siren contentions. As earlier noted,<sup>96</sup> this determination did not serve to deprive either the Attorney General or SAPL of the opportunity to press that attack anew in their appellate briefs and at oral argument. Both of those parties availed themselves of that opportunity.

Based to a large extent upon the disclosures at oral argument, we came to the conclusion that it might be possible to resolve the differences between the parties on the siren matters without the necessity to decide whether, as a matter

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<sup>92</sup> *Id.* at 1.

<sup>93</sup> *Union Electric Co.* (Callaway Plant, Unit 1), ALAB-740, 18 NRC 343, 346 (1983) (footnote omitted).

<sup>94</sup> The Coalition also maintains that the staff's audit was premature in that it should have been deferred until the "extensive revisions" called for by the preliminary review had been completed. New England Coalition on Nuclear Pollution's Brief in Support of Appeal of Partial Initial Decision Authorizing Issuance of a License to Operate at Low Power (May 8, 1987) at 26-27. We are pointed to nothing in the record, however, to suggest that at least some of the deficiencies uncovered in the preliminary review remained uncorrected at the time of the audit. Insofar as we have been told, none of the deficiencies disclosed by the audit had also turned up on the preliminary review.

<sup>95</sup> See Licensing Board Memoranda and Orders (March 23 and 25, 1987) (unpublished).

<sup>96</sup> See *supra* p. 255.

of law, the contentions in question were improperly rejected at the threshold. We gave effect to this conclusion in a July 30, 1987 unpublished memorandum and order.

With respect to the Merrimac sirens, we had this to say:

[T]he single area of present concern relates to the measurements of ambient background noise levels — an important element in ascertaining whether the sirens satisfy the acceptability standards of the NRC and the Federal Emergency Management Agency (FEMA). Compliance with NRC/FEMA standards may be achieved by assuring that siren sound pressure levels exceed by 10 decibels the average measured *summer* daytime ambient sound pressure levels. Tests were originally conducted in January and, then, again, in March. At argument, we were told that another set of measurements will be taken next month. As appears to be recognized by the Attorney General (as well as his adversaries), this event may well have a decided bearing upon any possible warrant for litigation in connection with the Merrimac sirens. Accordingly, once those measurements have been acquired, the applicants are to furnish them forthwith to both the other parties and this Board, together with a full description of the method employed in taking the measurements. Upon receipt of this information, the NRC staff shall (and any other party may) file comments with us addressed to the acceptability of the methodology employed and the results reached. These comments shall be placed in the mail no later than the fifteenth day following the date upon which the applicants file and serve the information. The applicants are to advise us promptly if, for some reason, the measurements are not taken, as planned, in August.<sup>97</sup>

On the subject of the East Kingston sirens, we observed that:

[T]he dispute as to their adequacy arose from the conduct of a test last January. According to SAPL, that test demonstrated that the sirens would not produce the required sound level. The staff's rejoinder, in the form of an affidavit, was that the test had not been properly performed. The staff nonetheless appeared to acknowledge that the sirens had failed to perform as intended; heavy snow, driving wind and subsequently falling temperatures had reduced the efficiency of the sirens and their activation antennae. But corrective action is underway. Such corrective action is planned for all sirens and activation antennae within the Seabrook alert and notification system.

In the circumstances, it seems quite apparent that this matter is susceptible of resolution without the need for litigation. More particularly, as no party appears to disagree, the sensible course is to conduct another test during the coming winter. Obviously, it will be most helpful if there is also agreement with regard to the test procedures that should be utilized and the appropriate climatic conditions for the conduct of the test. To this end, the staff is to initiate discussions with the other parties interested in this matter (SAPL, the applicants and (possibly) the Attorney General) and to submit a report to us as to the outcome of those discussions.<sup>98</sup>

2. The Merrimac sirens were tested on August 19 and 20 and the applicants' report was filed on September 17. Thus, under the terms of the July 30 order, the

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<sup>97</sup> Appeal Board Memorandum and Order (July 30, 1987) at 3-4 (footnotes omitted).

<sup>98</sup> *Id.* at 4-5.

comments of the staff (and possibly other parties) on the information contained in the report will be due shortly. We will require time, however, to evaluate those comments.

In the discharge of the responsibility placed upon it in the July 30 order, the staff advised us of the results of the negotiations with regard to the test this winter of the East Kingston sirens.<sup>99</sup> It appeared that there are some areas of agreement among the interested parties (applicants, staff and SAPL) as to the conduct of the test. It also appeared, however, that there are some significant areas of disagreement. This circumstance led us to enter an order on September 17 directing the parties to submit memoranda by October 5 detailing their positions on the matters on which agreement has not been achieved.<sup>100</sup>

3. As is seen from the foregoing, it will be some additional time before we will be able to resolve the siren questions before us. We perceive no good reason, however, why the disposition of the numerous other issues presented by the several pending appeals should be withheld in the meantime. Accordingly, we are rendering our decision today on all but the siren questions. An opinion on those questions will be forthcoming at a later date.

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For the reasons developed above, the March 25 partial initial decision is *affirmed in part and reversed and remanded* in part. In addition, jurisdiction over the issues pertaining to the emergency notification sirens is *retained* pending our further order.

On the remand, the Licensing Board is to admit for litigation Coalition Contentions I.V. (concerned with inservice inspection of steam generator tubes) and IV (addressed to the accumulation of aquatic organisms and other foreign matter in cooling systems). Moreover, the Board is to reexamine its disposition of a portion of the environmental qualification issue in accordance with the views expressed in section F of this opinion.

We need not now explore the extent, if any, to which the remanded issues are relevant to low-power Seabrook operation. As earlier noted,<sup>101</sup> such operation is now precluded by a Commission order prompted by offsite emergency response

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<sup>99</sup> See September 11, 1987 letter from Edwin J. Reis, Deputy Assistant General Counsel, to the members of this Board.

<sup>100</sup> In an August 31, 1987 letter, staff counsel Reis had informed us that he had been advised by counsel for the Attorney General that, "as SAPL was principally interested in this matter, he would abide by any agreement SAPL made concerning the testing of [the East Kingston] sirens." Unsurprisingly, then, Mr. Reis' September 11 letter did not allude to any views of the Attorney General. On September 22, however, Allan R. Fierce sent us a letter on the Attorney General's behalf indicating disagreement with aspects of the proposed procedure for testing the sirens beyond those assigned by SAPL and reported in staff counsel's September 11 letter. The explanation for this development was that, at or about the time staff counsel solicited the views of the various parties in late August, the attorney who had been the Attorney General's lead counsel in this matter resigned his position to enter private practice.

<sup>101</sup> See *supra* note 4.

planning considerations extraneous to anything that the Licensing Board will be looking at on the remand. We have no way of knowing whether, and if so when, the Commission will conclude that the reasons undergirding the stay it has imposed no longer obtain.<sup>102</sup> Assuming that such a conclusion is reached prior to the completion of the remand, and further assuming that the Commission does not provide controlling guidance of its own on the subject, the Licensing Board is to determine expeditiously the appropriateness of a renewal *pendente lite* of the low-power authorization contained in the March 25 decision.<sup>103</sup> In making that determination, the Board should consider such factors as the bearing of the remanded issues upon low-power operation and the then status of the resolution of those issues.<sup>104</sup>

Any conclusion reached by the Licensing Board on the question of authorizing low-power operation prior to completion of the remand shall be incorporated in a written order. If that question is answered in the affirmative, the order shall not become effective for a period of ten days following the date of its service to enable any dissatisfied party to seek appellate relief.<sup>105</sup>

It is so ORDERED.<sup>106</sup>

FOR THE APPEAL BOARD

C. Jean Shoemaker  
Secretary to the  
Appeal Board

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<sup>102</sup> On September 21, 1987, grounded upon their submission three days earlier of a utility emergency response plan for the Massachusetts portion of the EPZ, the applicants moved to vacate the Commission's stay of low-power operation. Responses to that motion are not as yet due. See September 23, 1987 Commission order (unpublished).

<sup>103</sup> In connection with its consideration of the pending motion to vacate the stay it had imposed, the Commission may or may not decide to examine as well the question whether our remand should stand in the way of low-power operation.

<sup>104</sup> The fact that we are retaining jurisdiction over the siren issues does not provide an obstacle to the authorization of low-power operation. As previously noted, we concluded in our stay decision that there had not been the requisite showing of a strong likelihood that the Licensing Board's ruling on those issues would be overturned. See ALAB-865, *supra*, 25 NRC at 441-43. Although the ultimate resolution of the issues may remain uncertain, nothing that has been put before us since the rendition of ALAB-865 persuades us that there is now a sufficiently high probability that the intervenors' position will prevail to warrant stay relief. (In view of this consideration, we need not and do not examine here the relationship between offsite emergency notification requirements and low-power (as opposed to full-power) facility operation.)

<sup>105</sup> No similar restriction shall exist with respect to the Licensing Board's disposition of the remanded issues in a supplemental partial initial decision.

<sup>106</sup> When confronted with one or more appeals from an initial decision, it is our general practice to review on our initiative any substantive determinations contained in the decision that may not have been embraced by the appeal(s). In this instance, the appeals covered all such determinations other than those concerned with the contentions of the Coalition and the State of New Hampshire (not a party to the appeals) respecting the applicants' emergency classification and action level scheme. It appears that those contentions were ultimately abandoned and thus no longer presented issues in controversy at the time the partial initial decision was rendered. See LBP-87-10, *supra*, 25 NRC at 183. Nonetheless, the Licensing Board included in the decision findings and conclusions that resolved the matter in the applicants' favor. *Id.* at 190-94. Our review has disclosed nothing to cast doubt upon the correctness of that disposition.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Christine N. Kohl, Chairman  
Gary J. Edles  
Howard A. Wilber

In the Matter of

Docket No. 50-271-OLA  
(Spent Fuel Pool Amendment)

VERMONT YANKEE NUCLEAR POWER  
CORPORATION  
(Vermont Yankee Nuclear Power  
Station)

October 2, 1987

The Appeal Board denies a request for reconsideration of its earlier decision in ALAB-869, 26 NRC 13 (1987), rejecting a contention that had been admitted by the Licensing Board in this operating license proceeding.

**RULES OF PRACTICE: INTERLOCUTORY REVIEW**

Under the Commission's Rules of Practice, appellate review of interlocutory Licensing Board decisions — such as an order granting a party's petition to intervene, or admitting contentions and thereby granting a request for hearing — is generally prohibited. 10 C.F.R. § 2.730(f). Under 10 C.F.R. § 2.714a(c), however, an applicant may appeal such an order "on the question whether the petition and/or the request for a hearing should have been wholly denied."

## **RULES OF PRACTICE: APPELLATE REVIEW (INTERVENTION RULINGS)**

The terms and spirit of 10 C.F.R. § 2.714a allow appeal boards to exercise discretion concerning the need and desirability of reviewing other contentions, once one admissible contention is found. ALAB-869, 26 NRC at 26.

## **RULES OF PRACTICE: HEARING PROCEDURES FOR SPENT FUEL POOL EXPANSION PROCEEDINGS**

Under the Commission's new "Hybrid Hearing Procedures for Expansion of Spent Nuclear Fuel Storage Capacity at Civilian Nuclear Power Reactors," 10 C.F.R. § 2.1101 et seq., the admission of a contention does not automatically trigger a formal hearing, but rather entitles the contention's proponent to file written statements and to present oral argument, after which a hearing may be ordered.

## **NEPA: POLICY STATEMENT ON SEVERE ACCIDENTS**

The National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4321, does not require NRC consideration of beyond design-basis accidents because they are, by definition, highly improbable — i.e., remote and speculative — events. ALAB-869, 26 NRC at 30-31 (citing *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1301 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26, *cert. denied*, — U.S. —, 107 S. Ct. 330 (1986)). To the extent that the Commission ever considers the environmental impact and risks of a beyond design-basis accident, it does so as an exercise of discretion under its Interim Policy on "Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969," 45 Fed. Reg. 40,101 (1980) [hereinafter "NEPA Policy Statement"]. ALAB-869, 26 NRC at 31.

## **NEPA: POLICY STATEMENT ON SEVERE ACCIDENTS**

The NEPA Policy Statement does not apply to license amendment proceedings for the expansion of the capacity of spent fuel pools by reracking. *Ibid.*

## **NEPA: POLICY STATEMENT ON SEVERE ACCIDENTS**

The NEPA Policy Statement provides for consideration of the risks of a beyond design-basis accident scenario only where an environmental impact statement (EIS) is already otherwise required. *Ibid.*

## **NUCLEAR REGULATORY COMMISSION: RESPONSIBILITIES UNDER NEPA**

As an independent agency, the Commission does not consider itself legally bound by substantive Council on Environmental Quality regulations. See *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 700 & n.21 (1985) (citing *Baltimore Gas and Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 99 n.12 (1983)), review declined, CLI-86-5, 23 NRC 125 (1986).

## **RULES OF PRACTICE: CONTENTIONS (SCOPE)**

An intervenor is bound by the literal terms of its own contention. *Id.* at 709.

## **NEPA: POLICY STATEMENT ON SEVERE ACCIDENTS**

The "special circumstances" exception in the NEPA Policy Statement — which provides that the Commission's direction to the staff to include severe accident considerations in future EISs was not to serve as a basis for opening, reopening, or expanding any previous or ongoing proceeding, in the absence of special circumstances — pertains only to proceedings already completed or under way as of June 1980. 45 Fed. Reg. at 40,103. Examples of such special circumstances include higher population density, proximity to man-made or natural hazard, unusual site configuration, unusual design features, etc. *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), CLI-80-8, 11 NRC 433, 434 (1980).

## **RULES OF PRACTICE: CERTIFICATION OF ISSUES TO COMMISSION**

Major or novel questions of policy, law or procedure may be certified to the Commission for its ruling at an appeal board's discretion. 10 C.F.R. § 2.785(d).

## **APPEARANCES**

Ellyn R. Weiss, Washington, D.C., for intervenor New England Coalition on Nuclear Pollution.

James M. Shannon, George B. Dean, and John Traficonte, Boston, Massachusetts, for the Commonwealth of Massachusetts.

David J. Mullett, Montpelier, Vermont, for the State of Vermont.

Thomas G. Dignan, Jr., and Kathryn A. Selleck, Boston, Massachusetts, for applicant Vermont Yankee Nuclear Power Corporation.

Ann P. Hodgdon for the Nuclear Regulatory Commission staff.

## MEMORANDUM AND ORDER

In ALAB-869, 26 NRC 13 (1987), we reviewed the Licensing Board's decision admitting three contentions in this proceeding for an operating license amendment authorizing the expansion (by reracking) of the capacity of the spent fuel pool at the Vermont Yankee facility. See LBP-87-17, 25 NRC 838 (1987). We affirmed the Board's admission of most of contention 1 but reversed its admission of contentions 2 and 3. Intervenor New England Coalition on Nuclear Pollution (NECNP) and the Commonwealth of Massachusetts each seek reconsideration of ALAB-869 insofar as we concluded that contention 2 (concerning the alleged need for an environmental impact statement (EIS)) should have been rejected.<sup>1</sup> The State of Vermont supports the requests for reconsideration, while applicant and the NRC staff oppose them. After giving the parties' views full consideration,<sup>2</sup> we affirm our decision in ALAB-869 rejecting contention 2.

1. As a preliminary matter, NECNP claims that we exceeded our authority under 10 C.F.R. § 2.714a in even reviewing the Licensing Board's decision admitting contention 2. Appellate review of interlocutory decisions in NRC proceedings — such as an order granting a party's petition to intervene, or admitting contentions and thereby granting a request for a hearing — is generally prohibited. 10 C.F.R. § 2.730(f). Under 10 C.F.R. § 2.714a(c), however, an applicant may appeal such an order "on the question whether the petition and/or the request for a hearing should have been wholly denied." Applicant appealed the Licensing Board's decision pursuant to this rule. NECNP argues that, once we found contention 1 admissible, agency precedent permits us "to

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<sup>1</sup> The Commonwealth lost its status as an intervenor in this proceeding by virtue of our decision in ALAB-869. It continues to participate (as does the State of Vermont), however, as an "interested State" pursuant to 10 C.F.R. § 2.715(c).

<sup>2</sup> Because the rationale for our decision concerning contention 2 was not fully explicated in any of the parties' pleadings, NECNP points out that it has had no prior opportunity to respond to it. We therefore devote more attention here to the parties' arguments than is ordinarily the case with requests for reconsideration. *But see infra* note 3.



inquire no further." New England Coalition on Nuclear Pollution's Petition for Reconsideration (August 10, 1987) at 3.<sup>3</sup>

NECNP has completely ignored our first, and independent, reason for reviewing the Licensing Board's decision admitting all three contentions. As we explained:

In this case, at least as to applicant's objections to the admission of NECNP's contentions, we might well conclude our review now, having found most of contention 1 admissible. Applicant's complaints, however, are also directed to the admission of the Commonwealth's contentions I and II. Although in admitting these contentions the Licensing Board combined both of them with portions of NECNP contention 5 and renumbered them as contentions 2 and 3, we believe that applicant is nonetheless entitled to our further consideration of its claim that the Commonwealth's petition "should have been wholly denied." We will therefore also review the Licensing Board's decision insofar as it concerns the admission of contentions 2 and 3.

ALAB-869, 26 NRC at 26. We were thus *obliged* to consider applicant's complaint that the *Commonwealth's* petition to intervene and for a hearing "should have been wholly denied." Because the Commonwealth's contentions overlapped and thus were combined by the Licensing Board with portions of one of NECNP's contentions, we could not logically rule on the admissibility of those Commonwealth contentions without necessarily ruling on the related NECNP contention as well.

We also concluded in ALAB-869 that, "[e]ven if the unusual procedural posture of this case did not dictate our review of the other contentions, . . . the terms and spirit of section 2.714a, as interpreted by our cases over the years, are flexible enough to allow appeal boards discretion in this regard." *Id.* at 26 (footnote omitted). Nothing in NECNP's argument persuades us that we should reconsider this view and the analysis underlying it. *See id.* at 26-27.<sup>4</sup>

2. As we noted in ALAB-869, contention 2 is a combination of Commonwealth contention I and that part of NECNP contention 5 that asserted a need for an EIS. *See id.* at 28, 36-38. The Licensing Board redrafted it as follows:

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<sup>3</sup> NECNP could have raised this point as an affirmative argument in response to applicant's appeal and in defense of the Licensing Board's decision, but failed to during the initial briefing of this matter. Nonetheless, we have taken NECNP's eleventh-hour argument into account here.

<sup>4</sup> NECNP argues that this is not an appropriate proceeding in which to invoke the discretion we have in section 2.714a because this is the first proceeding under the Commission's new "Hybrid Hearing Procedures for Expansion of Spent Nuclear Fuel Storage Capacity at Civilian Nuclear Power Reactors," 10 C.F.R. § 2.1101 et seq. Under these rules, the admission of a contention does not automatically trigger a formal hearing, but rather entitles the contention's proponent to file written statements and to present oral argument, after which a hearing may be ordered. The staff, however, points out that the Commission intends that the usual rules applicable to petitions to intervene and contentions apply to hybrid proceedings as well. NRC Staff Response (September 1, 1987) at 6-7. *See* 10 C.F.R. § 2.1117; 50 Fed. Reg. 41,662, 41,665, 41,670 (1985). *See also* 10 C.F.R. § 2.1101.

The proposed amendment would create a situation in which consequences and risks of a hypothesized accident (hydrogen detonation in the reactor building) would be greater than those previously evaluated in connection with the Vermont Yankee reactor. This risk is sufficient to constitute the proposed amendment as a "major federal action significantly affecting the quality of the human environment" and requiring preparation and issuance of an Environmental Impact Statement prior to approval of the amendment.

LBP-87-17, 25 NRC at 864. We agreed with the Licensing Board's characterization of the scenario serving as the basis for NECNP's and the Commonwealth's claims of increased risk as a "beyond design-basis accident." We disagreed, however, with that Board's belief that the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4321, mandated consideration of the risks of the accident described in the combined contentions. Relying on the holding of *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1301 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26, *cert. denied*, — U.S. —, 107 S. Ct. 330 (1986), we stated that "NEPA does not require NRC consideration of severe, beyond design-basis accidents because they are, by definition, highly improbable — i.e., remote and speculative — events." ALAB-869, 26 NRC at 30-31 (footnote omitted). We also observed that, "[t]o the extent that the Commission ever considers the environmental impact and risks of a beyond design-basis accident, it does so as an exercise of discretion" under its Interim Policy on "Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969," 45 Fed. Reg. 40,101 (1980) [hereinafter "NEPA Policy Statement"]. ALAB-869, 26 NRC at 31 (citing *San Luis Obispo*, 751 F.2d at 1301). We went on to find, however, that the Commission did not intend to apply that policy statement to license amendment proceedings like this. We also found that the policy provides for consideration of the risks of a beyond design-basis accident scenario only where an EIS is already otherwise required. By contrast, here, NECNP and the Commonwealth contend that an EIS is required because of the severe accident scenario they have described. Thus, we concluded that the admission of contention 2 is neither required by NEPA nor authorized, in the Commission's discretion, under the NEPA Policy Statement. *Ibid*.

NECNP argues that we have engaged in improper fact-finding in this analysis. Noting that risk is the product of consequences and probability, intervenor stresses that the focus of its concern in contention 2 is the asserted increased risk from a severe accident involving the reracked Vermont Yankee spent fuel pool. It claims that, in rejecting contention 2, we essentially made findings regarding the consequences and probability of such an accident without a factual basis or record. NECNP acknowledges that NEPA does not require consideration of remote and speculative events, but it asserts that we erred in finding that its postulated severe spent fuel pool accident is such an event. It further argues that an occurrence is not remote and speculative merely because it is of low probability, and that, in any case, a regulation of the Council on Environmental

Quality (CEQ), 40 C.F.R. § 1502.22, requires analysis of reasonably foreseeable catastrophic consequences of even low probability events. NECNP adds that a reactor core-melt accident is not a precondition to a spent fuel pool accident and refers to a recent draft report of the Brookhaven National Laboratory discussing the possibility of a self-sustaining fuel cladding fire in a drained spent fuel pool with high density racking. Finally, NECNP objects to our asserted use of the NEPA Policy Statement to make factual findings, inasmuch as that statement was adopted without the opportunity for public participation.

Despite NECNP's arguments to the contrary, we made no improper factual findings in rejecting contention 2. Rather, we simply measured the contention itself against what the law requires the Commission to consider. The principal flaw in NECNP's challenge to ALAB-869 is that it conveniently overlooks the wording and basis of the particular contention here at issue. The unequivocal point of contention 2 — both in the forms originally proffered by NECNP and the Commonwealth and as reworded by the Licensing Board, without their objection — is that a severe *reactor* core accident, involving substantial fuel damage, hydrogen generation and detonation, reactor vessel failure, and breach of primary containment, would ultimately lead to an accident in the spent fuel pool (housed within the same building as the reactor), the consequences of which would be greater due to the increased number of fuel assemblies stored there pursuant to the instant license amendment request. *See* New England Coalition on Nuclear Pollution's Response to Board Order of February 27, 1987: Statement of Contentions and Standing (March 30, 1987) at 8-9, 2-8 (especially 2-4); Contentions of the Commonwealth of Massachusetts (March 30, 1987) at 1-2; LBP-87-17, 25 NRC at 864.

As the Licensing Board found (and neither NECNP nor the Commonwealth has criticized), this reactor accident scenario, which is the key triggering event for the spent fuel pool accident postulated in contention 2, has been characterized as a severe, "beyond design-basis" event. LBP-87-17, 25 NRC at 845, 846, 854. *See generally* "Policy Statement on Severe Accidents Regarding Future Designs and Existing Plants," 50 Fed. Reg. 32,138, 32,139, 32,141 (1985). The court in *San Luis Obispo*, 751 F.2d at 1301, held that NEPA does not require the Commission to consider the risks of such severe accidents in its licensing proceedings. If the Commission is not required by law to consider the risks of the triggering event in contention 2, it can hardly be required to consider the even more attenuated risks of the spent fuel pool accident scenario NECNP

and the Commonwealth have “spun-off” from that hypothesized severe reactor accident.<sup>5</sup>

NECNP now posits, however, that such a beyond design-basis reactor core-melt accident is not a precondition for a spent fuel pool accident involving, for instance, a self-sustaining fire. That may well be, but that simply was not the basis or even the gist of the NECNP and Commonwealth contentions upon which the Licensing Board ruled. Indeed, the Board’s decision and wording of contention 2 reflect throughout its understanding that the two contentions sought consideration of the environmental risks of a severe reactor accident, as complicated by a reracked spent fuel pool. NECNP and the Commonwealth may have intended to litigate another type of spent fuel accident based on a different scenario. But, as we have stated repeatedly, an intervenor “is bound by the literal terms of its own contention” — and, in this case, by the terms of the contention as described and reworded by the Licensing Board as well. *Limerick*, *supra* note 5, 22 NRC at 709.<sup>6</sup>

NECNP’s argument that we improperly relied on the NEPA Policy Statement to make factual findings binding on the parties reflects a complete misunderstanding of that policy and our application of it. As we noted in ALAB-869, 26 NRC at 31, and the court held in *San Luis Obispo*, 751 F.2d at 1301, that policy statement represents an exercise of the Commission’s *discretion*. That is, it defines those circumstances in which the Commission staff, although not required by NEPA, will nonetheless evaluate the environmental risks of severe accidents. In ALAB-869, we concluded that there is no basis in the language of the statement for including license amendment proceedings within the policy’s discretionary ambit. No party has directly challenged that conclusion.

The Commonwealth nevertheless argues that this case falls within the policy statement’s “special circumstances” exception. In that provision, the Commission stated that its direction to the staff to include severe accident considerations in *future* EISs was not to serve as “a basis for opening, reopening, or expanding any *previous* or *ongoing* proceeding,” in the absence of a showing of “special circumstances.” 45 Fed. Reg. at 40,103 (emphasis added). Thus, on its face, the “special circumstances” exception pertains only to proceedings already

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<sup>5</sup>NECNP’s reliance on a CEQ regulation (which was not cited in its contention) does not aid its argument. As an independent agency, the Commission does not consider itself legally bound by substantive CEQ regulations. *See Philadelphia Electric Co.* (*Limerick* Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 700 & n.21 (1985) (citing *Baltimore Gas and Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 99 n.12 (1983)), *review declined*, CLI-86-5, 23 NRC 125 (1986).

Moreover, the regulation in question, 40 C.F.R. § 1502.22, is inapposite here. It is directed to those situations in which an agency has already decided to prepare an EIS, but relevant information is “incomplete or unavailable” due to exorbitant costs or inadequate state-of-the-art methodologies. The regulation is concerned with full disclosure, requiring an agency to “make clear that such information is lacking.”

<sup>6</sup>NECNP and the Commonwealth, of course, could submit a contention that articulates the accident scenario that now is of concern to them, but they would have to satisfy the criteria for late contentions in 10 C.F.R. § 2.714(a)(1).

completed or under way as of June 1980 — clearly not this license amendment proceeding. But assuming arguendo that the NEPA Policy Statement and its exception somehow apply here, the Commonwealth has failed to show that this proposal to rerack a spent fuel pool presents the type of special circumstances the Commission contemplated. The Commonwealth cites *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), CLI-80-8, 11 NRC 433, 434 (1980), where the Commission provided some examples of what might constitute a special circumstance warranting consideration of severe accident scenarios — “higher population density, proximity to man-made or natural hazard, unusual site configuration, unusual design features, etc.” The Commonwealth’s *ipse dixit* that the proposed reracking of the Vermont Yankee spent fuel pool substantially increases the risk to the environment falls far short of presenting a comparable situation.

The Commonwealth also complains that we wrongly decided that NEPA “prohibits” the admission of contention 2. We neither said nor meant to imply that. Rather, our primary conclusion, which we reaffirm now, is that the particular contention involved here — premised on a beyond design-basis reactor accident — is not admissible because (1) as a matter of law, NEPA does not require the Commission to consider the risks of such severe accident scenarios, and (2) as a matter of discretion under its NEPA Policy Statement, the Commission has not authorized the consideration of such contention in a license amendment proceeding.

3. NECNP requests, in the alternative, that we certify to the Commission the questions raised in connection with contention 2. Under 10 C.F.R. § 2.785(d), we have the discretion to certify “major or novel questions of policy, law or procedure” to the Commission for its ruling. In our view, however, ALAB-869 (as amplified here in response to NECNP’s and the Commonwealth’s requests for reconsideration) involves no such major or novel issues, but rather the application of well-established court and NRC precedent and Commission policy. In addition, NECNP and the Commonwealth have already petitioned the Commission for review of ALAB-869 under 10 C.F.R. § 2.786(b)(1). Certification is therefore unnecessary, as the Commission will already have an opportunity to consider their arguments.

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Reconsideration of ALAB-869, 26 NRC 13, is *denied*.  
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker  
Secretary to the  
Appeal Board

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman  
Thomas S. Moore  
Howard A. Wilber

In the Matter of

Docket Nos. 50-275-OLA  
50-323-OLA

PACIFIC GAS AND ELECTRIC  
COMPANY

(Diablo Canyon Nuclear Power  
Plant, Units 1 and 2)

October 8, 1987

The Appeal Board denies an intervenor's motion for a stay pending appeal of a Licensing Board decision authorizing the issuance of license amendments for the expansion of the capacity of each of the spent fuel pools of the Diablo Canyon facility.

**RULES OF PRACTICE: STAY OF AGENCY ACTION (CRITERIA)**

The four factors to be considered in deciding whether to grant a stay, as set forth in 10 C.F.R. 2.788(e), are: (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.

## **RULES OF PRACTICE: STAY OF AGENCY ACTION (CRITERIA)**

Although none of the factors to be considered in granting a stay is necessarily dispositive, the potential for irreparable injury and the likelihood of prevailing on the merits generally get primary attention.

## **NEPA: ENVIRONMENTAL ASSESSMENT**

A NEPA environmental assessment must identify the proposed action and include a "brief" discussion of the need for that action, the alternatives to it, and the environmental impacts of the proposal and the alternatives. 10 C.F.R. 51.30(a).

## **NEPA: ENVIRONMENTAL ASSESSMENT (NRC DETERMINATION)**

Upon completion of an environmental assessment, the NRC staff will determine whether (1) to prepare a full environmental impact statement ("EIS") or (2) to issue instead a finding to the effect that the proposed action will have no significant impact upon the environment (in which case an EIS is not necessary). See 10 C.F.R. 51.31, 51.32.

## **RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)**

To be admitted in a licensing proceeding, the basis of a contention must be set forth with reasonable specificity. 10 C.F.R. 2.714(b).

## **NEPA: CONSIDERATION OF SEVERE ACCIDENTS**

NEPA does not require NRC consideration in an EIS or elsewhere of highly improbable — i.e., remote and speculative — events. *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-876, 26 NRC 276, 282 (1987) (citing *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1301 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26, *cert. denied*, — U.S. —, 107 S. Ct. 330 (1986)).



## APPEARANCES

Marcia Preston, San Francisco, California, for the intervenor Sierra Club.

Howard V. Golub, Richard F. Locke and Bruce Norton, San Francisco, California, for the applicant Pacific Gas and Electric Company.

Benjamin H. Vogler for the Nuclear Regulatory Commission staff.

## MEMORANDUM AND ORDER

### I.

This proceeding involves the application of the Pacific Gas and Electric Company for amendments to the outstanding operating licenses for its Diablo Canyon nuclear facility. The requested amendments would permit the applicant to increase the capacity of each of the facility's two spent fuel pools from 270 to 1324 spent fuel rod assemblies. The additional capacity would be achieved by removing the existing storage racks and replacing them with so-called "high density" racks that allow the storage of assemblies in closer proximity to one another.

In a September 11, 1987 initial decision, the Licensing Board considered each of the contentions of the Sierra Club, the single remaining intervenor in the proceeding, that had been admitted for litigation.<sup>1</sup> Concluding that none of those contentions was meritorious, the Board authorized the Commission's Director of Nuclear Reactor Regulation to issue the license amendments.

On September 24, 1987, the Sierra Club noted an appeal from that decision, which appeal also embraces a challenge to a September 2, 1987 Licensing Board order rejecting the Sierra Club's proffer of a late-filed contention.<sup>2</sup> Accompanying the notice was a motion under 10 C.F.R. 2.788 for a stay of the effectiveness of the September 11 decision pending the outcome of the appeal. The stay motion is opposed by both the applicant and the NRC staff. For the following reasons, we agree with those parties that the relief sought by

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<sup>1</sup> See LBP-87-25, 26 NRC 168. Two other intervenors withdrew from the proceeding and their contentions were thereupon dismissed.

<sup>2</sup> See LBP-87-24, 26 NRC 159. Before noting its appeal from the initial decision, the Sierra Club attempted to take an independent appeal from the September 2 order. That endeavor failed because it was not countenanced by 10 C.F.R. 2.714a, the sole provision of the Rules of Practice permitting interlocutory appeals. See ALAB-873, 26 NRC 154 (1987). ALAB-873 went on to observe, however, that the order would be subject to challenge in connection with any appeal the Sierra Club might take from the September 11 initial decision.

the Sierra Club is not warranted here. Accordingly, the motion is denied and the previously entered interim stay dissolved.<sup>3</sup>

## II.

Consideration of stay applications requires us to apply the traditional stay criteria enunciated by the courts and incorporated into the Commission's regulations.<sup>4</sup> Those criteria are (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. As we recently had occasion to reiterate

[n]one of these factors is necessarily dispositive, but the potential for irreparable injury and the likelihood that a movant will prevail on the merits generally get primary attention. Moreover, the strength of a movant's showing on one of these factors determines how strong the showing must be on other factors to justify a stay.<sup>5</sup>

With these principles in mind, we turn to the foundation of the Sierra Club's assertion of entitlement to stay relief.

A. 10 C.F.R. Part 51 contains the Commission's regulations implementing the National Environmental Policy Act of 1969, as amended (NEPA). Among other things, with exceptions not relevant here, those regulations contemplate that the NRC staff will prepare an environmental assessment of the proposed licensing action.<sup>6</sup> That assessment shall identify the proposed action and include a "brief" discussion of the need for that action, the alternatives to it, and the environmental impacts of the proposal and the alternatives.<sup>7</sup> Upon completion of the assessment, the staff will determine whether (1) to prepare a full environmental impact statement (EIS), or (2) to issue instead a finding to

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<sup>3</sup> See Order of September 25, 1987 (unpublished). That order instructed the applicant not to take any action sanctioned by the amendments pending our further order. We took this step immediately upon receipt of the stay motion to enable a full and orderly examination of the claims contained therein.

<sup>4</sup> See 10 C.F.R. 2.788(c). See generally *Texas Utilities Electric Co. (Comanche Peak Steam Electric Station, Unit 1)*, CLI-86-4, 23 NRC 113, 121-22 (1986) (citing *Virginia Petroleum Jobbers Ass'n v. FPC*, 259 F.2d 921, 925 (D.C. Cir. 1958), and *Washington Metropolitan Area Transit Comm'n v. Holiday Tours, Inc.*, 559 F.2d 841 (D.C. Cir. 1977)).

<sup>5</sup> *Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2)*, ALAB-865, 25 NRC 430, 435 (1987) (citing for the second proposition *Cuomo v. NRC*, 772 F.2d 972, 974 (D.C. Cir. 1985)).

<sup>6</sup> See 10 C.F.R. 51.21, 51.25. The exceptions are set forth in 10 C.F.R. 51.20(b) (which lists the types of actions that require in all circumstances an environmental impact statement or supplement thereto) and 10 C.F.R. 51.22(c) (which identifies those categories of actions that the Commission has determined do not individually or cumulatively have a significant effect on the human environment).

<sup>7</sup> See 10 C.F.R. 51.30(a).

the effect that the proposed action will have no significant impact upon the environment (in which case an EIS is not necessary).<sup>8</sup>

1. It is undisputed that such an environmental assessment was prepared in connection with the proposed reracking of the Diablo Canyon spent fuel pools. On the basis of that assessment, the staff

concluded that there are no significant radiological or non-radiological impacts associated with the proposed action and that the proposed license amendments will not have a significant effect on the quality of the human environment. Therefore, the Commission has determined, pursuant to 10 CFR 51.31, not to prepare an environmental impact statement for the proposed amendments.<sup>9</sup>

None of the timely-filed contentions admitted for litigation and actually heard expressly challenged the sufficiency of the staff's environmental assessment or asserted that a full EIS was required.<sup>10</sup> Rather, it appears that specific claims to that effect surfaced for the first time at the outset of the evidentiary hearing on June 16, 1987.<sup>11</sup> The Licensing Board declined to entertain the attempted oral presentation of the claims and directed that they be submitted in writing.<sup>12</sup> Thereafter, on June 29, the Sierra Club filed a motion seeking to have this additional contention admitted to the proceeding:

The proposed action significantly increases the consequences of loss of cooling accidents in that a loss of water in the spent fuel pools could lead to spontaneous ignition of zircalloy [sic] cladding of the fuel elements in the high density configuration with significant releases of radiation.<sup>13</sup>

The motion explained that the contention was grounded upon a January 1987 draft report prepared by the Brookhaven National Laboratory, entitled "Beyond Design-Basis Accidents in Spent Fuel Pools (Generic Issue 82)" (hereafter

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<sup>8</sup> See 10 C.F.R. 51.31, 51.32.

<sup>9</sup> Environmental Assessment by the Office of Nuclear Reactor Regulation Relating to the Expansion of Spent Fuel Pools, Facility Operating License Nos. DPR-80 and DPR-82, Pacific Gas and Electric Company, Diablo Canyon Nuclear Power Plant, Unit Nos. 1 and 2, at 12, received into evidence below as NRC Staff Exhibit 2 (Tr. 298).

<sup>10</sup> In this connection, nothing in those admitted contentions appears to embrace the Sierra Club's claim in its stay papers that the environmental assessment did not adequately consider alternatives to the reracking proposal. Although Contention I(B)7 referred to the failure of certain "Reports" to discuss specified alternatives, in Contention I(A) the Sierra Club indicated that, by the term "Reports," it had reference to documents generated by the applicant. In any event, we think the attack upon the environmental assessment's treatment of alternatives to be far wide of the mark. For example, contrary to the Sierra Club's assertion that it was ignored, the dry cask storage system alternative was discussed at page 4 of the environmental assessment.

<sup>11</sup> Tr. 142-49.

<sup>12</sup> Tr. 291, 630.

<sup>13</sup> Motion to Include Issues Raised in Generic Issue 82 as Contentions in this Proceeding and to Direct Preparation of an Environmental Impact Statement (June 29, 1987) at 1.

Brookhaven report).<sup>14</sup> According to the Sierra Club, given the discussion in the report of the possible consequences of a loss of water in the spent fuel pools, the staff should not have issued a "no significant impact" finding but, instead, should have prepared an EIS on the reracking proposal.

In its September 2 order, the Licensing Board ruled that the late-filed contention was inadmissible for want of a sufficient basis. Accordingly, the Board's initial decision did not address whether the staff's environmental assessment provided an inadequate foundation for the "no significant impact" finding, with the consequence that an EIS should have been prepared.

2. Before us, the Sierra Club's insistence that it will prevail on its appellate claim that NEPA requires the preparation of an EIS hinges upon its further assertion that the late-filed contention based upon the Brookhaven report was improperly rejected. For, if that contention was correctly denied admission, it necessarily follows that the Sierra Club did not have before the Licensing Board any contention specifically asserting that the staff's environmental assessment did not satisfy the NEPA mandate. And it is settled that a party normally may not raise on appeal an issue that was not properly presented to the trial tribunal.<sup>15</sup>

As above noted, the Licensing Board rejected the contention because it failed to satisfy the requirement in the Rules of Practice that its basis be "set forth with reasonable specificity."<sup>16</sup> More particularly, the Board determined that there was no nexus between the Diablo Canyon reracking proposal and the Brookhaven report on which the contention was founded.<sup>17</sup>

We agree with the Sierra Club that, at least as articulated by the Licensing Board, the conclusion below on the nexus question is of dubious correctness. There is, however, another consideration suggesting that the Board quite likely reached the right result in the September 2 order.

Neither the contention nor the basis assigned for it contains an adequate explanation respecting why there is a reasonable possibility that the spent fuel pools would lose sufficient water to give rise to the chance of a fuel cladding fire and resultant radiation release discussed in the Brookhaven report. Yet such an explanation appears to have been required to meet the basis and specificity requirements for contentions.

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<sup>14</sup> The Sierra Club submitted the draft report to the Licensing Board at the evidentiary hearing. Although the stay papers stated that it was also attached to the June 29 motion as exhibit 1, that does not seem to be the case. Nevertheless, we regard the report as being included in the record for present purposes.

The final report, entitled "Severe Accidents in Spent Fuel Pools in Support of Generic Safety Issue 82," was issued in July 1987 and bears the designation NUREG/CR-4982. Because the Sierra Club has relied exclusively upon the draft report, all future references are to that report. In any event, we have found no crucial differences between the draft and final reports.

<sup>15</sup> See, e.g., *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 235 (1986); *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B and 2B), ALAB-463, 7 NRC 341, 348, *reconsideration denied on other grounds*, ALAB-467, 7 NRC 459 (1978).

<sup>16</sup> 10 C.F.R. 2.714(b).

<sup>17</sup> See LBP-87-2A, *supra*, 26 NRC at 165-67.

As the Brookhaven report notes, there are limited occurrences that might bring about a significant loss of pool water: (1) a failure of the system that serves to remove heat from the pool water, resulting in boil-off of the water; (2) a seismic event; (3) a striking of the pool walls by some externally-generated flying object (such as a turbine missile); (4) a failure of a seal protecting the integrity of the pool's water-tightness; and (5) a dropping onto the edge of the pool of a cask utilized to transfer spent fuel from the pool.<sup>18</sup> In the context of the two "surrogate" facilities utilized for analytic purposes (Ginna and Millstone 1 located in New York and Connecticut respectively), the report concludes that the likelihood of such an untoward occurrence having that result is remote — ranging from 3 chances in 100,000 per reactor year (cask drop) to 1 chance in 10,000,000,000 per reactor year (aircraft crash into the pool).<sup>19</sup>

Very recently, in the *Vermont Yankee* spent fuel pool proceeding similarly involving high density storage racks, we emphasized that NEPA does not require NRC consideration (in an EIS or elsewhere) of highly improbable — i.e., remote and speculative — events.<sup>20</sup> It was thus not enough for the Sierra Club to point to the Brookhaven report as the sole basis for the new contention. Rather, it was incumbent upon the intervenor to provide at least some reason to think that, at Diablo Canyon even if not at Ginna or Millstone, the possibility of an event causing a major loss of spent fuel pool water was sufficiently great to remove the hypothesized fuel cladding fire from the realm of the remote and speculative.

This, to repeat, was not done. Nor is there anything within the ambit of official notice to cure the omission. True, it is a matter of common knowledge that the Diablo Canyon facility is located in a more seismically active area than is either Ginna or Millstone. But the evidentiary record in this proceeding reflects, and the Sierra Club does not dispute in its stay papers, that the spent fuel pools have been determined upon analysis to be able to withstand the current design-basis earthquake for the facility.<sup>21</sup> Therefore, any seismic event causing significant damage to the spent fuel pools would qualify as a beyond design-basis incident. In observing in *Vermont Yankee* that remote and speculative events do

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<sup>18</sup> Brookhaven Report at 2-1 to 2-19.

<sup>19</sup> *Id.* at 2-29.

<sup>20</sup> *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-876, 26 NRC 276, 282 (1987) (citing *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1301 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26, *cert. denied*, — U.S. —, 107 S. Ct. 330 (1986)). On the strength of that proposition, discussed at some length, we reaffirmed (on the intervenor's petition for reconsideration) the rejection in ALAB-869, 26 NRC 13 (1987) of a contention to the effect that the staff was required to prepare an EIS to address the environmental risks associated with a hypothesized reactor accident producing a hydrogen detonation that, in turn, caused damage to the spent fuel pool.

<sup>21</sup> See NRC Staff Exhibit 1, Safety Evaluation, at 9-14, received into evidence below at Tr. 298. We need not, and do not, pass at this stage upon the sufficiency of the analysis inasmuch as it has not been challenged in the stay papers. We may well have to reach that question, however, in our subsequent full review of the initial decision.

not require consideration for NEPA purposes, we made specific reference to such incidents.<sup>22</sup>

In short, although it may persuade us otherwise upon a full briefing of its appeal,<sup>23</sup> we are not satisfied at this juncture that the Sierra Club is likely to prevail on the merits of its claim that the preparation of an EIS is a precondition to approval of the reracking proposal. Nor are we now convinced of the substantiality of the other claim in the stay papers: that the Brookhaven report establishes that the grant of the license amendment application will unreasonably endanger the public health and safety. As we have seen, the Sierra Club has supplied an inadequate basis for such a claim.<sup>24</sup>

B. The foregoing considerations are equally dispositive of the Sierra Club's claim that it will suffer irreparable injury in the absence of the requested stay. That claim rests entirely on the unsubstantiated premise that the Brookhaven report establishes both that the reracking will endanger the public health and safety and that NEPA required the filing of an EIS to consider the environmental risks attendant upon a loss of the water in either or both of the two spent fuel pools.<sup>25</sup> Moreover, it is our current expectation that the Sierra Club's appeal will be decided on the merits by next March, when the next refueling outage for Unit 1 of the facility is to take place.<sup>26</sup> Until that time, no additional spent fuel will be placed in either pool. At this point, there are 68 spent fuel assemblies in each pool.<sup>27</sup> We do not find any assertion by the Sierra Club that such a small

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<sup>22</sup> See ALAB-876, *supra*, 26 NRC at 435.

<sup>23</sup> It bears repeating what we said in the course of determining in ALAB-865, *supra*, that the stay papers of the Seabrook intervenors had not established a likelihood of success on the merits of their appeal from the initial decision there involved:

The foregoing conclusions do not mean that the intervenors' appeals from the March 25 partial initial decision are necessarily doomed to failure. To begin with, even on the issues raised in the stay applications, it is possible that a full briefing will persuade us that the intervenors should prevail. All that we now decide is that the stay papers do not themselves demonstrate the requisite high probability of such success. Moreover, we do not consider on a stay application any possible Licensing Board error not asserted by the movants. Presumably, the intervenors will advance in their appellate briefs claims of error that, perhaps because of the ten-page limit imposed by 10 C.F.R. 2.788(b), were not included in their stay applications.

<sup>25</sup> NRC at 444.

<sup>24</sup> The Sierra Club takes note of the recommendation of two of the authors of the Brookhaven report (in Appendix B at 3) that spent fuel not be stored in high density racks for two years after being removed from the reactor. That recommendation was not founded, however, on an expressed belief that the use of such racks to store recently removed spent fuel would impose an undue threat to the public health and safety. In this connection, it appears that the recommendation was prompted by the thesis that, in the event of a loss of pool water, a self-sustaining fuel cladding fire would be less likely if the stored spent fuel were substantially decayed. Yet, to repeat, the disclosures in the report affirmatively establish that the possibility of a loss of pool water does not loom sufficiently large to present a significant safety risk.

<sup>25</sup> On the latter score, the Sierra Club asserts that the courts will grant injunctive relief to preclude action in violation of NEPA.

<sup>26</sup> Affidavit of James D. Shiffer (October 2, 1987) attached to Pacific Gas and Electric Company's Answer in Opposition to Sierra Club's Request for Stay (October 2, 1987). The affidavit further reflects that Unit 2 is not scheduled for its next refueling until later in 1988.

<sup>27</sup> *Ibid.*

number of stored assemblies might pose a safety problem even if transferred to the high density racks.

C. The absence of any demonstrated irreparable injury to the Sierra Club if a stay is denied makes it unnecessary to pass upon the applicant's insistence that it will suffer significant harm should a stay be granted. Insofar as the public interest factor is concerned, we do not believe that that interest would be furthered by granting a stay notwithstanding the Sierra Club's failure to carry its burden on the first two, and most important, factors.

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The Sierra Club's request for a stay of the effectiveness of LBP-87-25 is *denied*. The interim stay granted in this Board's September 25, 1987 order is *dissolved*.

It is so ORDERED.

FOR THE APPEAL BOARD

Eleanor E. Hagins  
Secretary to the  
Appeal Board





UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judge:

Charles Bechhoefer

In the Matter of

Docket No. 55-60755  
(ASLBP No. 87-551-02-SP)

ALFRED J. MORABITO  
(Senior Operator License for  
Beaver Valley Power Station,  
Unit 1)

October 16, 1987

In an informal proceeding involving an Applicant's appeal of the denial of his senior operator's license, the Presiding Officer denies a motion to review documents denied to the Applicant by the NRC Staff in response to a Freedom of Information Act (FOIA) request. But the Presiding Officer determines that the Applicant may have a right to two of the requested documents on a basis other than the FOIA, and he defers action on those documents pending briefing by the parties (or, alternatively, provision of those documents by the Staff to the Applicant).

**RULES OF PRACTICE: JURISDICTION OF PRESIDING OFFICER**

The Presiding Officer in an informal proceeding lacks authority to review the procedures followed or results reached by other NRC offices on FOIA requests. The Presiding Officer does have responsibility to request and receive from a party whatever documents he deems necessary for an adequate development of the record.

## RULES OF PRACTICE: DISCOVERY

Discovery procedures are not available to parties in an informal proceeding. Proposed 10 C.F.R. § 2.1231(d).

### MEMORANDUM AND ORDER (Motion Requesting Judicial Review of Records)

On September 14, 1987, Mr. Alfred J. Morabito filed a motion requesting that I review certain documents that had been denied him by the NRC Staff in response to a Freedom of Information Act (FOIA) request. On October 5, 1987, the Staff filed a response opposing the motion. As explained below, I find the motion (insofar as it seeks access to documents under the FOIA) beyond my current authority and accordingly deny it.

Because Mr. Morabito may have a right to certain of the documents on a basis other than the FOIA, I am asking the Staff its opinion relative to those documents (or, alternatively, to provide them to Mr. Morabito). I am deferring action on those documents pending receipt of the Staff's response and (as applicable) Mr. Morabito's reply. Furthermore, I am denying Mr. Morabito's request for me to seek further authority from the Commission to examine all of the withheld documents, for lack of an adequate basis for me to seek such authority.

1. On June 5, 1987, Mr. Morabito requested that certain Staff documents that assertedly related to his appeal of the Staff's denial of his senior operator license be released to him under the FOIA. On September 3, 1987, the Staff denied his request on the ground that all of the requested documents to which Mr. Morabito had not already been given access were being withheld under exemptions (5) and (6) of the FOIA.<sup>1</sup>

According to the Staff denial (at Appendix A), the documents to which the exemptions apply fall into the following categories:

1. Documents reflecting the certification as operator licensing examiners of two individuals who administered the senior operator license examination to Mr. Morabito.
2. The Qualification Notebook and Qualification Manual for the same two examiners.

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<sup>1</sup>Those exemptions, set forth in 10 C.F.R. § 9.5(a)(5) and (6), cover

- (5) Interagency or intraagency memorandums or letters which would not be available by law to a private party in litigation with the NRC. . . .
- (6) Personnel and medical files and similar files, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy. . . .

3. The NRC Region I "Written Examination Quality Assurance Checkoff Sheet" and the NRC Region "Examination Grading Quality Assurance Checkoff Sheet."

On September 11, 1987, Mr. Morabito appealed the denial to the NRC Executive Director for Operations (EDO). Insofar as I am aware, that appeal has not yet been decided.

In his motion before me, Mr. Morabito claims that the withheld documents will reveal that an inadequate quality assurance (QA) review was administered to him in connection with his examination and that, if an adequate QA review had been performed (both pre-examination and post-examination), he would not have been denied his senior operator license. He also claims that the documents relate to the integrity of the entire operator examination process, a claim he is attempting to raise in this proceeding. Although he recognizes my earlier ruling that I lack authority to rule on this claim,<sup>2</sup> he views the substance of the information set forth in his motion and his claims as sufficient to cause me to seek additional authority from the Commission. See Commission Order (granting Mr. Morabito's request for a hearing), dated July 1, 1987, at 3.

2. For its part, the Staff would have me deny the motion based on my lack of authority to consider FOIA requests. The Staff asserts that NRC's Division of Rules and Records, Freedom of Information and Privacy Act Branch, implements (*inter alia*) the provisions of the FOIA and implementing regulations, all of which are legally binding on all Commission employees, including Administrative Judges such as myself. The Staff notes that Mr. Morabito has already instituted the proper method of seeking access to the withheld records, through his pending appeal to the EDO; and that if the appeal is denied Mr. Morabito may seek judicial review of the denial. The Staff further notes that Mr. Morabito has taken proper steps to discuss a rulemaking petition that could address his concerns about the operator license procedure.

3. It is clear, as the Staff observes, that I have no authority to review procedures followed or results reached by other NRC offices on FOIA requests. On that ground alone I could dismiss Mr. Morabito's motion. In addition, Mr. Morabito's request could also be deemed a discovery request, for which no procedures are available in an informal proceeding of this type. See proposed 10 C.F.R. § 2.1231(d). On that basis as well, I would have to deny his motion.

Although I lack authority to review a FOIA request, I do have responsibility to request and receive from a party whatever documents I deem necessary for an adequate development of the record. Commission Order dated July 1, 1987, *supra*, at 2, 3; see proposed 10 C.F.R. § 2.1231(b). In exercising these responsibilities, and apart from Mr. Morabito's FOIA request, it is not clear

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<sup>2</sup>LBP-87-23, 26 NRC 81, 84 (1987).

to me that Mr. Morabito should not have access to one of the categories of documents he requests — not by virtue of the FOIA but, rather, as a direct requirement of the standards governing operator licensing examinations, NUREG-1021 (Rev. 2, April 1986). That category (numbered 3, above) consists of two documents: the “Written Examination Quality Assurance Checkoff Sheet” and the “Examination Grading Quality Assurance Checkoff Sheet.”

Under Standard ES-107D of NUREG-1021 (Rev. 2), the completed “Written License Examination Quality Assurance Checkoff Sheet” for an examination must be “filed with the record copy of the examination.” Under Standard ES-108D, the completed “Examination Grading Quality Assurance Checkoff Sheet” must also be “filed with the record copy of the examination.” Under Standard ES-104D, a copy of the examination is to be forwarded to the examination candidate (here, Mr. Morabito).<sup>3</sup>

My tentative understanding of these standards is that the complete examination package includes the two checkoff sheets and that copies of the entire package must be furnished to the Applicant. In that connection, in at least one instance where a document associated with an examination is *not* to be made available publicly or to the candidate, the standards explicitly so provide. See NUREG-1021 (Rev. 2), Standard ES-104C.1 (results summary sheet). Because parties have not briefed this question, however, I will give them an opportunity to do so before reaching any final conclusion on whether the two checkoff sheets should be made available to Mr. Morabito. (Mr. Morabito apparently has received the rest of his examination.)

Within 15 days of service of this Memorandum and Order, the Staff may file a brief on this question. Alternatively, if the Staff agrees that the documents should be made available to Mr. Morabito, it should provide copies to him (and include them in the “hearing file” authorized by proposed 10 C.F.R. § 2.1231). (The Staff may impose a protective order to prevent dissemination to other than Mr. Morabito or named advisors, if it deems such protection to be warranted for any of the reasons it relied on in denying Mr. Morabito’s FOIA request.) If the Staff files a brief opposing the furnishing of the reports to Mr. Morabito, Mr. Morabito may reply within 10 days of service of the Staff’s brief.

4. With respect to the other documents denied to Mr. Morabito, those dealing with the examiners’ certifications seem to relate solely to Mr. Morabito’s challenge to the examination process rather than to whether Mr. Morabito passed his examination. All that is relevant to the legal adequacy of the examination administered to Mr. Morabito is whether the individual examiners were in fact certified with respect to the particular type of reactor for which a license is

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<sup>3</sup>These standards have remained in effect in subsequent revisions of NUREG-1021 (Rev. 3, Sept. 1, 1986; Rev. 4, May 1987). Because Mr. Morabito took his examination in July 1986, the provisions of NUREG-1021 (Rev. 2) are generally applicable to his appeal.

sought, as required by NUREG-1021 (Rev. 2), Standard ES-105. In its response to Mr. Morabito's Specification of Claims, filed on October 9, 1987, the Staff has provided (by affidavit) information concerning the certifications of the two examiners in question. Mr. Morabito has not shown a need for any further information on this subject.

I am not aware of the relevance of the Qualification Notebook or Qualification Manual to Mr. Morabito's examination, as distinguished from the examination process generally. Nor am I aware of any requirement or standard that would mandate the furnishing of these documents to Mr. Morabito (except as may be required by the FOIA, which I am not reviewing). I therefore take no action with respect to these documents.

I note, however, that if this were a proceeding subject to 10 C.F.R. Part 2, Subpart G, the Presiding Officer would have authority, in certain narrowly defined circumstances, to order the production to Mr. Morabito of all the documents that he is seeking. *See* 10 C.F.R. § 2.744(d). I express no opinion at this time whether my general authority to request and obtain documents (*see* p. 299, *supra*) encompasses the authority provided by 10 C.F.R. § 2.744. Although I may ask the Commission to provide me additional authority, including (to the extent necessary) that contemplated by § 2.744, I have thus far been presented with no adequate basis for making such a request, at least in the context of determining whether Mr. Morabito has passed his senior operator license examination.

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For the foregoing reasons, it is, this 16th day of October 1987, ORDERED:

1. Insofar as it seeks review of NRC's FOIA determinations, Mr. Morabito's motion is *denied*.

2. As described in ¶ 3 of this Memorandum and Order, the Staff is *directed* (on the schedule prescribed) either to furnish Mr. Morabito (and include in the hearing file) the two described checkoff sheets or, alternatively, to brief why they should not be available under Standards ES-107D, ES-108D, and ES-104D of NUREG-1021 (Rev. 2). As appropriate, Mr. Morabito may reply to the Staff's filing.

3. Mr. Morabito's motion for me to seek further authority from the Commission is *denied*.

PRESIDING OFFICER

Charles Bechhoefer  
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,  
this 16th day of October 1987.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulles, Chairman  
Dr. Jerry R. Kline  
Mr. Frederick J. Shon

In the Matter of

Docket No. 50-322-OL-3  
(ASLBP No. 86-540-08-OL)  
(Emergency Planning)

LONG ISLAND LIGHTING  
COMPANY

(Shoreham Nuclear Power Station,  
Unit 1)

October 29, 1987

In this Memorandum and Order, the Licensing Board denies Applicant's motion for reconsideration of the Board's September 17, 1987 decision denying Applicant's motion for summary disposition of the legal authority issues. It also denies Applicant's request that the motion for reconsideration be referred to the Commission.

The Board grants Applicant's request for expedited consideration of the motion because of its effect on the furtherance of the proceeding and denies as moot a request to immediately set a schedule for further proceedings on issues remanded by CLI-86-13, 24 NRC 22 (1986).

**MEMORANDUM AND ORDER**  
**(Ruling on Applicant's Motion of October 5, 1987,**  
**for Reconsideration and Other Relief)**

**INTRODUCTION**

On October 5, 1987, LILCO filed a motion requesting that the Board reconsider and revise the decision contained in its Memorandum and Order of September 17, 1987 (LBP-87-26, 26 NRC 201), denying Applicant's motion for summary disposition of the legal authority issues. In the alternative, LILCO asks that should the request be denied, the Board refer the matter to the Commission. Further, regardless of the disposition of the motion, LILCO asks that the Board immediately set a schedule for holding further proceedings of the remanded CLI-86-13 issues and give this motion expedited consideration.

Intervenors, in a response of October 15, 1987, requested that LILCO's motion for reconsideration as well as its alternative plea that the matter be referred to the Commission be denied as meritless. They did not address the request for expedited consideration and the setting of a schedule.

Staff, in a response of October 20, 1987, argued that the reconsideration of the Board's September 17, 1987 decision and the alternative request for referral is not warranted. It too did not consider LILCO's request for expedited consideration and the setting of a schedule.

In this Memorandum and Order the Board denies Applicant's motion for reconsideration and in the alternative to refer the matter to the Commission because of a failure to make the required showings. Expedited consideration is given to this motion as requested because of its effect on the further processing of the proceeding. As to the request to the Board that it immediately set a schedule for further proceedings on remanded CLI-86-13, that process was under way when the subject motion was received and is superseded by the Licensing Board's action as set forth in its Memorandum to the Parties of October 8, 1987.

**THE REQUEST TO RECONSIDER AND TO GRANT  
MOTION FOR SUMMARY DISPOSITION**

LILCO asserts that the Board erred in denying its motion for summary disposition because it misinterpreted the Commission's decision in CLI-86-13<sup>1</sup> remanding the realism argument, and incorrectly relied upon *Cuomo v. LILCO*.<sup>2</sup>

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<sup>1</sup> CLI-86-13, 24 NRC 22 (1986).

<sup>2</sup> Consol. Index No. 84-4615 (N.Y. Sup. Ct. Feb. 20, 1985), *aff'd*, 511 N.Y.S. 2d 867 (1987).

Applicant claims that CLI-86-13 requires that any remand should focus on the capabilities of state and local governments to participate in an actual response and not on speculative predictions of a state and local response.

LILCO states that CLI-86-13 requires the Board not to attempt to determine the precise intentions of presently hostile state and local governments for an undetermined point in the future. Rather the Board is said to have been directed to attempt to determine the potential range of effects of a best effort, but essentially *ad hoc*, contribution by those governments to implement LILCO's existing plan with existing resources. Applicant states that the decision focuses on governmental capabilities and presumes definitively that those capabilities will be harnessed with good faith, rather than on present predictions of future intentions to be gleaned from the testimony of the litigation-wise leaders of the political opposition to Shoreham. LILCO fears that focus on present statements of future intentions from hostile officials, by contrast, both is inherently speculative and, in the context of Shoreham, runs the risk of revealing little information of value. Motion at 4.

LILCO argues that productive evidentiary hearings cannot have as their core issue the present determination of the actual future response of the State and County. It claims this is to be particularly true (1) if the response is to be measured by present intent, (2) if the evidence of that intent is to be the testimony of officials of those governments, and (3) if LILCO has the burden of establishing what that response will be. *Id.* at 6-7.

In a footnote to its motion, footnote 10, Applicant propounds two other areas that it states should be reconsidered. One of those is said to be the Board's conclusion that a feature of the plan, such as providing fuel to stranded motorists, must be litigated because it is a safety feature even though it is not required by NRC regulations. This is stated to be a far-reaching conclusion that has significant legal and policy implications.

LILCO states that the other is the Board's determination that activities taken in the aftermath of an accident, when there is plenty of time to provide legal authority, nevertheless raise litigable issues. Applicant says that it cannot imagine any plausible scenario in which legal authority would prevent water supplies from being monitored, food from being interdicted, or people from being advised when to return home.

Intervenors assert that LILCO's claim that once certain State and County capabilities have been established the best-efforts assumption in CLI-86-13 compels the conclusion that these capabilities will be employed in such a way that the LILCO plan would be implemented and would achieve an adequate response, is a claim that is without foundation and has already been rejected by the Board.

Intervenors state that the Board found in regard to the legal authority contentions that the adequacy of a best-efforts response cannot be determined



without knowing, among other things, how, when, by whom, and whether governmental capabilities would be used. They further state that the Board determined as provided for in CLI-86-13 that only when such inquiries are resolved could it determine whether a best-efforts response would be adequate. Intervenor's Response at 6.

The Governments do not look upon the matters LILCO raised in the footnote to be seriously sought to be reconsidered because they state that no argument was offered in support of the request. As to the Board's conclusion that summary disposition cannot be granted on a feature of the LILCO plan not required by regulation, Intervenor's argue that the Board previously considered and rejected Applicant's argument and that it is a material element of the LILCO plan about which genuine issues of fact remain as to an important safety feature.

As to LILCO's argument that the Board should reconsider its decision to deny summary disposition on Contention 7 (ingestion pathway) and 8 (recovery and reentry) because there is less time pressure involved in making decisions and implementing protective actions, Intervenor's assert that the Board has already properly decided that timing has no bearing on the requirements that the regulations impose. They further contend that even in the absence of time pressure there are material questions about the nature and adequacy of a governmental response that nevertheless remain.

Staff's position is that reconsideration of the Board's September 17, 1987 decision is not warranted. It states that of the issues enumerated in CLI-86-13 only one involving the question of the familiarity of State and County officials with the LILCO plan is essentially an issue of capabilities. The other issues enumerated cannot be meaningfully addressed without exploring what the Governments would do. Staff states that the Board was correct that it could not answer the questions posed by CLI-86-13 based only on the immediate record before it. Staff's Response at 3-4.

As to the LILCO claim that the Intervenor Governments will not be forthcoming with information concerning what they might do, and the proceeding "will prove an exercise in frustration," Staff posits that this does not go to the Board's reading of the Commission's instructions but goes to the conduct of the proceeding and does not support the subject motion. *Id.* at 4.

Staff asserts that the issues appropriate for hearing are to be set out in response to the Board's October 8, 1987 Memorandum to the Parties and, rather than again considering the motion for summary disposition, expedition could be better achieved by designating issues to be heard and proceeding to a hearing on those issues.

As to LILCO seeking reconsideration on Contention EP-7 (ingestion pathway), the Staff relies on its response to the LILCO motion for summary disposition of Contention 92, yet to be decided, that because the Board had already found elsewhere that LILCO has the ability to take necessary interdiction mea-

sures without mandatory authority, summary disposition of Contention EP-7 is warranted. *Id.* at 5 & n.2.

Applicant further alleges that the Board has improperly applied *Cuomo v. LILCO*, asserting that the Board made it determinative of the summary disposition motion, whereas it only provides that the State cannot delegate its police power. LILCO states that it has never argued that the State would simply hand over an emergency response to LILCO in the manner of a contractor subcontracting a job to another party. It contends that the State and County would be involved to the maximum extent possible given the timing and other circumstances of a particular accident. This would help overcome the legal authority disability based on realism. LILCO claims it cannot be seriously argued that any state or local government is prohibited by law from directing a private party to take actions that the government lacks the ability to perform and that are necessary to protect the public health and safety. Motion at 7-8.

Intervenors argue that the Board has properly considered *Cuomo*. They note that the Governments' involvement (which must be consistent with *Cuomo*) and whether such involvement would provide an adequate response are matters that the Board found are unknown and must be determined through further proceeding. Intervenors state that the Board previously interpreted *Cuomo*, which the Commission did not dispute in CLI-86-13. Rather, the Commission in CLI-86-13 accepts *Cuomo* but calls for further fact finding on the nature and adequacy of a best-efforts governmental response. Intervenors' Response at 7.

Staff's position on the Board's interpretation of *Cuomo*, as well as on the matters of the availability of fuel for stranded motorists, and on alteration of plant-generated emergency classification (to be discussed below), is that they do not provide the answers to the Commission's questions concerning an *ad hoc* response and do not warrant the granting of the motion. Staff believes that these matters can be further addressed by LILCO in response to the Board's October 8 Memorandum requesting that the parties state their views on what issues are to be heard. Staff's Response at 5 n.3.

Applicant also argues for reconsideration on the basis of a letter of May 28, 1987, to LILCO from the Chief, Emergency Preparedness and Radiological Protection Branch, Division of Radiation Safety and Safeguards, NRC, Region I. The letter is quoted as stating that "[t]he licensee's declared emergency classification cannot be changed by offsite officials." LILCO claims that since, particularly in a fast-breaking emergency, protective action recommendations are determined by plant conditions, the NRC position makes it all the more implausible that the State or County would act independently of the utility in a destructive manner. Motion at 8.

Intervenors contend that the letter to LILCO from the NRC provides no basis for reconsideration. LILCO was said to have failed to quote the letter in context. They state that the sentence following that quoted is one that states

that the response of offsite emergency officials "may include actions beyond that indicated by the emergency classification if they feel it is appropriate." Intervenor's state that the language makes it plain that even the NRC Staff recognizes that the response of offsite officials is not bound by LILCO's emergency classifications, and it does not state, as LILCO claims, that offsite officials are restricted to a particular response by a licensee's emergency classification. Intervenor's dispute that the letter supports the conclusion that the Governments would accept and implement LILCO's plan. Intervenor's Response at 11.

### **THE BOARD DECISION ON THE REQUEST TO RECONSIDER AND TO GRANT THE MOTION FOR SUMMARY DISPOSITION**

The Licensing Board finds that Applicant has not provided sufficient grounds for it to reconsider and reverse the decision denying LILCO's motion for summary disposition of the legal authority issues based on the realism argument.

CLI-86-13 requires that certain questions be answered based on any shortcomings found in the LILCO plan in terms of lesser dose savings and foreclosed protective actions, assuming a best-efforts State and County response using the LILCO plan as the source of emergency planning information and options. In denying the motion for summary disposition on September 17, 1987, we explained in detail and at length why inquiry is required into what the Governments will do in an emergency and why the questions posed by the Commission cannot be answered based only on the capabilities of the State and County and the assumptions contained in CLI-86-13. We explained as to how the needed facts necessary to answer the Commission's inquiry are not currently of record and that they must be obtained in order to satisfy the requirements of the remand.

Applicant in its current motion has presented nothing to the Board that provides a basis that would cause us to alter our prior interpretation of the remand in CLI-86-13. As we previously found, the best-efforts assumption in CLI-86-13 does not establish, even knowing the capabilities of the State and County, how they will respond so that a determination can be made as to the adequacy of the LILCO plan. Because of this, Applicant's motion for summary disposition could not be granted. A hearing is required to obtain the facts upon which a decision can be based.

Applicant's current position on CLI-86-13 bears a resemblance to the new emergency planning rule that the Commission proposed on March 6, 1987 (52 Fed. Reg. 6980) that has not been acted upon as yet. The rule would permit the issuance of a full-power operating license, notwithstanding noncompliance by the Applicant with specified regulatory requirements, where it arises from a

lack of participation in the development or implementation of offsite emergency planning by a state or local government, and if the Applicant demonstrates to the Commission's satisfaction, among other things, that the noncompliance can be remedied, or adequately compensated for, by reasonable state or local government cooperation. The proposed rule is different from the law of the case laid down in CLI-86-13 and cannot be relied upon in support of Applicant's motion.

LILCO's argument that productive evidentiary hearings cannot have as their core issue the present determination of the actual future response of the State and County is not a meritorious legal argument for reconsideration and granting summary disposition. It is more a statement of dissatisfaction with what LILCO is faced with in litigating this issue in the proceeding.

The argument provides no grounds for the Board to reconsider its decision and to grant summary disposition. The fact that the inquiry involves a matter than can only occur in the future of necessity makes the finding predictive in nature. It is nothing anyone can alter. One can appreciate LILCO's unhappiness to have the undecided remanded issue of what the Governments' response will be so dependent on what its hostile adversary does, but that does not permit changing the requirements laid down by the Commission. At this juncture, the Board has not ruled on the burden of proof on this matter. If LILCO wants to raise the point, it can do so as Staff suggests as part of discussing the issues for the upcoming proceeding as called for in the Board's Memorandum to the Parties of October 8, 1987. However, it is not an argument for reconsideration and granting Applicant's motion for summary disposition.

As to the footnote request for reconsideration of the Board's conclusion that elements such as providing fuel to stranded motorists must be litigated, it is only asserted, without any support, that it is a far-reaching conclusion that has significant legal and policy implications. That alone provides no basis for reconsideration. We have previously stated the reasons why we had come to the conclusion we did on the issue. No grounds were provided by Applicant for reconsideration. Furthermore, the argument for summary disposition of the matter is misplaced. Applicant's March 20, 1987 motion for summary disposition of the legal authority issues was based on the realism argument. The argument LILCO makes in regard to dispensing fuel to motorists is based on immateriality, something not presently under consideration.

LILCO's other footnote request seeking reconsideration of the Board's determination that activities taken in the aftermath of an accident, where time may not be a factor, may nevertheless raise litigable issues, is without merit.

Applicant says it cannot imagine any plausible scenario in which legal authority would prevent water supplies from being monitored, food from being interdicted, or people from being advised when to return home. We understand LILCO's commendable intent for these things to take place in a manner that

would be satisfactory under the regulations. However, it is not difficult to envision, based on the prior record, that there could be a significant disagreement between the State and the Applicant on what is required for adequate emergency planning and response in the ingestion pathway EPZ. We are aware, of course, that LILCO has repeatedly asserted that it would defer decision making to the State if requested to do so. This does not help LILCO, however, since we do not know from the record what the State will do. LILCO's intent invites the Board to approve an unplanned response. We have been instructed in CLI-86-13 to determine the adequacy of governmental response under the Commission's best-efforts assumption. Nothing LILCO has submitted on this issue enables us to make that determination at this stage. The granting of summary disposition on this issue is not warranted.

The Board did not improperly apply *Cuomo* and make it determinative of the summary disposition motion as Applicant claims. The Licensing Board first applied *Cuomo* as part of its partial initial decision in ruling on the legal authority issues.<sup>3</sup> The Commission in CLI-86-13 never faulted the Licensing Board in its interpretation and application of *Cuomo*. The remand action the Commission took in CLI-86-13 was not inconsistent with how the Board applied *Cuomo*. For purposes of the remand, the Commission assumed that LILCO is prohibited from performing the State or County roles in the areas specified in Contentions 1-10.<sup>4</sup>

In applying *Cuomo* to Applicant's motion for summary disposition, we did not change our prior interpretation of it. We again stated, *inter alia*, that it prohibits the government from delegating its police power. The Board considered that stricture along with how LILCO said it expected Intervenor will operate in an emergency. Further, we took into account the evidentiary record in which the Governments stated that they would not implement the LILCO plan, would not respond to a Shoreham emergency in concert or in partnership with LILCO, would not rely upon LILCO recommendations or advice, and would not authorize LILCO to perform the functions in Contentions 1-10. Considering the best-efforts assumptions and the foregoing led the Board to the conclusion that it remained an open question as to how the Governments would respond in an emergency and whether their response will be adequate in fulfilling regulatory requirements. Material facts remained in dispute, and on that basis we denied the motion for summary disposition.

LILCO incorrectly viewed our handling of *Cuomo*, and Applicant presents no basis for reconsideration and granting the motion for summary disposition in its favor.

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<sup>3</sup>LBP-85-12, 21 NRC 644, 895-919 (1985).

<sup>4</sup>CLI-86-13, 24 NRC at 30.

As to the letter from the Chief, Emergency Preparedness and Radiological Protection Branch, to the Applicant, even accepting LILCO's wording which is contested by Intervenor, there is nothing to establish that the statement in it that the Licensee's declared emergency classification cannot be changed by offsite officials is binding on the Governments. Nothing convincing is provided to conclude that the Governments would not act independently. The letter provides no basis for reconsideration.

For the reasons expressed above, the request to reconsider and to grant the motion for summary disposition is denied.

### THE REQUEST TO REFER THE BOARD'S RULING TO THE COMMISSION

Applicant asked the Board, should it decide against the request for reconsideration, that it refer its ruling to the Commission.<sup>5</sup> LILCO, for authority, principally relies upon the 1981 *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 456, where the Commission stated:

If a significant legal or policy question is presented on which Commission guidance is needed, a board should promptly refer or certify the matter to the Atomic Safety and Licensing Appeal Board or the Commission.

LILCO believes that the Board's denial of summary disposition does present significant legal or policy questions. In describing them, LILCO said, "[o]ne is what is the burden of proof that must be borne by the sponsor of a 'utility plan.' Another is the important threshold issue of the construction of the realism doctrine outlined in CLI-86-13."

Citing the Appeal Board in *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977) for the proposition that the Appeal Board has undertaken discretionary interlocutory review only where the ruling below either (1) threatened the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated by later appeal or (2) affected the basic structure of the proceeding in a pervasive or unusual manner, LILCO believes that both tests are met in this case.

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<sup>5</sup>The request was stated to be made pursuant to 10 C.F.R. § 2.785(b)(1) which deals with the Appeal Board exercising authority and performing functions that would have otherwise been done by the Commission. More appropriately, 10 C.F.R. § 2.718(i) provides that the presiding officer has the power to certify questions to the Commission either in his discretion or on direction of the Commission. Section 2.730(f) of 10 C.F.R. states that no interlocutory appeal may be taken to the Commission from a ruling by the presiding officer. However, when in the judgment of the presiding officer prompt decision is necessary to prevent detriment to the public interest or unusual delay or expense, the presiding officer may refer the ruling promptly to the Commission.

Applicant believes that the public interest test in § 2.730(f) is met by the importance of a proper construction of the scope of the remand under CLI-86-13. It expects unusual delay and expense in litigating what the State and County would do in an emergency, considering the past performance of the Intervenor. LILCO justifies the holding of interlocutory review on the bases of the novelty of the question at issue and what it expects will be exceptional delay and expense. Motion at 9-11.

Intervenors state that interlocutory review of licensing board ruling should be granted in only the most compelling circumstances, citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-762, 19 NRC 565, 568 (1984). It cites *Marble Hill*, *supra*, as the controlling case on the standards that must be met and denies that LILCO meets the standards.

The Governments assert that LILCO's belief that the questions that it has raised are important goes only to the success of its case and does not satisfy the *Marble Hill* standards. They argue that the issues involved are not generic nor do they bear on ongoing proceedings, as well might justify referral.

Further, Intervenor states that an alleged error of a licensing board that may lead to additional litigation is not a controlling consideration in favor of interlocutory review, citing *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-741, 18 NRC 371, 378 & n.11 (1983). They assert that the fact that a party may be required to engage in additional litigation because of an adverse ruling does not result in irreparable harm or alter the basic structure of the proceeding in a pervasive or unusual manner so as to require interlocutory review. Intervenor argues that Applicant's claim of unusual delay or expense is not persuasive. They do not view LILCO's claim as anything different than just being a losing party wanting further review of the matter. Intervenor's Response at 11-19.

Staff's position is that referral at this time would be premature, and therefore is unwarranted. It argues that the Licensing Board did not, in denying summary disposition of Contentions 1-10, fully consider the issues raised in Applicant's motion regarding the scope of the issues and burden of proof in the realism phase of this proceeding. The Licensing Board has asked for fuller treatment of these matters in responses to the Board's October 8, 1987 Memorandum. Staff asserts that the public interest does not require referral, nor will unusual delay and expense follow Licensing Board denial of the pending motion. Staff's Response at 7.

## THE BOARD DECISION ON THE REQUEST TO REFER THE BOARD'S RULING TO THE COMMISSION

Applicant has not satisfied the regulatory requirements to refer the Board's ruling denying the motion for summary disposition to the Commission.

In effect, Applicant is seeking interlocutory appellate review of the Licensing Board's action. It is well settled that this is looked upon with disfavor by the Commission and it will be undertaken only under the most compelling circumstances. The grounds upon which LILCO relies do not make for a minimal showing under the authorities.

The Licensing Board is not looking for Commission guidance. Commission direction was given to us in CLI-86-13 and we have moved to implement the remand decision. The Board has no need to go back to the Commission for further instructions.

We have yet to hear from the parties in response to our October 8, 1987 Memorandum requesting their views on stating the issues involved. It would be premature to seek the Commission's guidance on matters that have not been presented to us. Certainly at this stage they cannot be viewed as significant legal or policy questions.

*Marble Hill, supra*, requires that, in order that interlocutory review be permitted, the ruling below either (1) threaten the movant with immediate and serious impact which as a practical matter could not be alleviated by later appeal or (2) affect the basic structure of the proceeding in a pervasive or unusual manner.

Clearly the *Marble Hill* standards are not met. Even if the Licensing Board were in error and it resulted in unnecessary delay and expense in litigating the issue, this does not meet the requirements of an immediate and serious impact which as a practical matter could not be alleviated by later appeal allowing interlocutory review. See *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-675, 15 NRC 1105, 1113 (1982). Similarly, if error were made, it does not affect the basic structure of the proceeding in a pervasive or unusual manner. Basically, the litigation on emergency planning has been completed except hearing issues on remand, of which this is one. Any mishandling of this would not affect the basic structure of the proceeding in a pervasive or unusual manner so as to warrant referring the ruling to the Commission.

The Board recognizes that the adverse ruling to LILCO is of significant importance to it, but it has not been shown to be of general significance to warrant referral to the Commission. Merely stating that an act is of general significance does not make it so. See *North Anna, supra*.



The request to refer the Board's ruling to the Commission is denied because of a failure to make the necessary showing.

**THE REQUEST FOR THE BOARD TO SET A  
SCHEDULE FOR FURTHER PROCEEDINGS AND  
TO DECIDE THE MOTION ON AN  
EXPEDITED SCHEDULE**

Applicant requests that, regardless of the disposition of its motion to reconsider and request for referral to the Commission, the Board should promptly set a schedule for further proceedings and specify the issues to be heard. LILCO asks that October 16, 1987, be set as the date by which all the parties must state their views on the issues to be heard and scheduling. LILCO asks for expedited treatment of the motion to speed up the process.

Intervenors took no position as to these requests. Staff notes that LILCO's request that the parties address by October 16, 1987, the issues to be heard and propose a schedule leading to hearing has been superseded by the directions in the Board's October 8, 1987 Memorandum to the Parties.

**THE BOARD DECISION ON THE REQUEST TO  
SET A SCHEDULE AND TO DECIDE THE MOTION  
ON AN EXPEDITED SCHEDULE**

LILCO's request for expedited treatment of the motion is granted to further timely handling of the proceeding. Effective case management requires the early disposition of this motion in order to be able to proceed with the remanded issues. Applicant's request that the Board promptly set a schedule for further proceedings and to specify the issues to be heard proved unnecessary because the Board already had the process under way when Applicant's request was made. The Board's Memorandum to the Parties of October 8, 1987, renders LILCO's request moot.

**ORDER**

Based upon all of the foregoing, it is hereby ORDERED:

1. That LILCO's motion of October 5, 1987, requesting that the Board reconsider and reverse the decision denying Applicant's motion for summary disposition of the legal authority issues is denied.

2. That the alternative request to refer the denial of the motions for summary disposition to the Commission is denied.
3. That the request for expedited consideration of the motion is granted.
4. That the request to immediately set a schedule for further proceedings on the remand in CLI-86-13 is denied for mootness.

**THE ATOMIC SAFETY AND  
LICENSING BOARD**

**Morton B. Margulies, Chairman  
ADMINISTRATIVE LAW JUDGE**

**Jerry R. Kline  
ADMINISTRATIVE JUDGE**

**Frederick J. Shon  
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,  
this 29th day of October 1987.**

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

Docket Nos. 50-440  
50-441

CLEVELAND ELECTRIC  
ILLUMINATING COMPANY, *et al.*  
(Perry Nuclear Power Plant,  
Units 1 and 2)

October 7, 1987

The Director of the Office of Nuclear Reactor Regulation denies a petition submitted by the Toledo Coalition for Safe Energy, Sunflower Alliance, Inc., Susan B. Carter, and Steven Sass (Petitioners) requesting action with regard to the Perry Nuclear Power Plant, Unit 1, of the Cleveland Electric Illuminating Company, *et al.* (Licensees). The petition requested issuance to the Licensees of an order to show cause why the operating license for the Perry facility should not be suspended pending an exhaustive review by an independent study group of the applicability of the Reed Report (a 1975 General Electric (GE) reactor study) and associated GE interval data to the design and operation of the Perry facility. The petition denied the relief requested based on the results of an NRC Staff reevaluation of the issues raised in the Reed Report, specifically, NUREG-1285, "NRC Staff Evaluation of the General Electric Company Nuclear Reactor Study ("Reed Report") issued in July 1987 which concluded that the Reed Report does not identify any matters that would support a need to curtail the operation of any GE boiling water reactor plant.

# DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206

## INTRODUCTION

On June 5, 1987, Terry Jonathan Lodge submitted on behalf of Toledo Coalition for Safe Energy, Sunflower Alliance, Inc., Susan B. Carter, and Steven Sass (hereafter jointly referred to as the Petitioners) (1) a "Petition of Toledo Coalition for Safe Energy, Sunflower Alliance, Inc., Steven Sass and Susan B. Carter for Revocation, Modification or Suspension of Operating License per 10 C.F.R. § 2.206," filed before the Atomic Safety and Licensing Board, and (2) "Sunflower Alliance's Motion to Reopen the Record and to Submit a New Contention," filed with the Nuclear Regulatory Commission (NRC). Both documents were referred to the Office of Nuclear Reactor Regulation for consideration pursuant to 10 C.F.R. § 2.206. The documents will be jointly referred to herein as the Petition.

The Petition asked the NRC to issue to the Cleveland Electric Illuminating Company, *et al.* (Licensees) an order to show cause why the operating license for the Perry Nuclear Power Plant, Unit 1 (Perry facility), should not be suspended pending an exhaustive review by an independent study group of the applicability of the Reed Report (a 1975 General Electric (GE) reactor study) and associated GE internal data to the design and operation of the Licensees' Perry facility. The Petition alleged that the Reed Report identified problems with GE BWR-6 Mark III containment boiling water reactors (BWRs) such as the Perry facility. Specifically, the Petition alleged that (1) technology to fix problems would not be available; (2) the design is unusually subject to earthquake hazards; (3) plant workers might be unusually subject to radiation exposures; (4) safety systems contained in the design had not been subjected to adequate testing; (5) inadequate or undertested metals could create defectively performing systems.

The Petition alleged that the NRC has been aware of the Reed Report, but has refused to apply or analyze its conclusions to a reevaluation of Mark III design reactors including the Perry facility. The Petition further alleges that no licensee-sponsored analysis or NRC regulatory review has taken place at the Perry facility in response to the Reed Report conclusions.

It is on this basis that the Petition requested a review by an independent study group of the applicability of the Reed Report and associated GE internal data to the Perry facility design and operation.

Further, the Petition requested that the NRC issue an immediately effective order restraining the Perry facility from further operation pending resolution of the issues raised in the Petition.

With respect to the Petition's request that the Commission issue an order immediately suspending operation of the Perry facility based on the Reed Report,

I declined to take such action for the reasons expressed in my letter to the Petitioners of June 30, 1987. I noted there that the NRC Staff has reviewed the Reed Report several times. Based on NRC review efforts at that time, including an ongoing NRC re-review of the Reed Report, I concluded that there were no adequate bases to suspend operation of the Perry facility.

The NRC Staff re-review of the Reed Report is now complete, and my formal decision in this matter follows.

## **BACKGROUND**

The Reed Report was a self-critical study performed by the staff of GE in 1975 with the stated objective of determining the basic requirements for implementing the GE Nuclear Energy Division's quality strategy through continuing improvements in the availability and capability of boiling water reactor plants.

The principal author of the report was Dr. Charles E. Reed, a Senior Vice-President of GE. Contributors included technical and professional personnel from a variety of GE departments. Two products resulted from their efforts. One was the Nuclear Reactor Study, referred to as the Reed Report. The second was a set of ten subtask reports that provided the detailed technical information used to develop the Reed Report.

The Reed Report was intended to be an internal document, not one for public disclosure. As claimed by GE, it contained information and comments that could have an adverse effect on GE's market position with respect to its competitors.

On February 23-24, 1976, two NRC Staff members reviewed a copy of the Reed Report in GE's Washington, D.C. offices. The NRC wanted to determine (1) if the report identified any new safety concerns of which the NRC was not aware, and (2) if GE had met the requirements of §206 of the Energy Reorganization Act of 1974 with regard to the reporting of significant safety items. On the basis of their review, these NRC Staff members did not identify any new safety concerns or any evidence that significant safety concerns had not been reported to the NRC. The Joint Committee on Atomic Energy also concluded a congressional inquiry into this matter.

In December 1977, Congressman John D. Dingell asked the NRC to provide information on the Reed Report to him. The Chairman of the NRC responded in a letter dated February 9, 1978, which described the Staff's earlier review and its conclusions. To provide further information to the Congressman, on March 6, 1978, the NRC asked GE to provide either a copy of the Reed Report or a list of the safety issues it addressed. GE responded by a letter dated March 22, 1978, which contained a list of twenty-five issues identified as having some safety significance.

On April 11, 1978, two members of the NRC Staff and one member of Congressman Dingell's staff reviewed the Reed Report at the GE offices in Washington, D.C. And, on May 26, 1978, GE sent a letter to NRC that gave a status report on each of the twenty-five items. GE's status report concluded that all items either were not a licensing problem, were closed out by GE as a licensing issue, or were under review by the NRC.

On November 9, 1978, the NRC Staff gave the Commission the results of its review of the Reed Report. The Staff review concluded: "[there is] no substantive disagreement with the summary status provided by GE."

The Staff clarified its conclusion by stating that GE's characterization that some of the items were not licensing problems could be misunderstood since the Staff was interested in all of the items. The Staff added that although acceptable solutions to each of the issues were available such that continued licensing was justified, these items had been and in some cases continued to be the subject of licensing action reviews.

On June 2, 1987, following the appearance of newspaper stories with controversial accounts of the contents and safety implications of the Reed Report and the receipt of inquiries from Congress, NRC established a special task group to reevaluate the issues raised in the Reed Report.

The results of the Staff's reevaluation of the issues are documented in NUREG-1285, "NRC Staff Evaluation of the General Electric Company Nuclear Reactor Study" ("Reed Report"), which issued in July 1987 and a copy of which is attached to this decision (not published).

## DISCUSSION

As noted above, in July 1987 the NRC Staff completed its re-review of issues raised in the Reed Report. In the process, the NRC established a special task group to reevaluate the issues raised in the Reed Report, taking into account the increased knowledge and understanding of nuclear power issues gained in the 12 years since the Reed Report was written. This review, documented in NUREG-1285, produced three separate conclusions:

- (1) The Reed Report does not identify any matters that would support a need to curtail the operation of any GE boiling water reactor plants now licensed.
- (2) The Reed Report does not identify any new safety issues of which the Staff was unaware.
- (3) While certain issues addressed by the Reed Report are still being studied by the NRC and industry, there is a basis for permitting continued plant operations while these issues are being resolved.

To the extent then that the Petition sought an exhaustive review of the Reed Report, the NRC Staff has just completed such a review and its findings support continued operation of affected GE facilities.

The NRC Staff's recent review also responds to the specific problems arguably based on the Reed Report and raised in the Petition. These are (1) that the technology necessary to fix design problems was prospectively not going to be available; (2) that the GE design was believed to be unusually subject to earthquake hazards; (3) that plant workers might be unusually subject to radiation exposure; (4) that safety systems contained in the GE design had not been subject to adequate testing; and (5) that inadequate or undertested metals could create defectively performing systems. Specific issues reviewed by the NRC Staff that appear to relate to the Petitioners' allegations are discussed below.

With respect to the Petitioners' concern that the technology to fix design problems was prospectively not going to be available, the Reed Report did identify a number of concerns regarding the merits of the BWR-6 Mark III design. It was observed that the BWR-6 Mark III design was incomplete and several technical problems were unresolved, that the overall design was not well integrated, and that potential problems in the areas of fuels management, operational limitations, licensing, and component replacement had not been anticipated. The NRC reviewed these issues in § 3.1 of NUREG-1285.<sup>1</sup> It was there noted that, to some degree, these issues may derive from the fact that NRC may issue construction permits for facilities before detailed and complete design information is available. The detailed review for the BWR-6 Mark III design was conducted by the NRC at the operating license stage. In some cases, licensing problems resulted because information was unsubstantiated. The end result was added NRC review effort and delays in licensing with associated economic impacts. No safety issues were outstanding prior to issuance of an operating license.

In certain cases, the BWR-6 Mark III design may result in economic penalties due to poor design including poor anticipation of future operational problems. Such design problems could result in operational constraints, plant unavailability, or plant derating. *See, for example*, § 3.2 (Margin Between Core and Operating Limits), § 3.4 (Impact of End of Cycle Scram Re-activity Insertion Rate on Core Full Power Life), § 3.6 (Accuracy of Transient Design Methods). These examples, and others, are areas where design problems could limit plant performance and affect economics. They are not unaddressed safety issues. Where specific safety issues have been identified, the NRC had already in place generic or plant-specific safety reviews to resolve the concerns and ensure

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<sup>1</sup> All section references are to NUREG-1285.

protection of the public health and safety. At present, all issues have either been resolved or have final resolution pending and include interim positions that provide an adequate basis for continued operation of affected plants.

With regard to the Petitioners' concern that the Reed Report concluded that the GE reactor design was unusually subject to earthquake hazards, the NRC Staff's reevaluation of the Reed Report categorized several issues as having seismic-related concerns. These included the long-term effect of radiation on core internals, the effect of sloshing of the suppression pool of the Mark III steel containment structure and the seismic capabilities of the  $8 \times 8$  fuel spacer. The suppression pool sloshing and fuel spacer issues have been resolved. *See* §§ 3.13 and 3.21. While long-term radiation effects on some core internal structures such as the top guide and the shroud make it unlikely that they would last the entire 40-year life for which the reactor is licensed, current monitoring, surveillance, and inspection programs will identify any incipient failures of core internals before failure, and radiation levels associated with plant operation are not likely to result in reactor safety problems from material failures in BWR core internals. *See* § 3.5.

With regard to the Petitioners' concern that the Reed Report concluded that plant workers might be unusually subject to radiation exposures, the Staff's reevaluation of the Reed Report categorized several issues as related to worker radiation exposure. These included the high radiation levels associated with replacing core internals, personnel radiation exposure from fuel failures induced by pellet-cladding interaction, radiation exposure from removal of the steam dryer/separator assembly, presence of detectable plutonium inside the BWR turbine, radiation exposures as a result of the fuel transfer accident in Mark III containments, and radiation levels outside the biological shield and drywell.

Concerns related to these potential radiation exposures to workers have been resolved. Fuel conditioning and operational limits have resolved fuel integrity concerns. *See* § 3.7. Underwater transfer of the dryer/separator assembly has resolved that issue. *See* § 3.10. Analysis has shown that the levels of plutonium in reactor water are less than 1% of permissible drinking water levels and what does exist is removed by the purification system. This resolves the issue of detectable plutonium in the turbines. *See* § 3.12. The fuel transfer accident has been evaluated, and the Staff has concluded that the use of the inclined fuel transfer system will not result in any significant increase in exposures to plant personnel. *See* § 3.14. Licensees have also conducted startup radiological surveys to confirm radiation levels and identify unexpected levels. Licensees have eliminated radiation pathways identified during these surveys and have implemented acceptable programs to reduce worker radiation exposures to as low as reasonably achievable (ALARA) to ensure that worker exposure conforms to NRC established limits. *See* §§ 3.5 and 3.23. While replacement of core internals could result in significant radiation exposure to workers, the ALARA programs,



including the use of decontamination and shielding, would minimize radiation exposure to the extent practical and help ensure conformance to NRC-established limits.

With respect to the Petitioners' concerns that the Reed Report concluded that safety systems contained in the design had not been subject to adequate testing, the Staff's reevaluation categorized several issues as testing or analysis related. These include the degree of proof of accuracy of transient design methods (§ 3.6), impact of hydrodynamic phenomena on containment designs (§ 3.9), level of testing of Mark III containment (§ 3.11), effect of sloshing of the suppression pool on Mark III steel containment structure design (§ 3.13), evaluation of the fuel transfer accident in Mark III containment (§ 3.14), consistency of degree of verification of calculational models (§ 3.18), seismic capabilities of 8 x 8 fuel spacer (§ 3.21), combination of LOCA-induced loads and safety relief valve actuation loads for Mark III containment (§ 4.1), and flow-induced vibration in jet pumps (§ 4.5). All of these issues have been resolved through a combination of improved analysis techniques using better calculational models, increased surveillances and testing and, in some cases, hardware modifications.

With respect to the Petitioners' concern that the Reed Report concluded that inadequate or undertested metals could create defectively performing systems, the Staff's reevaluation identified items falling into this category as mainly associated with the phenomenon of radiation-induced stress corrosion cracking in core internals, control rods, and stainless steel piping (§§ 3.5, 3.24, and 4.6, respectively). Ongoing surveillance and monitoring programs, coupled with improved control rod designs, pipe replacement where appropriate, and measures to minimize the operational effects of the plant as a contributor to stress corrosion cracking, have provided acceptable interim solutions to this phenomenon. The Staff believes that cracks will be detected well in advance of incipient failure in piping or core internals, and analysis shows that loss of reactivity worth associated with control rod cracking would be revealed by shutdown margin tests before the loss could affect the shutdown capability of the reactor.

## CONCLUSION

The Petitioners seek the institution of a show-cause proceeding pursuant to 10 C.F.R. § 2.202 to modify or revoke the operating license for the Perry facility. The institution of proceedings pursuant to § 2.202 is appropriate only where substantial health and safety issues have been raised. *See Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 175 (1975), and *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). This is the standard that

I have applied to the concerns raised by the Petitioners in this Decision to determine whether enforcement action is warranted.

For the reasons discussed above, I find no substantial basis for taking the actions requested by the Petitioners. Rather, based upon the lengthy review efforts over the years by the NRC Staff, Licensees, and the General Electric Company to resolve the issues identified in the Reed Report, including the recent Staff evaluation of the issues contained in the Reed Report and in the subtask reports associated with the Reed Report, I conclude that no substantial health and safety issues have been raised by the Petitioners. Accordingly, the Petitioners' request for action pursuant to 10 C.F.R. § 2.206 is denied. As provided in 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary for the Commission's review.

FOR THE NUCLEAR  
REGULATORY COMMISSION

Thomas E. Murley, Director  
Office of Nuclear Reactor  
Regulation

Dated at Bethesda, Maryland,  
this 7th day of October 1987.

[The attachment has been omitted from this publication but can be found in the NRC Public Document Room, 1717 H Street, NW, Washington, DC 20555.]

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF SPECIAL PROJECTS

James G. Keppler, Director

In the Matter of

Docket Nos. 50-445  
50-446

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

October 16, 1987

The Director of the Office of Special Projects grants in part and denies in part a petition submitted by the Government Accountability Project (GAP) pursuant to 10 C.F.R. § 2.206 requesting that the Nuclear Regulatory Commission (NRC) take certain actions with respect to alleged serious construction and documentation deficiencies at the Comanche Peak Steam Electric Station (facility) of the Texas Utilities Electric Company, *et al.* (Licensees). The relief requested a suspension of construction of the facility, special NRC inspections to determine the extent of the problems, an independent management audit of the Licensees to assess the cause of alleged design and construction quality assurance problems, and an independent design and construction verification program for Comanche Peak.

The Director declined to suspend construction because reinspection and plant modification activities are being sufficiently controlled. The Director also declined to direct the Licensees to initiate an independent management audit and an independent design and construction verification program. To the extent the petition sought special NRC inspections at the facility, such inspections have been and are being conducted and, to this extent, the relief requested in the petition has been granted.

# DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206

## INTRODUCTION

On March 19, 1984, the Government Accountability Project (GAP) filed with the Nuclear Regulatory Commission (NRC) a Petition pursuant to 10 C.F.R. § 2.206 on behalf of the Citizens Association for Sound Energy (CASE) and several nuclear workers at the Comanche Peak Steam Electric Station site (Petitioners). The Petition was referred to the Director of the Office of Nuclear Reactor Regulation for consideration and, subsequently, to the Director of the Office of Special Projects, which was formed by the Executive Director for Operations in February 1987 to resolve the complex regulatory issues associated with the Comanche Peak and TVA facilities.

The Petition requested that the NRC take certain actions with respect to alleged serious construction and documentation deficiencies at the Comanche Peak Steam Electric Station (facility) of the Texas Utilities Electric Company, *et al.* (Licensees), holders of Construction Permits CPPR-126 and CPPR-127 and Applicants for operating licenses for Units 1 and 2. The relief requested a management audit of the Licensees to assess the cause of alleged design and construction quality assurance problems at Comanche Peak and an independent design and construction verification program for Comanche Peak. Under the request, these actions would be accomplished through a Director's order for: (1) an immediate halt to construction, (2) the assignment of a special NRC inspection team to determine the extent of the problems in design documentation and construction deficiencies, and (3) suspension of the construction permits until the work of the special inspection team and an independent design and construction verification program (IDCVP) are completed. The Petition was supported by three affidavits from nuclear workers which were provided contemporaneously to the NRC's Office of Investigations.<sup>1</sup>

## BACKGROUND

The NRC acknowledged receipt of the Petition by a letter of May 24, 1984, to the Petitioners. With respect to the request of the Petitioners that construction at the Comanche Peak facility be suspended immediately, the NRC Staff informed the Petitioners that it had conducted a preliminary review of the affidavits submitted by Petitioners in support of the Petition and that none of the allegations in the affidavits raised a public health and safety issue requiring

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<sup>1</sup>The reason given by the Petitioners to provide the affidavits only to the Office of Investigations was to protect the identity of confidential sources.

immediate suspension of construction activities. To the extent final NRC Staff review of these matters identified construction deficiencies, these matters would be corrected prior to operation of the facility. The Staff noted that it would continue to review the Petition with regard to the relief requested in other areas and that the Staff would consider all relevant information, including additional information that Petitioners might submit to further support the Petition. No additional information was submitted.

Following a detailed review of the Petition and supporting affidavits, the NRC Staff formed a special review team to specifically evaluate whether construction should be allowed to continue. This team conducted its special review during the period April 3-13, 1984, and issued its report, "Comanche Peak Special Review Team Report," on July 13, 1984. The team concluded in its report that the Licensees' programs were being sufficiently controlled to allow continued plant construction while the NRC completed its review and inspection of the facility. The team evaluated the implementation of Licensees' management control of the construction, inspection, and test programs and found it generally effective and receiving proper management attention. The team also probed the extent of problems with design documentation and construction deficiencies. Both strengths and weaknesses were found, but no weaknesses were identified of such severity as to warrant a halt in construction.

In addition, following the special review team inspection, the NRC Staff assembled a technical review team (TRT) at the plant site on July 9, 1984. The TRT consisted of over fifty technical experts drawn from the NRC (Office of Nuclear Reactor Regulation and Regions), national laboratories, and consulting organizations. The TRT investigated allegations from July through October 1984. Among those were all the technical allegations raised by the Petition and supporting affidavits. Five supplements to the Comanche Peak Safety Evaluation Report (NUREG-0797) were issued documenting the findings of the TRT's investigations in the areas of electrical/instrumentation and test programs (SSER No. 7), civil/structural and miscellaneous (SSER No. 8), protective coatings (SSER No. 9), mechanical/piping (SSER No. 10), and quality assurance/quality control (QA/QC) (SSER No. 11). Civil penalties have been assessed against the Licensees for violations based on the results of the TRT review.<sup>2</sup> Of the allegations investigated and documented in SSER Nos. 7-11, approximately 18% were substantiated, half of which were safety-related. The majority of the allegations raised in the Petition and supporting affidavits were addressed in SSER No. 11 dealing with QA/QC. The NRC Staff again concluded that the

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<sup>2</sup> See EA 86-09, issued May 2, 1986, proposing civil penalties in the amount of \$250,000. The Licensees paid \$200,000 of this penalty on August 4, 1986, and sought mitigation of the outstanding penalty amount. The Licensees' request for mitigation was denied by the Staff in an order imposing the outstanding penalty amount dated December 15, 1986, and payment of the balance was submitted on January 5, 1987.

concerns raised in the TRT review, including the substantiated allegations, were not of sufficient severity as to warrant a halt in construction.

In response to the issues identified in these SSERs and elsewhere, the Licensees prepared and submitted, for NRC Staff review, the Comanche Peak Response Team (CPRT) Program Plan, which includes a plan for resolution of all issues and actions required by the SSERs, as well as self-initiated actions to broadly reexamine the adequacy of the design and construction of the Comanche Peak facility.<sup>3</sup> The Staff issued SSER Supplement No. 13, dated May 1986, which concluded that this plan provides an acceptable overall structure for addressing known deficiencies and, through its self-initiated programs, for detecting unknown deficiencies in design and construction.

Other allegations raised in the Petition and supporting affidavits involving wrongdoing were considered by the NRC Office of Investigations (OI). Two investigations (Report No. 4-84-025, Alleged Improprieties in the Brown & Root, Inc. Document Control Center; Report No. 4-84-039, Alleged Intimidation of QC Inspector), and two inquiries (Report No. Q4-84-029, Alleged Use of Non-conforming Materials; Report No. Q4-84-030, Alleged Improper Upgrading of Material) were conducted.<sup>4</sup> The technical aspects of these OI Reports were considered in the work performed by the TRT and resulting Supplemental Safety Evaluation Reports. The OI Reports substantiated allegations of intimidation, harassment, and discrimination. The NRC has also undertaken a comprehensive review and evaluation of the allegations of intimidation, harassment, and discrimination at the Comanche Peak facility as reflected in the report issued by the Staff's Harassment and Intimidation Panel.<sup>5</sup> Civil penalties have been assessed against the Licensees for violations based on the results of the panel review and the OI Reports.<sup>6</sup>

## DECISION

With this background, I now consider each of the specific requests made by Petitioners regarding construction activities at the Comanche Peak facility.

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<sup>3</sup>The adequacy of the Licensees' CPRT Program Plan is among the matters pending before the Atomic Safety and Licensing Board in the ongoing operating license proceeding.

<sup>4</sup>Board Notification No. 86-14, dated April 4, 1986, enclosed a synopsis of Report No. 4-84-039. A summary of the other three OI reports is contained in a memorandum to the Atomic Safety and Licensing Board from R.G. Bachmann, Counsel for the NRC Staff, dated August 25, 1986.

<sup>5</sup>See "Report of the Review and Evaluation of Allegations of Intimidation and Harassment of Employees at Comanche Peak Steam Electric Station, Units 1 and 2," dated October 1985, transmitted to the Licensees by letter dated November 4, 1985.

<sup>6</sup>See EA 86-63, issued May 2, 1986, proposing civil penalties in the amount of \$120,000. The Licensees paid \$40,000 of this penalty on June 2, 1986, and sought mitigation of the outstanding penalty amount. An NRC letter dated August 25, 1987, confirmed NRC determination that the violations occurred but granted relief from payment of the full sum of the civil penalty.

The Petition first requested a halt in plant construction. As described in the Background, the NRC Staff had conducted a preliminary review of the matter of continued construction based on the information contained in the Petition and concluded that it did not raise safety issues requiring the immediate suspension of construction. The special review team, and later the technical review team, similarly concluded that the Licensees' programs were being sufficiently controlled to allow continued plant construction while the NRC continued its review and inspection of the facility.

In response to the TRT issues (as well as other concerns), the Licensees developed the CPRT Program Plan which subsequently evolved into a set of corrective action programs to ensure the safety-related design and construction of the facility. While the complexity of this evolution might have been reduced or avoided by a halt in construction in 1984 (to fully develop the nature of the deficiencies and corrective actions required), by that time, construction of the facility was near completion. There was no evidence presented in the Petition or otherwise known to the Staff in that time frame, nor is the Staff aware of any now, to suggest that there were any significant safety deficiencies in the plant whose identification and correction would have been prevented by allowing work to continue. The NRC Staff is continuing to evaluate the sufficiency of the Licensees' program and to monitor its conduct. The Petitioner's request for a halt in construction is denied.

The Petition next requested the assignment of a special NRC inspection team to determine the extent of the problems in design documentation and construction deficiencies, and a related management audit of the Licensees. In response to this request, the NRC formed the special review team. This team, which was constituted along the lines suggested in the Petition, conducted a special review and inspection during the period April 3-13, 1984. The NRC followed the special review team inspection with the technical review team inspection and evaluation of allegations. More recently, in recognition of the complex regulatory issues associated with Comanche Peak (and TVA), the NRC created the Office of Special Projects (OSP) to provide direct, high-level management oversight and dedicated staff for the technical review and inspection of these projects. To this extent, the relief requested by Petitioners has been granted. However, the NRC declines to direct the Licensees to undertake a separate comprehensive management audit since the NRC inspection activities discussed in the Comanche Peak Special Review Team Report included a limited review of the implementation of the Licensees' management control of the construction, inspection, and test programs and found it generally effective and receiving proper management attention. Moreover, since that inspection, the Licensees have made many management and organizational changes at Comanche Peak which are the subject of ongoing NRC review to assess their effectiveness.

Finally, the Petition requested a suspension of the construction permits until the work of the special inspection team and an IDCVP are completed. The request for a suspension of the construction permits is denied for the same reason the request for a halt in construction is denied, as previously described. With respect to the associated request for an IDCVP, the Licensees have undertaken design validation and construction verification programs as a result of the CPRT program which are intended to accomplish essentially the same purpose. In large part, these CPRT activities are being performed by third parties with no prior involvement at Comanche Peak. To the extent that the Petition requests an independent validation program that is separate from the CPRT and the Licensees' corrective action programs (design validation and construction verification), the request is denied because such an effort would be duplicative of these programs and is not otherwise justified by a demonstrable need for additional independence. The NRC may, however, after reviewing the results of the CPRT and corrective action programs, require additional design and/or construction validation to resolve some shortcoming of those efforts.

## CONCLUSION

The relief requested in the Petition is granted in part and denied in part. As discussed above, I decline to suspend construction activities at the Comanche Peak facility, or the construction permits, because reinspection and plant modification activities are being sufficiently controlled. I also decline to direct the Licensees to initiate an independent management audit and an independent design and construction verification program. Finally, to the extent the Petition sought special NRC inspections at the facility, as discussed above, such inspections have been and are being conducted and, to this extent, the relief requested in the Petition has been granted.

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 of the Commission



twenty-five (25) days after issuance unless the Commission elects to review this Decision on its own motion within that time.

FOR THE NUCLEAR  
REGULATORY COMMISSION

James G. Keppler, Director  
*Office of Special Projects*

Dated at Bethesda, Maryland,  
this 16th day of October 1987.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

Docket Nos. 50-313, 50-287  
50-302, 50-312  
50-346, 50-289  
50-269, 50-438  
50-270, 50-439

PETITION FOR IMMEDIATE ACTION  
TO RELIEVE UNDUE RISKS POSED  
BY NUCLEAR POWER PLANTS  
DESIGNED BY THE BABCOCK &  
WILCOX COMPANY

October 19, 1987

The Director of the Office of Nuclear Reactor Regulation denies the petition of Ellyn R. Weiss and Robert D. Pollard filed on behalf of the Union of Concerned Scientists and other named Petitioners requesting the immediate suspension of the operating licenses of certain named Babcock & Wilcox (B&W) reactors and the construction permits of certain other named B&W reactors. The Petitioners allege that unique elements of these B&W-designed reactors make them inherently more dangerous than other pressurized water reactors. Petitioners request that reinstatement (or possible revocation) of such licenses and construction permits be contingent on the institution of a Staff safety reassessment program and proceedings to determine necessary corrective actions for each of the named reactors.

## **DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206**

### **INTRODUCTION**

On February 10, 1987, Ellyn R. Weiss, General Counsel, and Robert D. Pollard, Nuclear Safety Engineer, on behalf of the Union of Concerned Scientists (UCS) and other named Petitioners, filed a Petition directly with the U.S. Nuclear Regulatory Commission (NRC) pursuant to 10 C.F.R. § 2.206. The Petition alleges that there are safety deficiencies in the design of nuclear power reactors designed by the Babcock & Wilcox Company (B&W). Because of these alleged deficiencies, the Petition further alleges that utilities that operate B&W pressurized water reactors cause undue risk to the public health and safety by such operation. The Petition requests that the Commission itself immediately suspend the operating licenses or construction permits for all nuclear power plants utilizing nuclear steam supply systems designed by B&W. Specifically, the Petition requests the suspension of the operating licenses of Arkansas Nuclear One Unit 1; Crystal River Unit 3; Davis-Besse Unit 1; Oconee Units 1, 2, and 3; Rancho Seco; and Three Mile Island Unit 1; and the suspension of the construction permits for Bellefonte Units 1 and 2. The Petition also requests that before these operating licenses and construction permits are reinstated (1) the NRC should complete its safety reassessment program of the B&W plants and identify the specific corrective action to be taken at each B&W plant, (2) a public adjudicatory hearing on each plant should be held to determine whether these corrective actions are sufficient to correct the alleged deficiencies, and (3) the changes found to be necessary by the hearing board should be fully implemented at the plants with operating licenses and should be incorporated as conditions in the construction permits of the Bellefonte plants. Unless conditions (1), (2), and (3), above, are met, the Petition requests that the operating licenses and construction permits for the B&W plants be revoked. The Petition was referred by the Commission to the Office of Nuclear Reactor Regulation for consideration.

By letter dated February 26, 1987, the NRC requested the B&W Owners' Group (BWOOG) to respond to the Petition. An initial response was submitted on March 6, 1987, which was limited to the request by the Petitioners for immediate action. The BWOOG's principal response to the Petition was submitted by letter dated April 6, 1987. These responses hereafter will be referred to as the BWOOG responses.

By letter dated March 13, 1987, the NRC informed the Petitioners that their concerns do not warrant immediate suspension of the operating licenses and construction permits in question. The Petitioners also were informed that the NRC Staff would continue to review the Petition and that a formal decision

would be issued in the reasonably near future. This Director's Decision constitutes that formal decision.\*

## DISCUSSION

### Background

A number of operational transients of varying levels of severity have occurred in plants designed by B&W. During these transients, the plants have been subjected to conditions of overcooling, undercooling, loss of reactor coolant inventory, or a combination of these effects. Many transients have challenged safety systems. A wide variety of root causes, such as equipment failures or human errors in conjunction with system response as designed or system malfunctions, have initiated or aggravated the course of these transients. In contrast, however, the severity of many events also has been mitigated by automatic response by systems and manual intervening actions by the plant operating staff. Transient initiators have on occasion caused a loss of power to control systems or to instrumentation that comprises control system inputs. In the first case, control systems have malfunctioned, in the latter case, control systems may have responded as designed but to incorrect failed inputs.

The accident at Three Mile Island Unit 2 (TMI-2), on March 28, 1979, focused attention on plants designed by B&W and on their response during operational transients. This accident involved a main feedwater transient coupled with a stuck-open pressurizer power-operated relief valve and a temporary failure of the auxiliary feedwater system. The resulting severity of the ensuing events and the potential generic aspects of the accident affecting other operating reactors led the NRC to initiate prompt action to (1) ensure that other reactor licensees, particularly those with plants similar in design to that of TMI-2, took the immediate actions necessary to substantially reduce the likelihood of the recurrence of a TMI-2-type accident and (2) investigate the potential generic implications of this accident for other operating reactors.

During the Staff's preliminary assessment of the TMI-2 accident, it became apparent that several design problems, equipment malfunctions, and human errors contributed significantly to the severity of the accident and subsequent core damage. As a result, the B&W operating plant licensees were instructed in a series of Office of Inspection and Enforcement (IE) Bulletins to take a number of immediate actions to avoid repeating the same mistakes. The TMI-2-related IE Bulletins applicable to B&W-designed reactors were issued in April and July 1979, 79-05, "Nuclear Incident at Three Mile Island," April 1979; 79-05A,

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\*The substantive points raised in a supplement to the Petition, dated June 12, 1987, are also included in this Decision.

"Nuclear Incident at Three Mile Island — Supplement," April 5, 1979; 79-05B,  
"Nuclear Incident at Three Mile Island — Supplement," April 12, 1979; 79-05C,  
"Nuclear Incident at Three Mile Island — Supplement," July 26, 1979.

Some of the more significant issues dealt with in the IE Bulletins were (1) review and modification of many operating and emergency procedures associated with loss-of-coolant accidents (LOCAs), loss of feedwater and other transients that result in high reactor coolant system (RCS) pressure, natural circulation cooling, operation of the auxiliary feedwater (AFW) system, maintenance, and surveillance testing; (2) criteria for the termination and override of engineered safety features (ESF) systems; (3) review and modifications of the containment isolation design and procedures; (4) provisions for manually tripping the reactor during transients resulting in high pressure in the RCS; (5) changes to decrease the setpoint of the high-pressure reactor trip and increase the setpoint of the power-operated relief valve (PORV); and (6) requirements to trip the operating reactor coolant pumps (RCPs) during LOCA conditions.

In parallel with the issuance of the IE Bulletins, an NRC task group was appointed to perform a generic assessment of the feedwater transients experienced in B&W plants, including the accident at TMI-2, to determine bases for continued safe operation of these facilities in both the short term and the long term. The task group considered initiating events other than loss of feedwater where it was determined that such events could lead to similar transient conditions. A document entitled "U.S. Nuclear Regulatory Commission Status Report on Feedwater Transients in B&W Plants," dated April 25, 1979, was prepared based on the preliminary principal findings of this task group. This document concluded that there was not reasonable assurance of protection of the public health and safety if the B&W plants continued operation and that the plants should be shut down until certain modifications could be made to the facilities. It was determined that in order to reestablish that assurance, the following items would have to be accomplished: (1) review and upgrade the reliability and performance of the AFW system, (2) review the integrated control system (ICS) and take actions to reduce the likelihood of ICS initiating or exacerbating transients, (3) install anticipatory reactor trips based on feedwater transients, (4) review detailed analyses of plant response to transients including the effects of high-pressure injection operation and natural circulation cooling, and (5) develop new standing instructions and emergency procedures for plant operators and conduct operator training in the use of those procedures. In the long term, it was recommended that either the sensitivity of the response of the B&W plants to transients be improved by design changes or that there be a substantial upgrade of the instrumentation and controls available to the plant operator along with a substantial upgrade of operator education, training, and experience. On April 26 and 27, 1979, meetings were held between the Staff and representatives of the B&W reactor licensees. As a result of these meetings,

the licensees agreed to shut down their facilities until certain modifications in equipment, procedures, and operator training were completed. On the basis of these commitments by the licensees, the Commission directed the Staff to prepare confirmatory orders to formalize the agreements reached with the utilities. From May 7 through May 17, 1979, these Orders were issued to each of the B&W reactor licensees.

The Orders required that the B&W operating plants shut down (or remain shutdown) until certain immediate or short-term actions were completed and found acceptable by the Staff. In addition, the Orders specified certain long-term modifications to be performed to further enhance the capability and reliability of the B&W reactors to respond to various transient events.

The special task group assessing B&W feedwater transients completed its work in May 1979. Its findings are documented in NUREG-0560, "Staff Report on the Generic Assessment of Feedwater Transients in Pressurized Water Reactors Designed by the Babcock and Wilcox Company," May 1979. In its report, the task group concluded that certain design improvements and other actions being implemented at the B&W plants in accordance with the Commission Orders were necessary before plant operation could be resumed. The actions specified in the Orders that resulted from the generic review included (1) reactor trip upon upsets in the secondary system (loss of feedwater and turbine trip), (2) additional operator training, (3) improvements in AFW system reliability, and (4) further analyses of small-break LOCAs. Additional recommendations from this review are found in § 8.0 of NUREG-0560. In general, these recommendations include the short-term actions taken in connection with IE Bulletins and the May 1979 Commission Orders.

The NRC's Bulletin & Orders Task Force (B&OTF) was established within the Office of Nuclear Reactor Regulation (NRR) during early May 1979 and continued in operation until December 31, 1979. The B&OTF was responsible for reviewing and directing the TMI-2-related Staff activities on loss-of-feedwater transients and small-break LOCAs for all operating reactors to ensure their continued safe operation. In conducting this activity, the B&OTF concentrated its efforts on (1) the assessment of systems reliability, (2) the review of the analytical predictions of plant performance for feedwater transients and small-break LOCAs, (3) the evaluation of generic operating guidelines, (4) the review of emergency plant operating procedures, and (5) the review of operator training. The B&OTF worked directly with the operating plant licensees on plant-specific matters. For the review of B&W generic matters, a working relationship was established with the B&W Owners' Group, which comprised representatives of each of the B&W operating plants. In some cases, work was conducted directly with the Power Generation Group of the Babcock & Wilcox Company.

At the outset, the B&OTF concentrated on plants of the B&W design; as short-term actions on these plants were completed, priority was shifted to those pressurized water reactors designed by Westinghouse and Combustion Engineering and then to boiling water reactors designed by General Electric.

With respect to the B&W plants, the B&OTF evaluated responses by the B&W licensees to the TMI-2-related IE Bulletins (79-05, 79-05A, 79-05B, and 79-05C) as well as the licensees' compliance with the short- and long-term requirements of the Commission Orders of May 1979. Between May 18 and July 6, 1979, the B&OTF completed its review of the actions taken by the B&W licensees to comply with the short-term requirements of the Orders. As a result of these evaluations, the B&W licensees were authorized to resume power operations. The activities involving the B&W-designed reactors are reflected in three documents produced by the B&OTF:

- (1) NUREG-0623, "Generic Assessment of Delayed Reactor Coolant Pump Trip During Small Break Loss-of-Coolant Accidents in Pressurized Water Reactors" (November 1979);
- (2) NUREG-0565, "Generic Evaluation of Small Break Loss-of-Coolant Accident Behavior in Babcock & Wilcox Designed 177-FA Operating Plants" (January 1980);
- (3) NUREG-0645, "Report of the Bulletins and Orders Task Force," Vol. I and II (January 1980).

In late May 1979, the NRC's Lessons Learned Task Force (LLTF) was formed. The purpose of the LLTF was to identify and evaluate those safety concerns originating from the TMI-2 accident that required licensing actions, beyond those specified in the IE Bulletins and the Commission Orders of May 1979, for all operating reactors as well as for pending operating license (OL) and construction permit (CP) applications. In developing the required actions, the LLTF considered the review and evaluation of investigative information; Staff evaluations of responses to IE Bulletins and Commission Orders; and recommendations from the Commissioners, the Advisory Committee on Reactor Safeguards (ACRS), the NRC Staff, as well as recommendations from outside the NRC. In general, the LLTF was charged with identifying, analyzing, and recommending changes to licensing requirements and the licensing process for all nuclear power plants based on the lessons learned from the TMI-2 accident. The scope of the LLTF included the following seven general technical areas: (1) reactor operations, including operator training and licensing; (2) licensee technical qualifications; (3) reactor transient and accident analyses; (4) licensing requirements for safety and process equipment, instrumentation, and controls; (5) onsite emergency preparations and procedures; (6) NRR accident response role, capability, and management; and (7) feedback, evaluation, and utilization of reactor operating experience. In July 1979, the LLTF issued NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recom-

mendations." The recommendations contained in NUREG-0578 were narrow, specific, and urgent in nature and were intended to constitute a sufficient set of short-term requirements to ensure the safety of plants already licensed to operate and those to be licensed for operation in the near future. Following a review of NUREG-0578 by the ACRS and the Director, Office of Nuclear Reactor Regulation, all of the recommendations (except three requiring rulemaking) were directed to be implemented by all operating nuclear power plants. In addition to the recommendations specified in NUREG-0578, the requirements for remotely operable high-point vents for noncondensable gas removal and three additional instrumentation requirements (designed to follow the course of an accident) also were directed to be implemented.

In October 1979, the LLTF issued NUREG-0585, "TMI-2 Lessons Learned Task Force Final Report." In contrast to the short-term recommendations, the recommendations contained in NUREG-0585 dealt with safety questions of a more fundamental policy nature regarding nuclear plant operations and design as well as the regulatory process. Most of the recommendations were goal oriented rather than prescriptive and, if adopted, would cause significant changes within the nuclear industry and the regulatory process. However, immediate initiation of certain recommendations related to power plant operations was recommended since they would introduce a needed improvement in safety.

In addition to the special task forces previously discussed, other groups who have investigated the accident at TMI-2 and advanced certain recommendations include the Congress, the General Accounting Office, the President's Commission on the Accident at Three Mile Island, the NRC Special Inquiry Group, the ACRS, the Special Review Group of the NRC Office of Inspection and Enforcement, the NRC Staff's Siting Policy Task Force and Task Force on Emergency Planning, and the NRC Offices of Standards Development and Nuclear Regulatory Research. Each of the investigating groups organized its recommendations in a different way. A "TMI-2 Action Plan Steering Group" was appointed to organize, define, and assess the recommendations of these various groups. The charter of this group was to develop a "TMI-2 Action Plan" that would provide a comprehensive and integrated plan for all actions judged necessary by the NRC to correct or improve the regulation and operation of nuclear facilities based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. NUREG-0660, "NRC Action Plan Developed as a Result of the TMI-2 Accident," was issued in May 1980; Revision 1 to this NUREG was issued in August 1980. Actions to improve the safety of the B&W-designed operating plants, as well as the other vendor-designed reactors, which were necessary immediately after the accident and could not be delayed until an action plan was developed were also documented in the TMI-2 Action Plan.



By letter dated October 31, 1980, NUREG-0737, "Clarification of TMI Action Plan Requirements" was issued. This document incorporated all the TMI-related items approved for implementation by the Commission as of the date of issuance. The NRC subsequently issued orders confirming the implementation schedules for these requirements for operating reactors.

Supplement 1 to NUREG-0737 was issued on December 17, 1982. This supplement addressed requirements for emergency response capability and provided additional clarification regarding (1) safety parameter display systems, (2) detailed control room design reviews, (3) Regulatory Guide 1.97 (Rev. 2) — application to emergency response facilities, (4) upgrade of emergency operating procedures, and (5) meteorological data.

One of the TMI Action Plan items (II.K.2.9 "Analysis Upgrading of Integrated Control Systems") was the requirement to prepare a reliability analysis of the B&W plants' integrated control system (ICS). This analysis was performed generically by B&W, and the results of the analysis are documented in B&W report BAW-1564, "Integrated Control System Reliability Analysis," which was completed in August 1979. The report included a generic failure modes and effects analysis of the ICS. The report indicated that, as of the time of preparation, approximately one-third (101 of 310) of the reactor trips at B&W-designed plants were caused by problems associated with the ICS. The B&W report also noted that the most prevalent malfunctions and failures associated with the ICS were malfunctions and failures of the power supplies.

BAW-1564 also was reviewed by the Oak Ridge National Laboratory (ORNL) under contract to NRC to determine the adequacy of the B&W analysis. The ORNL analysis, submitted to the NRC on January 21, 1980, noted that B&W-designed reactors appear to be unusually sensitive to certain offnormal transients originating in the secondary system, and one of the features that contributes to this sensitivity is the B&W reliance on an ICS to automatically regulate feedwater flow. In addition, the ORNL report was critical of the completeness of the B&W analysis.

ORNL found no evidence that the ICS provided more frequent or more severe challenges to the plant protection system (PPS) than other control systems of similar scope or that these challenges exceeded the PPS capability. It went on to agree that the ICS should not be classed as a protection system, but that there should be more concern for avoiding degradation of failures within the system.

Each licensee of an operating B&W plant reviewed BAW-1564 and provided a letter regarding the applicability of this report to the plant. The NRC Staff reviewed the submittals by B&W, ORNL, and the licensees of B&W plants and issued safety evaluations for each plant regarding TMI Action Plan Item II.K.2.9. The safety evaluations, issued in 1982, concluded that the ICS design met all of the then-current regulatory requirements. The evaluations further noted that the issue of control system failure would be pursued as part of Unresolved

Safety Issue (USI) A-47, "Safety Implications of Control Systems." The purpose of this USI is to perform evaluations of the nonsafety-grade control systems that are typically used during normal plant operation and to evaluate the need for modifying control systems in operating reactors and to verify the adequacy of current licensing requirements.

During the period that the NRC Staff was reviewing BAW-1564, an operational event occurred at the B&W-designed Oconee plant on November 10, 1979. During the event, an inverter that fed all power to the ICS and to one channel of nonnuclear instrumentation (NNI) tripped because of a blown fuse. All valves controlled by the ICS assumed their respective failure positions and the operators lost most indication in the control room. The loss of power lasted for approximately 3 minutes.

As a result of this event at the Oconee plant, IE Bulletin 79-27, "Loss of Non-Class 1E Instrumentation and Control Power System Bus During Operation," issued on November 30, 1979, was sent to the licensees of all operating reactors including those of the B&W-designed plants. The bulletin required a number of actions:

- (1) Review the Class 1E and non-Class 1E buses supplying power to safety and nonsafety-related instrumentation and control systems that could affect the ability to achieve a cold shutdown condition using existing procedures or procedures developed as discussed below:
  - Identify and review the alarm and/or indication provided in the control room to alert the operator to the loss of power to the bus.
  - Identify the instrument and control system loads connected to the bus and evaluate the effects of loss of power to these loads including the ability to achieve a cold shutdown condition.
  - Describe any proposed design modifications resulting from these reviews and evaluations, and your proposed schedule for implementing those modifications.
- (2) Prepare emergency procedures or review existing ones that will be used by control room operators, including procedures required to achieve a cold shutdown condition, upon loss of power to each Class 1E and non-Class 1E bus supplying power to safety and nonsafety-related instrument and control systems.
- (3) Re-review IE Circular No. 79-01, "Failure of 120 Volt Vital AC Power Supplies," dated January 11, 1979, to include both Class 1E and non-Class 1E safety-related power supply inverters. Based on a review of operating experience and your re-review of IE Circular No. 79-01, describe any proposed design modifications or administrative controls to be implemented as a result of the re-review.

- (4) Within 90 days of the date of this Bulletin, complete the review and evaluation required by this Bulletin and provide a written response describing your reviews and actions taken in response to each item.

On February 26, 1980, an event occurred at the B&W-designed Crystal River plant which was relevant to IE Bulletin 79-27. During this event, a power supply monitor sensed a degraded voltage condition and tripped the NNI power supplies. In this case, the degraded voltage was caused by a "load-side" problem which caused the power supply monitor to deenergize the power supplies, rather than a "supply-side" fault, as had occurred at Oconee. Either problem has the same basic result: a loss of NNI and/or ICS power.

As a result of the Crystal River event, the NRC issued confirmatory orders to all operating reactor licensees, including the licensees of B&W-designed plants, requesting that the response to IE Bulletin 79-27 be expanded to include responses related to the Crystal River event. All licensees of operating plants met the requirements of the IE Bulletin, and the confirmatory orders were closed out by the NRC by memoranda dated June 22 and August 4, 1982. TMI-1 was not issued a confirmatory order because its response to the Bulletin also included its response to the Crystal River event and a commitment to complete modifications before restart.

In late 1979, a special task force was established within the NRC to investigate the apparent high frequency of transients at plants designed by B&W. The task force also assessed the apparent sensitivity of these plants to such transients, including the consequences of malfunctions and failures of the ICS and NNI. The product of this study was NUREG-0667, "Transient Response of Babcock & Wilcox-Designed Reactors," May 1980.

NUREG-0667 listed twenty-two recommendations to improve the safety of B&W plants. The NRC Staff prioritized the recommendations based on an evaluation of the safety significance. All of the recommendations that received a priority 1 (highest) ranking for implementation were included in NRC requirements. The NRC requirements were issued as either orders (regarding the 1980 Crystal River event), NUREG-0737 items, a generic letter, or a license condition for the Davis-Besse third auxiliary feedwater pump.

Notwithstanding the plant improvements made by the licensees of B&W plants in response to these various Commission actions, significant operational transients continued to occur at these facilities. BAW-1919 "B&W Owners' Group Safety and Performance Improvement Program," updated through Revision 5, July 1987, listed ten operational transients at B&W plants that exceeded a "stability parameter" from 1980 through 1985. (Specific definitions for the stability parameters are provided in § VI of BAW-1919. It should be noted that just exceeding a stability parameter does not necessarily imply that the transient is safety significant.) These events included the Crystal River event of February

26, 1980, and the more recent Davis-Besse event of June 9, 1985, and the Rancho Seco event of December 26, 1985.

On June 9, 1985, Toledo Edison Company's Davis-Besse Nuclear Power Station experienced a loss-of-all-feedwater event. During the early morning on June 9, 1985, one of the two main feedwater pumps tripped on overspeed while the plant was operating at 90% power. Approximately 30 seconds later, the reactor and turbine were tripped automatically on high reactor coolant pressure. Shortly after the reactor tripped, a spurious steam and feedwater rupture control system trip caused the main steam isolation valves to close, which resulted in interruption of steam to the remaining main feedwater pump causing it to trip within several minutes. After this loss of all main feedwater, an operator error, malfunctions of one safety-related valve in each auxiliary feedwater discharge line, and overspeed trips of both safety-related auxiliary feedwater system pump turbines resulted in a loss of all sources of feedwater to the steam generators for about 12 minutes.

Although feedwater was restored within about 12 minutes, separate actions by the operators were required to correct the operator error, open the valves that had malfunctioned, reset the overspeed trips on the AFW system pump turbines, and restart and control the turbine-driven AFW system pumps. Actions from outside the control room were necessary to open the valves and restart the pumps.

While operators acted to restore AFW flow, other operator actions, also from outside the control room, were taken to place a nonsafety-related motor-driven startup feedwater pump into service. Before any feedwater could be restored, the once-through steam generators essentially had boiled dry. Furthermore, a number of additional equipment problems complicated the event. Nevertheless, the operators were successful in restoring AFW flow and stabilizing the plant without any abnormal radioactivity release, any core damage, or any major damage to the plant.

On June 10, 1985, NRC Region III issued a confirmatory action letter that stated that the licensee would take certain actions to establish the causes of the malfunctions and determine the corrective actions to be taken, to perform evaluations with respect to the reactor vessel and steam generators, and to perform confirmatory testing. The letter also stated that the licensee would obtain Region III concurrence before restarting the unit.

On the same day, the NRC Executive Director for Operations sent a team of technical experts to the site to find out what happened, to identify the probable cause of the event, and to make appropriate findings and conclusions to form the basis for possible followup actions.

NUREG-1154, "Loss of Main and Auxiliary Feedwater Event at the Davis-Besse Plant on June 9, 1985," July 1985, documents the findings and conclusions of the investigative team. The team concluded that the underlying cause of the

Davis-Besse event was the licensee's lack of attention to detail in the care of plant equipment.

Subsequently, IE Bulletin 85-03 was issued on November 15, 1985, "Motor Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings," requesting all licensees of nuclear power plants or holders of permits to develop and implement a program to ensure that switch settings on certain safety-related motor-operated valves are selected, set, and maintained correctly to accommodate the maximum differential pressures expected on these valves during both normal and abnormal events within the design basis. This Bulletin discussed the incorrect torque switch bypass settings at Davis-Besse, valve failures at the Sequoyah Nuclear Plant Unit 2 (a Westinghouse-designed reactor) in 1985, as well as earlier problems at other nuclear plants.

The NRC Staff's safety evaluation related to the restart of the Davis-Besse plant following the June 9, 1985 event is documented in NUREG-1177. The conclusion of this report stated, in part, "[t]he staff believes that the actions taken or to be completed by the licensee, and the testing of systems to be done before startup and during power escalation, provide reasonable assurance that the plant has been improved beyond or restored to its original licensing basis and, therefore, the health and safety of the public will not be endangered by the resumption of power generation."

On December 26, 1985, Sacramento Municipal Utility District's Rancho Seco Nuclear Generating Station experienced a loss of dc power within the ICS (a nonsafety-related system) while the plant was operating at 76% power. Following the loss of ICS dc power, the reactor tripped on high RCS pressure followed by a rapid overcooling transient and actuation of the safety features actuation system on low RCS pressure. The overcooling transient continued until ICS dc power was restored 26 minutes after its loss. An NRC investigative team of technical experts was sent to the Rancho Seco site on December 27, 1985, to determine what happened, to identify the probable cause, and to make appropriate findings and conclusions. NUREG-1195\*, "Loss of Integrated Control System Power and Overcooling Transient at Rancho Seco on December 26, 1985," February 1986, documents the findings and conclusions of the investigative team. The team concluded that the fundamental causes for this transient were design weaknesses and vulnerabilities in the ICS and in equipment controlled by that system for which other hardware or human factors did not compensate.

The investigative team also found, among other items, that although the RCS temperature dropped 180°F in 26 minutes, it would have had to drop rapidly another 215°F, while pressure was maintained at approximately 1400 psig, in order to seriously threaten reactor integrity. In addition, had the emergency feedwater initiation and control (EFIC) system been installed at Rancho Seco, the December 26, 1985 event would have been much less severe and probably would

not have exceeded the Technical Specification limit of 100°F in an hour. The Rancho Seco licensee has committed to install the safety-grade EFIC system before restart from the current outage. Because of plant differences, no other B&W-designed plant would have responded in the same manner as Rancho Seco did during the December 26, 1985 event. The NRC Staff closely scrutinized the B&W-designed plants that have experienced significant events. Examples of this scrutiny include the NRC's detailed review of Davis-Besse before restart and the Staff's ongoing extensive review of the Rancho Seco Action Plan for Performance Improvement being implemented by the Sacramento Municipal Power District.

While the Davis-Besse and Rancho Seco events caused no offsite consequences, both events were significant. The Staff concluded, however, that they were caused by plant-specific problems. With the improvement in the emergency feedwater systems of B&W-designed plants made since the TMI accident (which will be completed at Rancho Seco before startup from the current outage), and the recent modifications at Rancho Seco and at Davis-Besse, there is no reason to shut down the B&W plants.

Improvements were made to the facilities, based on the experience discussed above, including the improvements required by the NRC as specified in NUREG-0737. In addition, the licensees of the B&W plants are continuing to make improvements to their facilities.

Notwithstanding the conclusion that the 1985 Davis-Besse and Rancho Seco events were caused by plant-specific problems rather than generic aspects applicable to all B&W plants, the Staff believed that it was prudent to conduct a generic review of B&W plants to make sure that there are no significant generic safety problems in these plants.

After the transients at the Davis-Besse and Rancho Seco nuclear plants in June and December 1985, respectively, the NRC Executive Director for Operations directed the Staff to reassess the long-term safety of plants designed by B&W. This additional review of the adequacy of the B&W design is aimed at possible further improvements in a design already substantially modified since the TMI-2 accident.

Following the decision to initiate a reassessment of the B&W-designed plants, the Babcock & Wilcox Owners' Group (BWO), consisting of the utilities with B&W facilities, requested that it assume the leadership role in accomplishing key aspects of the overall effort. The NRC Staff agreed that the BWO should assume this role not only because the owners of B&W-designed plants are responsible for the proper design and operation of their plants but also because they have the expertise and resources to participate in this effort.

The NRC's reassessment program includes reviewing and providing comments on the BWO reassessment plan; reviewing and requesting additional information, as necessary, regarding the results of the BWO efforts; and issu-

ing a safety evaluation on the BWOG results. In light of the BWOG lead role in the assessment of B&W plants, a large part of the Staff activities involves interacting with the Owners' Group and performing reviews of the results of the BWOG efforts.

As a result of the BWOG efforts, a reassessment plan was developed (see BAW-1919, "B&W Owners Group Safety and Performance Improvement Program," updated through Revision 5, July 1987). The NRC Staff reviewed this plan and proposed changes that have been incorporated by the Owners' Group. In the Staff's judgment, the BWOG program is responsive to concerns related to B&W plants. In addition to providing input to the BWOG reassessment, the Staff is also performing limited, independent evaluations of the B&W plant design. This includes review of operating experience, input from the NRC regional inspection staff, and limited risk and thermal-hydraulic analyses. A status report, entitled "NRC Staff's Review of the B&W Owners Group Safety Performance Improvement Program," was issued by the NRC Staff on August 27, 1987. After the completion of the reassessment, a safety evaluation will be issued documenting the Staff's findings and recommendations concerning the recommendations proposed by the BWOG to improve safety at the B&W plants. In addition, the Staff will determine whether NRC regulatory action is necessary to supplement the BWOG recommendations. Regulatory action will be taken by the NRC on a case-by-case basis, as needed, following appropriate regulatory policy for backfit.

In Supplement No. 4 to its Petition, UCS states that the owners of B&W plants that are currently permitted to operate have implemented only the following number of recommendations: Arkansas Power and Light — 1; Florida Power Corporation — 15; Toledo Edison Company — 11; Duke Power Company — 24; and GPU Nuclear — 7, of a total of 95 recommendations. Contrary to this statement, at this time, Table 7-1 of Appendix J to BAW-1919, updated through Revision 5, lists 178 recommendations that have been approved by the BWOG Steering Committee for disposition by the individual utilities. A summary of the implementation status for these 178 recommendations is presented in Table 7-6 of Appendix J. The number of recommendations that have been implemented by the licensees of operating B&W-designed plants is listed below:

	Number Implemented
Arkansas Power and Light	26
Florida Power Corporation	46
Toledo Edison Company	53
Duke Power Company	35
GPU Nuclear	21

In addition, other recommendations have been closed out as being either not applicable, or, in some cases, rejected by the utility.

The BWOg has identified 73 of the 178 recommendations as "key" recommendations. These key recommendations were selected by the BWOg "based upon their potential contribution to enhancing the overall safety of the B&WOG plants" (p. I-3-12, BAW-1919, updated through Revision 5). A summary of the implementation status for these 73 recommendations is presented in Table 7-7 of Appendix J. The number of these key recommendations that have been implemented by the licensees of operating B&W-designed plants is listed below:

	Number Implemented
Arkansas Power and Light	17
Florida Power Corporation	21
Toledo Edison Company	26
Duke Power Company	17
GPU Nuclear	9

On the basis of the information provided in BAW-1919, Appendix J, updated through Revision 5, the Staff developed the following summary of items that have been implemented by the licensees of operating B&W plants and that are related to the ICS and the Main Feedwater (MFW) system:

	Number Implemented	
	ICS	MFW
Arkansas Power and Light	8	4
Florida Power Corporation	7	7
Toledo Edison Company	10	8
Duke Power Company	4	6
GPU Nuclear	6	4

In addition, other recommendations have been closed out as being either not applicable, or, in some few cases, rejected by the utility.

The BWOg's August 7, 1987 response to Supplement 4 of the Petition lists the following number of reactor scrams at B&W plants since 1980: (1) 1980 — 34, (2) 1981 — 46, (3) 1982 — 42, (4) 1983 — 44, (5) 1984 — 20, (6) 1985 — 34, (7) 1986 — 17, and (8) 1987 (to date) — 9. Two examples of scram avoidance because of the implementation of Recommendation TR-030-MTS, "Raise Anticipatory Reactor Trips (ART) on Turbine Trip Arming Point," have been noted by the Staff. The events occurred at Crystal River Unit 3 on June 20, 1986 (see Crystal River Unit 3 Licensee Event Report (LER) 86-008), and at Arkansas Nuclear One Unit 1 on May 17, 1987 (see Arkansas Nuclear One Unit



1 LER 87-002). In both of these events, a turbine trip occurred, but because the ART on turbine trip setpoint had been raised, no reactor trip occurred.

In summary, since the B&W plant reassessment began, the BWOOG has referred over 175 recommendations to the B&W plant owners, who have implemented, or are implementing, many of them. Based on the Staff's review to date, these changes have already improved plant safety by improving the ICS, the performance of the main feedwater system, and other areas to reduce the number of challenges to safety systems resulting from feedwater and other transients. The NRC found no undue risk in the utilities' interim operation in January 1986 when the NRC's reassessment of B&W plants was initiated, and, after taking into consideration the utilities' improvements, again finds no undue risk in allowing the utilities to continue to operate the plants during the B&W plant reassessment. The Staff's reassessment of the B&W-designed plants is ongoing and, as stated previously, the Staff will determine whether NRC regulatory action is necessary to supplement the BWOOG recommendations.

## **The Petition**

The Petition alleges that basic elements of the B&W design increase both the probability and consequences of accidents. The Petition alleges design deficiencies in the B&W design in (1) the once-through steam generator, (2) the pressurizer, (3) the auxiliary feedwater system, (4) the integrated control system, and (5) nonnuclear instrumentation.

The Petition specifies a number of grounds for the relief requested. These concerns are addressed below in the order in which they have been raised in the Petition.

### ***(A) Safety Concerns Associated with the B&W Design***

#### ***(1) Once-Through Steam Generator (OTSG)***

The Petition alleges that the extreme sensitivity to feedwater flow upsets has turned events that would be innocuous at other pressurized water reactors (PWRs) into crises for equipment and operators at B&W plants. The OTSG design is intended to provide the capability for the nuclear steam supply system (NSSS) to respond acceptably to load changes when electrical grid conditions change as well as during daily load following cycles (see NUREG-0667 at 5-1). As a result of the design of the B&W NSSS and OTSG, which provides increased responsiveness to load changes, the primary coolant temperatures, pressurizer level, and pressure respond more rapidly to changes in the secondary system (e.g., feedwater flow changes) than at PWRs with other NSSS vendor designs.

The NRC Staff has reviewed the OTSG (see NUREG-0667 at 2-2 and 2-3) and determined that its design is technically sound; however, it requires a highly interactive and responsive control system. The Staff also found that although the OTSG is unique in terms of its capability to affect either rapid cooldown or heatup of the reactor coolant system, replacement of the OTSG does not appear to be practical or a necessary action for operating plants (see NUREG-0667 at 2-2). Also, based on the studies reported in NUREG/CR-4471, "Los Alamos PWR Decay-Heat-Removal Studies Summary Results and Conclusions," the Staff has concluded that, with the exception of Davis-Besse, the overall time available (greater than 20 minutes) for corrective actions following a loss of all feedwater (i.e., to institute feed and bleed) is comparable to that available for other PWRs. In the case of Davis-Besse, analyses have shown that for the case of loss of all feedwater, more than 10 minutes and possibly as much as 20 minutes are available for operator action to be instituted to avoid core uncover. In addition, the licensee for Davis-Besse has committed to evaluate possible improvements to enhance the ability to feed and bleed. The Staff concludes that the shorter time available at Davis-Besse does not warrant shutting down the plant because it still provides ample time in which corrective actions can be taken.

The Staff has not changed its position on the acceptability of the OTSG. Additionally, to date, the Staff's review of the BWOG's Safety and Performance Improvement Program (SPIP) has not found any significant safety concerns regarding the OTSG requiring the shutdown of B&W plants.

## *(2) Pressurizer*

The Petition alleges that the combination of the OTSG design and the small pressurizer makes reactor temperature and pressure in a B&W plant sensitive to a change in feedwater flow.

The pressurizer in PWR plants is designed to accommodate the changes in coolant density resulting from temperature changes in the reactor coolant system. The Petition discusses two scenarios and the effect on the pressurizer; the first scenario is a loss of main feedwater that initiates an undercooling event, and the second scenario involves excessive feedwater that initiates an overcooling event.

The Petition states that in the first scenario, as the pressure in the reactor coolant system increases, the reactor automatically shuts down, the PORV opens, and then the pressurizer safety valves open. The petition further alleges that if the PORV (or safety valve) sticks open as it did at TMI-2, the result is a loss-of-coolant accident and in the case of a stuck-open pressurizer safety valve, there is no way for the reactor operator to stop the loss of coolant.

The opening of the PORV during a loss-of-feedwater transient is what is predicted in each plant's FSAR. However, changes were made to setpoints fol-

lowing the TMI-2 accident so that the opening of the PORV is set higher than the high-pressure trip. The high-pressure trip setpoint was revised subsequently, but the PORV setpoint remains higher than the high-pressure trip setpoint. In addition, the anticipatory reactor trip (ART) setpoint on turbine trip was raised from the post-TMI value of 20% power to 45% power. The justification for and Staff acceptance of raising the setpoint for reactor trip on high pressure are contained in (B&W) Topical Report BAW-1890, "Justification for Raising Setpoint for Reactor Trip on High Pressure," September 1985, and the Staff's safety evaluation, contained in a letter from D.M. Crutchfield, NRC, to J.H. Taylor, dated April 22, 1986. The Staff's safety evaluation accepting the B&W Topical Report BAW-1893, "Justification for Raising Arming Threshold for Anticipatory Reactor Trip on Turbine Trip," is contained in a letter, D.M. Crutchfield to J.H. Taylor, dated April 25, 1986. The Staff's safety evaluation concluded that the revised high-pressure trips (2355 psig) with the PORV setpoint remaining at 2450 psig and the revised setpoint (45% power) of the ART on turbine trips meet the NRC requirements of NUREG-0737, "Clarification of TMI Action Plan Requirements," Items II.K.3.2 "Report on Overall Safety Effect of PORV Isolation System" and II.K.3.7 "Evaluation of PORV Opening Probability During Over Pressure" regarding PORV openings and PORV-caused small-break, loss-of-coolant accidents. Similarly, the requirements on this matter embodied in IE Bulletin 79-05B "Nuclear Incident at Three Mile Island," April 11, 1979, and Supplement, April 12, 1979, are met. Analysis of operating experience in B&W plants shows that there would be one PORV opening per 100,000 high-pressure trips at the revised PORV and high-pressure trip-setpoints. Because the safety valve setpoint is higher than the PORV setpoint, safety valve actuation during a high-pressure event is not likely. For example, neither the PORV nor the pressurizer safety valves opened during the Rancho Seco December 26, 1985 event.

However, should the PORV open and remain open, instrumentation added since the TMI-2 accident will provide indication that the PORV has stuck open (NUREG-0737, Item II.D.3, "Coolant System Valve Position Indication"). The control room operator would then close the PORV block valve to stop the loss of reactor coolant. Symptom-oriented emergency operating procedures that have been implemented since the TMI-2 accident provide guidance to the operator in determining the cause of and the reaction to any significant loss of reactor coolant.

Licensee safety analyses are required to show compliance with 10 C.F.R. § 50.46 (acceptance criteria for emergency core cooling systems (ECCS) for light-water nuclear power reactors) and Appendix K to 10 C.F.R. Part 50. The licensees must demonstrate that these regulations are met for an event such as a stuck-open pressurizer safety valve either by a specific calculation or by demonstrating that such an event is bounded by another calculation. Thus, for the case of a stuck-open pressurizer safety valve, the licensees of B&W-designed

plants have shown compliance with the NRC's regulations regarding ECCS performance.

In the second scenario, the Petition states that for an excessive feedwater transient, steam generator water levels increase, reactor temperature decreases, pressurizer level falls, and reactor pressure drops. As the pressure decreases, the reactor automatically shuts down and safety systems such as the ECCS begin to operate. The ECCS injects cold water. If the temperature drop in the reactor cooling system is large, the pressurizer will empty (with loss-of-level indication). The Petition goes on to state that continued operation of the ECCS subjects the reactor pressure vessel to pressurized thermal shock that has the potential to rupture it.

Although it is desirable to have level indication in the pressurizer during the course of a reactor transient, maintaining pressurizer level indication is not required to ensure plant safety. Instrumentation to monitor reactor subcooling has been added since the TMI-2 accident. In addition, the installation of instrumentation to detect inadequate core cooling has been required by the NRC (NUREG-0737, Item II.F.2 "Identification of and Recovery from Conditions Leading to Inadequate Core Cooling"). With regard to the potential for pressurized thermal shock during this transient, the Petition has not provided any information beyond that considered by the NRC in developing the pressurized thermal shock (PTS) rule (10 C.F.R. § 50.61), which requires the licensees of pressurized water reactors to submit an assessment of the projected  $RT_{PTS}^*$  (at the inner reactor vessel surface) from the date of submittal to the expiration date of the license. In particular, excessive feedwater transients of the type discussed in the petition were considered as part of the PTS rule. For those plants for which the value of  $RT_{PTS}$  for any material in the beltline is projected to exceed the PTS screening criterion before the expiration date of the operating license, additional corrective actions may be required. The B&W plants are in compliance with this rule.

### *(3) Auxiliary Feedwater System (AFWS)*

The Petition alleges that the AFWS at B&W plants are not reliable. The issues raised by the Petition are that loss of main feedwater leads to overheating of the reactor cooling system if auxiliary feedwater is not delivered in a timely manner and, conversely, excessive auxiliary feedwater flow can lead to overcooling of the reactor, stresses in piping, and other undesirable effects.

Challenges to the AFWS of B&W plants have been frequent because of the unreliability of the main feedwater systems and their associated control and

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\*Reference temperatures calculated by the method given in 10 C.F.R. § 50.61(b)(2).

support systems (NUREG-0667 at p. 5-37). In general, most plants originally used the nonsafety-grade ICS to control flow of auxiliary feedwater to the steam generators. An exception to this is the Davis-Besse plant where the original design included safety-grade control (and instrumentation) independent of the ICS and other safety-grade features. To improve the reliability of the AFWS, and therefore improve the response of the AFWS to main feedwater transients, a number of actions have been taken by the Staff and by the licensees of the B&W plants following the TMI-2 accident.

NUREG-0737, Item II.E.1.1, "Auxiliary Feedwater System Evaluation," requires licensees to perform the following:

- Analyze AFW system reliability using event-tree and fault-tree logic techniques to determine the potential for AFW system failure under various loss of main feedwater transient conditions with particular emphasis on common-cause and single-point failures.
- Review the AFW system against the NRC Standard Review Plan, NUREG-0800, § 10.4.9, which requires that a single malfunction, a failure of a component, or the loss of a cooling source does not reduce the safety-related functional performance capabilities of the system, and the associated Branch Technical Position ASB 10-1, which is a set of design guidelines for AFW system pump drive and power supply diversity for PWR reactors.
- Reevaluate the AFW system flowrate design bases and criteria.

The licensees of the B&W plants submitted the results of the foregoing, and a number of AFW system upgrades were identified that were needed to comply with Item II.E.1-1. The Staff's review of this TMI Action Plan item is complete for the B&W-designed plants. The Staff's safety evaluation for each B&W plant found the licensees' responses acceptable.

NUREG-0737, Item II.E.1.2, "Auxiliary Feedwater System Automatic Initiation and Flow Indication," requires that licensees install safety-grade automatic initiation signals and circuits for the AFW systems and safety-grade indication of auxiliary feedwater flow to each steam generator in the control room, among other requirements. As discussed earlier, the safety-grade EFIC system will be installed in the Rancho Seco plant before startup from the current outage. The B&W plants will then all have safety-grade control and initiation of the AFWS independent of the nonsafety-grade ICS and nonnuclear instrumentation (NNI).

Supplement 4 to the Petition alleges that contrary to NRC Staff assertions, TMI-1 still does not have a safety-grade emergency feedwater system. Contrary to this allegation, all modifications required to make the emergency feedwater (EFW) system at TMI-1 safety grade and highly reliable, as required by the Commission's Order dated August 9, 1979, the NRC Staff, and the Atomic Safety and Licensing Board, were implemented by the licensee and verified by

the NRC before the plant was allowed to start up from its first refueling outage, in March 1987, following restart from the long shutdown.

On March 9, 1987, the NRC issued License Amendment No. 124 to the TMI-1 license permitting operation for one cycle with manual operation for one small portion of the EFW system. Before issuing the license amendment, the Staff concluded that there were adequate procedures to ensure safety and reliability for this mode of operation. Upon completion of one cycle of operation, the licensee is required to incorporate the operating experience into a fully automatic system. The following paragraphs give a more detailed explanation of NRC requirements and the reasons why a waiver was granted in this instance.

NUREG-0737, Item II.E.1.2, "Auxiliary Feedwater System Automatic Initiation and Flow Indication," requires pressurized water reactors such as TMI-1 to have a highly reliable, automatically initiated EFW system. TMI-1 has such a system (verified in safety evaluation reports transmitted to the licensee by letters dated February 18 and March 19, 1987, and in a Staff inspection report dated March 18, 1987).

In explaining the provision of NUREG-0737, Item II.E.1.2, the NRC Staff indicated (1) that the Staff's intent is to ensure that a plant has a highly reliable, automatically initiated system and (2) that licensees *can* meet this objective by providing a system that meets all the requirements of Standard 279-1971 of the Institute of Electrical and Electronics Engineers (IEEE) (emphasis added). This statement, however, was not intended to prevent licensees from meeting the objectives of NUREG-0737 in other ways that have been demonstrated to provide adequate safety. For example, if a licensee provides a system that complies with IEEE 279 except for certain minor aspects for which other compensating measures are provided, this could satisfy NUREG-0737, Item II.E.1.2, "Auxiliary Feedwater System Automatic Initiation and Flow Indication," if the Staff agreed that the EFW systems as a whole provided adequate safety and reliability.

The system design at TMI-1 provides for four separate automatic EFW initiation signals. Three of these signals meet all the requirements of IEEE 279-1971. For the fourth signal, the licensee had proposed manual removal of a bypass of the signal.

For this fourth signal, the licensee believed it would be preferable to have the results of operating experience at low steam generator levels before it established the setpoint level that would trigger automatic initiation of the EFW system. (This would prevent numerous inadvertent initiations of the EFW system.) Hence, the licensee had proposed a design in which automatic initiation of the EFW system on low level was bypassed when the plant was operating below 30% power. In that situation, the licensee proposed, the system would be actuated manually. The licensee also proposed that this bypass be removed manually when the plant exceeded 30% power.

In a letter to the licensee, dated February 18, 1987, the NRC Staff told the licensee that manual removal of the bypass was not acceptable, since it did not meet the guidelines of IEEE 279-1971, which calls for automatic removal of operating bypasses when permissive conditions are not met, and the licensee had not provided adequate justification for the system proposed.

This issue has been resolved because the licensee has provided adequate compensating features to ensure that bypass removal will function properly until the end of Cycle 6, at which time the EFW system will be modified to delete manual removal of the bypass of the fourth initiation signal which will be in full compliance with IEEE 279. The licensee agreed to implement design and procedural controls to ensure that the bypass switch is in the appropriate position. First, when the bypass is actuated, an alarm indicates in the control room. Second, the control room operator must acknowledge, by signature, that he/she has checked the bypass status and the bypass has been removed as reactor power is increased above 30%.

In approving this design in Amendment No. 124, the NRC Staff imposed additional restrictions on the licensee. Use of this manually removed bypass is restricted to the controlled conditions of a normal reactor startup or shutdown and for Cycle 6 operation only. Thus, this bypass will be used very infrequently and only during a very short period (hours) following a decision to either start up or shut down the unit. Operation at power levels above 30% is the normal and more frequent mode of operation, and the bypass is always removed during this mode of operation. For this limited period, the use of these special procedural controls is adequate to satisfy the basic purpose of NUREG-0737.

To summarize, the NRC requires a safety-grade, highly reliable EFW system at TMI-1, and NRC safety evaluations and inspections indicate that such a system has been installed and is operational. For TMI-1, this will be provided following the end of Cycle 6 by a system fully meeting the guidelines of IEEE 279-1971. During Cycle 6, this will be provided by a system with adequate compensating features to satisfy the intent of NUREG-0737.

Thus, significant changes have been made or are being made to the AFW system in B&W plants since the TMI-2 accident, to make this system more reliable. In addition, to date, the Staff's review of the AFW system tasks of the BWOG's SPIP has not found any significant safety concerns regarding the AFW system requiring the shutdown of B&W plants. A Staff finding will be issued on this matter.

#### *(4) Integrated Control System (ICS)*

The Petition alleges that the nonsafety-grade ICS design has heightened the sensitivity of B&W plants because failures in the ICS or its electrical power

supplies cause the equipment it controls to malfunction. Such failures can initiate severe overcooling or undercooling events.

The ICS automatically controls the flow of steam to the turbine and the rate of steam production. The ICS is not safety grade because it is not part of the plant protection system nor is it relied on to mitigate the consequences of accidents.

There are two approaches to resolve the concern that a nonsafety-grade control system (the ICS) could fail in a manner that could threaten the safe shutdown of a nuclear power plant. The first would be to attempt to make the nonsafety-grade control system more reliable, for example, by imposing some or all of the requirements that would make it safety grade, to significantly reduce the likelihood of failure. The second approach is to accept the position that there is always a possibility of failure and to require the plant design to mitigate the adverse effects of ICS failures on the reactor so that the plant can always be safely shut down. The NRC Staff has pursued both approaches. In its review and priority ordering of the NUREG-0667 recommendations, Recommendations 5a, 5b, 5e, 5f, and 5g discussed actions that would increase NNI/ICS reliability, which coincides with the first approach. Recommendations 5c, 5d, 5g, 6, 14, and 15 presented actions associated with training, procedures, and instrumentation, which are the second approach. The first approach of upgrading the reliability of the ICS (and the NNI) was thought to be a formidable task in terms of NRC resources and industry effort, and it was believed that it would take a long time to complete. ORNL stated in its report (dated January 20, 1980) on the review of the B&W failure modes and effects analysis of the ICS (BAW-1564), that the ICS should not be classed as a protective system. ORNL recommended, however, that selected improvements be made in ICS/NNI power supply reliability. Based on the above, the Staff generally set a higher priority for the second approach, although Recommendations 5a and 5e were given high priority from the first approach.

Rather than make the ICS safety grade, the Staff required that the specific function for initiation of AFW be upgraded to safety grade in accordance with Item II.E.1.2 of NUREG-0737. This action also made the AFW initiation function independent of the ICS.

The ICS is one of the systems being reviewed during the NRC's reassessment of B&W plants. The BWO program (SPIP) is addressing this system. To date, the Staff's review of the BWO program, including the ICS, has not identified any safety concerns that would require the shutdown of the B&W plants.

#### *(5) Nonnuclear Instrumentation (NNI)*

The Petition alleges that failures in the NNI or its electrical power supplies have widespread adverse effects on the plant. Such failures can send false signals to the ICS, which then directs the plant to respond as if the signals represented



actual conditions. In addition, the false signals are sent to the main control room and the reactor operators may not recognize that much of the information on which they can normally rely is false. Failures in the ICS or NNI have simultaneously caused an accident and impeded the operator's ability to cope with that accident.

The NNI provides a significant amount of input information to various plant control systems, including the ICS, and also supplies control room information for the main control board, plant computer, and alarm annunciator, and display information for various systems. The NNI is not safety grade because it is not part of the plant protection system, nor is it relied on to mitigate the consequences of an accident.

The discussion of the NRC Staff's approach to the ICS concerns in the previous section is applicable to the NNI. In the case of the NNI, the NRC has required that certain parameters be upgraded to safety grade. These requirements are contained in NUREG-0737, Item I.D.2, "Control Room Design — Plant Safety Parameter Display Control," and in Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," Rev. 2, as required by Supplement 1 to NUREG-0737. The safety parameter display system has been installed in all B&W plants; however, the Staff's post-implementation review is not complete for all facilities. The NRC Staff believes that these improvements provide adequate information to the operator to monitor the course of an accident or transient.

The review of the NNI is included in the SPIP. On the basis of the Staff's review of the results of the BWOOG program, to date, no significant safety concerns regarding the NNI have been identified that would require that the B&W plants be shut down.

To support their arguments that design deficiencies in B&W facilities pose undue risk to public health and safety, the Petitioners point to extensive operating history at B&W facilities as ample evidence of the oversensitivity of the B&W design and the unreliability of the ICS, NNI, and their power supplies. The NRC is fully aware of the details of the events set out in the Petition and has considered this information in assessing whether actions need to be taken regarding B&W facilities and what such actions should be. Staff responses to events at B&W plants were discussed earlier. In particular, with regard to the Rancho Seco event of December 26, 1985, the previous discussion pointed out that the EFIC system being installed at Rancho Seco during the current outage would have made this event much less severe. Additionally, design differences make it unlikely that an event such as the Rancho Seco event would occur at the other B&W-designed plants.

The NRC reassessment of the B&W plants is revisiting the operational transients at the B&W plants. To date, this review has not identified any new

information that has raised significant safety concerns that would require the shutdown of the B&W plants.

***(B) Sufficiency of NRC Actions to Reassess B&W Plant Design***

The Petition raises three concerns regarding the adequacy of NRC actions to reassess B&W plant design. The Petition alleges that (1) the reassessment has been compromised in scope and schedule by the NRC's delegation of its regulatory responsibility to the BWO, (2) the reassessment is a further example of a long-time NRC practice of using studies to forestall effective actions to solve problems, and (3) the NRC lacks the technical capability to assess the B&W design and has not devoted the resources to acquire that capability.

***(1) The NRC's Reassessment of the B&W Plants Is Appropriate and Adequate in Scope and Schedule***

The Petition alleges that the promised reexamination of B&W plant safety has been compromised in scope and schedule by NRC's delegation of its regulatory responsibility to the owners of the B&W plants.

Following the decision to initiate a reassessment of B&W plants, the BWO assumed the leadership role in accomplishing key aspects of the overall effort. The NRC Staff agreed that the BWO should assume this role not only because B&W owners are responsible for the proper design and operation of their plants but also because they have the expertise and resources to participate in this effort.

The NRC's reassessment has been discussed earlier. In light of the BWO lead role in the assessment of B&W plants, a large part of the Staff activities involves interacting with the Owners' Group and independently reviewing the results of its efforts. Meetings of working and management levels of the BWO and the NRC Staff have been held to discuss various topics including the following: (a) the sensitivity study being performed by MPR Associates for the BWO in which an independent comparison of the response of different PWR designs to operational transients will be conducted; (b) the recommendation tracking system that the BWO has established to track the disposition made by each utility of the SPIP recommendations; (c) human factors/operator burden topics; and (d) the system reviews being performed including those of the integrated control system/nonnuclear instrumentation, the main feedwater system, the emergency feedwater/auxiliary feedwater system, the secondary plant relief systems, and the instrument air system. As the result of NRC input provided at these meetings, the BWO expanded its original

reassessment plan. For example, the plan now includes risk assessment of Category C events, an operator burden task, and an instrument air task.

As a result of the BWOGE efforts, a reassessment plan (BAW-1919) was developed. The NRC Staff reviewed this plan and proposed changes that have been incorporated by the Owners' Group. It is the Staff's judgment that the BWOGE program is addressing the concerns related to B&W plants.

In addition to providing input to the BWOGE reassessment, the Staff is also performing limited, independent evaluations of the B&W plant design. This includes review of B&W plant operating experience, input from the NRC regional inspection staff, and limited risk and thermal-hydraulic analyses. The Staff will perform a review of the results of the BWOGE program. After the completion of the reassessment, a safety evaluation will be issued documenting the Staff's findings and recommendations concerning the recommendations proposed by the BWOGE to improve safety at the B&W plants. In addition, the NRC Staff will determine whether NRC regulatory action is necessary to supplement the BWOGE recommendations. A status report was issued by the Staff on August 27, 1987. The Staff is scheduled to complete its review of the major portion of the BWOGE reassessment program by the end of October 1987, and the Staff will issue a safety evaluation. The remaining portion of the Staff's review is scheduled for completion in January 1988, and a safety evaluation supplement will be issued. Regulatory action will be taken by the NRC on a case-by-case basis, as needed, following appropriate regulations for backfit.

By letter dated July 16, 1986, the ACRS provided comments on the BWOGE Safety and Performance Improvement Program. In that letter, the ACRS expressed concern that this BWOGE program was directed at improving plant on-line performance rather than having plant safety as its central focus. Additionally, the ACRS provided specific comments regarding the reassessment program for the B&W plants.

The NRC Staff responded to the ACRS concern and comments by letter dated August 14, 1986. With regard to the ACRS concern, which is raised as an issue in the Petition, the Staff stated:

In a letter dated June 2, 1986 to Mr. Hal Tucker, Chairman of the BWOGE, the staff noted that the BWOGE program was primarily addressed at trip reduction and improving the post-trip response of the B&W plant. While the staff believed that such a program was necessary to reduce the frequency of complex transients in B&W plants, it also expressed concern that the BWOGE program goals were not broad enough. The staff intends, through working-level meetings with BWOGE, to ensure that the scope of the specific projects in the program are broad-based. Based upon the recent working level meetings with the BWOGE on the ICS/NNI evaluations and the sensitivity studies being performed by MPR Associates, the staff believes this approach will ensure that the broader plant safety issues are addressed as well.

The Staff is tentatively scheduled to meet with the ACRS in November 1987 to discuss the Staff's evaluation of the reassessment program.

*(2) The Current NRC Reassessment of B&W Plants Is Not a Means of Delaying Action with Regard to B&W Plants*

The Petition claims that the NRC safety reassessment of B&W plants is an example of a years-long practice by the NRC of using study after study as a means of forestalling effective action to solve the B&W problems.

The NRC has taken action with regard to B&W plants as needed to ensure protection of the public health and safety. This is demonstrated by the NRC orders that shut down the B&W plants following the TMI-2 accident, the suspension of the TMI-1 license pending the resolution of issues before a licensing board, and the TMI Action Plan items that the NRC required be implemented by order.\* The NRC also issued confirmatory action letters to the licensees of the Davis-Besse and Rancho Seco plants following the transients on June 19, 1985, and December 26, 1985, respectively. These confirmatory action letters confirmed that these plants would remain shut down until (1) the completion of an investigation, (2) the implementation of corrective actions, and (3) the NRC approval of the resumption of operation.

The Petition also specifically cites Unresolved Safety Issues (USIs) A-17, "Systems Interaction," and A-47, "Safety Implications of Controls Systems," as examples of issues that have been pending for some time.

The NRC frequently undertakes studies to evaluate potential safety concerns. These studies result in recommendations for resolution which can require backfitting in accordance with the appropriate regulations. These studies can require significant resources and time to resolve. Should a safety issue warrant, immediately effective regulatory actions can and will be taken as necessary to ensure that the facility poses no undue risk to public health and safety.

All technical review tasks for resolution of USI A-17 have been completed by the NRC Staff, and a draft proposed resolution has been developed. This resolution package includes: (a) the technical findings; (b) a regulatory analysis of the various alternative actions that were considered as the potential resolution; and (c) a proposed generic letter outlining the proposed resolution and the recommended actions. The proposed resolution package is scheduled to be issued for public comment in the spring of 1988. Final resolution of USI A-17 is scheduled for late 1988, following resolution of internal and public comments.

The staff has relied on, and is continuing to rely on, review and evaluation of operating experience to identify and fix potential adverse systems interac-

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\*See NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980.

tions. The review and evaluation of operating experience have resulted in a number of actions (generic letters, information notices, bulletins) that have addressed adverse systems interactions.

Currently all technical review tasks for resolution of USI A-47 "Safety Implications of Control Systems" have been completed and a draft proposed resolution of USI A-47 has been developed. This resolution package includes (a) the technical findings, (b) a regulatory analysis of the various alternative actions that were identified to achieve resolution, and (c) a proposed generic letter identifying the recommended actions. This package is currently under internal review by NRC. The current schedule anticipates that the proposed resolution package will be issued for public comment in the spring of 1988. Conditional on the satisfactory resolution of public and internal NRC comments, final resolution and completion of USI A-47 are scheduled for the spring of 1989. As a result of the Rancho Seco (December 1985) event, the USI A-47 study was expanded to include a confirmatory review of the nonsafety-grade integrated control systems (ICS) for two additional B&W plant designs. These reviews evaluated the design of an "820" ICS model. The objectives of this review were to determine if transients initiated by control system failure were significantly different from those in the initial reference plant study using a "721" ICS model, and to identify any other significant failure scenarios. In addition, the BWOG studies are being closely monitored to ensure that any significant results developed from that effort will be coordinated with the USI A-47 program.

*(3) The NRC Possesses the Technical Capability to Evaluate the Safety of Plants Designed by B&W*

The Petition alleges that the NRC lacks the technical capability to accurately predict the complex behavior characteristics of B&W plants under accident conditions and has not devoted the resources necessary to acquire that capability.

This section of the Petition highlights questions about B&W plants raised during the TMI-1 restart hearings in 1983. Specifically, these questions concerned the effectiveness of two methods of cooling the core of B&W plants called the "boiler-condenser mode" (BCM) and "feed-and-bleed" cooling and the possibility of a steam bubble forming in the high point of the piping and blocking natural circulation of water through the core. The Petition asserts that the NRC Staff's alleged lack of technical capability to analyze the behavior of B&W plants was evidenced by the Staff's inability to demonstrate a factual basis for its position in the TMI-1 restart hearings that B&W plants can achieve adequate core cooling using the BCM and feed-and-bleed cooling. B&W calculations and NRC Staff testimony were presented during the hearings to show that these two methods of cooling would be effective. At the time of these hearings, however, no data were available to confirm that these two methods of cooling

would be effective or that natural circulation would not be blocked by a steam bubble. Thus, the question was not one of Staff competency, but rather the lack of experimental data.

Recognizing that such confirmatory data would be useful, in June 1983, the NRC, B&W, the BWOG, and the Electric Power Research Institute (EPRI) initiated a joint research program called the Integral System Test (IST) program to address small-break LOCA issues in B&W plants. This program was the result of recommendations of an industry and government test advisory group formed in September 1982. The IST program consisted of three major parts: (a) existing data from tests conducted in the GERDA facility (a single-loop representation of a raised-loop B&W plant) would be made available to NRC; (b) the GERDA facility would be modified, renamed the Once-Through Integral Test (OTIS) facility, and additional tests would be conducted; and (c) a new facility, the Multiloop Integral System Test (MIST) facility, would be constructed to represent a lowered-loop B&W plant, and tests would be conducted. This program was a \$31 million program with the costs shared by the NRC, B&W, BWOG, and EPRI.

The GERDA and OTIS parts of the IST program have been completed, and fifty-one tests in the MIST facility have been completed. To date, seventeen tests of natural circulation, sixteen tests of BCM cooling and natural circulation during a small-break LOCA, and five tests of feed-and-bleed cooling have been conducted in the MIST facility. This is in addition to the eleven tests of a small-break LOCA, feed-and-bleed cooling, and natural circulation conducted in the OTIS and GERDA facilities. The remaining five tests in the current MIST program will be completed this summer after the completion of the facility modifications discussed below. In addition to the IST program, both the industry and the NRC are sponsoring supporting programs of model development, scaling tests, and computer code assessment to aid in extending the results of these programs to plants.

Testing in these facilities has shown the effectiveness of both feed-and-bleed cooling and BCM cooling in the test facilities. Extensive natural circulation tests have shown that, although a steam bubble may form in the high point of the hot leg, the core remains adequately cooled and the bubble does not block the reestablishment of natural circulation as the vessel is refilled. The purpose of the test facility data is to validate computer code predictions, which are then used to calculate plant performance. This process of computer code validation is in progress. The preliminary results of these tests and analyses have supported the conclusions of the Staff during the TMI-1 restart hearings concerning the effectiveness of feed-and-bleed cooling, BCM cooling, and the resumption of natural circulation.

It is important to note, however, that credit is not given by the NRC Staff for feed-and-bleed cooling in the licensing basis for B&W or other PWR plants.

The Petition also highlights more recent NRC Staff concerns about the ability of NRC thermal-hydraulic safety analysis codes (TRAC and RELAP5) to reanalyze operational transients being experienced in B&W plants. The Petition further states that the NRC has cut its research budget in these areas and that the nuclear industry has not stepped in to do the needed work.

The computer codes that are in question (TRAC and RELAP5) are not the computer codes used in the licensing safety evaluations of B&W plants. The licensing analyses use conservative input parameters to bound the consequences of the events. The use of conservative licensing analyses is sufficient to demonstrate conformance with regulatory requirements. The safety criteria used during the licensing of the B&W plants are discussed later. Based on the conservative licensing analyses, there are no known safety deficiencies in B&W plants.

The TRAC and RELAP5 computer codes are best-estimate codes that attempt to make as realistic calculations as possible. More realistic calculations are used by the NRC to improve the understanding of the margin in the conservative licensing calculations and to provide additional assurances of plant safety. The NRC has indicated that additional data beyond those that will be obtained from the IST program would be needed (*see below*) to validate the best-estimate codes in areas other than the small-break LOCA issues addressed by the IST program. These issues include plant recovery from non-LOCA transients and once-through steam generator transient response, especially during auxiliary feedwater injection.

An additional use for improved best-estimate computer codes would be to enhance the understanding of operational transients and to improve simulator optimization of emergency operating procedures. One of the NRC's objectives is to ensure that emergency operating procedures are continually reviewed and upgraded and that reactor operators receive thorough plant simulator training in coping with plant transients.

The cut in the research budget mentioned in the Petition concerns a previous plan to upgrade the power supply of the MIST facility to full-scale power. Based on lack of industry support for this power upgrade and overall research budget reductions, the NRC decided that this program was not a cost-effective way of obtaining the required data. Following this decision, the NRC Staff developed a new plan to obtain the needed data. This plan includes three major programs: (a) additional testing of transients other than the small-break LOCA in the current MIST facility; (b) separate-effects testing of a MIST facility steam generator at full-scale power; and (c) a separate-effects test of auxiliary feedwater behavior. This program, estimated to cost \$18.4 million over FY 1987-89, is in addition to NRC's ongoing B&W-related research involving code assessment, scaling, model development, and B&W plant safety studies. Currently, discussions are being conducted with industry to obtain funding to support these programs.

Thus, the NRC is making provisions to obtain the experimental data to verify the best-estimate computer codes.

***(C) Original Basis for Licensing the B&W Plants Was Conservative***

Supplement 4 to the Petition asserts that the original basis for licensing the B&W plants was not conservative and without integral testing cannot be made so. The Petitioners allege the following major deficiencies:

- (1) No details are provided in the initial Director's Decision (March 13, 1987) to support the claim that the B&W plant safety analyses predict conservative results sufficient to conclude that the plants can be operated with no undue risk.
- (2) There are no integral systems test data to make a finding that the B&W plant safety analyses codes are adequate.
- (3) The plant safety analyses are not bounding in that they have not predicted the consequences of actual operating experience (e.g., TMI-2 accident, Davis-Besse event).

***(1) B&W Plant Safety Analyses Are Conservative***

Supplement 4 to the Petition alleges (at 47) that the statement in the Initial Decision that the B&W plant safety analyses predict conservative results sufficient to conclude that continued operation poses no undue risk to the public health and safety is "utterly devoid of details, substance and validity." Although the Initial Decision did not detail the basis on which the Staff came to its conclusion, the Staff's conclusion is valid as discussed below.

Plant safety analyses are performed to demonstrate that the plant conforms with applicable safety criteria for a spectrum of design-basis events and transients. Specific safety criteria used during the licensing of B&W plants included:

- For postulated transients, reactor coolant system pressure shall remain limited to less than 110% of design.
- For postulated transients, the calculated minimum departure from nucleate boiling ratio (DNB) shall exceed 1.30.
- For postulated accidents, offsite dose consequences shall not exceed those specified in 10 C.F.R. Part 100.
- For design-basis loss-of-coolant accidents (LOCAs), the criteria of 10 C.F.R. 50.46 shall be satisfied.

The B&W plant safety analyses, which were performed to demonstrate conformance with these criteria, used conservative input parameters; that is, the parameters were chosen to maximize the consequences of the event. For example, core physics parameters, such as moderator and Doppler coefficients,



were chosen as bounding values for the fuel cycle. For steamline break analyses, initial steam generator inventories were chosen to be larger than that expected to maximize the cooldown and possible concerns with respect to DNB.

As a specific example of the conservatism in the plant safety analyses, many of the analyses of the undercooling events predict that the pressurizer safety valves will lift to limit overpressurization of the reactor coolant system. However, actual operating experience indicates that even lifting of the PORV, which opens at a lower system pressure, is not an expected consequence of these events. Thus, the plant safety analyses have been proven to be conservative by actual operating experience.

For postulated accidents, offsite dose consequences are bounded by the maximum hypothetical accident analyzed in the FSARs. For this accident, it is assumed that 100% of the fuel fails nonmechanistically. Offsite dose consequences are then calculated using technical specification values on containment leakage and conservative meteorology. The results of this analysis, which bounds that expected for postulated accidents considered in the FSAR, clearly demonstrate conformance of the B&W plants with the requirements of Part 100.

Loss-of-coolant accident analyses are performed using analytical methods that must comply with the requirements of Appendix K to 10 C.F.R. Part 50. The requirements of Appendix K contain several conservatisms, including the specification of models that must be used for calculating decay heat and core metal-water reaction. In addition, bounding values are used for many of the input parameters. As a result of these assumptions, peak cladding temperature, for these design-basis events are overestimated.

It should be noted that the requirements of Appendix K to Part 50 were developed after an extensive rulemaking proceeding of which UCS was a participant. Since the development of Appendix K, research results, such as those obtained from experiments performed at the LOFT and Semiscale facilities, as well as separate-effects experiments, have demonstrated the conservatism of these requirements.

The adequacy of LOCA analyses performed for the TMI-1 facility was litigated during the restart proceedings for that plant. The Atomic Safety and Licensing Board found that these analyses satisfied the applicable regulatory requirements.

It is on the basis of factors such as the ones above that the Staff concluded that the safety analyses for postulated transients and accidents for the B&W plants are sufficiently conservative.

## *(2) B&W Safety Analyses Codes Are Adequately Based*

The Petitioners allege that the B&W plant safety analysis codes cannot be judged adequate because no integral experimental data have been used to develop

these codes. Supplement 4 to the Petition further states that these computer codes were developed from tests done in integral test facilities based on the Westinghouse and Combustion Engineering designs. Several NRC documents are discussed to support the Petitioners' position.

First, it should be made clear that computer codes are generally *not* developed from integral systems test data. Rather, the codes are generally developed using standard engineering principles (e.g., conservation of mass, energy and momentum), with specific models being utilized to reflect certain thermal-hydraulic processes (e.g., heat transfer from the fuel rod). Separate effects tests are generally used to develop some of these specific models. Integral systems tests are used to assess the ability of the code to predict the overall system response to transients. The B&W safety analysis computer codes were developed in this fashion.

Specific reference is made in Supplement 4 to the Petition to a number of NRC documents. These include:

- (a) NUREG-0565, "Generic Evaluation of Small Break LOCA Behavior in Babcock & Wilcox Design," January 1980;
- (b) Memorandum from H. Denton to R. Minogue, dated December 30, 1981;
- (c) Memorandum from V. Stello to S. Chilc, dated April 30, 1986;
- (d) Memorandum from T.A. Rehm to the Commissioners, "Weekly Information Report — Week Ending February 20, 1987," February 25, 1987; and
- (e) NUREG-1154, "Loss of Main and Auxiliary Feedwater Event at the Davis-Besse Plant," June 9, 1985.

The first two documents concern NRC Staff recommendations that integral systems test data were necessary for the B&W plant design. These recommendations were made because it was recognized that the then-existing integral systems test facilities, notably LOFT and Semiscale, were based on the Westinghouse and Combustion Engineering system designs and that these facilities would be unable to reflect the unique thermal-hydraulic response for a B&W plant design (e.g., the OTSG behavior). The Petitioners, however, fail to recognize that the Staff has taken action in this area.

First, in June 1983, the NRC, B&W, the BWO, and EPRI initiated a joint research program to develop and obtain integral systems test data applicable to the B&W plant design. This program consisted of three major parts: (1) existing data from tests conducted in the GERDA facility would be made available to the NRC; (2) the GERDA facility would be modified, renamed the OTIS facility, and additional tests would be conducted; and (3) a new facility, the MIST facility, would be constructed and tests would be conducted. To date the GERDA and OTIS parts of the integral systems testing program have been completed, and fifty-one tests have been run in the MIST facility. Thus, integral

systems test data exist for the B&W plant design. The test data are being used by NRC and BWOG to assess their computer codes.

Second, NUREG-0737, "Clarification of TMI Action Plan Requirements" Item II.K.3.30, "Revised Small Break LOCA Methods to Show Compliance with 10 C.F.R. 50, Appendix K," specifically required that small-break LOCA models be tested against applicable experimental data, especially in the area of natural circulation, and be shown to be in compliance with Appendix K to Part 50. In response to these requirements, the BWOG modified its small-break LOCA model (BAW-10154 "B&W's Small Break LOCA ECCS Evaluation Model") and submitted the model for Staff review. Included in this submittal were numerous comparisons of the new model to experimental data, including both separate-effects experiments to test individual code models and integral systems experiments performed at the LOFT and Semiscale facilities to ensure that the model performs correctly. Benchmarks of the code to actual B&W plant transients also were provided. The Staff has reviewed this model and has found that it meets the requirements of Appendix K to Part 50 and satisfies the requirement of NUREG-0737, Item II.K.3.30. As a confirmatory item, the Staff has required that the adequacy and/or conservatism of the new model be shown by comparison to either the MIST test results or another computer code that has been benchmarked versus the MIST tests.

Finally, with respect to these two documents, the Petitioners also fail to mention that these documents, and the plans of at least one B&W plant, were extensively litigated during the TMI-1 restart proceedings.

With respect to the third document cited by the Petitioners, it is stated in Supplement 4 to the Petition (at 49) that even with the use of "correction factors" the B&W "safety analysis results are characterized with a greater degree of uncertainty than desired." An examination of the actual paragraph from the document paraphrased by the Petitioners (*see* p. 55 of Supplement 4 to the Petition) shows that the document is actually discussing the NRC's computer codes *not* the B&W codes used for performing the B&W plant safety analyses. The Staff's computer codes are constructed to be best-estimate computer codes, not conservative licensing codes. The paragraph cited by the Petitioners is a Staff expression that further experimental data are needed to reduce the uncertainty in the Staff's ability to perform best-estimate analyses for B&W plants.

The fourth document cited by the Petitioners discusses the progress of ongoing research being performed by the NRC, specifically single-tube OTSG tests being performed to examine flooding behavior for an OTSG. As stated on page 50 of Supplement 4 to the Petition, "UCS seriously questions whether a test facility with a single tube is an adequate representation of the 15,000 tube steam generator." The Staff did not claim, nor is it claiming, that the single-tube tests provide all the necessary data for the further development of the Staff's

best-estimate computer codes. In fact, the quoted document states that the "NRC has initiated an OTSG experimental program that consists of full-scale single tube and multitube sector models of the OTSG." While it is clear that continuing research is necessary in this area, details of the testing program are still being developed by the Staff with consultation with BWOG. The Staff believes that, upon completion of this future experimental program, sufficient data will have been obtained to improve the modeling of OTSG behavior in the NRC best-estimate codes.

On the basis of this document, the Petitioners further conclude that the Staff has no rational basis for concluding that the B&W plant safety analyses are conservative. As discussed above, the Staff does have a rational basis and has concluded that the licensing analyses are indeed conservative.

It is noteworthy to mention the fact that modeling of OTSG behavior in the B&W small-break LOCA code was litigated during hearings before the Atomic Safety and Licensing Appeal Board on the matter of TMI-1 restart. UCS was an active participant in these proceedings.

The last document cited by the Petitioners is NUREG-1154. Because NUREG-1154 contains the words "integrated system testing," the Petitioners use this as further "proof" that the Staff has continually taken the position that experimental data are needed for supporting the B&W plant safety analyses. A review of NUREG-1154 makes it clear that the document is discussing testing of plant *equipment* to ensure that it is capable of fulfilling its safety function. The document has no relationship to the issue of integral systems experimental data.

In summary, the Petitioners appear to misunderstand the facts surrounding the cited documents. The Staff, B&W, EPRI, and BWOG have an ongoing experimental program to provide integral systems test data for code benchmarking. Many of the issues have already been litigated in the TMI-1 restart proceedings. The Staff has a basis on which to conclude that the B&W plant safety analyses are conservative. Positions taken in the more recent documents cited by the Petitioners relate only to the Staff's best-estimate analysis codes and do not relate to the B&W plant safety analyses.

### *(3) The Licensing Basis Is Adequate*

In various portions of Supplement 4 to the Petition, the Petitioners allege that the licensing basis for the B&W plants is not adequate or conservative in that the FSAR analyses did not predict scenarios such as those that occurred at Davis-Besse or TMI-2. In essence, this is a challenge to the licensing basis and the concept of design-basis events used for plant safety analyses.

Design-basis events are developed by examining failures that can occur during normal operation. A common characteristic of design-basis events is that they are assumed to be caused by a single malfunction as the initiating event. For

the postulated accidents in the design basis, the Staff also requires that the plant be able to accommodate the worst single active failure in conjunction with the event. This failure is limited to systems and equipment that are predicted or assumed to operate during the event. Spurious or random failures are not postulated.

Multiple failures, such as those that occurred at TMI-2, and Davis-Besse, are not considered in the design basis because other NRC design criteria require that the systems be designed with sufficient reliability to ensure that multiple failures are of sufficiently low probability that they need not be considered in the design basis. Thus, if multiple malfunctions are uncovered that can be expected to occur during initiating events, and lead to a loss of safety function and unacceptable consequences, the NRC position is to require that the system design be upgraded and corrected as necessary so that those multiple failures are no longer expected.

As a result of each of these events, the Staff took appropriate actions to ensure that such events would not be expected in the future. The actions taken following the TMI-2 event are given in NUREG-0737; the plant-specific Davis-Besse issues were resolved before the plant was allowed to restart.

The Petitioners are correct that design-basis analyses will not cover every conceivable combination of system failures that may occur during a plant transient. In recognition of that fact, after TMI-2 the NRC required licensees to upgrade their plant emergency procedures to provide operator guidance for dealing with multiple equipment failures (*see* NUREG-0737, "Clarification of TMI Action Plan Requirements," Item I.C.1, "Short Term Accident Analysis and Procedures Revision"). This action provides additional assurance that plant transients can be safely mitigated and is consistent with the NRC's defense-in-depth approach to maintaining plant safety.

The Staff continues to conclude that the basic approach of analyzing design-basis events, coupled with the requirement that equipment be designed with sufficient reliability to ensure that it will fulfill its safety function, and taking corrective action when an event does occur, is adequate.

#### ***(D) Abnormal Transient Operating Guidelines***

In Supplement 4 to the Petition, the Petitioners state that the NRC is permitting the B&W plants to operate despite the fact that it is not known whether the emergency procedures for steam generator tube rupture, a design-basis accident, have a valid technical basis.

The NRC Staff's safety evaluation (SE) on the basic abnormal transient operating guidelines (ATOGs) was issued on September 14, 1983. A supplement to the SE was issued on December 14, 1983, which closed out the near-term open items and indicated that the ATOG guidelines, including guidelines for

a steam generator tube rupture, were acceptable for immediate development and implementation of emergency procedures. Section 3.7.2 of the September 14, 1983 SE addressed steam generator tube rupture guidelines. Some long-term items remained to be addressed, including confirmatory information needs and certain scenarios that go beyond design-basis tube rupture events (e.g., multiple steam generator tube failures and tube failures in multiple steam generators). The B&W technical basis document No. 74-115244, "Emergency Operating Procedures Technical Basis Document," September 3, 1985, was submitted in response to the longer-term items and is undergoing Staff review.

Thus, the NRC has approved guidelines for use in the development of emergency operating procedures, including procedures to be used in the event of a design-basis steam generator tube rupture. The additional long-term items are not complete.

## CONCLUSION

The B&W-designed plants have experienced a number of operational transients of varying levels of severity but these problems do not justify Petitioners' request to shut down these plants. Substantive improvements have been made to the B&W plants since the TMI-2 accident, and the licensees are continuing to make improvements to these plants. No new significant generic safety problems have been identified to date by the NRC Staff in the ongoing reassessment of B&W-designed plants.

The petition does not present any substantial health or safety questions associated with the operation or construction of plants designed by the Babcock & Wilcox Company, the resolution of which would be advanced by granting the relief requested. In addition, I find that there are no substantial health and safety issues that would warrant the suspension or revocation of any license or permit for such facilities. Therefore, I decline to institute proceedings pursuant to 10 C.F.R. § 2.202. Accordingly, I decline to grant relief pursuant to 10 C.F.R. § 2.206. As provided by 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary for the Commission's review.

Thomas E. Murley, Director  
Office of Nuclear Reactor  
Regulation

Dated at Bethesda, Maryland,  
this 19th day of October 1987.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF THE EXECUTIVE DIRECTOR FOR OPERATIONS

Victor Stello, Jr., Executive Director for Operations

In the Matter of

Docket No. PRM 50-44

COMMITTEE TO BRIDGE THE GAP

September 23, 1987

The Nuclear Regulatory Commission is denying a petition for rulemaking submitted by the Committee to Bridge the Gap. The Petitioner, citing primarily the accident at the Chernobyl plant in the Soviet Union requested that the NRC amend its regulations in 10 C.F.R. Part 50 to require that licensees whose reactors employ graphite as a neutron moderator or reflector and whose licensed power is greater than 100 W: (1) formulate and submit for NRC approval fire response plans and evacuation plans in case of a reactor fire involving graphite and fuel; and (2) measure the "Wigner" energy stored in the graphite of their reactors and submit a revised safety analysis addressing the risks and consequences of a reactor fire. The Commission is denying the petition because the Petitioner has failed to demonstrate that the existing fire protection systems and emergency response plans, as considered and approved by the NRC, fail to provide an appropriate level of protection of the health and safety of the public. Moreover, the Commission has concluded that empirical measurement of stored energy in reactor graphite components is not practical nor is it necessary to ensure the health and safety of the public.

**NRC STAFF SAFETY REVIEW: "CREDIBLE" AND "INCREDIBLE" ACCIDENTS**

The words "credible" and "incredible" have been used in many AEC/NRC safety analyses. As used by the Staff, these words have always been a qualitative statement of the likelihood or probability of an event or condition occurring.

## **EMERGENCY PLANNING: FIRE PROTECTION MEASURES**

NRC-approved emergency plans in accordance with 10 C.F.R. § 50.54 and 10 C.F.R. Part 50, Appendix E, provide for response to fires, for training of firefighting personnel, and for periodic drills to demonstrate proper operation of the plan in accordance with procedures developed for each facility.

## **FIRE PROTECTION: APPLICABILITY TO ALL FIRES**

Basic safety measures required to reduce the threat of fires as well as to mitigate the consequences of any fires that do occur (as reviewed and approved by the NRC Staff and as implemented for all licensed reactors), generally apply to all fires and provide acceptable protection for the health and safety of the public.

## **TECHNICAL ISSUES DISCUSSED**

Relevance of Chernobyl accident to NRC-licensed reactors; graphite fire credibility in NRC-licensed reactors; radiological hazard to the public from a graphite fire in NRC-licensed reactors; empirical measurement of stored energy in graphite components of reactors.

# **DENIAL OF PETITION FOR RULEMAKING**

## **I. BACKGROUND**

A petition for rulemaking was filed by the Committee to Bridge the GAP (CBG) on July 7, 1986. The petition was docketed by the Commission on July 7, 1986, and was assigned Docket No. PRM 50-44. A notice requesting comments on the petition was printed in the *Federal Register* on September 3, 1986 (51 Fed. Reg. 31,341). The petition requests that the Commission amend its regulations.

### **Basis for the Request**

The Petitioner offered the following justification for the proposed revision of the regulations:

- The occurrence of a graphite fire at the Chernobyl plant in the Soviet Union demonstrates that such fires are credible events. The NRC and



its licensees have mistakenly dismissed graphite fires as noncredible events.

- New experimental data show that NRC's generic analysis of stored energy in research reactor graphite significantly underestimates the actual amount of stored energy, and thus underestimates the associated risk of graphite fire.
- The NRC failed to require basic safety measures that could help to reduce the threat of such a fire. Licensees whose reactors use graphite, including dozens of nonpower reactors and one commercial power reactor, have no fire response plans for combating graphite fires in their reactors. Nonpower reactor licensees do not have adequate emergency plans to evacuate members of the public in the event of a graphite fire or other severe accident.

For these reasons, the Petitioner would require all licensees whose reactors employ graphite as a neutron moderator or reflector and whose licensed power is greater than 100 W to:

- (a) Formulate and submit for NRC approval fire response plans for combating a reactor fire involving graphite and other constituent reactor parts (e.g., fuel) that might be involved in such a fire, taking into consideration the potential for explosive reactions. Response plans shall identify precisely which materials will be used to suppress a fire without increasing the risk of explosion, and shall indicate where and in what quantities these materials will be stored.
- (b) Formulate and submit for NRC approval evacuation plans for a reactor fire. Plans should include evacuation out to a sufficient distance from the reactor such that no member of the public receives a dose to the thyroid greater than 5 rem, assuming a release to the environment of 25% of the equilibrium radioactive iodine inventory.
- (c) Perform measurements of the "Wigner energy" stored in the graphite of their reactor, and submit these measurements to NRC for review together with a revised safety analysis, which shall address the risks and consequences of a reactor fire. A sufficient number of graphite samples shall be measured to identify the location of maximum stored energy, and to determine the maximum quantity of stored energy within  $\pm 10\%$ .

## II. PUBLIC COMMENTS

### A. Description of Comments Received on Petition

On September 3, 1986, the Commission published a notice in the *Federal Register* (51 Fed. Reg. 31,341) requesting comments on the petition. The NRC

received nine requests for an extension of the comment period. An extension of the comment period was granted, changing the closing date for the comments from November 3, 1986, to February 2, 1987. A total of twenty-seven comments was received, six of which supported the petition and twenty-one of which opposed the petition. Of the six commenters supporting the petition, two were individual citizens and four were from citizen's groups. Of the twenty-one commenters opposed to the petition, fifteen were universities or university-related organizations, four were companies involved with the nuclear industry, one was a state government agency, and one was an individual citizen.

Of the comments in support of the petition, none offered any specific technical insights but rather simply endorsed the information and basis of the petition. These comments covered general concerns that include:

- the potential for graphite fires,
- training of firefighters to manage graphite fires,
- evacuation of persons on site and in nearby areas in the event of an accident.

Highlights from the comments opposing the petition are as follows:

- CBG's comparison of research reactors to the Chernobyl-4 (RBMK) reactor ignores the extreme differences in power level, core size, fission product inventory, operating temperature, reactor control systems, and inherent design characteristics.
- CBG's inference that graphite fires were the initiating events in both the Chernobyl and Windscale accidents cannot be substantiated.
- The operating temperature of the Chernobyl graphite (700°C) dismisses CBG's contention that stored energy in the irradiated graphite played any role in the Chernobyl accident.
- CBG ignores the necessity for an initiating event to raise the graphite temperature 50°C-100°C above its normal operating temperature before any Wigner (stored) energy in graphite can be released.
- CBG ignores the fact that only the releaseable stored energy, not the total stored energy, in graphite, in accordance with the annealing temperature, can contribute to a graphite temperature increase.
- The conditions necessary for graphite burning do not exist nor can they be created by random events in nonpower reactors.
- The conditions necessary for graphite burning do not exist in the Fort St. Vrain reactor.
- Operating temperatures of the graphite in the Fort St. Vrain reactor preclude the accumulation of any significant quantity of stored energy (i.e., the graphite is self-annealing).
- NRC-approved emergency plans (required by 10 C.F.R. Part 50, Appendix E) are in place at all NRC-licensed reactors and are adequate and acceptable.

- Measurement of stored energy is not consistent with the ALARA philosophy, since it requires the unnecessary exposure of reactor personnel.
- CBG fails to provide a technical basis for any of the petition's proposed requirements.

The comments opposing the petition are too numerous to address individually. However, each comment has been considered by the Staff and its contractors in analyzing the petition and in developing the NRC position. Copies of the petition, public comments and abstracts of the comments received on the petition, and the Brookhaven National Laboratory Report NUREG/CR-4981 are available for inspection and copying under Docket No. PRM 50-44 in the NRC Public Document Room, 1717 H Street, NW, Washington, DC. Copies of NUREG/CR-4981 may be purchased through the U.S. Government Printing Office by calling (202) 275-2060 or by writing to the U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies may also be purchased from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161.

## **B. Analysis of the Petition**

### **(1) *The Petitioner Asserts That "the Occurrence of a Graphite Fire at the Chernobyl Plant Demonstrates That Such Fires Are Indeed Credible Events"***

CBG filed its petition on July 7, 1986. Consequently, only fragmentary information, mostly conjecture, was available before the petition was filed. More detailed and definitive information was first made available, outside the Soviet Union, during a meeting held by the International Atomic Energy Agency (IAEA) in Vienna, Austria, on August 25 to 29, 1986. Without the benefit of the detailed Soviet report, the basis of the petition is seriously flawed.

In response to the CBG assertion regarding the Chernobyl event, the NRC selected Brookhaven National Laboratory (BNL), operator of the Brookhaven Graphite Research Reactor, whose Staff is recognized internationally for its research on reactor-grade graphite and its properties, to review the published information and determine its relevancy to the use of graphite in NRC-licensed reactors. In addition, BNL personnel reviewed the Chernobyl and Windscale accidents and the role, if any, of the graphite moderator in these events. The results of this review are contained in NUREG/CR-4981, "A Safety Assessment of the Use of Graphite in Nuclear Reactors Licensed by the U.S. NRC," July 1987. This report is available as noted in § II.A.

The Staff has used the BNL report, comments received from the public, and its own understanding of and expertise relevant to the use of graphite in

nonpower reactors and Fort St. Vrain to evaluate and respond to the assertions and proposed requirements of the CBG petition (PRM 50-44).

In their evaluations of the Chernobyl accident, both Soviet and international scientists agree that graphite burning did occur during this accident. However, most of the experts, including the scientists at BNL, consider the graphite burning a secondary or corollary event resulting from the explosions that occurred as a result of a very rapid reactivity insertion that overheated the fuel and cladding. The explosion created the conditions necessary to initiate and sustain graphite burning (e.g., fragmentation of fuel and graphite, rupture of the moderator inert gas boundary, admission of air, a favorable ratio of graphite volume-to-surface area, sustained heat input from asphalt fires, and decay heat). Although the petition considers the Chernobyl accident a demonstration of graphite fire credibility, the accident confirms that initiation and sustained burning of graphite require the existence of a complex combination of ideal conditions, which are extremely difficult to achieve in any real situation and are virtually incredible in the reactors being considered under this petition. The words "credible" and "incredible" have been used in many AEC/NRC safety analyses. As used by the Staff, these words have always been a qualitative statement of the likelihood or probability of an event or condition occurring. Accordingly, the Staff's conclusion that sustained or self-sustained graphite burning is not a credible event in NRC-licensed reactors is still valid (i.e., the random simultaneous occurrence of the several conditions necessary for sustained graphite burning or self-sustained graphite burning is an event with a very small probability of occurring). The Staff thus concurs in the conclusion reached in the BNL report: "There is no new evidence associated with the analyses of either the Windscale accident or the Chernobyl accident that indicates a credible potential for a graphite burning accident in any of the reactors considered in this review. Nor is there any new evidence that detailed case-by-case safety analyses of the role of graphite in NRC-licensed reactors are warranted." Accordingly, there has been no change in the Staff's assessment of graphite burning, the Chernobyl accident notwithstanding, in NRC-licensed reactors, and no changes are required in the Staff's previous findings in the safety evaluation reports prepared for these reactors.

**(2) *The Petitioner States That "the NRC Has Failed to Require Basic Safety Measures to Reduce the Threat of a Graphite Fire"***

The Petitioner did not identify the "basic measures" the NRC has failed to require and provided no basis for this statement. The Staff considers that the elements of the NRC regulatory and licensing process represent the basic safety measures required of licensees to ensure the safe design and operation of their reactors as well as to provide specific plans and procedures for managing and

responding to off-normal conditions and accidents. Some examples that are relevant to fire<sup>1</sup> detection, protection, and mitigation are listed below:

- Safety reviews of nonpower reactors include an assessment of the fire protection systems at each facility. Fire detection, fire extinguishers, fire alarms, fire prevention, firefighting training of facility personnel, and onsite and offsite response to fire alarms are typical areas included in the safety review. Inadequacies identified during the review must be corrected before a license is granted.
- Each nonpower reactor licensee is required by conditions of the license (Technical Specifications) to provide a safety review for experiments to be inserted in their reactors and for changes in reactor operation. Among many other safety considerations, an assessment of fire potential (e.g., flammable materials) is included.
- Each nonpower reactor licensee has responded to the requirements of 10 C.F.R. § 50.54(q) and 10 C.F.R. Part 50, Appendix E, in submitting an emergency plan for NRC review and approval. All licensed nonpower reactors now have approved emergency plans and the necessary implementing procedures. These plans were reviewed against ANSI/ANS-15.16-1982 and Regulatory Guide 2.6, proposed Revision 1, as outlined in NUREG-0849, "Standard Review Plan for the Review and Evaluation of Emergency Plans for Research and Test Reactors."

Examples of the evaluation items that are relevant to "basic safety measures to reduce the threat of . . . fire" are listed below:

- (a) The [emergency] plan should also describe nonradiological monitors or indicators. . . . (2) Fire detectors. . . .
- (b) The emergency plan should describe an initial training and periodic retraining program designed to maintain the ability of emergency response personnel to perform assigned functions for the following:  
. . . . f. Police security, ambulance, and firefighting personnel. . . .

NUREG-0849, §§ 8.0 and 10.0.

The licensee for Fort St. Vrain has satisfactorily met the requirements of 10 C.F.R. § 50.48 and 10 C.F.R. Part 50, Appendix R. Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," sets forth fire protection features required to satisfy Criterion 3 of Appendix A to 10 C.F.R. Part 50. These NRC requirements include the "basic safety measures to reduce the threat of a . . . fire."

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<sup>1</sup>Covers all types of fires, including graphite fires.

It is the Staff's judgment that the NRC has required adequate basic safety measures to reduce the threat of fire as well as to mitigate the consequences of any fires that do occur. These measures have been reviewed, approved, and implemented for all licensed reactors. They generally apply to all fires and have been found to provide acceptable protection for the health and safety of the public.

**(3) *The Petitioner Alleges That "Licensees Have No Fire Response Plans for Graphite Fires"***

As discussed in item 2, above, all licensees have NRC-approved emergency plans in accordance with 10 C.F.R. § 50.54(q) and 10 C.F.R. Part 50, Appendix E. These plans provide for response to fires, for training of firefighting personnel, and for periodic drills to demonstrate proper operation of the plan in accordance with procedures developed for each facility. One commenter opposing the petition reported that the offsite firefighters and their supervisors were regularly trained in firefighting procedures for their facilities and that the firefighters were confident that they were prepared to deal with the type of fires they could encounter, including a fire involving graphite. This is consistent with BNL research,<sup>2</sup> which recommends a basic firefighting technique for graphite fires, that is, exclude air or oxygen and cool the graphite. Success in using this basic "cool-and-smother" technique was demonstrated during the Chernobyl accident. Cold nitrogen gas was pumped into the bottom of the reactor to successfully cool the graphite and fuel debris while excluding oxygen to smother any burning. Also at Chernobyl, graphite blocks were successfully quenched using water (NUREG-1250 at 4-12, 4-21, and 7-23). Since this basic cool-and-smother technique is effective for most fires, the Staff has concluded that the licensees' existing emergency plans provide an adequate response for graphite fires as well as any other type of fire.

**(4) *The Petitioner Asserts That "Nonpower Reactors Do Not Have Adequate Emergency Plans to Evacuate Members of the Public in the Event of a Graphite Fire"***

Neither the Petitioner nor any of the citizens' groups or individuals supporting the petition provided a basis in support of this assertion. The Staff has reconsidered the need to provide a plan to evacuate members of the public

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<sup>2</sup>R.W. Powell, R.A. Meyer, and R.G. Bourdeau, "Control Radiation Effects in a Graphite Reactor Structure," *Proceedings of the Second United Nations International Conference on the Peaceful Uses of Atomic Energy*, Vol. 7, 1958, at 293.

located off site in the very unlikely event of a graphite fire and, in the course of evaluating this petition, has not identified any such need.

As stated in Regulatory Guide 2.6, Rev. 1:

In the judgment of the NRC Staff, the potential radiological hazards to the public associated with the operation of research and test reactors are considerably less than those involved with nuclear power plants. In addition, because there are many different kinds of nonpower reactors, the potential for emergency situations arising and the consequences thereof vary from facility to facility. These differences and variations are expected to be reflected realistically in the emergency plans and procedures developed for each research and test reactor facility.

Accordingly, each nonpower reactor licensee has developed an emergency plan based on the identified characteristics of its reactor facility. To assist licensees in meeting the requirements of 10 C.F.R. Part 50, Appendix E, Regulatory Guide 2.6 (ANSI/ANS-15.16-1982, Table 2) provides an "Alternate Method for Determining the Size of an Emergency Planning Zone (EPZ)." Table 2 is based on highly conservative dose calculations that are generically applicable to nonpower reactors. These calculations include the very conservative assumption for nonpower reactors that 25% of the equilibrium radioactive iodine is gaseous and will escape from the reactor building into the environment. It is the current and standard practice of the NRC Staff to use the 25% iodine source term with regard to 10 C.F.R. Part 20 recommended dose considerations in its safety evaluations of nonpower reactors. Table 2, which is based on power level, recommends that reactors with power levels less than or equal to 2 MW use their "operations boundary" for their EPZs, which essentially recognizes that a reactor of this power level will only need to initiate protective actions for members of the general public on site and will not pose an unacceptable radiological hazard to members of the public off site. There are only five licensed nonpower reactors containing graphite that have power levels greater than 2 MW. Three of the reactors have power levels less than 10 MW, one has a power level of 10 MW, and one has a power level of 20 MW. Table 2 recommends an EPZ of 100 meters for nonpower reactors with power levels greater than 2 MW and equal to or less than 10 MW, and 400 meters for those with power levels greater than 10 MW and equal to or less than 20 MW. The licensee for each of these reactors has an NRC-approved emergency plan that takes into consideration the specific characteristics of each reactor (e.g., fission product inventory and engineered safety features) in the development of the action levels, procedures, and protective actions necessary to protect all members of the public within its EPZ. Regulatory Guides 1.3 and 1.4 recommend the use of the 25% radioactive iodine source term in determining the compliance of power reactors with the siting, containment, and dose guidelines of 10 C.F.R. Part 100. The Staff believes

the current regulatory practices are suitable to ensure that the basic statutory requirement, for adequate protection of public health and safety, is met.

These emergency planning considerations are appropriate for reactors utilizing graphite components. Because the graphite contains no fission products and very few activation products, even the remote possibility of the graphite burning would not contribute to the radiological source term. Therefore, a graphite fire in and of itself presents essentially no radiological hazard to the public.

Because of the major differences in design, power level, core size, fission product inventory, reactor control systems, and inherent reactor neutronics, comparison of the Chernobyl accident and its consequences with accidents and the resulting consequences for nonpower reactors is not appropriate, nor is it meaningful. Many of the comments received in opposition to the petition speak of the impropriety of comparing NRC-licensed nonpower reactors with the Chernobyl RBMK-1000 reactor.

The Petitioner has not provided any proof of inadequacy in the emergency plans for nonpower reactors. On the basis of a review of the guidance for emergency planning contained in Regulatory Guide 2.6 and ANSI/ANS 15.16-1982 and the requirements of 10 C.F.R. Part 50, Appendix E, the Staff has concluded that the emergency plans previously approved by NRC are still appropriate and adequate. Neither the Petitioner nor the commenters supporting the petition have supplied information that demonstrates that, even in the remote case of graphite burning, there is a need to modify any existing emergency plans.

***(5) The Petitioner States That "NRC's Generic Analysis of Stored Energy in Research Reactor Graphite Significantly Underestimates the Actual Amount of Stored Energy and Thus Underestimates the Associated Risk of Graphite Fire"***

The conditions necessary for stored energy releases in graphite are described in § 3 of the BNL report. The Staff agrees with the methodology derived for estimating the stored energy that can be released from graphite and in the analysis applied to the estimation of stored energy releases in § 6 of the BNL report.

In § 2 of the BNL report, the necessary conditions for graphite to burn are discussed in detail. A reassessment of the literature on the experiments previously performed at BNL and the reported details of the Windscale and Chernobyl accidents are included in the BNL study. The conclusions reached as a result of these analyses are:

[T]he potential to initiate or maintain a graphite burning incident is essentially independent of the stored energy in the graphite, and depends on other factors that are unique for each research reactor and for Fort St. Vrain. In order to have self-sustained rapid graphite oxidation



in any of these reactors, certain necessary conditions of geometry, temperature, oxygen supply, reaction product removal and a favorable heat balance must be maintained. There is no new evidence associated with either the Windscale Accident or the Chernobyl Accident that indicates a credible potential for a graphite burning accident in any of the reactors considered in this review.

On the basis of its review of the BNL report, the literature on BNL experiments, and the information on the Windscale and Chernobyl events, the Staff finds that the conclusions reached by BNL are correct and adopts them as its own.

**(6) *The Petitioner Asserts That "Actual Empirical Measurements of Wigner Energy Will Be Required to Assess the Magnitude of the Energy Stored in Research Reactor Graphite"***

Measurements of stored energy in its research reactor graphite were made by the University of California, Los Angeles, in the course of decommissioning its Argonaut research reactor. Several things learned from its program of sampling and measuring stored energy were reported by a commenter who opposed the petition. This information was also reported in a paper by Ashbaugh, Ostrander, and Pearlman<sup>3</sup> at the American Nuclear Society annual meeting in June 1986.

- Stored energy decreases with increasing distance from the fuel region (e.g., 5.61 cal/g at 18 inches, 1.34 cal/g at 22 inches, and an unmeasurable amount at 26 inches).
- Within the graphite island, stored energy decreases from 33.3 cal/g at the fuel box graphite interface to 19.2 cal/g about 3 inches from the fuel box toward the center of the graphite island.

These results illustrate the principles associated with the proposed requirement to measure the Wigner energy stored in the research and test reactor graphite. The significant changes in stored energy with relatively small differences in location demonstrate the difficulty in selecting the locations and the number of samples needed to characterize the "maximum stored energy and to determine the maximum quantity of stored energy to within  $\pm 10\%$ ."

The bases for storage and release of Wigner energy in graphite are delineated in the BNL report, which shows that there is no unique connection between total stored energy and the releaseable energy. Thus, establishing the magnitude of the stored energy in nonpower reactor graphite by empirical measurements would not provide the information needed to evaluate this potential. Because the releaseable stored energy saturates, an upper bound on the stored energy that

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<sup>3</sup>C.E. Ashbaugh, N.C. Ostrander, and H. Pearlman, "Graphite Stored Energy in the UCLA Research Reactor," *Transactions of the ANS*, Vol. 52, 1986, at 372.

can be released to 700°C can be determined from existing data. Therefore, no measurement of stored energy is required.

Also, because of the several conditions required to initiate graphite burning in addition to a graphite temperature of 650°C, the potential to initiate or maintain a graphite-burning incident is essentially independent of stored energy in the graphite. This further supports the conclusion that no measurement of stored energy is needed.

Many of the commenters who opposed the petition cited a violation of ALARA considerations because stored energy measurements would not provide needed information, but would incur radiological exposures. The impracticality of taking the samples and making the measurements was also pointed out. For example, sampling the graphite reflector pieces in the ends of a TRIGA fuel pin would require breaching the fuel pin cladding as well as providing shielding against the fuel pin's radioactivity. Similar challenges would be associated in taking a sample from graphite reflector components clad with metal. In addition, it was pointed out that numerous samples would be required to establish the true magnitude of stored energy in the various graphite components.

The Staff has considered the relevant BNL findings and the comments received and has concluded that empirical measurement of stored energy in nonpower reactor graphite components is not practical nor is it necessary to ensure the health and safety of the public.

***(7) The Petitioner Refers to "One Commercial Power Reactor," Indicating That It Has No Fire Response Plans for Combating Graphite Fires; the Petitioner Also States That "Graphite Is Used as a Moderator in the Fort St. Vrain Nuclear Power Plant in Colorado"***

Other than the lack of graphite fire response plans, the Petitioner does not identify specific concerns related to Fort St. Vrain. However, it is implied that all reactors using graphite components are subject to CBG's concerns and assertions. In reality, the petition and requirements are really directed at NRC-licensed nonpower reactors.

Fort St. Vrain is a high-temperature gas-cooled reactor (HTGR) owned and operated by Public Service Company of Colorado. Its design capacity is 330 MWe. It uses a ceramic fuel particle (uranium and thorium carbide) clad with silicon carbide and multiple layers of pyrolytic carbon. The fuel particles are compacted into small rods and installed in fuel holes in the hexagonal graphite fuel blocks. Including the reflectors there are 500 tons of reactor graphite in the core. The reactor coolant is helium with an average inlet temperature of 762°F (405°C) and an outlet temperature of 1445°F (785°C). The average graphite moderator temperature is 1380°F (749°C). These characteristics are far different than those of the nonpower reactors. BNL has reviewed Fort St. Vrain

parameters in relation to graphite stored energy and concludes in § 7 of its report, "Fort St. Vrain operates at temperatures that preclude accumulation of stored energy. There are no known problems associated with stored energy in graphite for operating temperatures associated with HTGRs." The Staff agrees with BNL's conclusion and can find no reason to empirically measure the stored energy in Fort St. Vrain's graphite components.

In response to an NRC request, Public Service Company of Colorado addressed the implications of the Chernobyl accident for Fort St. Vrain. The licensee submitted a final report entitled "Design Differences, Air Ingress and Graphite Oxidation, and Steam Ingress and Water Gas Generation" (P-86641, December 4, 1986). The Staff has reviewed the report and concludes that the only significant similarity between Chernobyl and Fort St. Vrain reactors is that they both contain a large amount of graphite moderator. There are design differences between these reactors that preclude an accident similar to the Chernobyl accident at Fort St. Vrain.

Furthermore, on the basis of its review, the Staff concluded that the structural integrity of the Fort St. Vrain prestressed concrete reactor vessel would be maintained during and after the assumed accident scenarios. Although the initiating events are beyond the plant's original design basis, the plant design appears to have an adequate margin of safety to withstand these events.

The Staff's comments and conclusions can be found in the NRC Public Document Room under Docket No. 50-267, in a letter dated April 1, 1987, Accession No. 8704090248.

The Petitioner's assertion that graphite burning and oxidation were not included in the Staff's evaluation for Fort St. Vrain is in error. This subject was thoroughly reviewed in both the construction permit and operating license safety evaluations. These Staff evaluations may be found in the Public Document Room in the 50-267 docket file. The licensee's updated Fort St. Vrain Final Safety Analysis Report, § 14, contains much of the information and analyses submitted for NRC review. The Staff concluded that significant graphite oxidation at Fort St. Vrain was not credible. (Note: In addition to the previously discussed conditions necessary for graphite burning, Fort St. Vrain must suffer simultaneous independent structural failures resulting in the release of the inert helium and the subsequent supply of an adequate air/oxygen flow). The Staff finds no basis for changing its previous conclusions. The licensee for Fort St. Vrain has met the requirements of 10 C.F.R. Part 50, Appendix R (which sets forth fire protection features required to satisfy Criterion 3 of 10 C.F.R. Part 50, Appendix A) and has an NRC-approved emergency plan that meets 10 C.F.R. Part 50, Appendix E. The Fort St. Vrain fire protection program and emergency plan specify the necessary organization, plans, and procedures to provide the necessary protection of the health and safety of the public even in the very unlikely event of a graphite fire.

### III. BASIS FOR DENIAL

The NRC denies the Petitioner's request to amend Part 50 to require licensees whose reactors employ graphite as a neutron moderator or reflector and whose licensed power is greater than 100 W to:

- (1) formulate and submit for NRC approval fire response plans for combating a reactor fire involving graphite and other constituent reactor parts (e.g., fuel);
- (2) formulate and submit for NRC approval evacuation plans in case of a reactor fire; and
- (3) perform measurements of the Wigner energy stored in the graphite of their reactors, and submit these measurements to the NRC for review together with a revised safety analysis that shall address the risk and consequences of a reactor fire.

This denial is based on the following:

- (1) Each licensee of a nonpower reactor has submitted an emergency plan that has been approved as meeting the requirements of Part 50, Appendix E. The Petitioner has not demonstrated that these plans do not provide an appropriate level of protection of the health and safety of the public.
- (2) The licensee for Fort St. Vrain has an approved emergency plan that meets the requirements of Part 50, Appendix E, as well as an approved fire protection program that meets the requirements of Part 50, Appendix R. In addition, at the request of the NRC, the licensee has submitted a report addressing the implications of the Chernobyl accident for Fort St. Vrain. The report has been reviewed and approved by the Staff. The Petitioner has not provided a technical basis that would show that an additional fire response plan would enhance the protection provided for the health and safety of the public by the existing emergency plan and fire protection program.
- (3) Measurements of maximum stored energy in nonpower reactors are not necessary to ascertain the releaseable stored energy in graphite components below 650°C. Existing knowledge provides this information which is adequate for a safety evaluation of the effect of stored energy on the potential for graphite burning and the associated danger to the health and safety of the public. Additionally, such measurements

are contrary to the NRC's ALARA principle, since unneeded knowledge would be sought at the expense of unnecessary personnel exposure.

Accordingly, the Commission denies the petition.

For the Nuclear Regulatory  
Commission

Victor Stello, Jr.,  
Executive Director for  
Operations

Dated at Bethesda, Maryland,  
this 23d day of September 1987.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman  
Thomas M. Roberts  
Frederick M. Bernthal  
Kenneth M. Carr  
Kenneth C. Rogers

In the Matter of

Docket No. 50-322-OL-3  
(Emergency Planning)

LONG ISLAND LIGHTING  
COMPANY

(Shoreham Nuclear Power Station,  
Unit 1)

November 5, 1987

The Commission reverses ALAB-832, 23 NRC 135 (1986), insofar as it allowed the admission of two contentions for evidentiary hearing on whether the Shoreham Plume Exposure Pathway Emergency Planning Zone should be expanded by a few miles to: (1) provide an adequate base for the expansion of emergency response efforts beyond the EPZ in very severe accidents; and (2) minimize the occurrence and effects of spontaneous evacuation from outside the EPZ. The Commission affirms the ALAB-832 remand to the Licensing Board for further consideration of evacuation plans for hospitals in the Shoreham EPZ.

**EMERGENCY PLAN: EMERGENCY PLANNING ZONES (SIZE)**

The NRC/EPA task force report (NUREG-0396), which formed the basis for the "EPZ" concept in NRC's emergency planning regulations, indicates clearly that the margins of safety provided by the recommended 10-mile radius were not calculated in any precise fashion but were qualitatively found adequate as a matter of judgment. EPZ shape and size can be somewhat different than the 10-mile circular radius implies without compromising emergency planning goals,

as evidenced by the following statement in the report: "judgment . . . will be used in determining the precise size and shape of the EPZs considering local conditions such as demography, topography, and land use characteristics, access routes, local jurisdictional boundaries and arrangements with the nuclear facility operator for notification and response assistance." See 10 C.F.R. § 50.47(c)(2) (1987).

#### **EMERGENCY PLAN: EMERGENCY PLANNING ZONES (SIZE)**

Nothing in NUREG-0396 or in any part of the emergency planning rulemaking record compels a finding that EPZ adequacy is especially sensitive to where exactly the boundary falls, and any such conclusion would seem to be at odds with the overall thrust of the report. In particular, the NUREG-0396 analysis indicates that "adequate protective measures" in the context of emergency planning is not a precisely defined concept.

#### **EMERGENCY PLAN: CONTENT (PROTECTIVE MEASURES)**

NRC emergency planning requirements do not require that an adequate plan achieve a preset minimum radiation dose saving or a minimum evacuation time for the plume exposure pathway emergency planning zone in the event of a serious accident. Rather, those requirements are designed to achieve reasonable and feasible dose reduction under the circumstances; what may be reasonable or feasible for one plant site may not be for another. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-86-13, 24 NRC 22, 30 (1986).

#### **EMERGENCY PLAN: EMERGENCY PLANNING ZONES (SIZE)**

Implicit in the concept of "adequate protective measures" is the fact that emergency planning will not eliminate, in every conceivable accident, the possibility of serious harm to the public. Emergency planning can, however, be expected to reduce any public harm in the event of a serious but highly unlikely accident. Given these circumstances, it is entirely reasonable and appropriate for the Commission to hold that the rule precludes adjustments on safety grounds to the size of an EPZ that is "about 10 miles in radius." In the Commission's view, the proper interpretation of the rule would call for adjustment to the exact size of the EPZ on the basis of such straightforward administrative considerations as avoiding EPZ boundaries that run through the middle of schools or hospitals, or that arbitrarily carve out small portions of governmental jurisdictions. The goal



is merely planning simplicity and avoidance of ambiguity as to the location of the boundaries.

#### **EMERGENCY PLANNING: EVACUATION TIME ESTIMATES**

Even though sheltering will quite likely be the preferred protective action for EPZ hospitals in the event of a serious accident at Shoreham, evacuation should not be prejudiced by the failure to plan in advance. Appendix E to 10 C.F.R. Part 50 requires evacuation time estimates for the EPZ without exceptions for special facilities such as hospitals. Moreover, hospitals, as a kind of "special facility," are specifically mentioned in the principal guidance document in this field, NUREG-0654, and there is no suggestion in this guidance that hospitals are to be treated specially as exempt from the evacuation planning requirement that applies to other segments of the population within the EPZ.

#### **EMERGENCY PLAN: CONTENT (PROTECTIVE MEASURES)**

A Commission conclusion that NRC regulations require Applicant to fulfill the same emergency planning obligations for Shoreham with regard to hospital evacuation as those imposed by the Licensing Board in connection with other like segments of the EPZ, such as nursing/adult homes, does not necessarily mean that the applicant's emergency plan is inadequate with respect to hospitals. Under 10 C.F.R. § 50.47(c)(1), the Licensing Board could still approve the utility plan if it found that the deficiencies related to the hospitals were not significant for Shoreham.

### **MEMORANDUM AND ORDER**

In ALAB-832, 23 NRC 135 (1986), the Shoreham Appeal Board reversed and remanded three issues, among others, to the Licensing Board: the Licensing Board's refusal to permit an evidentiary hearing on whether the Shoreham Plume Exposure Pathway Emergency Planning Zone (EPZ) should be expanded by a few miles to provide an adequate base for ad hoc emergency response efforts beyond the EPZ in very severe accidents (Contention 22.B); the Board's refusal to permit an evidentiary hearing on whether the EPZ should be expanded by a few miles to minimize the occurrence and effects of spontaneous evacuation from outside the EPZ (Contention 22.C); and the Board's approval of the applicant's provisions for hospital evacuation. In an Order dated September 19, 1986 (unpublished), the Commission took review of these three issues and requested briefs from the parties.

On review, Long Island Lighting Company (LILCO) and the Staff support the Licensing Board's decisions on these issues and oppose the Appeal Board's decision. The Intervenor take the opposite view.

We conclude on the EPZ issues that while the decision of the Appeal Board is a reasonable one in light of the available, but limited, adjudicatory precedent, additional Commission guidance is needed. After careful review of the history of our regulations, we conclude that Contentions 22.B and 22.C constitute challenges to these regulations. Since Intervenor have declined to cast their contentions in the alternative as challenges to the regulations under 10 C.F.R. § 2.758, litigation of these issues must be disallowed. As for hospital evacuation, we agree with the Appeal Board that LILCO's plans do not fully satisfy NRC's emergency planning regulations.

## I. EPZ SIZE

### A. Background

Section 50.47(c)(2) of 10 C.F.R. provides that, generally, the EPZ for power reactors shall be "about 10 miles" in radius, with the exact boundaries to be determined "in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries." LILCO's plume EPZ is about 10 miles in radius.

In Contention 22, a four-part, ten-page (double-spaced) contention, Intervenor argued that the proposed LILCO plume EPZ was not large enough, for several reasons.<sup>1</sup> In subpart B, it was argued that a myriad of local conditions mandated a larger plume EPZ because, in a severe accident, LILCO would not be able to adequately extend emergency response efforts outside the 10-mile area on an ad hoc basis.

In subpart C, Intervenor argued that local conditions demanded an EPZ larger than 10 miles, most importantly because massive spontaneous evacuation by those outside the EPZ would have two disastrous effects: first, residents of the eastern end of Long Island would spontaneously evacuate through the EPZ to avoid being trapped, either passing through contaminated areas or impeding evacuation from inside the EPZ; and second, spontaneous evacuation from west of the EPZ would impede evacuation of the EPZ.

The Licensing Board denied admission of these contentions on the ground that they challenged the Commission's generic determination of EPZ size, as

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<sup>1</sup> The text of Contentions 22.B and C is set forth in the Appendix (not published) to this Memorandum and Order.

manifested in 10 C.F.R. § 50.47(c)(2).<sup>2</sup> In dismissing Contention 22.B, the Licensing Board noted the Commission's explanation of the 1980 amendments to the emergency planning rules, where the Commission stated that "[t]hese distances are considered large enough to provide a response base that would support activity outside the planning zone should this ever be needed." Special Prehearing Conference Order, Aug. 19, 1983, at 10, *quoting* 45 Fed. Reg. 55,409, col. 2 (Aug. 19, 1980). The Board also explained that, contrary to the Commission's generic determination, Contention 22.B

asserts, [in essence], that advance planning, as opposed to *ad hoc* planning, is required beyond the 10-mile EPZ because of the eight alleged "distinguishing characteristics." To the extent that this contention asserts that *ad hoc* emergency response would be impossible, it must be rejected as a challenge to § 50.47(c)(2). To the extent that it challenges the LILCO plan in specific matters, viz. transient population, inadequate roads, adverse weather, etc., these concerns have already been asserted in other contentions which we have admitted.

Order Ruling on Objections to Special Prehearing Conference Order, Sept. 30, 1983, at 4. The Licensing Board rejected Contention 22.C for much the same reasons.

In ALAB-832, the Appeal Board reversed the Board's disallowance of these contentions, reasoning that "these contentions do not appear to seek anything more than that to which section 50.47(c)(2) entitles intervenors: a determination of the 'exact size and configuration' of the EPZ based upon, *inter alia*, local conditions."<sup>3</sup> On the ground that one set of facts might support more than one contention, the Appeal Board also rejected the Licensing Board's reasoning that because Intervenor were being permitted to challenge the overall adequacy of the plan to deal with spontaneous evacuation, the disallowance of Contention 22.B had no effect on Intervenor's ability to litigate the safety matters at issue. *Id.*, 23 NRC at 148.

In taking review of the rulings on Contention 22.B, the Commission asked:

(1) whether . . . the admission of Contention 22.B impermissibly challenges the generic rulemaking finding that a 10-mile EPZ will provide an adequate basis for satisfactory *ad hoc* emergency response beyond 10 miles should this be required (*see* 45 Fed. Reg. 55,406, col. 2) (August 19, 1980);<sup>4</sup> and,

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<sup>2</sup> Special Prehearing Conference Order, Aug. 19, 1983 (unpublished); Order Ruling on Objections to Special Prehearing Conference Order, Sept. 30, 1983 (unpublished).

<sup>3</sup> 23 NRC at 148. However, the Appeal Board rejected Intervenor's argument that the only legitimate limits on the size of the EPZ are those limits dictated by local conditions. Instead, noted the Appeal Board, the regulations permit consideration only of "minor adjustments (such as a mile or two) . . ." *Id.* at 149 n.41. *Cf. id.* at 148 n.37.

<sup>4</sup> Commission Order dated Sept. 19, 1986, at 2. As noted above, the Commission stated in the cited *Federal Register* notice that "these distances are considered large enough to provide a response base that would support activity outside the planning zone should this ever be needed." *Id.*

(2) in the context of Contention 22.C: (a) [whether] there is a logical connection between plume EPZ size and the ability to resolve problems associated with possible spontaneous evacuation, and (b) [whether] the regulations contemplate that the possibility of spontaneous evacuation is a "local condition" which should result in adjustments to an EPZ.

## B. Parties' Arguments Before the Commission

### 1. Intervenor Arguments

Intervenors assert that the contentions, far from challenging the regulations, merely seek to enforce them. Thus, Intervenors argue, the Appeal Board correctly acknowledged the importance of the generic considerations that led to the choice of the 10-mile guideline,<sup>5</sup> but most importantly recognized that "[n]otwithstanding these generic considerations, . . . section 50.47(c)(2) goes on to direct that the 'exact size and configuration' of the plume EPZ 'shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries.'"<sup>6</sup>

Intervenors offer two main arguments on the interpretation of this regulation. First they argue that while spontaneous evacuation and lack of local government cooperation aren't listed in the regulations as local conditions, the conditions listed are exemplary rather than exclusive. Second, Intervenors emphasize that "the determination of the exact size and configuration of the EPZ must be made 'in relation to *local emergency response needs and capabilities* as they are affected by . . .'" local conditions. Brief at 13 (emphasis in Brief). The concept of "local emergency response needs and capabilities," they continue, encompasses LILCO's alleged failure to plan for spontaneous evacuation, an evacuation that will result directly from listed conditions such as the land characteristics of Long Island.<sup>7</sup>

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<sup>5</sup> Those generic considerations are that "(1) projected doses from most accidents would not exceed Federal [PAG] dose levels beyond that distance from the facility and (2) detailed planning within 10 miles would provide a substantial base for expansion of response efforts if this became necessary." ALAB-832, 23 NRC at 145, citing NUREG-0396 and NUREG-0654.

<sup>6</sup> 23 NRC at 145. In their Reply Brief, Intervenors charge that LILCO and the Staff offer arguments to the Commission on EPZ size that largely address questions other than those that the Commission chose to review. Reply Brief at 3. Intervenors claim that they don't respond to these improperly offered arguments, and that the Commission should not consider them. However, they continue, if the Commission intends to consider these improper arguments, then it should offer Intervenors an opportunity to respond. In fact, however, Intervenors devote nearly two pages of their fourteen-page response to these LILCO/Staff arguments. See Reply Brief at 6-7.

<sup>7</sup> Intervenors add that the legitimacy of Contention 22.C is confirmed by the Brenner Licensing Board's statement that it would consider the effect of local conditions on EPZ size. The Brenner Board stated that whether or not contentions were submitted on the issue, it would investigate whether, "because of the geography of Long Island, evacuation planning within an approximate 10-mile EPZ may not be adequate because of the impacts of persons outside and to the east of the EPZ choosing to evacuate and having to do so by coming through the EPZ." LBP-82-19, 15 NRC 601, 618-19 (1982). LILCO claims that this issue was litigated in the form of Contentions 23.D (evacuation is an ineffective protective action because LILCO hasn't considered the extent of spontaneous

(Continued)

Rejecting charges that they challenge the regulations by seeking a 20-mile EPZ, or one that is "dramatically enlarged," Intervenor asserts that what they seek is only what the regulations demand, i.e., an EPZ based on local conditions, whatever the size.<sup>8</sup>

The Licensing Board had agreed with the Staff and LILCO that litigation of Contention 22.B required Intervenor to obtain a § 2.758 exception to the rule prohibiting challenges to the regulations, something Intervenor never sought. But, say Intervenor, Commission precedent includes cases requiring no exception for challenges to the 10-mile EPZ, cases relied on by the Appeal Board as well as Intervenor.<sup>9</sup> Even if LILCO, the Staff, and the Licensing Board are correct that only minor adjustments are permitted, Intervenor adds, they were precluded from litigating for these adjustments. Reply Brief at 6.

Finally, while claiming that the Commission did not take review of the Appeal Board holding in ALAB-832 that a utility-only emergency response is a "local condition" to be considered in determining EPZ size, Intervenor asserts in response to a LILCO argument that the Appeal Board correctly decided this question.

## 2. Staff and LILCO Arguments

The Staff and LILCO oppose the admission of Contentions 22.B and C mainly on the ground that the contentions challenge the generic findings underlying the Commission's determination that a 10-mile EPZ for power reactors is adequate to protect the public. The Staff and LILCO contest the Appeal Board's conclusion that Contention 22.B was aimed at determining the exact size and shape of the EPZ based on local conditions. Rather, they claim, it is a direct

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evacuation that will occur) and 23.H (LILCO has failed to provide for blockades to prevent spontaneous evacuees from entering contaminated areas of the EPZ, thus potentially harming them and impeding evacuation from the EPZ). Reply Brief at 9. The Licensing Board found for LILCO on both of these questions.

<sup>8</sup> Both LILCO and Intervenor cite a Commission decision in *San Onofre* to support their positions. *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-83-10, 17 NRC 528, 533 (1983). Intervenor points to the Commission's description there of the emergency planning regulations as requirements for "core planning with sufficient planning flexibility to develop a reasonable *ad hoc* response to those very serious low probability accidents that could affect the general public." Reply Brief at 5. All they seek, say Intervenor, is a chance to explore whether the "core planning" proposed by LILCO "is in fact 'sufficient' and has sufficient 'flexibility' to permit the 'develop[ment of] a reasonable *ad hoc* response.'" *Id.*

<sup>9</sup> The cases cited are *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), LBP-84-37, 20 NRC 933, 979-89 (1984), *aff'd*, ALAB-813, 22 NRC 59 (1985), and *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), LBP-85-14, 21 NRC 1219, 1236 (1985), *aff'd in relevant part*, ALAB-836, 23 NRC 479, 492-500, *Commission review declined*, July 24, 1986.

In our view, these cases provide only marginal support for Intervenor. In neither case was the propriety of admitting the contentions challenged before the Appeal Board. Moreover, the pertinent contention in *Limerick* was couched in the alternative, asserting that to prevent conditions outside and adjacent to the EPZ boundary from impeding evacuation from within the EPZ, it was necessary either to expand the EPZ or to provide additional traffic control outside the EPZ. In contrast, Contentions 22.B and 22.C assert that the only way to comply with the NRC's requirements is to expand the EPZ. Thus, *Limerick* does not directly support Intervenor's position.

challenge to the Commission's determination that a 10-mile EPZ in all cases *would* provide a substantial base for ad hoc expansion of any emergency response. Staff Brief at 12; LILCO Brief at 3-4. As to Contention 22.C, the Staff and LILCO make three main points: first, that the contention challenges the generic determinations in § 50.47; second, that the local conditions cited by Intervenor are not the type contemplated by the regulation; and third, that Intervenor's concerns were litigated before the Licensing Board in the context of other contentions.<sup>10</sup>

The Staff and LILCO contend that the rules contemplate clearly drawn EPZs, with minor deviations from the 10-mile radius where dictated by geographic factors. To support these propositions, the Staff further argues that the Commission decided in its 1980 rulemaking that:

Predetermined protective actions are needed for EPZs; . . . it is those within this zone for whom predetermined protective actions are needed in order to prevent exposure to airborne radionuclides; such predetermined actions are not needed for those outside this zone.<sup>11</sup>

Further, LILCO notes the conclusion of the NUREG-0396 task force relied upon by the Commission in the rulemaking:

"[I]t was the consensus of the Task Force that emergency plans could be based upon a generic distance out of which predetermined actions would provide dose savings for any such accidents. Beyond this generic distance it was concluded that actions could be taken on an *ad hoc* basis using the same considerations that went into the initial action determinations. [Thus], the size of the EPZs need not be site specific, [as] emergency planning needs seem to be best served by adopting uniform EPZs for initial planning studies for all light water reactors."<sup>12</sup>

Thus, LILCO argues, while obviously there are both generic and site-specific components to § 50.47(c)(2), the site-specific component is merely a fine-tuning mechanism such that "it makes sense to depart from a perfect circle in order to run the boundary down a prominent highway so that people will know clearly where the boundary is, and . . . to avoid bisecting a discrete population." LILCO Reply Brief at 2.

To bolster the position that only geographical conditions were to be considered, and then lead to minor adjustments, if any, LILCO cites the NRC Staff's presentation to the Commission in 1980, where the Staff explained that the factors to be considered were "'narrowed to a relatively small range,'" e.g., a

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<sup>10</sup> Intervenor note that the Appeal Board rejected this argument, and assert that the Commission "decided not to review" the Appeal Board ruling. Reply Brief at 11.

<sup>11</sup> Staff Brief at 15, citing 45 Fed. Reg. 55,406 (Aug. 19, 1980), and NRC Policy Statement on "Planning Basis for Responses to Nuclear Power Accidents," 44 Fed. Reg. 61,123 (Oct. 23, 1979).

<sup>12</sup> LILCO Brief at 12-13 n.17, quoting NUREG-0396 at 16, III-7, 8.

“‘major population center’ crossing the 10-mile boundary and ‘abnormal topographical situations, a very peculiar river valley.’” LILCO Brief at 5 n.6. Even in these “abnormal” situations, Staff’s intent was to adjust EPZ boundaries “‘by small amounts.’” *Id.*

The Staff adds that “the cure for any EPZ-related problem arising from events taking place outside the EPZ is not to expand the zone, but to factor those matters into the planning for the protective actions to be taken for those within the 10-mile zone.” *Id.* LILCO agrees, stating that the record shows that providing accurate, consistent information to the public will minimize spontaneous evacuation, and that this is the remedy contemplated by the regulations. LILCO Brief at 10, citing *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-82-70, 16 NRC 756, 779 (1982).

Further, even if spontaneous evacuation is to be considered a local condition, they submit, it isn’t the *type* of local condition that can cause adjustments in EPZ size, because the conditions contemplated in the regulation are those unique conditions existing around each plant, as opposed to those that might arise at the time of an accident at any plant. Staff Brief at 15-16; LILCO Brief at 12.

Continuing, they argue that Contention 22.C challenges the regulations in two ways. First, it posits nongeographic conditions, e.g., spontaneous evacuation and the utility-only nature of the response organization. Staff Brief, n.8; LILCO Brief at 4-5, 14. Second, the contention argues for more than minor adjustments to EPZ size based on these “conditions.” Thus LILCO contrasts the 10-mile generic finding (in NUREG-0396 and in the Commission’s 1980 preamble to the rule) with Contention 22.C’s implicit call for a dramatic EPZ expansion, i.e., an expansion “to the west to encompass those persons who may be involved in protective actions” and to the east to include “East End residents” (which could include those 50 miles from the plant) who may have “the perception that they would be trapped if the wind blew to the east.”

For such a challenge to the rules, intervenors allegedly should have sought permission under § 2.758 to litigate the contention, something that was suggested to intervenors early in the proceeding.

The Staff and LILCO also deny that there is any logical connection between plume EPZ size and the ability to deal with spontaneous evacuation. LILCO argues that “no matter where the boundary is drawn, there will always be people outside it who then become part of a new hypothesized ‘shadow,’” a problem earlier recognized by a TMI Licensing Board. LILCO Brief at 10, quoting *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), LBP-81-59, 14 NRC 1211, 1553 (1981). Thus, says LILCO, with the use of

Intervenors' theories to determine EPZ boundaries, "the EPZ spreads out like oil on water till it runs out of people." *Id.*<sup>13</sup>

Finally, LILCO and the Staff note that the Licensing Board specifically considered potential problems associated with spontaneous evacuation by those outside the EPZ, rejecting several Intervenor assertions:

- that spontaneous evacuation would prevent the evacuation of those inside the EPZ (Contentions 23.A-C);<sup>14</sup>
- that spontaneous evacuation of those outside the EPZ would significantly and adversely affect evacuation times from within the EPZ (Contentions 65, 23.D and 23.H);<sup>15</sup>
- that spontaneous evacuees from outside the EPZ might harm themselves by entering contaminated areas, and might impede evacuation from within the EPZ (Contention 23.H);<sup>16</sup> and
- that LILCO had drawn the EPZ boundary improperly such that it bisected discrete populations and jurisdictions (Contention 22.D).

LILCO Brief at 14.

### C. Commission Decision

Resolution of this issue requires that we examine carefully the history of the EPZ concept. The EPZ concept in NRC's emergency planning regulations derives from the report of an NRC/EPA task force on emergency planning, NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," December 1978 ("Report"). The Report's conclusions on EPZ size were based on analyses of both design-basis and serious Class 9

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<sup>13</sup> Aside from the lack of a local connection, says LILCO, Intervenor's proposal has two other important defects. First, it would force LILCO to use limited planning resources for people who generally will not need them. Second, it makes impossible the task of the planner trying to decide on EPZ boundaries:

First, the Intervenor claims that the emergency planner must predict how much spontaneous evacuation (that is, how many people and how far away) there will be in an emergency of unknown nature sometime in the future. This task is impossible. (Intervenor would use public opinion polls for this purpose, but the record shows that opinion polls cannot predict actual emergency behavior.) . . . Even assuming the planner can predict the extent of spontaneous evacuation, he then has to have a criterion for where to draw the line. (Opinion polls, for example, will show fewer spontaneous evacuations as distance from the plant increases; at what point on this decreasing function does one end the EPZ?) There is no such criterion in NRC regulations or guidance. . . .

LILCO Brief at 11.

<sup>14</sup> See LILCO Answer at 3-4, *citing* PID I, 21 NRC at 804, 806-09 ("LILCO has given reasonable consideration to the possible impacts of shadow evacuation on evacuation traffic arising from within the EPZ;" "excess evacuation poses no barrier to evacuation of all or part of the EPZ").

<sup>15</sup> Staff Brief at 14, *citing* 21 NRC at 801-09. *Cf.* LILCO Brief at 12 (*citing* Contention 65).

<sup>16</sup> The Board found that "those who evacuate unnecessarily because of fear of radiation would also have strong motivation not to enter the EPZ," and that LILCO's plans for EPZ perimeter control were reasonable. PID, 21 NRC at 804.



accident consequences using analytical techniques and information available at that time.<sup>17</sup>

For design-basis/loss-of-coolant accidents (DBA/LOCA), the Report concluded, among other things, that for most plants the 25-rem (thyroid) and 5-rem (whole-body) EPA protective action guides<sup>18</sup> would not be exceeded beyond 10 miles from the plant, even using conservative assumptions and analyses. Report, Appendix I at 4-6. As for serious Class 9 accidents involving core melt and containment failure, the Report concluded that these protective action guides generally would not be exceeded beyond 10 miles unless the containment failed catastrophically and there was a very large release of radioactive material. The Report further concluded that even for very large releases, emergency actions such as sheltering or evacuation within 10 miles would result in significant reductions in deaths and early injuries. *Id.* at 6-7. From a probability standpoint, the Report concluded that the probability of large doses from core-melt accidents drops off substantially at about 10 miles from the reactor. *Id.* at 37.

Based on these considerations, the Report concluded that:

[E]mergency response plans should be useful for responding to any accident that would produce offsite doses in excess of the PAGs. This would include the more severe design basis accidents and the accident spectrum analyzed in the RSS. After reviewing the potential consequences associated with these types of accidents, it was the consensus [*sic*] of the Task Force that emergency plans could be based upon a generic distance out to which predetermined actions would provide dose savings for any such accidents. Beyond this generic distance it was concluded that actions could be taken on an ad hoc basis using the same considerations that went into the initial action determinations.

The Task Force judgment on the extent of the Emergency Planning Zone is derived from the characteristics of design basis and Class 9 accident consequences. Based on the information provided in Appendix I and the applicable PAGs a radius of about 10 miles was selected for the plume exposure pathway and a radius of about 50 miles was selected for the ingestion exposure pathway, as shown in table 1. Although the radius for the EPZ implies a circular area, the actual shape would depend upon the characteristics of a particular site. The circular or other defined area would be for planning whereas initial response would likely involve only a portion of the total area.

Report at 16.

<sup>17</sup> A Class 9 accident is an accident considered to be so low in probability as not to require specific additional provisions in the design of a reactor facility. Such accidents would involve sequences of successive failures more severe than those postulated for the purpose of establishing the design basis for protective systems and engineered safety features. (Class 9 event sequences include those leading to total core melt and consequent degradation of the containment boundary and those leading to gross fuel clad failure or partial melt with independent failures of the containment boundary). NUREG-0396 at 26.

<sup>18</sup> Protective action guides are units of radiation dose which, if projected to be received by an individual, would warrant protective action. See *Manual of Protective Action Guides and Protective Actions for Nuclear Incidents*, EPA-520/1-75-001 (September 1975).

A reading of the Report indicates clearly that the margins of safety provided by the recommended 10-mile radius were not calculated in any precise fashion but were qualitatively found adequate as a matter of judgment. Given the uncertainties in estimations of Class 9 accident probabilities and consequences, there was no other feasible choice in this regard. The EPZ's shape could be somewhat different than the 10-mile circular radius implies, without compromising emergency planning goals. Indeed, the Report is explicit that "judgment . . . will be used in determining the precise size and shape of the EPZs considering local conditions such as demography, topography, and land use characteristics, access routes, local jurisdictional boundaries and arrangements with the nuclear facility operator for notification and response assistance." These are, of course, the considerations later cited in § 50.47(b)(2) with regard to determining the "exact size and configuration" of the EPZ.

Nothing in the Report or in any other material in the emergency planning rulemaking record compels a finding that EPZ adequacy is especially sensitive to where exactly the boundary falls, and any such conclusion would seem to be at odds with the overall thrust of the Report. In particular, the task force's analysis indicates that "adequate protective measures" in the context of emergency planning is not a precisely defined concept. Earlier in this proceeding we explained the concept of "adequate protective measures" in our emergency planning regulations in CLI-86-13, 24 NRC 22, 30 (1986), as follows:

This root question cannot be answered without some discussion of what is meant by "adequate protective measures." Our emergency planning regulations are an important part of the regulatory framework for protecting the public health and safety. But they differ in character from most of our siting and engineering design requirements which are directed at achieving or maintaining a minimum level of public safety protection. *See, e.g.,* 10 C.F.R. § 100.11. Our emergency planning requirements do not require that an adequate plan achieve a preset minimum radiation dose saving or a minimum evacuation time for the plume exposure pathway emergency planning zone in the event of a serious accident. Rather, they attempt to achieve reasonable and feasible dose reduction under the circumstances; what may be reasonable or feasible for one plant site may not be for another.

It is implicit in this concept of "adequate protective measures" that a determination that a particular EPZ size will provide "adequate protective measures" does not in fact mean that emergency planning will eliminate, in every conceivable accident, the possibility of serious harm to the public. If this were actually the criterion, it would be difficult if not impossible to set any *a priori* limits to the size of the EPZ or to the scope of required emergency planning. Emergency planning can, however, be expected to reduce any public harm in the event of a serious but highly unlikely accident.

But the rule clearly was intended to set such limits. Even under the Appeal Board's analysis, the rule amounts to a Commission finding that adequate

protection can be provided by an EPZ of limited size, 10 miles in radius, give or take a few miles, but certainly much less than 20.

Given these circumstances, we think it is entirely reasonable and appropriate for the Commission to hold that arguments for "adjusting" a 10-mile EPZ to improve safety, especially arguments that entail complex analysis and lengthy litigation, are an impermissible challenge to the rule. The Appeal Board has in effect also treated the rule as imposing a cutoff, which the Appeal Board places at somewhere more than 10 miles but certainly less than 20. The Appeal Board's approach is not much different from simply reading 50.47(b)(2) as requiring an EPZ "about 20 miles in radius" and then taking the position we adopt, i.e., refusing to accept contentions that would enlarge an EPZ that meets the criterion. But the rule says 10, not 20. The "outward creep" the Appeal Board would allow seems in the end to have no logical limits, as LILCO and the Staff argue.

Accordingly, we think the better interpretation is that the rule precludes adjustments on safety grounds to the size of an EPZ that is "about 10 miles in radius" and that Contentions 22.B and 22.C should on this ground be deemed impermissible challenges to the rule. In our view, the proper interpretation of the rule would call for adjustment to the exact size of the EPZ only on the basis of such straightforward administrative considerations as avoiding EPZ boundaries that run through the middle of schools or hospitals, or that arbitrarily carve out small portions of governmental jurisdictions. The goal is merely planning simplicity and avoidance of ambiguity as to the location of the boundaries. With such clarity, plans can be implemented with an understanding as to who is being directed to take particular protective actions.<sup>19</sup>

## II. HOSPITAL EVACUATION

### A. Background

Two hospitals, and perhaps a third as well, are located within the Shoreham 10-mile EPZ. The LILCO plan lists several hospitals outside the EPZ to which

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<sup>19</sup> Under 10 C.F.R. § 2.758 the safety sufficiency of a 10-mile EPZ may still be challenged based on a showing that there are special circumstances for the particular site that were not considered in the emergency planning rulemaking. Intervenor, who are fully familiar with our rules in this regard, have chosen not to cast their contentions in the alternative as rule challenges under § 2.758. Over 4 years have now elapsed since the submission of emergency planning issues for litigation, and a recasting of Contentions 22.B and 22.C as rule challenges would be untimely in the extreme.

Nevertheless, whether there are special circumstances at Shoreham that were not envisioned in the rulemaking and that would make it inappropriate to apply the 10-mile EPZ rule to Shoreham can still be considered as part of the NRC Staff's review of uncontested issues. To be sure that no important safety issue has been overlooked in this case, we request NRC Staff to review this issue and to report to the Commission on it prior to any licensing above 5% power.

hospital evacuees might be sent. But the Licensing Board found that LILCO had not obtained letters of agreement with hospitals outside the EPZ concerning transfer of patients, had not provided for transportation for evacuation of EPZ hospital patients until individuals in other "special facilities" (e.g., nursing homes and nursery schools) were evacuated, had not calculated evacuation times for two of the three EPZ hospitals, and had not predetermined the circumstances under which EPZ hospital patients would be evacuated.

Nevertheless, the Licensing Board concluded that the LILCO plan was adequate. In the Board's view, arrangements for the relocation of patients to hospitals outside the EPZ could be made while the emergency was in progress. This was considered adequate because the hospitals are close to the outer edge of the EPZ, where the likelihood of receiving doses requiring evacuation is small, sheltering is the preferred emergency response in any event because of the risks attendant upon the movement of patients, and the EPZ hospitals were constructed so as to be particularly suitable for sheltering.

The Appeal Board reversed. It characterized the LILCO arrangements as ad hoc, and found that contrary to the regulations' requirement for EPZ evacuation time estimates, LILCO had not provided time estimates for each EPZ hospital. The Appeal Board also noted the Licensing Board's contrasting treatment of hospitals and nursing homes. While the Licensing Board found no deficiency in LILCO's failure to obtain agreements with hospitals for relocation of hospital patients, it found deficient LILCO's failure to sufficiently identify and to include letters of agreement with facilities outside the EPZ for accommodating EPZ nursing home residents. The Appeal Board was puzzled by the Licensing Board's contrasting treatment of these two areas.

In taking review, the Commission asked whether the regulations, including § 50.47(c)(1), "require evacuation plans for hospitals in the EPZ even though sheltering would be the preferred option in most circumstances."

## **B. Parties' Arguments Before the Commission**

### ***1. LILCO and Staff Arguments***

LILCO argues before the Commission that NRC's emergency planning regulations do not require evacuation plans for hospitals. LILCO argues that the hallmark of the Commission's emergency planning requirements is flexibility, recognizing the appropriateness of different approaches at different sites and for different potential accident sequences. The key regulation, says LILCO, is 10 C.F.R. § 50.47(b)(10), which requires "[a] range of protective actions . . . for the plume exposure pathway EPZ . . . ." This range of protective actions, LILCO continues, in practice includes sheltering and evacuation.

While conceding that its plan doesn't have all of the detail contemplated by NUREG-0654, LILCO argues that the standards of NUREG-0654 do not constitute *requirements*, but rather are *suggestions*. LILCO then lists some of those NUREG-0654 "suggestions," e.g., that plans "shall include . . . means for protecting [hospital patients], . . . means of relocation, . . . time estimates for evacuation, . . . an estimate of the [hospital] population . . . [which] 'shall usually be done on an institution-by-institution basis, [and] the means of transportation . . . [for the hospital population].'" Brief at 19-20. LILCO concludes from these passages that "none of these provisions requires every licensee to maintain a detailed plan for both sheltering and evacuation of every facility and population group in the EPZ," LILCO finds support for its position in the EPA Manual of Protective Action Guides, which "expressly acknowledges the need in certain circumstances to apply different criteria in establishing appropriate protective action for special populations such as hospital patients." *Id.* at 20. Thus, LILCO concludes, "the regulations and guidance 'explicitly' allow different treatment for different groups such as hospital patients."

LILCO's next argument on the hospital evacuation issue, and the only argument offered by the Staff on this issue, is that even if the regulations generally require evacuation plans, the Shoreham plan is not *significantly* deficient in this regard, and thus, under § 50.47(c)(1), the Commission is not compelled to deny the issuance of a license. Both LILCO and the Staff support this argument by pointing to the Licensing Board's findings on the distance of the hospitals from the plant (over 9 miles), on the heavy masonry construction of the hospital buildings leading to 0.2 shielding factors (i.e., the dose inside the buildings would be 20% of the dose outside), on the danger of evacuation for patients, on the low probability of accidents that would require evacuation for those more than 9 miles from the plant, and on the existing arrangements for eventual evacuation of the hospitals.

Finally, LILCO argues, it has developed reasonable evacuation plans for the hospitals. Evacuation vehicles first would complete their nursing/adult home runs, and then report to hospitals on an "as needed" basis, as determined by hospital administrators upon balancing information including that on weather, projected doses, and the risk of transporting patients. Moreover, LILCO argues, the Appeal Board was mistaken that LILCO had not adequately calculated evacuation times for hospitals, since the Licensing Board specifically found that the hospitals could be evacuated within 9 hours.<sup>20</sup>

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<sup>20</sup> The Licensing Board found that:

[A]mbulances would not completely evacuate the Suffolk County Infirmary until some 8 hours, 50 minutes after the initial notification. . . . The evacuation of hospitals *could well take similar amounts of time at least with regard to ambulances*. . . . [With regard to ambulettes], the hospitals are in a similar position [to the Suffolk County Infirmary, for which ambulette evacuation will take 4 hours, 40 minutes].

LBP-85-12, 21 NRC at 845-46 (emphasis added).

## 2. Intervenor Arguments

Intervenors argue that "LILCO's failure to plan for evacuation of hospital patients is total," with vehicle arrangements "expressly acknowledge[d]" in the plan as ad hoc, and provisions for evacuation only "if vehicles become available." Brief at 15. These aspects of the plan allegedly violate the regulations and NUREG-0654 by failing, for example, to identify relocation centers for hospitals (an alleged violation of NUREG-0654 §§ II.A.3, J.10.d, and J.10.h), by failing to provide evacuation time estimates for each facility (an alleged violation of Appendix E to 10 C.F.R. Part 50), and by failing to plan routes or procedures for hospital evacuation (an alleged violation of both § 50.47(b)(10) and EPA Protective Action Guidelines).

Intervenors support the Appeal Board's view that the improbability of ever needing to use any given protective action is irrelevant under the NRC's emergency planning rules because those rules are based on an assumption that a serious accident might well occur. Brief at 19-20, citing *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 713 (1985), *review declined*, CLI-86-5, 23 NRC 125 (1986). Moreover, Intervenors assert that LILCO's allegedly "complete failure" to plan for hospitals can never be viewed, using § 50.47(c)(1), as insignificant.<sup>21</sup>

## C. Commission Decision

We agree with the Appeal Board's reasoning on this issue. Even though sheltering will quite likely be the preferred protective action for EPZ hospitals in the event of a serious accident, evacuation should not be prejudiced by the failure to plan in advance. Appendix E to 10 C.F.R. Part 50 requires evacuation time estimates for the EPZ without exceptions for special facilities such as hospitals. Clearly, evacuation plans for hospitals must at least be developed in sufficient detail to provide a basis for these estimates. Moreover, hospitals, as a kind of "special facility," are specifically mentioned in the principal guidance document in this field, NUREG-0654, and there is no suggestion in this guidance that hospitals are to be treated specially as exempt from the evacuation planning requirement that applies to other segments of the population within the EPZ.

We therefore conclude, in agreement with the Appeal Board, that the regulations require the Applicant to fulfill the same planning obligations with regard to hospital evacuation as the Licensing Board imposed in connection with other like segments of the EPZ, such as nursing/adult homes. This conclusion does not

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<sup>21</sup> In response to LILCO's Brief, Intervenors claim that the Commission should disregard many of LILCO's arguments because they are outside the scope of the Commission's review questions, particularly insofar as LILCO attempts to show that there is adequate planning and preparedness for hospital evacuation.

necessarily end the inquiry as to whether LILCO's Emergency Plan is adequate with respect to these hospitals. Under § 50.47(c)(1), the Licensing Board could still approve the LILCO plan if it found that the deficiencies related to the hospitals were not significant for Shoreham. In fact, the Licensing Board did identify factors that may have relevance to this question, such as distance from the plant and construction characteristics of the hospitals. However, it is not clear to us that this was a matter adequately presented to or considered by the Licensing Board, since the Licensing Board did not specifically discuss § 50.47(c)(1). On remand, LILCO and Staff are free to raise the issue for appropriate resolution.

### III. SUMMARY

In summary, we take two actions. First, we reverse the Appeal Board's decision in ALAB-832 insofar as it admits Contentions 22.B and 22.C for hearing. However, the NRC Staff is to advise us prior to issuance of any license for operation above 5% power whether there are special circumstances at Shoreham that were not envisioned in the emergency planning rulemaking, and that would make it inappropriate to apply to Shoreham the generic decision that an EPZ of about 10 miles is adequate for emergency planning purposes. Second, we uphold the Appeal Board's decision in ALAB-832 that the proceeding must be remanded to the Licensing Board for further consideration of the evacuation plans for hospitals in the EPZ.

It is so ORDERED.

For the Commission\*

SAMUEL J. CHILK  
Secretary of the Commission

Dated at Washington, D.C.,  
this 5th day of November 1987.

[The appendix has been omitted from this publication but can be found in the Public Document Room, 1717 H Street, NW, Washington, DC 20555.]

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\*Commissioners Bernthal and Rogers were not present for the affirmation of this order. If they had been present they would have approved it.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman  
Thomas M. Roberts  
Frederick M. Bernthal  
Kenneth M. Carr  
Kenneth C. Rogers

In the Matter of

Docket Nos. 50-443-OL-1  
50-444-OL-1  
(Onsite Emergency Planning  
and Safety Issues)

PUBLIC SERVICE COMPANY OF  
NEW HAMPSHIRE, *et al.*  
(Seabrook Station, Units 1  
and 2)

November 25, 1987

The Commission lifts its stay on issuance of a low-power operating license for Seabrook in the event such a license is authorized and dismisses as unripe all other pending motions seeking to stay low-power operations. The Commission also denies a request for an evidentiary hearing on summary review of the sufficiency of the Applicants' utility plan.

**EMERGENCY PLAN: UTILITY PLAN AS SUBSTITUTE**

In requiring Applicants to submit their utility emergency plan for summary review, the Commission did not open the door to an evidentiary prehearing on emergency planning issues. On summary review the Commission intended that the plan need demonstrate only that adequate emergency planning was not foreclosed.



## **EMERGENCY PLAN: UTILITY PLAN AS SUBSTITUTE**

The Commission refers to the standards for submittal of a utility emergency plan that were elaborated in CLI-87-3, 25 NRC 875 (1987) and reemphasizes that a utility plan must include measures to compensate for the absence of state and local governmental planning and that it necessarily must be a good-faith submittal.

## **EMERGENCY PLAN: LOW-POWER LICENSE**

The Commission's rules provide that a full evidentiary hearing on the offsite emergency plan is available before full-power operations, but is not required before low-power operations. 10 C.F.R. § 50.47.

## **EMERGENCY PLAN: UTILITY PLAN AS SUBSTITUTE**

On summary review, the Commission finds that the disputes about the adequacy of the Seabrook utility plan are, as was the case with Shoreham, litigation and political disputes. While the outcome of those disputes is uncertain, the Commission cannot conclude on the basis of the papers before it that they are categorically unresolvable.

## **EMERGENCY PLAN: LOW-POWER LICENSE (SUMMARY REVIEW OF UTILITY PLAN)**

The Commission concludes that the other issues raised by Intervenors go beyond the summary review intended here. Those issues may be legitimate questions to be raised at the full-power hearings on the emergency plans.

## **EMERGENCY PLAN: LOW-POWER LICENSE (SUMMARY REVIEW OF UTILITY PLAN)**

For its threshold determination, the Commission does not need certain information deleted by Applicants from the utility emergency plan. Deleted information that Staff and FEMA deem necessary for full-power review of the plan must be provided by the Licensees before low-power operation. Also, Applicants should state for the record their willingness to provide the detailed information to the other parties if necessary under appropriate protective orders.

## **EMERGENCY PLAN: LOW-POWER LICENSE (SUMMARY REVIEW OF UTILITY PLAN)**

The Commission's decision to lift the stay on low-power operations is dictated by the Applicants' good-faith submittal of a utility emergency plan and in no way results from or depends on the recently published revision of the Commission's emergency planning regulations. 52 Fed. Reg. 42,078 (1987).

### **MEMORANDUM AND ORDER (Lifting the Order Staying the Director of Nuclear Reactor Regulation from Authorizing Low-Power Operations Due to the Lack of an Emergency Plan for Massachusetts)**

By this Memorandum and Order the Commission grants Applicants' September 21, 1987 motion to vacate the stay entered in the Commission's order of January 9, 1987 (unpublished). The January 9 order barred the Director of Nuclear Reactor Regulation from issuing a low-power license for Seabrook in the event issuance of such a license was otherwise authorized so that the Commission might consider whether, as a matter of law or policy, low-power operations should proceed absent the submittal of an emergency plan for that portion of the plume exposure emergency planning zone that lies within the Commonwealth of Massachusetts.<sup>1</sup>

This order lifting the stay does not itself authorize a low-power license for Seabrook, as we explain more fully below. Also, consistent with its instant decision, the Commission denies the remaining pending portion of the Request of Attorney General James M. Shannon, Seacoast Anti-Pollution League (SAPL), New England Coalition on Nuclear Pollution, and Town of Hampton for Briefing Schedule and Hearing on Applicants' Utility Plan, dated September 21, 1987, in which the named parties sought among other things an evidentiary hearing on the sufficiency of the Applicants' utility plan before low-power operations would be authorized for the Seabrook facility. Finally, the Commission dismisses as unripe all other motions seeking to stay low-power operations that are pending before it; these motions may be refiled should a low-power license be authorized in the future.

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<sup>1</sup> By subsequent orders the stay was continued in force until the Applicants shall have submitted a bona fide utility plan. See CLI-87-2, 25 NRC 267 (1987), and CLI-87-3, 25 NRC 875 (1987).

## BACKGROUND

Both matters that we here address — the motion to vacate the stay and the request for an evidentiary hearing on summary review — arose from the Applicants' submittal, under cover of a letter dated September 18, 1987, of their utility emergency plan for Massachusetts. Such a plan for Seabrook had been required by the Commission as a matter of regulatory policy on April 9, 1987. CLI-87-2, 25 NRC at 270. In setting this requirement the Commission did not open the door to an evidentiary prehearing on emergency planning issues, but stated that on summary review the plan need demonstrate only that adequate emergency planning was not foreclosed, i.e., that it was "in the realm of the possible." On June 11, 1987, rejecting an earlier submittal by the Applicants, the Commission elaborated in CLI-87-3 on the standards for such a plan. The Commission emphasized that the plan must be a utility plan including measures to compensate for the absence of state and local governmental planning and that it necessarily must be a good-faith submittal.

## EVIDENTIARY HEARING DENIED

As should have been clear from the Commission's order in CLI-87-2, all that the Commission intended need occur with respect to a utility plan submittal before low-power operations at Seabrook was summary review. The Commission's policy decision to require submittal of a bona fide plan before low-power operations was not intended to effect an exception to the Commission's rules which provide that a full evidentiary hearing on the offsite emergency plan is available before full-power operations, but is not required before low power. 10 C.F.R. § 50.47. Accordingly, the motion for a hearing is denied.<sup>2</sup>

## VACATION OF STAY

On review of the positions of the parties<sup>3</sup> on both the sufficiency of the submittal and the motion to vacate the stay and on its own review of the Applicants' utility plan, the Commission accepts and agrees in essential respects with the analysis of the NRC Staff which supports the motion to vacate the stay. The Staff's analysis closely followed the Commission's guidance in CLI-87-3 and, based on the recitations in its affidavit describing its summary review, concludes that the Applicants' utility plan appears to constitute a bona fide utility

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<sup>2</sup>Also denied are the various repetitions of this request incorporated by the parties into other legal papers.

<sup>3</sup>The Commission grants the motions to permit late filing by the Town of Newbury and SAPL, which were unopposed.

plan for those portions of the emergency planning zone that are located in the Commonwealth of Massachusetts. See NRC Staff's Response to Applicants' Motion for Vacation of Stay, Oct. 20, 1987.

As the Staff stated, the utility plan addresses the sixteen planning standards by which emergency plans are judged (*see* 10 C.F.R. § 50.47(b) and NUREG-0654); has compensating measures for the lack of state and local government participation; has been submitted to the Federal Emergency Management Agency (FEMA) and the NRC for review; and appears to be intended for implementation. Staff's Response at 7-11.

Our summary review of the utility plan, and the record before us, convinces us that adequate emergency planning for the Massachusetts portion of the emergency planning zone is "in the realm of the possible" or, stated conversely, we are satisfied that the Massachusetts emergency planning issues are not "categorically unresolvable." CLI-87-2, 25 NRC at 270. In CLI-87-2, the Commission, after analyzing its prior decision in *Shoreham*, CLI-83-17, 17 NRC 1032 (1983), and the decision in *Cuomo v. NRC*, 772 F.2d 972 (D.C. Cir. 1983) dismissed as moot (March 12, 1987), contrasted the situation where emergency planning issues are "categorically unresolvable" with more typical situations where there are litigation and political disputes about emergency planning whose outcome is speculative. As we said in the decision,

[T]he disputes that fueled the controversy in *Shoreham* were, by their nature, litigation and political disputes. And, as noted by the U.S. Court of Appeals for the District of Columbia Circuit, we observed in regard to *Shoreham*, "the outcome of litigation and political conflicts frequently surrounding the grant of a final license is particularly speculative." *Cuomo v. NRC*, 772 F.2d 972, 976 (D.C. Cir. 1985). The emergency planning uncertainty at *Shoreham* could have changed favorably or adversely at any time as viewpoints changed or as accommodations were reached. This is characteristic of many matters in litigation, and the Commission properly declined to regard the existence of such litigation as a factor precluding issuance of a low-power license.

CLI-87-2, 25 NRC at 270. We find here that the disputes about the adequacy of the Seabrook utility plan are, as was the case with *Shoreham*, litigation and political disputes. While the outcome of those disputes is uncertain, we cannot conclude on the basis of the papers now before us that they are categorically unresolvable. We necessarily find, therefore, that adequate emergency planning for the Massachusetts portion of the emergency planning zone is within the realm of the possible. Because the policy concerns that caused us to impose our stay have now been satisfied, that stay is hereby vacated.

The various Intervenor in this proceeding have raised a number of issues in their responses that we do not here address in detail. Those issues may turn out to be legitimate questions for the full-power hearings on the emergency plans, and as such they will be addressed in the first instance by the Atomic Safety and

Licensing Board. Suffice it for now for us to find that the issues raised reach a level of detailed review that goes beyond the inquiry that we intended as a condition for lifting the stay of low-power operation.

This is not to say that the Commission is unconcerned about the extent of the deletions of information from the plan. While the Commission can well understand why the Applicants might wish to withhold individuals' names and phone numbers, given the emotionally charged atmosphere that surrounds this particular plant, that concern must eventually give way to the needs of the Staff and FEMA to review the emergency plans. However, the Commission does not believe that it needs to have that information in its possession to satisfy itself that the utility plan satisfies the policy concerns that we set out in CLI-87-3. Those concerns have been satisfied for the reasons set forth in this order. We find that the plan is bona fide and in the realm of the possible. That decision does not require us to evaluate every detail of the proposed plan. Such an evaluation will be made in the full-power proceedings. Nevertheless, as a condition of low-power operation, the Licensees must provide to the Staff and FEMA any of the deleted information that the Staff and FEMA deem necessary for the detailed full-power review of the emergency plan. Until such information is provided, no low-power license shall issue. Also prior to low power, Applicants should clearly state for the record their willingness to provide the detailed information to the other parties to the proceeding, if necessary under appropriate protective orders from the Licensing Board. The Commission is confident that the Licensing Board can fashion appropriate orders and procedures to allow full litigation of contested issues without unnecessarily violating personal privacy.

## POSTURE OF THE PROCEEDING

As the parties are aware, the Appeal Board's October 1, 1987 decision on review of the Licensing Board's March 25, 1987 partial initial decision authorizing low-power operations<sup>4</sup> may have disturbed the legal footing of authorization for low-power operations. As directed by the Appeal Board,<sup>5</sup> the Licensing Board shall expeditiously determine whether considering the issues that it is hearing on remand, it is appropriate to renew at this time its authorization of low power or whether low-power operations must await further decisions. The Appeal Board shall also consider whether any matter of which it has jurisdiction should be resolved before low power.<sup>6</sup> The Commission ratifies the Appeal Board's order that any decision by the Licensing Board *prior to*

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<sup>4</sup> See ALAB-875, 26 NRC 251 (1987), *aff'g in part and remanding in part*, LBP-87-10, 25 NRC 177 (1987).

<sup>5</sup> See ALAB-875, 26 NRC at 276.

<sup>6</sup> The Commission here notes that it appears that certain issues relating to Newburyport sirens and the environmental qualification of coaxial cable may be before the Appeal Board.

*completion of the remand*, if it authorizes low power, shall not become effective for a period of 10 days following the date of its service to enable any dissatisfied party to seek agency appellate relief.

Consonant with the foregoing discussion, the Commission lifts its stay of low-power operations. The conditions regarding the providing of emergency planning information to FEMA, NRC Staff, and the parties must be satisfied before any low-power license can be authorized. Moreover, because no order currently in force authorizes low-power operations at Seabrook and because the voluminous motions and related papers before us are in some respects outdated, the motions and supplemental motions seeking a Commission stay of such operations are dismissed. Should low power be authorized in the future, opposing parties are free to file updated stay motions.

We wish to emphasize that our decision today is dictated by the fact that the Applicants have made a good-faith submittal of a utility emergency plan. Our decision in no way results from or depends on the recently published revision of the Commission's emergency planning regulations. 52 Fed. Reg. 42,078 (Nov. 3, 1987; effective date Dec. 3, 1987). Our decision would be the same whether the old or the new supplemental emergency planning rules applied.

Commissioner Rogers disapproved in part, and his additional views are attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK  
Secretary of the Commission

Dated at Washington, D.C.,  
this 25th day of November 1987.

#### **ADDITIONAL VIEWS OF COMMISSIONER ROGERS**

The majority has indicated that it requires the submission of information deleted in the utility plan to the Staff and FEMA, and under protective order to the other parties prior to the issuance of any low-power license.

I am of the opinion that the information withheld from the plan should be furnished to the Commission prior to the lifting of the stay, so that we can assure ourselves that the utility plan does indeed satisfy the policy concerns set out in CLI-87-3.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman

Dr. W. Reed Johnson

Howard A. Wilber

In the Matter of

Docket Nos. 50-250-OLA-1  
50-251-OLA-1  
(Vessel Flux Reduction)

FLORIDA POWER & LIGHT  
COMPANY

(Turkey Point Nuclear Generating  
Plant, Units 3 and 4)

November 4, 1987

The Appeal Board in this operating license amendment proceeding affirms, on sua sponte review, the licensing board's order (LBP-87-21, 25 NRC 958 (1987)) granting the applicant's motion to relinquish jurisdiction and terminate the proceeding.

TECHNICAL ISSUE DISCUSSED

Acceptance criteria for the capability of the emergency core cooling system in response to a loss-of-coolant accident.

MEMORANDUM AND ORDER

1. This is a proceeding on the application of the Florida Power & Light Company for amendments to the operating licenses for Units 3 and 4 of its

Turkey Point nuclear power facility. In ALAB-846,<sup>1</sup> we affirmed on sua sponte review the Licensing Board's resolution in the applicant's favor of Contention (d), submitted by joint intervenors Center for Nuclear Responsibility and Joette Lorion.<sup>2</sup> We did not pass upon, however, the Board's earlier grant of the applicant's motion for summary disposition of Contention (b),<sup>3</sup> the only other contention of the joint intervenors that was admitted for litigation. As we explained, in the same decision in which it acted upon Contention (d) the Board announced its intention to retain jurisdiction over Contention (b) pending the receipt of further information from the NRC staff.<sup>4</sup> In that circumstance, it appeared appropriate to withhold appellate review in connection with Contention (b) to abide the event of the final action taken on it below.<sup>5</sup>

On June 23, 1987, having received the desired information from the staff and concluded that there was no reason to withdraw the prior summary disposition of Contention (b), the Licensing Board granted the applicant's motion to relinquish jurisdiction and to terminate the proceeding.<sup>6</sup> No appeal having been taken from that action, it now is before us for sua sponte review.

2. The requested license amendments were directed to the facility's technical specifications concerned with the limits on the temperature of the fuel assemblies in the reactor core. The applicant desired the revision of those technical specifications to accomplish two objectives: (1) the reduction of the neutron flux at the reactor pressure vessel wall, which in turn would mitigate vessel embrittlement and therefore the consequences of pressurized thermal shock; and (2) the removal of restrictions on facility operation that had been imposed prior to the time at which the applicant replaced the facility's steam generators, which had a significant number of plugged tubes.<sup>7</sup>

One of the acceptance criteria for facility emergency core cooling systems stipulates that, in the event of a loss-of-coolant accident, the "calculated maximum fuel element cladding temperature shall not exceed 2200°F."<sup>8</sup> To establish that the proposed amendments were consistent with the observance of that criterion, the applicant employed a computer model for the purpose of predicting the peak cladding temperature on the fuel rods.<sup>9</sup> In Contention (b), the intervenors

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<sup>1</sup> 24 NRC 409 (1986).

<sup>2</sup> See LBP-86-23, 24 NRC 108 (1986).

<sup>3</sup> See LBP-85-29, 22 NRC 300, 310-20 (1985).

<sup>4</sup> See LBP-86-23, 24 NRC at 129-30. Inasmuch as the grant of summary disposition on Contention (b) had been interlocutory, the Licensing Board remained empowered to retain jurisdiction over the contention at the time it issued LBP-86-23.

<sup>5</sup> See ALAB-846, 24 NRC at 411 n.6.

<sup>6</sup> See LBP-87-21, 25 NRC 958.

<sup>7</sup> Although prompted by the number of plugged tubes in the former steam generators, the restrictions apparently were not automatically lifted when those generators were replaced.

<sup>8</sup> 10 C.F.R. 50.46(b)(1).

<sup>9</sup> The peak cladding temperature is the highest temperature to be found on the surface of any of the fuel rods in the reactor core.



questioned whether the chosen computer model would provide a sufficiently precise prediction to ensure that the 2200°F limit would not be exceeded.

In granting the applicant's motion for summary disposition of the contention, the Licensing Board determined that the intervenors had not raised a genuine issue of material fact respecting the adequacy of the computer model.<sup>10</sup> Thereafter, however, the staff informed the Board that that model required additions and corrections.<sup>11</sup> The staff went on to state that it expected that, after the necessary adjustments were made, the computer model would still support the conclusion that the 2200°F limit would not be exceeded.<sup>12</sup> Nevertheless, the staff felt it necessary to consider taking some unspecified action with respect to the interim and continued operation of facilities such as Turkey Point.<sup>13</sup>

As above noted, this development induced the Licensing Board to retain jurisdiction over Contention (b) to await further word from the staff. That word came in the form of a Board Notification issued on October 23, 1986.<sup>14</sup> The Board was told that the required changes in the computer model had not resulted in a calculated cladding temperature in excess of the 2200°F limit.<sup>15</sup>

We have examined the explanation given by the Board for its acceptance of the staff's present conclusion on the matter.<sup>16</sup> That examination satisfies us that the explanation is not flawed and provides a sufficient basis for the Board's adherence to its previous grant of summary disposition of Contention (b).

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The Licensing Board's June 23, 1987 memorandum and order terminating this proceeding is *affirmed*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker  
Secretary to the  
Appeal Board

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<sup>10</sup> See LBP-85-29, 22 NRC at 316.

<sup>11</sup> See LBP-86-23, 24 NRC at 130.

<sup>12</sup> *Ibid.*

<sup>13</sup> *Ibid.*

<sup>14</sup> See LBP-87-21, 25 NRC at 959.

<sup>15</sup> *Id.* at 961.

<sup>16</sup> *Id.* at 960-64.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman  
Howard A. Wilber

In the Matter of

Docket Nos. 50-443-OL-1  
50-444-OL-1  
(Onsite Emergency Planning  
and Safety Issues)

PUBLIC SERVICE COMPANY OF  
NEW HAMPSHIRE, *et al.*  
(Seabrook Station, Units 1  
and 2)

November 20, 1987

The Appeal Board in the onsite emergency planning and safety phase of this operating license proceeding affirms the Licensing Board's rejection of the intervenors' motions to reopen the record and to admit two late-filed contentions concerning the adequacy of two siren systems designed to provide offsite public notification of a radiological emergency at the Seabrook site.

**EMERGENCY PLAN: NOTIFICATION REQUIREMENTS**

The Commission's regulations require emergency response plans to include, *inter alia*, a means to provide early notification and clear instructions to the populace within the plume exposure pathway emergency planning zone. 10 C.F.R. 50.47(b)(5).

## **RULES OF PRACTICE: REOPENING OF RECORD (SIGNIFICANT SAFETY ISSUE)**

To prevail on a motion to reopen a record, a movant must show, *inter alia*, that a significant safety issue is involved. 10 C.F.R. 2.734(a)(2). A contention that raises an entirely new issue and is filed after the record has been closed can be accepted for litigation only if it *both* (1) meets the reopening criteria set forth in 10 C.F.R. 2.734(a) and (2) survives a balancing of the five factors that, by virtue of 10 C.F.R. 2.714(a)(1), control the admission of any late-filed contention.

## **RULES OF PRACTICE: REOPENING OF RECORD (SATISFACTION OF REQUIREMENTS; BURDEN ON MOVANT)**

The movant has the burden to establish, prior to reopening the record, that the standards for reopening are met. The movant is not entitled to engage in discovery in an effort to produce evidence that will support a motion to reopen. Rather, the issue in each case is whether the available information meets the standards for reopening, i.e., timely raises a significant safety issue which might have affected a licensing board's decision, such that the record should be reopened and discovery initiated. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), CLI-85-7, 21 NRC 1104, 1106 (1985).

## **TECHNICAL ISSUES DISCUSSED**

- Emergency notification sirens;
- Siren testing;
- Siren sound pressure level criteria;
- Ambient background sound pressure level measurements;
- Octave band.

## **APPEARANCES**

Allan R. Fierce, Boston, Massachusetts, for the intervenor James M. Shannon, Attorney General of Massachusetts.

Robert A. Backus, Manchester, New Hampshire, for the intervenor Seacoast Anti-Pollution League.

Thomas G. Dignan, Jr., George H. Lewald, Kathryn A. Selleck and Deborah S. Steenland, Boston, Massachusetts, for the applicants Public Service Company of New Hampshire, *et al.*

Edwin J. Reis and Gregory Alan Berry for the Nuclear Regulatory Commission staff.

## DECISION

The Commission's regulations require radiological emergency response planning to include, *inter alia*, means "to provide early notification and clear instruction to the populace within the plume exposure pathway emergency planning zone [EPZ]."<sup>1</sup> In the case of the Seabrook nuclear power facility, this requirement is being met in large measure by the installation of sirens in both the New Hampshire and the Massachusetts portions of the EPZ.

In ALAB-875,<sup>2</sup> we determined all but two of the questions that were raised on the intervenors' appeals from the Licensing Board's March 25, 1987 partial initial decision in the onsite emergency planning and safety issues phase of the proceeding on the Seabrook operating license application.<sup>3</sup> The questions retained for later disposition concerned the correctness of the Board's rejection in separate interlocutory orders of two contentions, filed after that phase of the evidentiary record had closed, that focused upon the adequacy of the sound levels of the sirens installed in East Kingston, New Hampshire, and Merrimac, Massachusetts.<sup>4</sup> In each instance, one assigned basis for the rejection was the Board's belief that the proponent of the contention had failed to show in the accompanying motion to reopen the record, as required by the Commission's Rules of Practice, that a significant safety issue was involved.<sup>5</sup>

For reasons alluded to in ALAB-875,<sup>6</sup> we thought it might prove possible to resolve the crucial differences among the parties on the siren matters without

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<sup>1</sup> 10 C.F.R. 50.47(b)(5).

<sup>2</sup> 26 NRC 251 (1987).

<sup>3</sup> See LBP-87-10, 25 NRC 177.

<sup>4</sup> See Licensing Board Memoranda and Orders (March 23 and 25, 1987) (unpublished). The East Kingston contention was sponsored by the intervenor Seacoast Anti-Pollution League and the Merrimac contention by the intervenor Attorney General of Massachusetts.

There is no dispute among the parties that those contentions had to be advanced in the onsite emergency planning phase of the proceeding. Even though the sirens are designed to provide offsite public notification of a radiological emergency, the Commission deems the arrangements for such notification to be within the ambit of onsite emergency planning. See Statement of Consideration accompanying 10 C.F.R. 50.47(d), 47 Fed. Reg. 30,232, 30,234 (1982).

<sup>5</sup> Such a showing (among others) is an absolute condition precedent to the reopening of a closed record. See 10 C.F.R. 2.734(a)(2).

<sup>6</sup> See 26 NRC at 273-75.

the necessity of deciding whether, as a matter of law, the contentions in question were improperly rejected at the threshold.<sup>7</sup> Because the exploration of that possibility was still in progress at the time our review of all of the other appellate issues had reached fruition, we concluded that the appropriate course was to render our decision on those issues without additional delay and to reserve jurisdiction over the siren questions pending our further order.<sup>8</sup>

As will be seen, our endeavor to obtain a settlement of the siren questions was not entirely successful. We thus have had to confront the challenges to the rejection of the East Kingston and Merrimac contentions. For the reasons set forth below, we conclude that they are without merit. More specifically, irrespective of whether consideration is given to information presented to us that was not before the Licensing Board, we are satisfied that the contentions do not raise safety questions of sufficient gravity to justify the reopening of a closed record to accommodate them.

### A. East Kingston

As observed in ALAB-875, the controversy involving the adequacy of the four East Kingston sirens had its genesis in a test of those sirens performed last January.<sup>9</sup> According to an affidavit supplied by the Seacoast Anti-Pollution League (SAPL) in support of its motion to reopen the record to permit the admission of a contention directed to the applicants' siren system, the test brought to light a number of deficiencies.<sup>10</sup> Specifically, one or more of the sirens did not function at all during some phases of the test. And the functioning sirens assertedly did not uniformly fulfill their intended objective.

In addition to pointing to this development as demonstrating the shortcomings of the siren system, SAPL called attention to a January 1987 decision of the Rockingham County, New Hampshire Superior Court in a suit instituted by the Town of Rye, New Hampshire, against the lead applicant Public Service

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<sup>7</sup> In this connection, a contention that raises an entirely new issue and is filed after the record has been closed can be accepted for litigation only if it *both* (1) meets the reopening criteria set forth in 10 C.F.R. 2.734(a) and (2) survives a balancing of the five factors that, by virtue of 10 C.F.R. 2.714(a)(1), control the admission of any late-filed contention. With regard to the East Kingston contention, the Licensing Board discussed the section 2.714(a)(1) factors but, given its conclusion that not all of the reopening criteria were met, did not undertake to balance those factors. See March 23, 1987 Memorandum and Order. The Merrimac contention was rejected, however, on the basis of both the reopening criteria and a balancing of the section 2.714(a)(1) factors. See March 25, 1987 Memorandum and Order.

<sup>8</sup> See ALAB-875, 26 NRC at 275.

<sup>9</sup> *Id.* at 274.

<sup>10</sup> See Seacoast Anti-Pollution League's Contention and Motion to Admit Late-Filed Contention, Reopen the Record on On-Site Emergency Planning, and Condition the Issuance of a License Up to 5% of Rated Power on Applicants' Compliance with 10 C.F.R. § 50.47(b)(5) (February 6, 1987) [hereinafter SAPL's Contention and Motion], Affidavit of Frederick H. Anderson, Jr.

Company of New Hampshire.<sup>11</sup> In that decision, the court concluded that New Hampshire statutory law precluded the grant of licenses to the applicants to erect poles on state or town-maintained highways for purposes related solely to the siren system. On the strength of that conclusion, the court declared "null and void" all such licenses issued by either Rye or a New Hampshire state agency in connection with highways located in that municipality and nearby Hampton Falls (which had intervened in the litigation).<sup>12</sup> This declaration in turn led to an order directing the applicants to remove the poles erected under the aegis of those licenses.<sup>13</sup>

In its March 23 memorandum and order, the Licensing Board determined that neither the siren test nor the judicial decision gave rise to a significant safety issue.<sup>14</sup> With respect to the test, the Board relied on an NRC staff affidavit to the effect that it was not a reliable indicator of the capabilities of the sirens.<sup>15</sup> This was because (1) the proper procedures were not followed by the East Kingston officials in conducting the test, and (2) a buildup of ice and snow had adversely affected the operation of the sirens.<sup>16</sup> On the latter score, the affidavit noted that measures would be taken to avoid a repetition of such a buildup: e.g., an anti-icing agent would be applied to the sirens, which also would be reoriented to point in a southerly direction.<sup>17</sup>

Turning to the judicial decision, the Board observed that it had been appealed to the New Hampshire Supreme Court and, accordingly, had not taken effect.<sup>18</sup> Consequently, the Board reasoned, the decision lacked current safety significance. The Board added that, were the sirens to be subsequently removed on the strength of an affirmance of the decision, the Commission's regulations would bar reactor operation in the absence of alternative measures to provide the requisite reasonable assurance that the public health and safety would be protected in the event of an accident.<sup>19</sup>

In coming to grips with SAPL's challenge to the denial of its motion to reopen the record, we encounter no difficulty in agreeing with the Licensing Board that the concern engendered by the Superior Court's ruling is premature. SAPL does not dispute that the siren poles have not been removed and will continue to remain in place at least until the outcome of the pending appeal to the state

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<sup>11</sup> See *Town of Rye v. Public Service Co. of N.H.*, No. 86-E-34 (N.H. Super. Ct., Rockingham County, Jan. 22, 1987), attached to SAPL's Contention and Motion.

<sup>12</sup> *Id.* at 4.

<sup>13</sup> *Id.* at 6-7.

<sup>14</sup> See Memorandum and Order at 7-9.

<sup>15</sup> See NRC Staff Response to SAPL's Late-Filed Contention and Motion to Reopen the Record (February 26, 1987), Affidavit of William J. Lazarus.

<sup>16</sup> *Id.*, Affidavit at 2-4.

<sup>17</sup> *Id.*, Affidavit at 4-5.

<sup>18</sup> See March 23, 1987 Memorandum and Order at 9.

<sup>19</sup> *Ibid.*

Supreme Court. That appeal was argued on October 7 and will be decided at some currently uncertain date.<sup>20</sup> We need not speculate on what the state Supreme Court is likely to determine on the pivotal issue of New Hampshire law — a course fraught with considerable peril in any event. If the court overturns the result below, that will likely be the end of the matter. On the other hand, if the directive to remove the poles in question is affirmed, the applicants obviously will have to substitute for the sirens some other mechanism that will satisfy the regulatory requirement regarding “early notification and clear instruction to the populace within the” EPZ.<sup>21</sup> If SAPL believes that the substitute proposed by the applicants is insufficient to meet that requirement, it will have means at its disposal to put that belief before the Commission.<sup>22</sup>

On the matter of SAPL’s concerns stemming from the January test of the East Kingston sirens, none of the interested parties disagreed with our suggestion at oral argument that the sensible course was to undertake another test during the coming winter.<sup>23</sup> Accordingly, as noted in ALAB-875, in a July 30, 1987 memorandum and order (unpublished) we directed those parties to endeavor to come to an agreement among themselves with regard to the “test procedures that should be utilized and the appropriate climatic conditions for the conduct of the test.”<sup>24</sup> That endeavor proved only partially fruitful. In the staff’s report on the outcome of the discussions in which it, SAPL, and the applicants took part, the staff advised us that agreement had been reached on all but three subjects.<sup>25</sup> In SAPL’s view, contrary to that of the applicants and staff, the test should (1) include all sirens in the New Hampshire EPZ, rather than just those in East Kingston; (2) embrace the public address (and not merely the tone alert) function of those sirens located in the beach areas; and (3) be scheduled not more than five days in advance.<sup>26</sup>

It is manifest from the text of our July 30 memorandum and order that we had in mind a new test of the East Kingston sirens alone. The reason is readily apparent. Once again, the sole basis assigned for the claim of siren system inadequacy advanced in the SAPL contention was the outcome of the test of those sirens. And at no time during the course of the consideration of the contention either by the Licensing Board or by us has SAPL provided any information that might suggest an infirmity in the sirens located elsewhere in the EPZ. That being so, SAPL is scarcely in a position to insist that, as part of any

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<sup>20</sup> See Applicant’s Response to Appeal Board Order of October 13, 1987: Supplemental Memorandum (October 30, 1987).

<sup>21</sup> See *supra* p. 412.

<sup>22</sup> See, e.g., 10 C.F.R. 2.206.

<sup>23</sup> See, e.g., App. Tr. 63-64, 116-18.

<sup>24</sup> 26 NRC at 274.

<sup>25</sup> See letter from Edwin J. Reis to the members of this Board (September 11, 1987).

<sup>26</sup> *Id.* at 2. See also Seacoast Anti-Pollution League’s Memorandum Regarding Test of East Kingston Sirens (October 1, 1987).

settlement of the controversy surrounding the rejection of the SAPL contention, the test be extended to sirens beyond East Kingston. The same is true with respect to SAPL's argument that the test should encompass the public address function of the sirens in beach areas. East Kingston does not include beach areas and, therefore, its sirens will not be relied upon during a Seabrook emergency for public address functions.<sup>27</sup>

Thus, the first two points of disagreement must be resolved in favor of the applicants and staff. This does not mean, of course, that the sirens in other portions of the EPZ (both in New Hampshire and Massachusetts) will go untested. As the staff has informed us without contradiction, the Federal Emergency Management Agency (FEMA) has assumed by regulation the responsibility of determining the adequacy of the applicants' siren system as part of its review of the overall offsite emergency preparedness program for the facility.<sup>28</sup> It is inconceivable that FEMA would undertake to make a determination in that regard without an appropriate test of the sirens that are to serve as part of the emergency response effort.

That leaves for consideration SAPL's objection to the applicants' proposal that a specific date for the East Kingston siren test be set well in advance — indeed, in September the applicants and the staff settled upon January 30, 1988.<sup>29</sup> We think that there is substance to the objection. There is obviously no way of now forecasting with any degree of confidence the weather conditions that are likely to prevail several months hence. For all that was known when January 30 was selected, or is now known, on that date New Hampshire might be enjoying a spell of unseasonably temperate weather. If so, the test would scarcely serve its intended purpose (among others) of ascertaining how the sirens function in the more severe climatic conditions that customarily attend upon Northern New England winters.

In this connection, we are unpersuaded that, as the applicants maintain, it would not be possible to mobilize in the space of several days the personnel involved in the siren test and to provide adequate prior notice to the public.<sup>30</sup> After all, there are only four sirens to be tested in a relatively small community, with the consequence that a very limited number of observers and other participants will be required.<sup>31</sup> And while it may be true that, as both the applicants and staff stress, one cannot predict weather conditions with absolute

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<sup>27</sup> See NRC Staff's Response to Appeal Board Order of September 17, 1987 (September 25, 1987) at 2-3; Applicants' Memorandum Regarding Test of East Kingston Sirens (September 30, 1987) at 2.

<sup>28</sup> See NRC Staff Supplemental Response to Appeal Board Order of September 17, 1987 Regarding East Kingston Sirens (October 6, 1987) at 3 n.3; 44 C.F.R. 350.3(e). See also *Louisiana Power & Light Co. (Waterford Steam Electric Station, Unit 3)*, ALAB-732, 17 NRC 1076, 1104-05 & n.45 (1983).

<sup>29</sup> See NRC Staff's Response to Appeal Board Order of September 17, 1987, at 3-4; Applicants' Memorandum Regarding Test of East Kingston Sirens at 1-2.

<sup>30</sup> See Applicants' Memorandum Regarding Test of East Kingston Sirens at 2-3.

<sup>31</sup> See letter of Edwin J. Reis, Attachment (Siren Activation Test Procedure — East Kingston) at 4, 6.



accuracy even four or five days in advance, it cannot be gainsaid that a prediction in that time frame is likely to be much closer to the mark than a conjecture in September regarding what the weather will be like on a particular day in late January.

Notwithstanding these considerations, we cannot conclude that the action of the applicants and staff in already determining the date for the test gives rise to a significant safety issue requiring the reopening of the record to entertain the SAPL contention. This being so, we lack the legal predicate for ordering the applicants and the staff to reconsider what appears to us to have been a premature selection of a test date. The most that we can do is to urge such reconsideration in the interest of increasing the likelihood (albeit not providing any assurance) that the test will prove to be a reliable indicator of the ability of the sirens to operate in inclement weather. In this regard, we think there is much to be said for the counterproposal that SAPL placed on the table during the settlement discussions mandated by our July 30 order. Underlying that proposal are the dual considerations that the test should take place in January or early February and, in accordance with East Kingston's desire, on a Saturday. SAPL would have it that, if on a particular Monday during that period the five-day weather forecast called for the appropriate inclement conditions at the end of the week, the test be then scheduled for the following Saturday. Should this procedure not lead to the scheduling of a test for some Saturday prior to February 13, the test would be set for that date irrespective of predicted weather conditions.<sup>32</sup>

## B. Merrimac

The Attorney General's concerns respecting the adequacy of the sirens serving the Town of Merrimac rest on a quite different footing. Specifically, through his late contention, the Attorney General seeks to litigate whether the sound pressure produced by those sirens will satisfy the acceptability standard established by the NRC and FEMA jointly.<sup>33</sup> For lightly populated areas such as

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<sup>32</sup> See letter of Edwin J. Reis at 2.

Having advised the staff that his client would abide by any agreement entered into by SAPL on the subject, counsel for the Attorney General did not participate in the settlement discussions pertaining to the test of the East Kingston sirens. See ALAB-875, 26 NRC at 275 n.100. Nonetheless, through new counsel, the Attorney General later interposed objections to the proposed test procedures that had not been advanced by SAPL. *Ibid.* Even though not required to do so in the circumstances, we have examined those objections (as well as the Attorney General's comments on SAPL's concerns). Only one of the Attorney General's points appears to have some substance: there may well be justification for assigning additional observers to certain areas where the siren coverage might be insufficient. But that consideration similarly does not warrant a reopening of the record to accept the SAPL contention. Moreover, we see no reason why the Attorney General himself could not arrange for the additional observers thought to be necessary.

<sup>33</sup> See NUREG-0654/FEMA-REP-1 (Revision 1), "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980) [hereinafter NUREG-0654], Appendix 3 at 3-10 to 3-11; FEMA-REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants" (November 1985) [hereinafter FEMA-REP-10] at E-8.

Merrimac, that standard can be met in one of two ways. The utility may show that, throughout the area they are called upon to cover, the sirens will provide (either individually or collectively) a sound pressure level of at least 60 decibels C (dBC).<sup>34</sup> Alternatively, the utility may demonstrate that, even though less than 60 dBC, the expected sound pressure level will exceed the average measured daytime ambient (background) sound pressure levels by, preferably, at least 10 decibels (dB).<sup>35</sup>

It is not disputed that, in certain portions of the territory covered by them, the Merrimac sirens fall short of meeting the 60 dBC coverage criterion.<sup>36</sup> Therefore, to comply with the NRC/FEMA standard, in those areas the sirens must meet the alternative criterion.

In determining that the Attorney General had not established that a significant safety issue existed regarding the adequacy of the Merrimac sirens, the Licensing Board relied on the results of a March 10, 1987 set of measurements of the ambient sound pressure levels, which the applicants had commissioned.<sup>37</sup> Taken in conjunction with the assumption (not challenged by the Attorney General) that the siren coverage was at least 50 dBC, those results reflected the existence of the 10 dB differential.<sup>38</sup>

In performing these measurements, the applicants' consultant had utilized a one-third octave band; i.e., it had collected sound coming within that frequency range.<sup>39</sup> For his part, the Attorney General was of the opinion that a full octave band should have been employed by the applicants' consultant. Acting on that opinion, the Attorney General had provided the Board with the results of measurements taken by his consultant that took account of the sound falling within that broader range.<sup>40</sup> Those results suggested that, assuming siren coverage of exactly 50 dBC, in some areas the differential between ambient and siren sound pressure levels was less than 10 dB.<sup>41</sup> The Licensing Board declined, however,

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<sup>34</sup> The pressure level of sound is measured relative to a small reference pressure and is reported in units called decibels (dB). These measurements can be weighted by different filter circuits in the measuring equipment. One such measurement is weighted by so-called "filter C" and is referred to as decibels C, or dBC. See *Mechanical Engineer's Reference Book*, at 15-19 to 15-21 (A. Parrish, 11th ed. 1973).

As will be seen, the record in this case reflects that the pressure level of ambient sound was expressed in terms of "dB" while the sound pressure level of sirens was expressed in terms of "dBC." No party has suggested that the difference in usage is significant here.

<sup>35</sup> The NRC/FEMA guidance refers to the 10 dB differential as a "target" in the design of the siren system. See NUREG-0654, Appendix 3 at 3-8.

<sup>36</sup> See, e.g., Applicants' Response to "Contention of Attorney General Francis X. Bellotti and Motion to Admit Late-Filed Contention . . ." and Alternative Motion for Summary Disposition (January 22, 1987), Affidavit of James A. MacDonald, Attachment (letter of Robert S. Berens to James A. MacDonald (July 7, 1986)).

<sup>37</sup> See March 25, 1987 Memorandum and Order at 5-6, 14.

<sup>38</sup> See Applicants' Answer to Motion of Attorney General James M. Shannon to Reconsider Late-Filed Contention with Revised Basis and to Reopen the Record (March 13, 1987), Affidavit of Anthony M. Callendrello.

<sup>39</sup> *Ibid.*

<sup>40</sup> See Motion of Attorney General James M. Shannon to Reconsider Late-Filed Contention with Revised Basis and to Reopen the Record (March 3, 1987), Affidavit of Brion Koning.

<sup>41</sup> *Id.*, Affidavit at 3.

to attach any weight to this consideration.<sup>42</sup> As it understood the FEMA guidance on the methodology for taking measurements of ambient sound pressure levels, the use of a one-third octave band is acceptable.<sup>43</sup>

On his appeal to us from the disposition below of the Merrimac siren issue, the Attorney General insisted that, given the fact that demonstrated compliance with the NRC/FEMA acceptability standard appeared to hinge upon what frequency range was selected for measurement purposes, the record should have been reopened to explore further that matter. At oral argument, however, he expressly conceded that the use of either a one-third or full octave band is acceptable.<sup>44</sup> Given that concession, we might well have brought our inquiry to an end. For it amounts to an acknowledgement that the use of the one-third octave band was sufficiently conservative for the purpose of ascertaining whether there was the necessary differential between ambient and siren sound pressure levels. And there is an at least tacit further acknowledgement by the Attorney General that, as the Licensing Board found, the existence of the differential was established by the results obtained from the measurement of ambient sound pressure levels in the one-third octave band.

But we were also informed at oral argument that the applicants had scheduled another set of measurements for later in the summer.<sup>45</sup> In that circumstance, it seemed prudent to await the outcome of those measurements before closing the door on this subject. Among other things, we thought it of possible significance that they would be taken in the summer, when presumably the ambient sound pressure levels are at their peak.<sup>46</sup> Accordingly, we instructed the applicants to furnish the results of the measurements when available, together with a description of the methodology employed.<sup>47</sup>

The measurements were taken on two days in late August in a total of nine Merrimac locations. At each location, the applicants' current consultant, Wyle Laboratories, collected the ambient sound for a fifteen-minute period in early to mid-afternoon over a one-third octave band. According to the applicants' report, with a single exception the measured sound pressure levels were below 40 dB and, thus, at least 10 dB below the assumed siren sound coverage of 50 dBC. The exception was a location at which the measured sound pressure level

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<sup>42</sup> See March 25, 1987 Memorandum and Order at 15-16.

<sup>43</sup> *Id.* at 14-15.

<sup>44</sup> App. Tr. 76.

<sup>45</sup> App. Tr. 79.

<sup>46</sup> Although apparently not a requirement, FEMA recommends that ambient sound pressure levels be measured during the summer. See FEMA-REP-10 at E-8; NRC Staff Response to Massachusetts Attorney General's Motion to Reopen Record and Consider Late-Filed Contention with Revised Basis (March 20, 1987) at 8 n.2.

<sup>47</sup> See ALAB-875, 26 NRC at 274.

was 41 dB. An analysis by Wyle indicated, however, that the actual siren sound coverage at that location would be in the neighborhood of 60 dBC.<sup>48</sup>

In short, the applicants' report maintained that the August measurements established that the 10 dB differential was met throughout the coverage area of the Merrimac sirens.<sup>49</sup> Responding to the report, the Attorney General took issue with two aspects of the methodology employed by the applicants' consultant.<sup>50</sup> In addition, he supplied the results of measurements taken in September at his instigation.<sup>51</sup>

As the Attorney General sees it, applicants' measurements should have been taken at each location at frequent intervals over a period of days. Further, he expressed disagreement with the reference standard ( $L_{90}$  exceedance level) employed by Wyle in determining what level of ambient sound should be deemed significant for reporting purposes.<sup>52</sup>

Our examination of the NRC and FEMA sound measurement guidance brought to our attention by the parties does not address either of these concerns.<sup>53</sup> In essence, both agencies leave it up to the taker of the measurements to determine, at least in the first instance, the appropriate time period and reference standard. As earlier noted, FEMA ultimately will be called upon to decide the adequacy of the Merrimac sirens.<sup>54</sup> In fulfilling this responsibility, it presumably will consider, *inter alia*, the methodology employed by the applicants in measuring ambient sound pressure levels. For present purposes, we need consider whether it clearly appears that the methodology was so crucially flawed that no good reason exists to await the outcome of the FEMA review. No such demonstration has been made. Indeed, the record establishes that, in taking its measurements last February, the Attorney General's own consultant utilized both a single thirty-minute period at each location and the same  $L_{90}$  reference standard selected by the applicants' consultant.<sup>55</sup> Even though the Attorney General may prefer essentially continuous measurement taking and the different

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<sup>48</sup> See letter from Thomas G. Dignatt, Jr., to the members of this Board (September 17, 1987), Attachments (letter from John R. Stearns, Wyle Laboratories, to the lead applicant (September 4, 1987) and Report).

<sup>49</sup> *Id.*, Report at 3.

<sup>50</sup> See letter from Allan R. Fierce to the members of this Board (October 2, 1987).

<sup>51</sup> See *id.*, Affidavit of Gregory C. Tocci. See also letter from Allan R. Fierce to the members of this Board (October 23, 1987), Enclosure ("Ambient Sound Level Study [of] Merrimac, Massachusetts" (September 1987) [hereinafter Cavanaugh Tocci Final Report]).

<sup>52</sup> See October 2 letter of Allan R. Fierce at 2-3. Exceedance levels are expressed in terms of the letter "L" and a subscript number reflecting the percentage of the measurement interval during which the sound pressure was above the reported level. See A. Peterson, *Handbook of Noise Measurement*, at 57 (9th ed. 1980).

<sup>53</sup> See generally NUREG-0654; FEMA-REP-10; and FEMA-43, "Standard Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants" (September 1983).

<sup>54</sup> See *supra* p. 416.

<sup>55</sup> See Koning Affidavit at 2. We do not understand the Attorney General to maintain that the difference between a 15- and a 30-minute period is of significance. Rather, to repeat, his point is that measurements should be taken throughout the day. The September measurements taken by his consultant generally adopted that approach. See Tocci Affidavit at 5-6.

reference standard used by his consultant in its September measurements (the L<sub>50</sub> exceedance level), it does not follow that the Wyle methodology is unacceptable or unreliable.<sup>56</sup>

The single remaining question then is whether the Attorney General's September measurements themselves cast doubt on the applicants' conclusion that the Merrimac sirens are adequate. Those measurements were taken by his consultant, Cavanaugh Tocci Associates, at four locations chosen because of the possibility of inadequate siren coverage.<sup>57</sup> As reflected by the data for the L<sub>50</sub> measurements included in the consultant's final report, in three of those locations<sup>58</sup> the average daytime ambient sound pressure level exceeded 40 dB; in the remaining location,<sup>59</sup> the data established, the average level was below 40 dB.<sup>60</sup> On the basis of the preliminary report presaging these results,<sup>61</sup> we called upon the applicants to provide us with any available information regarding the siren sound pressure levels at all four locations.<sup>62</sup> In response, the applicants supplied an analysis by their consultant, Wyle, that assigned a siren sound pressure level to each location.<sup>63</sup>

A simple mathematical computation utilizing both the Wyle analysis and the data supplied by the Attorney General discloses that at three of the locations<sup>64</sup> a differential of at least 10 dB manifestly exists between the siren sound pressure level and the average daytime ambient sound pressure level (irrespective of which reference standard is invoked). But at the fourth location — South Pleasant Street — compliance with that acceptability criterion hinges upon which reference standard is utilized in determining what ambient sound should be reported. Using the L<sub>90</sub> standard invoked by the applicants' and the Attorney General's consultants in their measurements early in the year, it turns out that the 10 dB differential is satisfied. On the other hand, the L<sub>50</sub> standard now adopted by the Attorney General's consultant (but not by that of the applicants) produces a differential at South Pleasant Street of approximately 7 dB.<sup>65</sup>

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<sup>56</sup> The applicants' March 10 measurements had similarly been taken over a single 15-minute period with the same reference standard used for the August measurements. See Callendrello Affidavit, Attachment (letter of Robert S. Berens to the lead applicant (March 11, 1987) at 2). Yet the Attorney General's sole voiced objection to the utilized methodology related to the choice of a one-third, rather than a full, octave band. See *supra* pp. 918-19. At the time of the August measurements, the applicants had this additional reason to assume that the Attorney General regarded the 15-minute measurement period and the selected reference standard to be acceptable.

<sup>57</sup> See October 2 letter of Allan R. Fierce at 3. See also Cavanaugh Tocci Final Report at 1, 11-12.

<sup>58</sup> River Road, South Pleasant Street and High Street.

<sup>59</sup> Bear Hill Road.

<sup>60</sup> See generally Cavanaugh Tocci Final Report.

<sup>61</sup> See Tocci Affidavit at 11.

<sup>62</sup> See Order (October 13, 1987).

<sup>63</sup> See Applicants' Response to Appeal Board Order of October 13, 1987: Supplemental Memorandum, Affidavit of Louis C. Sutherland.

<sup>64</sup> River Road, High Street and Bear Hill Road.

<sup>65</sup> Cavanaugh Tocci Associates presented the results of its September measurements in terms of both the L<sub>90</sub> and L<sub>50</sub> standards.

There is nothing before us to support a FEMA preference for one standard over the other. Moreover, inasmuch as at one time or another, the consultants for both the Attorney General and the applicants used the L<sub>90</sub> standard, it is beyond cavil that acoustic professionals on occasion resort to that standard. In this circumstance, we cannot conclude that the Attorney General's September measurements at the South Pleasant Street location give rise to an issue of such safety significance that a reopening of the record on the adequacy of the Merrimac sirens is mandated.<sup>66</sup>

In responding to the Wyle analysis, the Attorney General did not confine himself, however, to calling attention to the South Pleasant Street situation.<sup>67</sup> In addition, he asked leave to conduct discovery to determine whether infirmities existed in the Wyle analysis that led to the values assigned to the siren sound pressure levels at the four locations.<sup>68</sup> Controlling precedent stands in the way of granting that request. In advising an intervenor that it had "misconstrued the standards for reopening" a closed record in the *Three Mile Island Restart* proceeding, the Commission had this to say:

The burden is on the movant to establish prior to reopening that the standards for reopening are met. The movant is not entitled to engage in discovery in order to support a motion to reopen. Rather, the issue in each case is whether the available information meets the standards for reopening, i.e., timely raises a significant safety issue which might have affected the Licensing Board's decision, such that the record should be reopened and discovery initiated.<sup>69</sup>

The following year, in the *Perry* proceeding, the Commission reiterated the "available information" requirement in the course of overturning our determination to conduct a brief evidentiary hearing to probe further the safety significance of an issue on which the reopening of the record was being sought.<sup>70</sup>

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The Licensing Board's March 23 and 25, 1987, denials of the motions to reopen the record to allow the admission of late contentions on the adequacy of the East Kingston and Merrimac emergency notification sirens are *affirmed*. This Board still has before it, however, a recently filed motion of the Attorney

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<sup>66</sup> Our disinclination on this record to choose between the L<sub>90</sub> and L<sub>50</sub> reference standards does not, of course, preclude FEMA from making such a choice in its own evaluation of the acceptability of the Merrimac sirens.

<sup>67</sup> See Attorney General James M. Shannon's Reply to Applicants' October 30, 1987 Supplemental Memorandum in Response to Appeal Board Order of October 13, 1987 (November 13, 1987).

<sup>68</sup> See Motion of Attorney General James M. Shannon to Conduct Discovery Regarding How Siren Sound Levels Were Calculated for Merrimac by Louis C. Sutherland (November 13, 1987).

<sup>69</sup> *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), CLI-85-7, 21 NRC 1104, 1106 (1985).

<sup>70</sup> *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), CLI-86-7, 23 NRC 233, 235-36 (1986) (citing, in addition to *Three Mile Island, Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), CLI-86-1, 23 NRC 1 (1986)).

General seeking a reopening of the record to permit a late contention addressed to the alleged removal of sirens in the City of Newburyport, Massachusetts.<sup>71</sup> Action on that motion is *deferred* to await the receipt of the responses to it.

It is so ORDERED.

FOR THE APPEAL BOARD

Eleanor E. Hagins  
Secretary to the  
Appeal Board

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<sup>71</sup> See Contention of Attorney General James M. Shannon and Motion to Admit Late-Filed Contention and Reopen the Record (November 13, 1987).





UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulies, Chairman  
Dr. Jerry R. Kline  
Mr. Frederick J. Shon

In the Matter of

Docket No. 50-322-OL-3  
(ASLBP No. 86-539-07-OL)  
(Emergency Planning)

LONG ISLAND LIGHTING  
COMPANY

(Shoreham Nuclear Power Station,  
Unit 1)

November 6, 1987

The Licensing Board grants Applicant's motion for summary disposition of Contention 92, which alleges, in part, that there is no New York State emergency plan to deal with an emergency at the Shoreham Nuclear Power Station and that Applicant's plan fails to provide for coordination of Applicant's emergency response with New York State, assuming such a response would occur. The Licensing Board finds that the contention, as written, is clearly true and does not raise any other unresolved health and safety issue. Therefore, the motion for summary disposition should be granted, under 10 C.F.R. § 2.749, because there is no genuine issue as to any material fact and Applicant is entitled to a decision as a matter of law.

# **MEMORANDUM AND ORDER**

## **(Ruling on Applicant's Motion for Summary Disposition of Contention 92)**

### **INTRODUCTION**

On September 11, 1987, LILCO filed a motion pursuant to 10 C.F.R. § 2.749 for summary disposition of Contention 92, which alleges in part that there is no New York State emergency plan to deal with an emergency at Shoreham and that the LILCO plan fails to provide for coordination of Applicant's emergency response with New York State, assuming such a response would occur. The Licensing Board's prior disposition of Contention 92 in favor of Intervenor had been reversed and remanded by the Appeal Board.<sup>1</sup> In support of its motion, claiming that there is no genuine issue as to any material fact and that it is entitled to a decision as a matter of law, Applicant relies upon the existing evidentiary record and the law of the case.

In an answer submitted October 5, 1987, Intervenor requests that the motion be denied. They assert that there are unresolved issues of material fact and that the requirements of § 2.749 are not met to grant LILCO's motion for summary disposition. They too believe that the subject issues can be decided based upon the law of the case and the existing evidentiary record.

The Staff, in a response dated October 5, 1987, agrees with Applicant that it is entitled to a decision as a matter of law and that LILCO's motion for summary disposition should be granted.

On October 20, 1987, Intervenor filed a response to the Staff response in support of the LILCO motion for summary disposition of Contention 92. They argue that, contrary to Staff's assertion, there are material facts in dispute with respect to Contention 92.

In this Memorandum and Order, the Licensing Board finds that the motion for summary disposition of Contention 92 should be granted because there is no genuine issue as to any material fact and Applicant is entitled to a decision as a matter of law.

### **BACKGROUND**

The Licensing Board considered and decided Contention 92 as part of a grouping of contentions dealing with the ingestion pathway.<sup>2</sup> It found that no site-specific plans for Shoreham exist in the New York State plan. We further

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<sup>1</sup>ALAB-847, 24 NRC 412, 429-33 (1986).

<sup>2</sup>LBP-85-12, 21 NRC 644, 647, 875 (1985).

found that LILCO has the capability to perform the four specific tasks<sup>3</sup> that have been identified as State functions, although we did not expect that that is all that a state might do in a genuine emergency. We decided that the absence of commitment, resources, and decisionmaking capability and authority of the State, together with similar absences on the part of the County, constitutes a serious deficiency in the LILCO plan and concluded that public health and safety could not be protected as well by LILCO acting alone as it could if LILCO were acting in concert with the State of New York and the County. The Board decided that the State and County prevailed on Contention 92; the lack of State participation constituted a serious substantive deficiency in emergency preparedness at Shoreham.

The Licensing Board also heard as part of the grouping of ingestion pathway contentions, Contention 81, which alleges that the utility's plan contains insufficient procedures or means for implementing protective actions for the 50-mile ingestion exposure pathway.

The Board ruled in LILCO's favor on Contention 81. It found that LILCO's plans are adequate for management, monitoring, issuance of warnings, and means for implementation, through notification of producers and through purchase of possible contaminated food in the ingestion pathway EPZ.<sup>4</sup> The Licensing Board finding on Contention 81 remains intact. It was not disturbed on appeal.

Also relevant, as part of the legal authority issue, we heard and decided Contention 7, which alleges that the LILCO plan provides that various LILCO employees and contractors will be responsible for determining, making available to the public, and implementing protective action recommendations for the 50-mile ingestion exposure pathways, which activities under State and County law are unlawful for LILCO's employees and contractors to perform.

We found that the activities described in Contention 7 were prohibited by State law and that this defect in the LILCO plan was not eliminated by preemption or through Applicant's realism argument.<sup>5</sup> Although the Licensing Board's rulings on the legal authority issue were upheld by the Appeal Board,<sup>6</sup> they were reversed and remanded for further evidentiary hearing based on LILCO's realism argument.<sup>7</sup> The process has started for holding the hearing called for in CLI-86-13.

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<sup>3</sup> (1) Dose projection based on release data communicated to State officials; (2) ingestion pathway sampling in the 50-mile EPZ; (3) interdiction of contaminated foods; and (4) protective action recommendations. *Id.* at 883.

<sup>4</sup> *Id.* at 877.

<sup>5</sup> *Id.* at 895-912, 919.

<sup>6</sup> ALAB-818, 22 NRC 651, 673-76 (1985).

<sup>7</sup> CLI-86-13, 24 NRC 22 (1986).

## POSITION OF THE PARTIES

Contention 92 on which LILCO requests summary disposition reads as follows:

There is no New York State emergency plan to deal with an emergency at the Shoreham plant before this Board. (See, Attach. 1.4.2). In addition the LILCO Plan fails to provide for coordination of LILCO's emergency response with that of the State of New York (assuming *arguendo*, such a response would be forthcoming). (See FEMA Report at 1). In the absence of a State emergency plan for Shoreham, there can be no finding of compliance with 10 C.F.R. §§ 50.47(a)(2), 50.47(b), or NUREG-0654 §§ I.E, I.F, I.H or II.

(footnote omitted).

In support of its motion for summary disposition, LILCO argues that the Board's bases for ruling in favor of Intervenor on Contention 92 in its Partial Initial Decision have been specifically rejected by the Commission or the Appeal Board and that since the Board had resolved all disputed factual issues in LILCO's favor in its previous decision there is now no material fact in dispute on Contention 92 and LILCO is entitled to a decision in its favor as a matter of law.

The elements of LILCO's argument are complex and they require further elaboration. According to LILCO, the Board in its Partial Initial Decision refused to accept LILCO's plan for the ingestion pathway as an adequate interim compensating measure under the provisions of § 50.47(c) where there was a total absence of State emergency planning for Shoreham and no assurance existed that any coordinated response to an emergency from the State could be expected. This view of the regulations LILCO argues was reversed and remanded by the Appeal Board, which in turn based its opinion on the Commission's ruling in CLI-86-13 where the Commission determined, in the context of reviewing LILCO's overall proposal, that a utility plan prepared without any governmental cooperation might pass muster under 10 C.F.R. § 50.47(c). LILCO next argues that the Board's second ground for deciding Contention 92 was its belief that the public health and safety could not be protected as well by LILCO acting alone as it could if LILCO acted in concert with governmental authorities and that this ground was set aside by the Appeal Board on remand in favor of a reexamination of whether there are identifiable deficiencies in LILCO's ability to fulfill four State functions (which were identified by LILCO in hearing) so as to render the plan inadequate. As to that matter, LILCO asserts that the Board found in its Partial Initial Decision that LILCO could adequately perform the specified functions and that there are no other issues within the scope of this contention specifying other possible deficiencies regarding actions to be taken in the ingestion pathway. There being no further material issue of fact in dispute according to LILCO, it is entitled to summary disposition on Contention 92.

LILCO appended to its motion a "Statement of the Material Facts as to Which LILCO Contends There Is No Genuine Issue to Be Heard on Contention 92 (No New York State Emergency Plan)." LILCO's statement consists of five material facts which in abbreviated form assert: (1) The State and County would make a best-efforts response using the LILCO plan in an emergency; (2) the four specific functions performed by the State in an emergency are dose projection, ingestion pathway sampling, interdiction of contaminated foods, and issuance of protective action recommendations; (3) the four State functions have to do with the ingestion pathway and are performed in the aftermath of an accident; (4) the Applicant will perform the four State functions but will defer to decisions of the Governments if requested; and (5) the Applicant has the capability to perform the tasks that have been identified as State functions.

LILCO further asserts that coordination with the State is not a litigable issue because the Board's original ruling on Contention 92 was based on the absence of a State response altogether and not on the absence of coordination and because the issue of coordination is part of the realism issue and should not be duplicated under Contention 92.

The Governments filed an answer to LILCO's motion on October 5, 1987, in which they opposed summary disposition of Contention 92. The Governments base their opposition primarily on that portion of Contention 92 which asserts that LILCO's plan fails to provide for coordination of LILCO's emergency response with that of the State. In the Governments' view the evidentiary record is completely void of any demonstrated preparedness on the part of the State of New York, and this prohibits a finding that there will be an integrated or coordinated response or that the response to an emergency will be adequate.

As to the four State functions in emergency response that were proffered by LILCO in its defense against Contention 92, the Governments claim that LILCO cannot seek to prevail on Contention 92 based on its asserted capability to perform them because the New York Supreme Court and the Appellate Division thereof ruled in *Cuomo v. LILCO* that the functions to be performed by LILCO under its plan constitute illegal usurpation of the police power. Thus in the Governments' view, LILCO's capability to perform the specified State functions is irrelevant to the resolution of Contention 92.

Additionally, the Governments argue that, following the Appeal Board's remand in ALAB-847, there remain triable issues of material fact with regard to the adequacy of the LILCO plan to fulfill the four State functions. In addition to the asserted legal prohibition cited above, the Governments now assert that the four functions cited by LILCO are merely representative of the kinds of functions that New York State might perform in an emergency. Taking their cue from language used by the Board in its Partial Initial Decision ("we have a great deal of trouble accepting that that is all a State might do in an emergency.") Intervenor's assert that Contention 92 raises issues broader

than the four State functions discussed in LILCO's motion. The primary issue they say concerns whether LILCO's plan provides for coordination of LILCO's emergency response with that of the State. Without stating specifically what else the State might do in an emergency, Intervenor's rely on instructions from the Appeal Board that the Board should determine on remand whether and how the State's participation would make the plan better. Thus, say the Intervenor's, there is an absence of evidence of record that New York State would participate in an emergency; that an *ad hoc* State response would comply with NRC regulations; or that it would be meaningful, coordinated, or integrated with LILCO's response. Absent evidence of record on the nature of a State response in an emergency, Intervenor's assert that the Board may not reach a conclusion other than that there is no reasonable assurance that an integrated or coordinated emergency response that includes the State would occur. Intervenor's support their position by citation to the Commission's decision in CLI-86-13 in which the Commission assumed that the Governments would respond to an emergency with their "best efforts" but was unwilling to assume that such efforts would be adequate without additional evidence. Further support according to Intervenor's comes from the Board's decision on LILCO's motion for summary disposition issued September 17, 1987 (LBP-87-26, 26 NRC 201), wherein the Board found that the question of adequacy of Government response under the "best-efforts" assumption required further development of evidence before it could be resolved.

Intervenor's acknowledge LILCO's argument that we should not duplicate our efforts and that the issues raised by Contention 92 are in some ways similar to the realism and legal authority issues for which evidentiary hearings are to be held. They continue to oppose summary disposition, however, on the basis that Contention 92 has been at issue since July 26, 1983; its admission was not opposed by LILCO; its allegations and issues raised have never changed. In Intervenor's view, LILCO's assertion of duplication is merely backdoor maneuvering seeking to oppose Contention 92's admission.

Intervenor's oppose LILCO's claim that the four identified State functions apply primarily to the ingestion pathway. They cite two — dose projection and protective action recommendations — which they claim are primarily related to plume exposure EPZ activities. Thus these are not activities to be done in the aftermath of an accident when there would be little time pressure on their accomplishment, and in any event the Board has ruled that the timing and pressure under which a response must be made are irrelevant to the requirements imposed by NRC's regulations.

In sum, Intervenor's claim that it is the coordination issue of Contention 92 that most clearly mandates denial of LILCO's motion. This is so, say the Intervenor's, because in its interpretation of CLI-86-13 all four State functions have been found by this Board to involve factual disputes requiring denial of LILCO's motion for summary disposition of the legal authority issues. Inter-

venors assert that renewed scrutiny is required even for contentions that were previously resolved in LILCO's favor, such as Contention 81, because the situation confronting the Board was so changed by the Commission's decision in CLI-86-13.

The NRC Staff responded in support of LILCO's motion on October 5, 1987. In its response the Staff reviews CLI-86-13, ALAB-847, and the Partial Initial Decision and concludes that there are no material facts in dispute. According to Staff, our determinations under Contention 81 and the facts in the record provide an ample basis for the Board to find under § 50.47(c) that the LILCO plan constitutes adequate interim compensating action permitting a reasonable assurance finding, notwithstanding lack of literal compliance with 10 C.F.R. § 50.47(b)(10) and NUREG-0654. Intervenor found it necessary to respond to the Staff, but their discussion was unproductive to disposing of the issues.

## DISCUSSION

A literal reading of Contention 92 reveals that it makes two factual assertions and two legal assertions. The Contention alleges as factual matters that no State emergency plan is before this Board and that no planned coordination between LILCO and the State is provided for. It alleges as legal matters that as a consequence there can be no compliance with specified portions of § 50.47 and portions of NUREG-0654. The contention has specificity only for the things alleged and not for any additional specific defects that Intervenor may wish to litigate by implication. LILCO, in its defense against Contention 92, specified in testimony four issues that it said the State normally performs and claimed, on the basis that it could perform them, that it was entitled to prevail under the provisions of § 50.47(c) which, among other things, would permit licensing where adequate interim compensating measures were taken for deficiencies found in an emergency plan. The Board was willing in its Partial Initial Decision to accept LILCO's demonstration, in essence, as a necessary one but could not find record support of sufficiency under a literal reading of the contention. We specifically expressed doubt as to whether the four matters raised by LILCO were exhaustive of State functions in a planned response to an emergency. (We note here in passing that NUREG-0654 specifies ninety-five elements as State responsibilities in emergency planning). We review this history to make clear that the four State functions that have become an issue in this contention arise from LILCO's litigation strategy and not from any specification of issues by the Intervenor in their contention nor from anything the Board directed.

We initially admitted Contention 92 for litigation simply because it has the requisite basis and specificity for admission under NRC regulations. The

specificity of the contention is not diminished because the matters alleged are broadly stated. The contention alleges, as comprehensive flaws, that no State plan is before the Board and that LILCO's plan fails to provide for coordination with the State in an emergency. There is no evidence that Intervenors ever intended to litigate possible specific deficiencies in the LILCO plan under this contention or to extend its reach beyond the allegations plainly stated. The evidence indeed is to the contrary because Intervenors did not do so in the hearing; they submitted other contentions alleging specific deficiencies in the plan, and their references to violations in the contention itself are broadly stated. For example, they allege that the violations they perceive include noncompliance with § 50.47(b) in its entirety even though that section contains sixteen specific requirements on a broad range of subjects. Similarly, Intervenors reference perceived violations of § I of NUREG-0654. That section, however, contains no specific planning requirements. That section states the underlying rationale and conceptual bases for the emergency planning requirements that are stated in detail in § II of NUREG-0654. Thus we are persuaded now as we were in our Partial Initial Decision that Contention 92 was intended to specify a global and conceptual deficiency in the plan which includes the full collection of State functions without specifying each of them one by one. The truth of Contention 92 can therefore be determined by a simple measure of whether a State plan for Shoreham exists and whether there is a planned coordination between LILCO and the State in the event of a radiological emergency at Shoreham.

By that standard, no party disputes and neither the Board nor the Commission expresses any doubt that the factual allegations of Contention 92 are true. Moreover, the legal allegations of the contention are also recognized by the Appeal Board as literally true. The Appeal Board stated in ALAB-847: "We agree with the Licensing Board that, in terms, LILCO cannot satisfy section 50.47(b) or conform to the guidance in NUREG-0654." 24 NRC at 431. Thus there are no material facts in dispute on Contention 92, and under the ruling of CLI-86-13, summary disposition is required as a matter of law.

The foregoing conclusion is not at variance with the Appeal Board decision in ALAB-847 which instructed us on remand to "reexamine whether there are identifiable deficiencies . . . to fulfill the four state functions so as to render the LILCO plan inadequate." *Id.* at 432. We have conducted such a review ourselves and find no basis in the record or in the parties' responses to this motion for altering our previous conclusion that LILCO has the capability to perform the four State functions that it identified in the hearing. No party has argued, and the Board does not believe, that any possible insufficiencies in LILCO's plan result solely from either (i) LILCO's inability to do things not required by regulations, or (ii) the State's capacity to provide a level of safety beyond that considered adequate. The only insufficiencies alleged by Intervenors are their perceived lack of LILCO's legal authority to perform the four functions and their view that a



broader inquiry into State emergency response function is now required by the Commission's decision in CLI-86-13. However, we have provided for adequate inquiry into the legal authority question in our decision denying LILCO's motion for summary disposition of the ten legal authority contentions. Intervenor's are not persuasive that a broader inquiry into State function is required since the Appeal Board has ruled that review of the four State functions proffered by LILCO is adequate. If we were required by ALAB-847 to inquire into how the participation of the State would make the plan better, we conclude that that issue is encompassed within the issues that will be addressed as a result of our decision denying summary disposition of the ten legal authority contentions.

Intervenor's argue that our interpretation of CLI-86-13 in our decision denying summary disposition of the ten legal authority contentions requires us to take a consistent position here. In our previous decision, we concluded that summary disposition of those contentions must be denied because there existed unresolved issues of fact related to the nature and adequacy of government response under the Commission's best-efforts assumption. We agree that Contention 92 could be viewed as raising the same issues, particularly regarding the four State functions. The issue of the adequacy of government response is, however, new to the case because of the Commission's decision in CLI-86-13. Our previous decision provides an adequate mechanism for inquiry into the new issue of adequacy of government response. Subsequent to that decision we afforded the parties the opportunity to advise us on the proper specification of issues for trial. Those matters have not yet been decided. We are persuaded by the foregoing considerations of the validity of LILCO's argument that we should not duplicate our inquiries under Contention 92. Intervenor's' arguments to the contrary were generalized and unpersuasive, and they acknowledged that the four State function issues were also raised within the scope of the ten legal authority contentions. We therefore conclude that any issues related to the adequacy of government performance that arguably might be included within the scope of Contention 92 can be consolidated within the scope of issues remaining for trial without prejudice to any party. We conclude that summary disposition of Contention 92 would not be inconsistent with our previous action dealing with the ten legal authority contentions.

The essence of the dispute on Contention 92 is legal rather than factual. In our Partial Initial Decision we found that the truth of Contention 92 had adverse consequences to the acceptance of LILCO's plan. The Commission, however, has decided with finality the legal effect of the absence of a State emergency plan for Shoreham. The Commission has ruled that LILCO's plan can serve as an adequate interim compensating action under § 50.47(c) even in the total absence of State planning; that the State and local governments can be expected to participate in an emergency response with their best efforts even though that response is unplanned; that the standard of equivalent protection employed by

the Board in its Partial Initial Decision was too stringent; and that a more flexible interpretation permitting LILCO to demonstrate that it can achieve results that are generally comparable to what could be achieved with State and County participation should be employed. With those interpretations by the Commission, the Board concludes that the truth of Contention 92 does not require a finding adverse to LILCO.

The Board has considered the five material facts as to which LILCO claims there is no genuine issue and the Intervenor's response. We conclude that LILCO's facts are supported by the record and that they have not been adequately controverted by Intervenor. The Governments argue generally that LILCO's facts are not material to the resolution of Contention 92 and they specifically challenge LILCO's assertion in its statement of uncontested facts (number three) that the four State functions have to do primarily with the ingestion pathway. That assertion is contrary to the record, however, because the parties litigated this contention as part of a cluster of ingestion pathway contentions, and the entire record of this case was assembled without dispute among the parties that the functions of State and local government were apportioned in a manner that assigns responsibility for the 10-mile EPZ primarily to local government and responsibility for the ingestion pathway primarily to the State. Intervenor's response therefore does not raise a material issue on Contention 92.

The Board concludes that Contention 92 has served its purpose of establishing on the record that no State emergency plan for Shoreham is before this Board and that there is no provision for planned coordination between LILCO and the State. The Contention as written is clearly true and, according to our interpretation of the Commission's decision in CLI-86-13, does not raise any other unresolved health and safety issue, and summary disposition is required. Applicant's motion is therefore granted.

**ORDER**

Based upon all of the foregoing, it is hereby ordered that Applicant's motion for summary disposition of Contention 92 is granted.

**THE ATOMIC SAFETY AND  
LICENSING BOARD**

**Morton B. Margulies, Chairman  
ADMINISTRATIVE LAW JUDGE**

**Jerry R. Kline  
ADMINISTRATIVE JUDGE**

**Frederick J. Shon  
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,  
this 6th day of November 1987.**

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judge:

Charles Bechhoefer

In the Matter of

Docket No. 55-60755  
(ASLBP No. 87-551-02-SP)

ALFRED J. MORABITO  
(Senior Operator License for  
Beaver Valley Power Station,  
Unit 1)

November 24, 1987

In an informal proceeding involving an Applicant's appeal of the denial of his senior operator's license, the Presiding Officer authorizes an oral presentation, outlines procedures for the presentation, and sets forth matters for both the Applicant and the NRC Staff to address at the presentation.

MEMORANDUM AND ORDER  
(Need for Further Information and Requirement  
for Oral Presentation)

I have reviewed the claims set forth in Mr. Morabito's Specification of Claims, dated July 31, 1987, including the attached appendices; the response of the NRC Staff, dated October 9, 1987; and Mr. Morabito's reply, dated November 7, 1987. In response to the Staff's Motion for Opportunity to Respond to Rebuttal Filed by Mr. Morabito, dated November 19, 1987, and in accord with my Order of October 23, 1987, the Staff may respond to new information submitted by Mr. Morabito in his reply, on the schedule set forth herein.

I have also ascertained that there are several areas (set forth in the Attachment hereto) as to which I will require information beyond that already submitted by the parties, in order to reach a determination whether Mr. Morabito passed both the written and the simulator segments of his senior operator license examination. Because of the already extended length of time that has elapsed since Mr. Morabito initiated his appeal, and because answers and further information that I have requested will likely provoke followup inquiries, I have also determined that an oral presentation should be held. As direct testimony for that oral presentation, I will consider (1) both parties' responses to the inquiries set forth in the Attachment; (2) the Staff's response to Mr. Morabito's reply; (3) the Specification of Claims (to the extent it relates to Mr. Morabito's examination), the Staff response thereto, and Mr. Morabito's reply (all previously filed).

This oral presentation is being scheduled because of my need for further information or clarification of information, *not* because of Mr. Morabito's request for an oral presentation "as a platform for initiating national debate" on the operator license examination process (Specification of Claims at 32). Matters considered will be limited to the specific items identified herein, unless otherwise requested by a party and approved by me. At the oral presentation, I will pose questions on the matters to be considered. Dr. David L. Hetrick, the technical interrogator, may also question the parties. Although cross-examination by the parties will not be permitted as a matter of right (*see* proposed 10 C.F.R. § 2.1235(a)), I will permit parties to pose questions or lines of questions to the other party, subject to my approval.

As contemplated by proposed 10 C.F.R. § 2.1235(b), all direct testimony and responses to oral questioning are to be given under oath or affirmation. At the oral presentation, I intend to have the parties, to the extent they have not already done so, swear or affirm to the direct testimony referenced above. Parties should thus be prepared to identify any necessary changes or corrections to the documents previously submitted.

The parties' responses (direct testimony) should be filed (mailed) by December 21, 1987. The oral presentation will be held during January 1988, at a place and time to be announced (in the vicinity of Pittsburgh, Pennsylvania, or the Beaver Valley facility). At the oral presentation, I will entertain oral limited appearance statements, as permitted by proposed 10 C.F.R. § 2.1211(a) and as

announced in the Notice of Hearing dated July 15, 1987 (52 Fed. Reg. 27,485 (July 21, 1987)).

PRESIDING OFFICER

Charles Bechhoefer  
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,  
this 24th day of November 1987.

## ATTACHMENT

### ADDITIONAL INFORMATION REQUIRED

To the extent applicable, each party should provide additional information in the following areas:

#### A. Written Examination

##### 1. *Question 6.03b*

a. This question asked for three design features of the component cooling water system that minimize the effects of a rupture of the RCP thermal barrier. One of Mr. Morabito's answers that was judged incorrect was "[a]bility to manually isolate the thermal barriers." The Staff explains (Affidavit, ¶ 10) that "[a] containment entry, which is a lengthy and involved process, would be required to isolate the component and would not provide *immediate* reduction in the severity of the rupture" (emphasis added). The Staff goes on to state (*id.*, ¶ 11) that isolation valves are "*normally* designed to allow maintenance . . . and not to minimize the effects of a component failure" (emphasis added). In view of the fact that the question made no reference to the timing of the minimization of the effects of a rupture and no reference to any "normal" design feature to accomplish that purpose, is not Mr. Morabito's answer technically correct? In any event, does not the ambiguous scope of the question as described herein warrant the deletion of question 6.03b?

b. In an examination question of this type (requesting a specified number of answers), has the Staff invariably used the method of grading described in ¶ 15 of its affidavit? (Mr. Morabito, in his reply (at 12) claims otherwise. Mr. Morabito should provide additional specificity, if he can do so, with respect to the two

written examinations he references. For its part, the Staff should explain what is meant by the word "routinely" set forth in ¶ 15, line 9, of its affidavit.)

c. Were candidates advised not to supply more than the requested number of answers to questions such as question 6.03b?

d. Were candidates advised of penalties (either discretionary or mandatory) for a wrong answer accompanied by a sufficient number of correct answers? Were they informed, prior to or at the time of the written examination, of the method of grading that the Staff is now utilizing — i.e., that they would be given credit only for the percentage of correct/incorrect answers where more than three answers were supplied (Staff Affidavit, ¶ 15)?

- (i) If so, why was Mr. Morabito initially given 1/3 credit (0.5 point) when only one of the four answers supplied was considered correct? If the Staff were utilizing the grading method described in ¶ 15 of its affidavit, should not Mr. Morabito initially have been given only 1/4 credit (0.375 point)?
- (ii) If Mr. Morabito was *not* informed of the grading system, should he not either be given credit for at least two correct answers out of three (1.0 point) or, alternatively, should not the question have been deleted?

## **2. Question 6.06a**

a. Does the phrase "cold solid plant operations" in examination question 6.06a refer only to standby conditions, or could it refer to a stage during plant startup?

b. Is the overpressure protection system ever used "during cold solid plant operations"? If so, explain.

## **3. Question 6.06b**

Assuming that some points should have been deducted for Mr. Morabito's acknowledged listing of an incorrect setpoint, would not a deduction of 0.1 point (rather than 0.2 point) have been more appropriate, given the nature and significance of the mistake? Please explain.

## **4. Question 6.07a**

Mr. Morabito stated that the steam generator code safety valves provide the "first" means of protection for Tavg increases. The Staff suggests another "normal first response." The Staff also indicates that the steam generator safety valves provide a "secondary or tertiary protection for T average in a limited

range of power levels.” Because the question asked for the importance of steam generator code safety valves, without specifying whether primary, secondary, or tertiary protection was sought, should not Mr. Morabito have been given at least partial credit for his answer?

## **5. Question 6.07b**

a. What is the purpose of the parenthetical phrase “(NOT CONDITIONS)” in examination question 6.07b?

b. The question asks for two reasons why the MSIVs are required to close during a main steam-line rupture. Mr. Morabito’s references to pages 10.3-2 and 10.3-5 of the FSAR appear to provide different reasons why the MSIV shuts — i.e., as the primary isolator of a leak or as the backup to a nonreturn valve. Was not Region I correct in stating that the “facility literature provides many varied reasons for closing the MSIVs” and thus that “there is no definitive answer to the question” and that the question should be deleted (letter dated November 12, 1986, to Mr. Morabito, Attachment 1)?

## **B. Simulator Examination**

### **1. General**

a. Under NUREG-1021 (Rev. 2), the Operator Licensing Examiner Standards in effect at the time of Mr. Morabito’s examination, a “rating of U [unsatisfactory] on any one competency *may* be considered an adequate basis for failure of the examination.” ES-302, F.3 (emphasis supplied).

(i) Which, if any, of the four ratings of U in this examination would be considered adequate for failure of the examination in the event that it became the only competency so rated?

(ii) May a candidate pass the examination with ratings of U in two of the eight competencies?

b. The Standards further provide that “the assignment of an overall rating *must* be based on the specific circumstances of candidate’s performance during the examination.” ES-302, F.3 (emphasis supplied). How did the Staff develop the overall rating for Mr. Morabito?

c. Was any attempt made at quantitative evaluation of performance? For example, one could count the number of improper decisions, weigh them according to the degree of undesirable consequences, and compare with the number of correct decisions.

d. Is it appropriate for a single observation or comment by an examiner to be used as a basis for a “U” rating in more than one competency? If so, what



effect would such multiple use of a single observation or comment have on a candidate's overall rating?

e. The candidate's Specification of Claims (July 31, 1987) includes eight items (at 13-17) that address either ES-301 or ES-305 of the examination report. Only one of these items (5.2.A on page 6 of ES-305) is related to comments in the simulator examination summary sheet (ES-302-11 and attachments). The Staff response (October 9, 1987) addresses the candidate's claims concerning ES-302-11, including the subject matter of 5.2.A, but does not address the other seven claims.<sup>1</sup>

(i) What is the relevance of the eight comments in ES-301 and ES-305 (other than 5.2.A) to the simulator examination?

(ii) What is the significance of the circled letters A and E in the column headings of ES-305, page 6?

f. Were the procedures of NUREG-1021 (Rev. 2), ES-301, E, followed with respect to the orientation of the examiners who administered Mr. Morabito's simulator examination? Provide details.

## **2. *Compliance/Use of Procedures (ES-302-11-1/4)***

### **a. *Comment 1***

(i) Why were two power-range instruments giving indications different from the other two?

(ii) Is a procedure required for every small power reduction, regardless of the reason?

(iii) What is a surveillance procedure (Staff Affidavit at 14, ¶ 41)?

(iv) What is the meaning of the phrase "believe all indications" in Staff Affidavit at 14, ¶ 41, in the event of inconsistent indications?

(v) Would this comment by itself justify a grade of U for this competency?

### **b. *Comment 2***

(i) What is the relevance of the examiner's comment to the "Compliance/Use of Procedures" competency?

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<sup>1</sup> Specifically, the Staff failed to address comments 2.5.H (ES-301 at 5); 5.1.C (ES-305 at 6); 2.5.E (ES-305 at 8); 7.1 (ES-305 at 8); 6.A.7 (ES-305 at 10a); 8.B.4 (ES-305 at 10a); and 8.C.2 (ES-305 at 10a).

**c. Comment 4**

- (i) Why is this not a minor event that also illustrates good teamwork?
- (ii) Would this comment by itself justify a grade of U for the competency?
- (iii) Was Mr. Morabito informed prior to the examination that he would be responsible for knowing from memory the immediate actions of emergency procedures? If so, when or how? (See NUREG-1021 (Rev. 2), ES-301, H.)
- (iv) How would the Staff respond to the four rhetorical questions posed by Mr. Morabito in his reply (§§ 2a-d at 8-9)? Answers should be provided for all simulator examinations for Beaver Valley, Unit 1.
- (v) The Staff concedes (Affidavit, ¶ 50) that "this was the only evaluation made of the candidate's ability to properly perform the required immediate actions of the emergency procedures as a control board operator." In view of the significance of this single evaluation, did the Staff perform followup questioning as suggested by NUREG-1021 (Rev. 2), ES-303, B, to determine whether a rating of "M" or "S" would have been more appropriate? If so, please provide details. If not, please explain.

**3. Control Board Operations (ES-302-11-2/4)**

**a. Comment 1**

- (i) Would this comment by itself justify a grade of U for the competency?

**b. Comment 2**

- (i) Why is this not a minor event that also illustrates good teamwork?
- (ii) Why not delete this comment in view of the examiner's confusion about indicator lights?

**c. Comment 3**

- (i) Why is this not a minor event that also illustrates good teamwork?
- (ii) Would this comment by itself justify a grade of U for the competency?

**d. Comment 4**

- (i) Would this comment by itself justify a grade of U for the competency?

**4. Supervisory Ability (ES-302-11-3/4)**

**a. Comment 1**

- (i) What is the relevance of the examiner's comment to the "Supervisory Ability" competency?
- (ii) Was an alarm intended to be part of the scenario in question?
- (iii) Was there a simulator malfunction?
- (iv) How do examiners allow for simulator malfunctions in making their evaluations?
- (v) Was Mr. Morabito's view of the valve position indicator blocked by the balance-of-plant operator? If so, how could Mr. Morabito have perceived the incorrectly positioned valve?

**b. Comment 2**

- (i) Why does the examiner's comment include no specific citations?
- (ii) How does the use of hand signals in the circumstance cited bear on the "Supervisory Ability" competency? (See Staff Affidavit, ¶71.) See also 5.b, below.

**5. Communications/Crew Interactions (ES-302-11-4/4)**

**a. Comment 1**

- (i) What is the relevance of the examiner's comment to the "Communications/Crew Interactions" competency?
- (ii) Would the candidate normally be expected to communicate with the operator before acting in this situation?
- (iii) Were the symptoms of the emergency sufficiently understood by the candidate?
- (iv) How much immediate diagnosis is required in this particular situation?
- (v) Would this comment by itself justify a grade of U for the competency?

**b. Comment 2**

- (i) Are there rules or standards that preclude the use of hand signals?
- (ii) Was Mr. Morabito instructed concerning the inappropriateness of using hand signals?
- (iii) Is there any way to resolve the controversy about whether the candidate understood this particular hand signal?
- (iv) Would this comment by itself justify a grade of U for the competency (or for the "Supervisory Ability" competency)?

**c. *Comment 3***

- (i) Are there rules or standards against “thinking out loud”?
- (ii) If the candidate’s action here were judged as merely “thinking out loud,” would that by itself justify an unfavorable comment in this competency?
- (iii) Is Mr. Morabito’s first verbalization properly characterized as an “incorrect analysis” (Staff Affidavit, ¶ 80)?
- (iv) Was anyone misled by Mr. Morabito’s initial verbalization?
- (v) Would this comment by itself justify a grade of U for the competency?

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ADMINISTRATIVE LAW JUDGE

Ivan W. Smith

In the Matter of

Docket No. 50-320  
(ASLBP No. 86-534-01-OL)  
(Civil Penalty)  
(License No. DPR-73)  
(EA 84-137)

GENERAL PUBLIC UTILITIES  
NUCLEAR CORPORATION  
(Three Mile Island Nuclear  
Station, Unit 2)

November 12, 1987

MEMORANDUM AND ORDER  
(Approving Settlement Agreement and  
Terminating Proceeding)

The NRC Staff and GPU Nuclear have submitted for approval a settlement agreement pursuant to the provisions of 10 C.F.R. § 2.203. The settlement is patently in the public interest. The parties have acted responsibly in agreeing to settle this matter as set out in the agreement.

## **ORDER**

The settlement agreement is approved and is attached hereto as part of this Order. This proceeding is terminated.

Ivan W. Smith  
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland  
November 12, 1987

## **ATTACHMENT**

### **SETTLEMENT AGREEMENT**

The staff of the U.S. Nuclear Regulatory Commission (NRC staff) and GPU Nuclear Corporation (GPUN) enter into this agreement compromising and settling NRC Enforcement Action 84-137. Enforcement Action 84-137 involves a Notice of Violation (NOV) issued by the NRC staff charging GPUN with a violation of 10 C.F.R. § 50.7 and imposed a \$64,000 civil penalty as a consequence. The NOV was based on charges that Richard D. Parks, a former Bechtel North American Power Corporation employee who was assigned to Three Mile Island Unit 2, was discriminated against early in 1983 because he raised safety concerns. The NRC staff and GPUN hereby agree as follows:

1. GPUN recognizes and views as of the utmost importance its obligation to insure that employees may freely raise safety concerns without fear of reprisal. The NRC staff acknowledges that GPUN has emphasized established procedures aimed at preventing harassment or intimidation of its employees who raise safety concerns. Further, the Commissioners and the NRC staff have previously found that the allegations of this enforcement proceeding involve at most an isolated instance.

2. GPUN and its contractor, Bechtel North American Power Corporation, continue to deny that harassment or retaliation against Mr. Parks occurred, while the staff continues to assert its belief that the Enforcement Action was appropriate as brought. The settlement does not resolve the existence of discrimination or the extent, if any, of management involvement in the alleged violations. Nevertheless, both sides agree that, in the present circumstances, compromise and settlement of the matter are in the interest of both sides and the public.

3. The NRC staff will reduce the severity level of the violation asserted in its August 12, 1985 Notice of Violation and in its March 4, 1986 Order Imposing Civil Monetary Penalty (EA 84-137) from Level II to Level III. Under the NRC's General Statement of Policy and Procedure for Enforcement Actions (10 C.F.R. Part 2, App. C), a Level II violation normally is appropriate when the violation alleged involves action against an employee in violation of 10 C.F.R. § 50.7 by plant management above first level supervision, while a Level III violation normally is appropriate when the alleged violation involves action against an employee in violation of 10 C.F.R. § 50.7 by first line supervision.

4. GPUN will pay a civil monetary penalty of \$40,000, which is the appropriate civil penalty for a Severity Level III violation if one occurred at the time of the events alleged (1983). GPUN will make this payment within thirty days of the approval of this settlement agreement by the Presiding Officer in the above-captioned proceeding.

5. This settlement agreement is not intended and shall not be construed in any manner as an admission of fault or wrongdoing by GPUN or its officers, employees or contractors, including Bechtel North American Power Corporation.

6. GPUN and the NRC Staff also agree to use the joint press release attached as Exhibit A hereto [not published] to announce this settlement.

7. GPUN and NRC Staff will jointly move the Presiding Officer to approve this settlement agreement and terminate the proceeding thirty days thereafter. The settlement will constitute a bar to any future NRC proceeding or action involving the same claims and allegations raised in the NRC Staff's August 12, 1985 Notice of Violation.

FOR THE NUCLEAR  
REGULATORY COMMISSION  
STAFF

George E. Johnson  
Counsel for NRC Staff

FOR GPU NUCLEAR  
CORPORATION

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SHAW, PITTMAN, POTTS &  
TROWBRIDGE  
Counsel for GPUN





UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman  
Christine N. Kohl  
Howard A. Wilber

In the Matter of

Docket Nos. 50-275-OLA  
50-323-OLA

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

December 21, 1987

The Appeal Board affirms a licensing board decision authorizing the issuance of operating license amendments permitting the expansion of the spent fuel pool capacity of each of the facility's two units.

**RULES OF PRACTICE: CONTENTIONS (SPECIFICITY AND BASIS)**

To be admitted in a licensing proceeding, a contention must have its basis set forth with reasonable specificity. 10 C.F.R. § 2.714(b). The purposes of this rule are to assure the proper invocation of the hearing process and to provide adequate notice to other parties as to exactly what they will be called upon to litigate. *See Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21, *modified on other grounds*, CLI-74-32, 8 AEC 217 (1974).

## **APPEAL BOARD: SCOPE OF REVIEW**

Like courts, appeal boards usually do not consider arguments that are raised for the first time during appellate review. *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, 7 NRC 341, 348, *reconsideration denied*, ALAB-467, 7 NRC 459 (1978).

## **RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)**

Under the Commission's requirements, an intervenor is not expected to prove, at the contention admission stage, that a proffered contention is true; the intervenor must, however, allege at least some credible foundation for the contention. *Cf. Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1) CLI-80-16, 11 NRC 674, 675 (1980).

## **NEPA: ENVIRONMENTAL IMPACT STATEMENT**

Under section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA), an environmental impact statement (EIS) is required for major Federal actions that significantly affect the quality of the human environment. 42 U.S.C. § 4332(2)(C).

## **NEPA: CONSIDERATION OF ALTERNATIVES (SECTION 102(2)(E))**

Under section 102(2)(E) of NEPA, agencies are obliged to study alternatives to proposals that involve "unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E).

## **APPEAL BOARD: SCOPE OF REVIEW**

An appeal board will not consider a party's claims of error that are not developed in the party's brief on appeal. *Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), ALAB-872, 26 NRC 127, 131-32 (1987).

## **REGULATIONS: INTERPRETATION**

General design criteria (GDC) are broadly stated engineering and safety goals that "constitute the minimum requirements for the principal design criteria of water-cooled nuclear power plants." "Regulations" set forth more detailed requirements, while less formal staff documents (such as "Regulatory Guides" and "Standard Review Plan" provisions) provide guidance for compliance with

the GDC. *Petition for Emergency and Remedial Action*, CLI-78-6, 7 NRC 400, 406 (1978).

## **NEPA: CONSIDERATION OF SEVERE ACCIDENTS**

Accidents that contemplate "sequences of postulated successive failure more severe than those postulated for the design basis of protective systems and engineered safety features" are variously termed "beyond design-basis," "Class 9," or "severe" accidents. *Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257, 258 (1979); Interim Policy on "Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969," 45 Fed. Reg. 40,101, 40,104 (1980) ["NEPA Policy Statement"]. See generally "Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants," 50 Fed. Reg. 32,138 (1985). The Commission considers such accidents "to be so low in probability as not to require specific additional provisions in the design of a reactor facility." *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-87-12, 26 NRC 383, 393 n.17 (1987).

## **NEPA: ENVIRONMENTAL IMPACT STATEMENT**

Under the "rule of reason," NEPA does not require the consideration of Class Nine accidents in future EISs, nor does it require that final EISs be supplemented to take account of the Class Nine risk. *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1301 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26, *cert. denied*, — U.S. —, 107 S. Ct. 330 (1986).

## **NEPA: CONSIDERATION OF SEVERE ACCIDENTS**

NEPA does not require agency consideration of highly improbable — i.e., remote and speculative — events. Thus, an EIS need not be prepared to consider such events. *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-869, 26 NRC 13, 30 (1987), *reconsideration denied*, ALAB-876, 26 NRC 277 (1987).

## **NUCLEAR REGULATORY COMMISSION: RESPONSIBILITY UNDER NEPA**

As an independent regulatory agency, the Commission does not consider substantive Council on Environmental Quality regulations as legally binding on it. 49 Fed. Reg. 9352, 9356 (1984). See *Baltimore Gas and Electric*

*Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 99 n.12 (1983); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 700 n.21 (1985), *aff'd in part and review otherwise declined*, CLI-86-5, 23 NRC 125 (1986), *petitions for review pending sub nom. Limerick Ecology Action, Inc. v. NRC*, No. 85-3431, et al. (3d Cir.).

## **NEPA: POLICY STATEMENT ON SEVERE ACCIDENTS**

In its NEPA Policy Statement, the Commission describes those circumstances in which the NRC staff, as a matter of discretion, is to consider the environmental impacts of a beyond design-basis accident. That policy statement, however, does not apply to license amendment proceedings for the expansion of the capacity of spent fuel pools by reracking. *Vermont Yankee*, ALAB-869, 26 NRC at 31.

## **NEPA: ENVIRONMENTAL ASSESSMENT**

An environmental assessment is a concise statement usually prepared to aid the Commission's compliance with NEPA when no environmental impact statement is necessary. 10 C.F.R. § 51.14(a). *See also* ALAB-877, 26 NRC 287, 290-91 (1987).

## **APPEAL BOARD: SCOPE OF REVIEW**

Where a party's brief on appeal provides no references to the hearing transcript and underlying record and no specifics to support its generalized complaints, its appeal is subject to summary rejection. *See* 10 C.F.R. § 2.762(d)(1); *Vogtle*, 26 NRC at 131-32.

## **APPEAL BOARD: SUA SPONTE REVIEW**

It is appeal board practice to review on its own initiative licensing board decisions, or portions thereof, that have not been appealed, as well as the underlying record. *See Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), ALAB-859, 25 NRC 23, 27 (1987).

## **TECHNICAL ISSUES DISCUSSED**

High-Density Spent Fuel Racks  
Spent Fuel Pool Loss of Coolant Accidents  
Zircaloy Cladding Fire  
Beyond Design-Basis Accidents

Consideration of Alternative Onsite Spent Fuel Pool Storage Facilities  
Design Bases  
Spent Fuel Pool Design Criteria.

APPEARANCES

Dian M. Grueneich and Marcia Preston, San Francisco, California, for the intervenor Sierra Club.

Howard V. Golub, Richard F. Locke, and Bruce Norton, San Francisco, California, for the applicant Pacific Gas and Electric Company.

Benjamin H. Vogler for the Nuclear Regulatory Commission staff.

DECISION

This proceeding involves the application of Pacific Gas and Electric Company (PG&E) for amendments to its operating licenses for the two-unit Diablo Canyon facility. The license amendments are to permit the expansion of the capacity of each unit's spent fuel pool from 270 to 1324 fuel assemblies by replacing existing storage racks with high density racks.

Initially, pursuant to 10 C.F.R. § 50.92, the Commission staff found that "no significant hazards" were involved in PG&E's request, and it approved the issuance of the license amendments. *See* 51 Fed. Reg. 19,430 (1986). The Sierra Club and the San Luis Obispo Mothers for Peace, which had already requested a hearing on PG&E's application, asked both the Commission and the U.S. Court of Appeals for the Ninth Circuit to stay issuance of the license amendments. The Commission decided to allow PG&E to continue its installation of the new storage racks, but declined to permit storage therein of more than 270 fuel assemblies, pending completion of a hearing before the Licensing Board. CLI-86-12, 24 NRC 1 (1986). The court, however, found that, in denying the Sierra Club and Mothers for Peace a hearing before issuance of the involved license amendments, the Commission's "no significant hazards" determination did not comply with 10 C.F.R. § 50.92. The court thus ordered PG&E not to place any spent fuel assemblies in the Unit 1 pool and not to rerack Unit 2 until the completion of the administrative hearing; in the alternative, the court permitted PG&E to return the racks to their original configuration. *San Luis Obispo Mothers for Peace v. NRC*, 799 F.2d 1268, 1271 & n.1 (9th Cir. 1986).

In connection with that hearing, the Licensing Board admitted four extensive contentions proffered by intervenor Sierra Club (contentions I(A), I(B), II(A), and II(B)).<sup>1</sup> Most of each of those contentions concerned the effects of an earthquake on various aspects of the proposed reracked pools; a portion of one, however — contention I(B)(7) — alleged that PG&E had not considered two specified alternative types of onsite storage facilities. *See* LBP-86-21, 23 NRC 849, 860-65, 873 (1986). Just as the three-day hearing on these matters was to begin, the Sierra Club proffered yet another contention, raising concerns about the consequences of a spent fuel pool loss of coolant accident (LOCA) and possible resulting spontaneous burning of the zircaloy cladding surrounding the spent fuel elements in high density storage. The Sierra Club also sought the preparation of an environmental impact statement (EIS). The Licensing Board took those new matters under advisement and proceeded with the hearing on the other already admitted contentions.

The Licensing Board subsequently issued a memorandum and order in which it concluded that the Sierra Club's late-filed LOCA contention did not meet the Commission's standards for admission, and that an EIS was not required. LBP-87-24, 26 NRC 159 (1987). About a week later, the Board issued its initial decision on the contentions litigated at the hearing, resolving all issues in PG&E's favor and authorizing the issuance of the license amendments. LBP-87-25, 26 NRC 168 (1987).

The Sierra Club now appeals the Licensing Board's decision rejecting its late-filed contention and the initial decision insofar as it concerns the disposition of contention I(B)(7). PG&E and the NRC staff oppose the appeal. As explained below, we find the Sierra Club's arguments unconvincing, and we therefore affirm the two Licensing Board decisions in question.<sup>2</sup>

## I. THE LOCA CONTENTION

The new contention proposed by the Sierra Club at the beginning of the hearing on its other already admitted contentions states:

The proposed action significantly increases the consequences of loss of cooling accidents in that a loss of water in the spent fuel pools could lead to spontaneous ignition of zircalloy

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<sup>1</sup> The Board admitted several other contentions of the Mothers for Peace and a third intervenor as well, but those parties subsequently withdrew from the proceeding and are not participants here before us.

<sup>2</sup> The Sierra Club earlier asked us to stay the effectiveness of the Licensing Board's decisions. In ALAB-877, 26 NRC 287 (1987), we denied that motion. The NRC staff issued the license amendments to PG&E on October 20, 1987, and the Commission subsequently denied the Sierra Club's request to deny the amendments' effectiveness. Commission Order of October 26, 1987 (unpublished). The Ninth Circuit also denied a stay on November 13, 1987, and has deferred judicial review pending completion of the administrative review process. *See Sierra Club v. NRC*, No. 87-7481 (9th Cir. November 25, 1987).

[sic] cladding of the fuel elements in the high density configuration with significant releases of radiation.

The Sierra Club alleged no violation of any existing safety standard or regulation. It based the contention, however, on the findings of the Brookhaven National Laboratory in a draft report titled "Beyond Design-Basis Accidents in Spent Fuel Pools (Generic Issue 82)" (January 1987) [hereinafter "BNL Report"].<sup>3</sup> According to the intervenor, the BNL Report

clearly identifies the storage of recently discharged nuclear fuel in high density spent fuel storage racks as posing significant dangers to the public health and safety. The proposed spent fuel storage facilities at Diablo Canyon would store freshly discharged fuel in high density racks like those identified in the Brookhaven report as hazardous. Two of the authors specifically recommend against the storage of spent fuel in the manner proposed for Diablo Canyon.

Sierra Club Motion to Include Issues Raised in Generic Issue 82 as Contentions (June 29, 1987) [hereinafter "Sierra Club Motion"] at 1-2 (citations omitted). In light of the BNL Report, the Sierra Club also requested the Licensing Board to order the staff to prepare an EIS on the modification of the Diablo Canyon spent fuel facilities. *Id.* at 6-7.

The Licensing Board, however, concluded that there was no "nexus" shown between the BNL Report and the Diablo Canyon spent fuel pools and thus that the contention was inadmissible for lack of a basis. In particular, the Board stressed that the contention "assumes a total loss of coolant in the Diablo Canyon spent fuel pools without specifying any accident scenario that would cause that loss." LBP-87-24, 26 NRC at 164. It stated that the Sierra Club had made no attempt to suggest relevant similarities between Diablo Canyon and the surrogate pressurized water reactor (PWR) used for the BNL study, the Ginna facility in upstate New York. *Id.* at 165. The Board further found that the newly proposed contention was not included in any already admitted contention. Lastly, the Board determined that the contention was based on a hypothesized "beyond design-basis" accident, for which an EIS is not required under the National Environmental Policy Act of 1969, 42 U.S.C. § 4321 [hereinafter "NEPA"], or authorized as a matter of Commission discretion under its Interim Policy on "Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969," 45 Fed. Reg. 40,101 (1980) [hereinafter "NEPA Policy Statement"]. LBP-87-24, 26 NRC at 166-67 (citing *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-869, 26 NRC 13, *reconsideration denied*, ALAB-876, 26 NRC 277 (1987)). In view of these determinations, the Board found it unnecessary to

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<sup>3</sup> The staff first referred to this report in Board Notification No. 87-05 (March 27, 1987).

balance the five factors set forth in 10 C.F.R. § 2.714(a)(1) against which late contentions are measured. LBP-87-24, 26 NRC at 167.

On appeal, the Sierra Club argues that it has demonstrated a nexus between the BNL Report and Diablo Canyon and thus its contention has a sufficiently specific basis warranting admission. It also asserts that the requirements for admission of a late-filed contention have been met. In addition, it presses its view that an EIS is required for this license amendment because of the findings of the BNL Report. We address these arguments seriatim.

A. The Commission's Rules of Practice require "the bases for each contention [to be] set forth with reasonable specificity." 10 C.F.R. § 2.714(b). The purposes of this rule are to assure the proper invocation of the hearing process and to provide adequate notice to other parties as to exactly what they will be called upon to litigate. See *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21, *modified on other grounds*, CLI-74-32, 8 AEC 217 (1974).

The Sierra Club's proffer of its LOCA contention does not satisfy these requirements. Its pleading before the Licensing Board alleges no lack of compliance with any existing safety standard. It notes, however, the proposed use of high density racks for storage of spent fuel at Diablo Canyon and refers generally to the BNL Report's findings with regard to such racks and the possibility of a zircaloy cladding fire in the event of a substantial loss of pool cooling. But, as the Licensing Board pointed out, the Sierra Club's filing does not mention, let alone discuss, a single mechanism or scenario that might cause such a LOCA at Diablo Canyon. LBP-87-24, 26 NRC at 165.<sup>4</sup> Indeed, it does not even refer to the five initiating events hypothesized by BNL for purposes of the study.<sup>5</sup> See Sierra Club Motion *passim*.<sup>6</sup> Without such a triggering event, there is no connection between the spent fuel pools at Diablo Canyon and the BNL Report's ultimate conclusions concerning high density racks — and, thus, no basis for the contention.<sup>7</sup>

<sup>4</sup> Earlier in this proceeding, the Licensing Board rejected, for lack of a credible accident scenario, loss of spent fuel cooling contentions filed by both the Sierra Club and another intervenor. LBP-86-21, 23 NRC at 856, 857, 862, 863. Thus, the Sierra Club was on notice concerning the requirements for admission of such a contention.

<sup>5</sup> As we noted in our stay decision, the BNL Report postulated the following scenarios leading to a significant depletion of pool water:

(1) a failure of the system that serves to remove heat from the pool water, resulting in boil-off of the water; (2) a seismic event; (3) a striking of the pool walls by some externally-generated flying object (such as a turbine missile); (4) a failure of a seal protecting the integrity of the pool's water-tightness; and (5) a dropping onto the edge of the pool of a cask utilized to transfer spent fuel from the pool.

ALAB-877, 26 NRC at 293.

<sup>6</sup> The word "earthquake" appears on page 5 of the Sierra Club's motion, but in a reference to another contention. Most of the motion is, in fact, devoted to the 10 C.F.R. § 2.714(a)(1) criteria for admission of a late (but otherwise sufficiently based) contention.

<sup>7</sup> Because we agree with the Licensing Board that the contention lacks a basis, we need not decide whether the Board correctly found a lack of "nexus" between the BNL Report and the Diablo Canyon facility, as we used that term in *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 773 (1977).

(Continued)



On appeal, the Sierra Club now argues that all of the events identified by BNL as initiators of a LOCA "are clearly potential scenarios for [spent fuel pool] failure at Diablo Canyon." Sierra Club's Brief, *supra* note 7, at 12. It also suggests that a spent fuel cask drop and seismic event are particularly likely events. *Id.* at 8, 9. Like courts, we usually do not consider arguments, such as these, that are raised for the first time during appellate review. *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, 7 NRC 341, 348, *reconsideration denied*, ALAB-467, 7 NRC 459 (1978). But even if the Sierra Club's arguments were otherwise permissible, they would still fail. The Sierra Club makes no allegation that the Diablo Canyon spent fuel pools are not designed and built, in accordance with regulatory standards, to withstand the maximum anticipated earthquake at that site. Nor is there any basis evident for the Sierra Club's implicit assumption that spent fuel casks are likely to be transferred at Diablo Canyon in the manner postulated in the BNL Report's cask drop scenario. *See* BNL Report at 2-16. Under the Commission's requirements, the Sierra Club is not expected to *prove*, at the contention admission stage, that a seismic event or cask drop serious enough to cause a major loss of pool coolant might occur; it must, however, allege at least some credible foundation for such a scenario.<sup>8</sup> *Cf. Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), CLI-80-16, 11 NRC 674, 675 (1980) (where there is no allegation of lack of compliance with existing safety regulations, credible reactor LOCA scenario is prerequisite for admission of contention concerning accident control measures). We therefore agree with the Licensing Board that, because the Sierra Club has not even suggested a credible accident initiator, its contention lacks the requisite basis for admission. *See* LBP-87-24, 26 NRC at 165.<sup>9</sup>

B.1. Section 102(2)(C) of NEPA, 42 U.S.C. § 4332(2)(C), requires an environmental impact statement for "major Federal actions significantly affecting the quality of the human environment." Claiming that the BNL Report provides

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We concur, however, in the Sierra Club's criticism of the portion of the Licensing Board's decision suggesting that the Sierra Club should have supplied, with its contention, "comparisons or data" showing greater similarity between Diablo Canyon and Ginna than the fact that they are both PWRs. *See* Sierra Club's Brief (October 26, 1987) at 10; LBP-87-24, 26 NRC at 165. Had the Sierra Club's contention and basis set forth a credible causative accident scenario, the type of data to which the Licensing Board referred would be more properly required for a merits disposition. *See generally Mississippi Power and Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 426 (1973).

<sup>8</sup> In this connection, it is worth noting that the concrete walls and foundation of each pool are at least five feet thick and lined with steel plate. Each pool is roughly 35 feet wide, 37 feet long, and 40 feet deep. In a normal operating condition, there is a minimum of 23 feet of water above the top of the stored fuel. LBP-87-25, 26 NRC at 180. Thus, before even the top of the spent fuel assemblies would be exposed, about 30,000 cubic feet of water (approximately 224,000 gallons) would have to escape from the pool (without corrective action) via some unidentified mechanism.

<sup>9</sup> As noted *supra* pp. 455-56, the Licensing Board did not address the factors to be weighed for admission of a late contention in 10 C.F.R. § 2.714(a)(1). Thus, that matter is not squarely before us for review. Moreover, in light of our agreement with the Board's conclusion about the contention's lack of basis, we need not take up this legal issue on our own.

evidence of "significant impacts on the human environment," the Sierra Club argues that an EIS is required here "concerning the possibility of and impact of Zircaloy cladding fires" at Diablo Canyon. Sierra Club's Brief at 18, 17.<sup>10</sup> Intervenor also asserts that the Licensing Board misapplied our ruling in *Vermont Yankee*, ALAB-869, 26 NRC 13. The Sierra Club argues that that decision simply determined that the specific accident scenario involved there was too remote and speculative to trigger the EIS requirement, "reconfirm[ing] the agency's long-standing policy of considering the need to prepare an EIS on a case-by-case basis." Sierra Club's Brief at 19. In the Sierra Club's view, it has linked the BNL Report to Diablo Canyon and thus demonstrated that a zircaloy cladding fire is not remote and speculative; *Vermont Yankee* therefore does not pertain here, so as to bar its request for an EIS. The Sierra Club also argues that, even if the Licensing Board applied *Vermont Yankee* correctly, NEPA does not permit the exclusion from its EIS requirement of all accidents labelled "beyond design-basis" on the ground that they are remote and speculative. *Ibid*.

The Commission's *minimum*, principal design criteria for spent fuel pools *require*, among other things, the prevention of a "significant reduction in fuel storage coolant inventory under accident conditions" and the provision of monitoring systems "to detect conditions that may result in loss of residual heat removal capability [i.e., cooling water and its associated systems] and excessive radiation levels." 10 C.F.R. Part 50, Appendix A, General Design Criteria 61 and 63.<sup>11</sup> Accidents that contemplate "sequences of postulated successive failure more severe than those postulated for the design basis of protective systems and engineered safety features" are variously termed "beyond design-basis," "Class 9," or "severe" accidents. *Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257, 258 (1979); NEPA Policy Statement, 45 Fed. Reg. at 40,104. *See generally* "Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants," 50 Fed. Reg. 32,138 (1985). The Commission considers such accidents "to be so low in probability as not to require specific additional provisions in the design of a reactor facility." *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-87-12, 26 NRC 383, 393 n.17 (1987). Thus, because spent fuel pools must be

<sup>10</sup> The Sierra Club also briefly refers to section 102(2)(E) of NEPA, 42 U.S.C. § 4332(2)(E), which obliges agencies to study alternatives to proposals that involve "unresolved conflicts concerning alternative uses of available resources." We have found no indication that the Sierra Club raised this separate NEPA issue before the Board below so as to preserve it for appeal. *See supra* p. 457. Moreover, its brief on appeal fails to develop this point and thus we do not consider it. *Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), ALAB-872, 26 NRC 127, 131-32 (1987). We note, however, that the staff's Environmental Assessment for this license amendment application considers six alternatives. *See* NRC Staff Exhibit 2 at 2-5. *See also infra* pp. 461-64.

<sup>11</sup> General design criteria (GDC) are broadly stated engineering and safety goals that "constitute the minimum requirements for the principal design criteria of water-cooled nuclear power plants." "Regulations" set forth more detailed requirements, while less formal staff documents (such as "Regulatory Guides" and "Standard Review Plan" provisions) provide guidance for compliance with the GDC. *Petition for Emergency and Remedial Action*, CLI-78-6, 7 NRC 400, 406 (1978).

designed to prevent a significant loss of coolant inventory, an accident scenario that assumes such an event — like the zircaloy cladding fire hypothesized by the Sierra Club and the BNL Report — is necessarily a beyond design-basis accident, considered to be of very low probability.<sup>12</sup>

In *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1300-01 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26, *cert denied*, — U.S. —, 107 S. Ct. 330 (1986), the court addressed the requirements of NEPA vis-a-vis such events of assertedly high improbability. It held that, under the “rule of reason,” “NEPA . . . does not require the consideration of Class Nine accidents in future EISs, nor does it require that final EISs be supplemented to take account of the Class Nine risk.” *Id.* at 1301. The Commission, of course, cannot engage in definitional sleight-of-hand so as to avoid NEPA’s demands; the Commission’s belief that certain types of accidents are highly unlikely to occur must be reasonably well-founded. *See ibid.*

The Sierra Club is thus incorrect in its view that NEPA does not permit the exclusion of beyond design-basis accidents from the EIS requirement. Further, its reliance on the BNL Report to support its challenge to the characterization of a significant loss of pool coolant (followed by a zircaloy cladding fire) as a highly improbable, beyond design-basis event is unavailing. The District of Columbia Circuit in *San Luis Obispo* noted that the existence of ongoing research into beyond design-basis accidents — like the BNL Report (*see* LBP-87-24, 26 NRC at 163) — does not undercut the reasonableness of the Commission’s view that such accidents nonetheless remain highly improbable and therefore beyond NEPA’s mandate. 751 F.2d at 1301. Moreover, the BNL Report itself describes the initiating events that would lead to a structural failure of a spent fuel pool as “extremely unlikely.” BNL Report at 2-2. It also acknowledges the substantial

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<sup>12</sup> The Sierra Club questions the use of the phrase “design-basis” in this proceeding. It reasons that, because the Diablo Canyon spent fuel pools were originally designed to hold 270 assemblies each, the proposed amendment to increase storage capacity to 1324 assemblies is itself beyond the design basis of the plant. Sierra Club’s Brief at 22-23. As PG&E notes, however, the Sierra Club misunderstands the engineering concept of “design bases.” Pacific Gas and Electric Company’s Brief (November 25, 1987) [hereinafter “PG&E’s Brief”] at 20-21. The focus of this concept is on functional goals, as is evident from the Commission’s general definition of design bases in 10 C.F.R. § 50.2:

that information which identifies the specific functions to be performed by a structure, system, or component of a facility, and the specific values or ranges of values chosen for controlling parameters as reference bounds for design. These values may be (1) restraints derived from generally accepted “state of the art” practices for achieving functional goals, or (2) requirements derived from analysis (based on calculation and/or experiments) of the effects of a postulated accident for which a structure, system, or component must meet its functional goals.

As we have seen, one design-basis function of a spent fuel pool is to provide cooling for the spent fuel stored therein and to prevent the loss of a significant amount of cooling water. *See* 10 C.F.R. Part 50, Appendix A, GDC 61. Although the design of the storage racks and the capacity of the pools at Diablo Canyon will be altered by the proposed license amendment, the design-basis functions of the pool are *not* to be changed and thus will remain in compliance with the fundamental regulatory criteria.

uncertainties in the probability estimates of these events. *Id.* at S-4, 2-19.<sup>13</sup> There is nothing, therefore, to suggest that the loss of pool coolant and zircaloy cladding fire scenario the Sierra Club postulates is anything but a remote and speculative, beyond design-basis accident. As we concluded in *Vermont Yankee*, ALAB-869, 26 NRC at 30-31, with regard to a somewhat different hypothetical accident scenario, NEPA does not require the consideration of such an event and an EIS need not be prepared.

2. The Sierra Club next argues that, according to "governing" regulations of the Council on Environmental Quality (CEQ) and relevant case law, "an event is not remote and speculative merely because there is a low probability that it will occur." In this connection, it cites 40 C.F.R. § 1502.22 (1986) and asserts that this CEQ regulation requires consideration, presumably in an EIS, of all significant, reasonably foreseeable adverse impacts, "'even if their probability of occurrence is low.'" Sierra Club's Brief at 20. The Sierra Club also claims that the District of Columbia Circuit's decision in *San Luis Obispo*, 751 F.2d at 1303, as well as other decisions, supports its view. Sierra Club's Brief at 20-21.<sup>14</sup>

We disagree with the Sierra Club's reading and application of 40 C.F.R. § 1502.22. In the first place, this CEQ regulation is not concerned with whether or when an EIS should be prepared. Rather, as we noted in *Vermont Yankee*, ALAB-876, 26 NRC at 284 n.5, section 1502.22

is directed to those situations in which an agency has already decided to prepare an EIS, but relevant information is "incomplete or unavailable" due to exorbitant costs or inadequate state-of-the-art methodologies. The regulation is concerned with full disclosure, requiring an agency to "make clear that such information is lacking."

See 51 Fed. Reg. 15,618, 15,620 (1986). Other CEQ regulations, e.g., 40 C.F.R. §§ 1508.18, 1508.27, are relevant to the determination of whether NEPA requires an EIS. See 40 C.F.R. § 1502.3.

The Sierra Club has also omitted a significant proviso from its excerpt from section 1502.22. The complete definition of "reasonably foreseeable"

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<sup>13</sup> We note that the final version of the BNL Report (transmitted to the Licensing Board and parties via Board Notification No. 87-13 on August 28, 1987) shows an even greater range of uncertainty with regard to seismically-induced structural failure of a pool. It also substantially lowers the estimated probability of pool failure due to a cask drop to between two in 100 million and two in one trillion, so as to take account of recommended improvements in fuel cask handling procedures. NUREG/CR-4982, "Severe Accidents in Spent Fuel Pools in Support of Generic Safety Issue 82" (July 1987) at 23, 27-28, 38.

<sup>14</sup> Neither PG&E nor the NRC staff addressed the Sierra Club's "CEQ" argument. Although we find no merit to the argument, it raises a nonfrivolous issue concerning what deference should be accorded another federal agency's regulations. In the circumstances, we find the staff's failure to brief the matter particularly troubling.

includes impacts which have catastrophic consequences, even if their probability of occurrence is low, *provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.*

40 C.F.R. § 1502.22(b) (emphasis added). This proviso was added to the regulation in 1986, in conjunction with CEQ's elimination of the requirement for a "worst case" analysis. In CEQ's view, the worst case analysis was "unproductive and ineffective," capable of leading to "endless hypothesis and speculation." 51 Fed. Reg. at 15,620. The new proviso is intended to impose some common sense limits on the inquiry into events of very low probability. *Id.* at 15,621. Section 1502.22 does not therefore automatically require analysis of *all* catastrophic but highly improbable events, as the Sierra Club suggests.

In any event, the Commission does not consider substantive CEQ regulations as legally binding on it because the NRC is an independent regulatory agency. 49 Fed. Reg. 9352, 9356 (1984).<sup>15</sup> Instead, the Commission views its NEPA Policy Statement as its counterpart to CEQ's section 1502.22. *Id.* at 9356-58. In the NEPA Policy Statement, the Commission describes those circumstances in which the NRC staff, as a matter of discretion, is to consider the environmental impacts of a beyond design-basis accident.<sup>16</sup> As we have previously determined, however, that policy statement does not apply to license amendment proceedings such as this. *Vermont Yankee*, ALAB-869, 26 NRC at 31.

In sum, the CEQ regulation on which the Sierra Club bases its claimed requirement of an EIS is neither applicable to this proceeding, nor, in any case, binding on the agency.

3. Lastly, the Sierra Club argues that an EIS is needed to correct asserted shortcomings in the NRC staff's existing environmental documents, namely its May 21, 1986, Environmental Assessment (EA) and October 15, 1987, Supplement to the EA.<sup>17</sup> It complains that, in light of the BNL Report, these

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<sup>15</sup> As we noted in *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 700 n.21 (1985), *aff'd in part and review otherwise declined*, CLI-86-5, 23 NRC 125 (1986), *petitions for review pending sub nom. Limerick Ecology Action, Inc. v. NRC*, No. 85-3431, et al. (3d Cir.), the Supreme Court has expressly left open the issue of the binding effect of CEQ regulations on independent agencies. See *Baltimore Gas and Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 99 n.12 (1983).

Despite the Sierra Club's suggestion (Sierra Club's Brief at 20), the District of Columbia Circuit's decision in *San Luis Obispo* does not hold that the CEQ regulation in question is binding on the NRC. Rather, the court noted the Commission's position and the Supreme Court's reservation of judgment on the matter. It then only assumed *arguendo* that section 1502.22 applied to the agency, before going on to find this regulation inapplicable to the particular circumstances at hand. 751 F.2d at 1302-03 & n.73. See *Our Ecosystems v. Clark*, 747 F.2d 1240 (9th Cir. 1984), and *Sierra Club v. Sigler*, 695 F.2d 957 (5th Cir. 1983), also cited by the Sierra Club, involved executive (rather than independent regulatory) agencies, as well as the earlier "worst case analysis" version of section 1502.22. Thus, neither case advances the Sierra Club's argument.

<sup>16</sup> In *San Luis Obispo*, 751 F.2d at 1301, the District of Columbia Circuit recognized the NEPA Policy Statement as an exercise of the Commission's discretion.

<sup>17</sup> An environmental assessment is a concise statement usually prepared to "[a]id the Commission's compliance with NEPA when no environmental impact statement is necessary." 10 C.F.R. § 51.14(a). See also ALAB-877, 26 NRC at 290-91.

documents give inadequate consideration to alternative means of spent fuel storage and fail to disclose fully to the public all the consequences of the reracking proposal. The Sierra Club also points to dictum in the Ninth Circuit's decision earlier in this proceeding, *San Luis Obispo*, 799 F.2d at 1271, where the court "strongly suggest[ed] that any doubt concerning the need to supplement the NEPA documents be resolved in favor of additional documentation." Sierra Club's Brief at 23-24.

The Sierra Club's arguments are not entirely clear. If its point is that the type of accident studied in the BNL Report must be given consideration in some environmental document (either an EIS or more extensive EA), we have already disposed of that argument: NEPA requires *no* consideration of such accidents. If, on the other hand, its argument is that an EIS is required, or the EA is deficient, for some reason *other* than the BNL Report (e.g., reliance on a 1979 generic EIS for spent fuel pool expansion proceedings), there is no indication that the Sierra Club properly presented such an issue to the Licensing Board in the first instance, so as to preserve its right to appeal the matter.<sup>18</sup> In the circumstances, the Sierra Club is therefore precluded from raising for the first time on appeal any challenge to the staff's EA that is founded on something other than the BNL Report. *See supra* p. 457.<sup>19</sup>

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<sup>18</sup> Notice of the issuance of the staff's EA was published on May 29, 1986. 51 Fed. Reg. 19,430. The Sierra Club fails to direct our attention to where or when it subsequently sought to challenge the alleged deficiencies in the EA. We have discovered two instances in which the intervenor referred to the adequacy *vel non* of the EA, but neither involved a bona fide attempt to place the issue in controversy as a contention before the Licensing Board.

The first such instance was a passing reference to the EA in a footnote in the Sierra Club's initial request to the Commission for a stay of the staff's issuance of the license amendments *prior* to the hearing. Intervenors' Application for a Stay (June 16, 1986) at 7 n.5. In its order denying the stay, the Commission noted the lack of specificity in the Sierra Club's complaint. CLI-86-12, 24 NRC at 12. The Sierra Club might well have gone on to draft a more specific challenge to the EA and to submit this issue to the Licensing Board in accordance with the Commission's Rules of Practice, but it did not.

The only other mention of the adequacy of the EA was six months later in a motion for summary disposition before the Licensing Board. In that motion, the Sierra Club sought denial of the license amendments for the alleged failure of the EA to comply with NEPA. Motion for Summary Disposition (December 15, 1986) at 3-7. The motion, however, expressly disclaimed any attempt to raise this matter as a contention in the proceeding (possibly because the time for submitting such issues had long since passed). *Id.* at 1-2. The Licensing Board denied the motion for failure to satisfy the Commission's criteria for summary disposition. Memorandum and Order of January 28, 1987 (unpublished) at 2-4. *See* 10 C.F.R. § 2.749. The Sierra Club does not mention, let alone appeal, that Board ruling.

<sup>19</sup> We note in passing, however, that, in explicit response to the Ninth Circuit's suggestion in *San Luis Obispo*, 799 F.2d at 1271, the staff supplemented its earlier EA — before issuing the license amendments here at issue but well after the close of the hearing below. *See* 52 Fed. Reg. 38,977, 38,978 (1987). We also note that the October 15, 1987, supplement contains a section on "Severe Accident Considerations." Because that document was not part of the record below, we express no view on its content; because the Sierra Club has not preserved its right to appeal the general adequacy of the EA and has made no challenge to the timing of the Supplement to the EA, we express no view on that score either.

## II. CONTENTION I(B)(7)

The Sierra Club objects to the Licensing Board's initial decision in this proceeding (LBP-87-25) only insofar as the disposition of contention I(B)(7) is concerned. This contention states that:

the [applicant's] Reports fail to include consideration of certain relevant conditions, phenomena and alternatives necessary for independent verification of claims made in the Reports regarding consistency of the proposed reracking with public health and safety, and the environment, and with federal law.

In particular, the Reports fail to consider:

- 7) alternative on-site storage facilities including:
  - (i) construction of new or additional storage facilities and/or;
  - (ii) acquisition of modular or mobile spent nuclear fuel storage equipment, including spent nuclear fuel storage casks[.]

LBP-87-25, 26 NRC at 184.<sup>20</sup> The Licensing Board's decision discusses PG&E's consideration of the two specified alternative onsite storage facilities. The Board notes that, although the evaluation was brief, PG&E explained that neither of the alleged alternatives offered an increase in safety over the high density racks, and that both proposed alternatives involved certain technical, regulatory, and other disadvantages. *See id.* at 185-86. The only evidence presented by the Sierra Club was its witness's testimony that, in his opinion, PG&E had not considered the alternatives seriously. *See Tr.* 443-45. The Licensing Board concluded that PG&E's consideration of alternatives was adequate and complied fully with the NRC's requirements. It therefore denied contention I(B)(7) on the merits. LBP-87-25, 26 NRC at 174, 198.

The Sierra Club argues that it "presented expert testimony showing that the consideration given these alternatives by the applicant was not adequate to protect the public health and safety." Sierra Club's Brief at 25. It contends that PG&E's assertion that the two alternatives would not provide added safety is not supported by fact. It claims further that the record provides no adequate basis for comparison of the alternatives with the high density reracking proposal. *Ibid.*<sup>21</sup>

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<sup>20</sup> The Sierra Club's Brief at 24-25 makes clear that the "Reports" at issue in this contention are those filed with the NRC by PG&E in support of its license amendment application. In view of our decision on contention I(B)(7), we have no need to decide whether the contention should have focused on the *NRC staff's*, rather than the applicant's, consideration of alternatives. *See Vermont Yankee*, ALAB-869, 26 NRC at 33.

<sup>21</sup> The Sierra Club also complains that the alternative of storing newly discharged fuel in low density racks, as recommended by two contributors to the BNL Report, was not considered. We have already addressed the Sierra Club's arguments in connection with the BNL Report. *See especially supra* pp. 456-60. We also note that, because contention I(B)(7) mentions two other particular alternatives, it is not surprising that the litigation of this issue thus focused on those alternatives, rather than on the new alternative the Sierra Club now suggests.

Intervenor's challenge to the Licensing Board's disposition of contention I(B)(7) is wholly without merit. The Sierra Club provides no references to the hearing transcript and underlying record — indeed, no specifics whatsoever to support its generalized complaints. *See ibid.* Because the Sierra Club's brief thus fails to comply with our Rules of Practice (*see* 10 C.F.R. § 2.762(d)(1)) and leaves us with no meaningful arguments to consider, we reject its appeal in connection with contention I(B)(7) summarily. *See Vogtle, supra* note 10, 26 NRC at 131-32. Nonetheless, we have reviewed the record (including the hearing transcript) and find no cause to overturn the Licensing Board's disposition of contention I(B)(7). *See, e.g.,* Shiffer, et al., fol. Tr. 179, at 28-30; Ferguson, fol. Tr. 442, at 2-3, 39-41; Cleary, fol. Tr. 604, at 2-9; Tr. 364-89, 393-98, 443-48.<sup>22</sup>

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LBP-87-24, 26 NRC 159, and LBP-87-25, 26 NRC 168, are *affirmed*.  
It is so ORDERED.

FOR THE APPEAL BOARD

Eleanor E. Hagins  
Secretary to the  
Appeal Board

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<sup>22</sup>As is our practice, we have also reviewed on our own those portions of the Licensing Board's initial decision that have not been appealed, as well as the underlying record. *See Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), ALAB-859, 25 NRC 23, 27 (1987). We find no errors warranting corrective action.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman  
Thomas S. Moore  
Howard A. Wilber

In the Matter of

Docket No. 50-289-CH

GENERAL PUBLIC UTILITIES  
NUCLEAR CORPORATION  
(Three Mile Island Nuclear  
Station, Unit No. 1)

December 31, 1987

In this discretionary hearing ordered by the Commission, the Appeal Board certifies to the Commission a question concerning the subject matter jurisdiction of the proceeding.

APPEARANCES

Michael W. Maupin, Richmond, Virginia, for Charles Husted.

Deborah B. Bauser, Washington, D.C., for intervenor General Public Utilities Nuclear Corporation.

Louise Bradford, Harrisburg, Pennsylvania, for intervenor Three Mile Island Alert.

Janice E. Moore for the Nuclear Regulatory Commission staff.

## MEMORANDUM AND ORDER

Although the caption of this case reads *General Public Utilities Nuclear Corporation* and carries the docket number of Three Mile Island Nuclear Station, Unit 1, a more appropriate case name is *In the Matter of Charles Husted*. Mr. Husted is an employee of General Public Utilities Nuclear (GPUN) who is before us on appeal seeking to return to his previously held position as supervisor of non-licensed operator training. He was earlier barred from that post by a condition imposed upon GPUN in the proceeding involving the restart of TMI-Unit 1 by another Board of the Appeal Panel. Because the condition placed upon the licensee directly impacted Mr. Husted even though he neither was a party to the restart proceeding nor had notice of the condition or a chance to challenge it, the Commission, upon review of that Appeal Board action, offered Mr. Husted an opportunity to contest it. In its hearing notice, the Commission confined the hearing to several specific issues precipitating the imposition of the restart condition, i.e., the agency's investigation into cheating on NRC operator licensing examinations. To those issues, the designated Administrative Law Judge added another concerning Mr. Husted's job performance at GPUN. After taking evidence on all the issues, the judge below concluded that the restart condition should not be vacated.

As we explain more fully below, a jurisdictional deficiency in the proceeding leads us to certify a question to the Commission. We take this step because we find, unlike the Administrative Law Judge, that the record evidence on the issue of Mr. Husted's job performance is pivotal to the outcome. Yet that issue, inserted by the trial judge, is clearly beyond the scope of the hearing ordered by the Commission in its notice of hearing — the document delineating the hearing officer's subject matter jurisdiction. The structure and language of that notice is such that we cannot reasonably read it to encompass the issue of Mr. Husted's job performance at GPUN without winking at reality. In this circumstance, we think the best course is to certify to the Commission the question whether it wishes to expand retroactively the jurisdiction of the proceeding to encompass the issue introduced by the trial judge. The evidence in question is already in the record so there is no barrier to retroactive expansion of the subject matter jurisdiction and it well might be that the Commission would have broadened the trial judge's charter initially had this question been anticipated.

### I.

A. After the accident at TMI-Unit 2, the Commission ordered that Unit 1 of the facility should remain in a cold shutdown condition until a hearing determined whether it could be operated without endangering the public health

and safety.<sup>1</sup> In the spring of 1981 while the restart proceeding for Unit 1 was ongoing, Mr. Husted, who was then an instructor of licensed operators at the plant, and a number of his fellow employees took NRC-administered reactor operator and senior reactor operator examinations. Allegations of cheating on those examinations surfaced and the agency conducted an investigation. As subsequent events would reveal, that investigation marked the beginning of Mr. Husted's prolonged difficulties with the NRC.

The agency's initial investigation resulted in a series of Board Notifications to the Licensing Board presiding over the restart proceeding that cheating on the examinations had occurred. When it received this information, the Licensing Board had already concluded the evidentiary hearing so it went ahead and issued its first partial initial decision. At the same time, the Board retained jurisdiction and reopened the record on the effect of the cheating incidents on the management issues in the case. It then appointed a Special Master to take evidence with respect to the cheating and instructed him to issue a recommended decision.<sup>2</sup>

During the NRC staff investigation of the test irregularities, Mr. Husted was interviewed twice by investigators from the former Office of Inspection and Enforcement. In prehearing discovery before the Special Master, he was also deposed by one of the intervenors in the proceeding. Although the staff investigation uncovered a number of individuals involved in cheating on the operator examinations, neither the staff investigation reports nor the pretrial discovery implicated Mr. Husted in such activity. Before the Special Master, however, an NRC investigator testified that another operator had alleged that Mr. Husted solicited an answer to a question on the senior reactor operator examination. Thereafter, Mr. Husted was called as a witness and he was questioned extensively in the hearing.<sup>3</sup>

In his report to the Licensing Board, the Special Master concluded that during the NRC examination Mr. Husted had solicited an answer from the other individual in the unproctored testing room and that he refused to cooperate with the subsequent NRC investigation. In reaching this conclusion, the Special Master also found that Mr. Husted lacked credibility as a witness, had a flippant demeanor, and displayed an unacceptable attitude toward the hearing on the cheating incidents. Because he could find no reliable standard for judging the seriousness of Mr. Husted's poor attitude and lack of cooperation with NRC investigators, the Special Master recommended that Mr. Husted not be removed

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<sup>1</sup> CLI-79-8, 10 NRC 141 (1979).

<sup>2</sup> See LBP-82-56, 16 NRC 281, 287-88 (1982).

<sup>3</sup> LBP-82-34B, 15 NRC 918, 957-58, 960-61 (1982).

from licensed duties but instead suggested to the Licensing Board that some unspecified lesser sanction might be appropriate.<sup>4</sup>

Finding insufficient reliable evidence to support the Special Master's conclusion, the Licensing Board rejected the determination that Mr. Husted had solicited an answer to an examination question. The Board agreed with the Special Master, however, that Mr. Husted refused to cooperate with the NRC investigators. It also generally concurred in the Special Master's determination that Mr. Husted's testimony was not credible and conveyed the sense that Mr. Husted was unconcerned whether or not he was believed. Although the Board questioned whether, as a training instructor, Mr. Husted would impart a sense of seriousness and responsibility to TMI-Unit 1 operators, it found no evidence that Mr. Husted's attitude affected his performance as a teacher and concluded that his testimony and conduct during the investigation were unrelated to his status as a licensed operator. The Board therefore found that any action against his license would be inappropriate; rather, it required GPUN to establish qualifications for its training instructors and to audit its training program, paying particular attention to Mr. Husted's performance.<sup>5</sup>

A number of intervenors and the Commonwealth of Pennsylvania, as an interested State,<sup>6</sup> appealed the Licensing Board's decision. While the appeals were pending, the Commonwealth and GPUN entered into a stipulation to the effect that the Commonwealth would withdraw its appeal on the condition that the licensee would not permit Mr. Husted either to operate TMI-Unit 1 or to train operating license holders or trainees. Even before GPUN entered into the stipulation, the licensee already had moved Mr. Husted from his job as an instructor of licensed operators at TMI-Unit 1 to the position of supervisor of non-licensed operator training. While the Commonwealth's action in dropping its appeal removed the specific issues before the Appeal Board with respect to Mr. Husted and his licensed duties, the Board, on its own motion, questioned GPUN's judgment in promoting Mr. Husted in the face of his documented past failure to cooperate with the NRC's cheating investigation. Accordingly, the Board, as a condition of restart, barred GPUN from allowing Mr. Husted to have any supervisory responsibilities in the training of non-licensed personnel — employees who normally were on a career path to becoming licensed operators.<sup>7</sup>

In placing this condition upon GPUN, the Appeal Board first determined that the record supported the conclusions of the Special Master and the Licensing Board regarding Mr. Husted's poor attitude toward his responsibilities due to his failure to cooperate with the NRC investigation of the cheating incidents. It

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<sup>4</sup> *Id.* at 1045-46.

<sup>5</sup> 16 NRC at 318-20.

<sup>6</sup> See 10 C.F.R. § 2.715(c).

<sup>7</sup> ALAB-772, 19 NRC 1193, 1221-24 (1984).

then stated that, in a field where so much of the material conveyed to trainees by instructors concerns the need to comply with procedures, the ability to communicate a sense of responsibility is an important and integral part of the ability to teach. Noting that the record contained no direct evidence on whether Mr. Husted's bad attitude affected his teaching performance, the Appeal Board drew that inference and placed the sanction on GPUN because Mr. Husted's new job as supervisor of non-licensed operator training would place him in a position to instruct personnel in areas affecting the public health and safety. It also imposed the restart condition upon GPUN for a second reason. The Board stated it was inappropriate for GPUN to elevate Mr. Husted to a supervisory position where he likely would have a voice in establishing the criteria for training instructors and in auditing the training program when the license condition regarding GPUN's training had been ordered, in part, by the Licensing Board as a remedy for Mr. Husted's failure to cooperate with the NRC.<sup>8</sup>

In responding to GPUN's petition for review of the Appeal Board's decision, the Commission announced that, in addition to the several issues urged upon it by the licensee, the Commission would review, on its own motion, the restart condition imposed upon GPUN by the Appeal Board. The Commission noted, however, that it was not concerned with the underlying justification for the condition but rather with the question whether an adjudicatory board may impose a condition on a licensee that, in effect, operates as a sanction against an individual where the impacted employee is not a party to the proceeding and has no notice of the sanction or any opportunity to request a hearing.<sup>9</sup> After briefing, the Commission then decided against resolving the issue it had posed. Instead, it exercised its discretion and offered Mr. Husted an opportunity to request a hearing on whether the condition imposed upon GPUN by the Appeal Board should be vacated. Mr. Husted subsequently requested a hearing, which stayed the effect of the restart condition pursuant to the terms of the Commission hearing offer.<sup>10</sup>

At the same time he requested a hearing, Mr. Husted also asked the Commission to expand its scope to include the question whether concerns about his integrity or attitude should exclude him from serving as a licensed operator, an instructor of licensed operators, or a training supervisor — the positions closed to him by GPUN's stipulation with the Commonwealth of Pennsylvania. The Commission granted Mr. Husted's request in its hearing notice, observing that the expanded scope would not require any additional agency resources. It also pointed out to Mr. Husted that the Commission was powerless to undo the stipulation between GPUN and the Commonwealth barring him from certain licensed

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<sup>8</sup> *Id.* at 1223-24.

<sup>9</sup> CLI-84-18, 20 NRC 808, 810-11 (1984).

<sup>10</sup> CLI-85-2, 21 NRC 282, 317 (1985).

activities and that, for reinstatement, he would have to seek direct relief from those parties if the hearing evidence warranted. It next directed that the hearing

focus on whether the following four concerns regarding Mr. Husted are true, and, if so, whether they require that he not be employed in the jobs in question:

- (1) The alleged solicitation of an answer to an exam question from another operator during the April 1, 1981 NRC written examination;
- (2) The lack of forthrightness of his testimony before the Special Master;
- (3) His poor attitude toward the hearing on the cheating incidents; and
- (4) His lack of cooperation with NRC investigators.<sup>11</sup>

Finally, the Commission ordered that the hearing be held before an Administrative Law Judge and that "[t]he NRC staff . . . participate as a full party . . . to ensure that the record is fully developed."<sup>12</sup>

B. In a number of prehearing orders, the Administrative Law Judge granted the intervention petitions of Three Mile Island Alert (TMIA) and GPUN and admitted their proffered contentions. TMIA's contentions enveloped the issues identified by the Commission in the hearing notice and alleged that Mr. Husted's bad attitude and lack of integrity precluded him from supervisory responsibilities for the training of non-licensed operators as well as serving as a licensed operator or instructor or supervisor of such operators. GPUN's contention was to the opposite effect.<sup>13</sup> To the issues identified by the Commission as forming the scope of the proceeding, the trial judge added the question of what Mr. Husted's job performance at GPUN reflected about his attitude and integrity.<sup>14</sup> Next, the judge below ruled that Mr. Husted was entitled to a *de novo* hearing on the factual issues and that the proceeding was tantamount to a hearing on an agency enforcement action where the staff fulfills the role of the proponent of the sanction and has the burden of going forward and the ultimate burden of proof.<sup>15</sup>

<sup>11</sup> 50 Fed. Reg. 37,098 (1985).

<sup>12</sup> *Id.* at 37,099.

<sup>13</sup> Memorandum and Order (December 6, 1985) at 4.

<sup>14</sup> Report and Order on Initial Prehearing Conference (February 27, 1986) at 5.

Although the Administrative Law Judge's prehearing conference order listed two further matters at issue concerning whether any remedial action against Mr. Husted was required and what remedial action was appropriate, those questions merely particularized the Commission's question from the hearing notice asking whether Mr. Husted should be precluded from licensed or non-licensed operator training or supervisory positions. *Id.* at 11. See 50 Fed. Reg. at 37,098.

<sup>15</sup> Report and Order on Initial Prehearing Conference (February 27, 1986) at 7-8.

In reaching this conclusion, the Administrative Law Judge noted that the history of this matter and the vagueness of the hearing notice made it difficult to decipher the type of proceeding the Commission intended. Nevertheless, he reasoned that because Mr. Husted was not a party to the restart proceeding, the Commission in ordering a new hearing found, in effect, that the record before the Appeal Board was insufficient and that there was the possibility of imposing on Mr. Husted the same sanction as the Appeal Board originally placed upon GPUN. Thus, the trial

(Continued)

Even though the staff initially agreed with the trial judge that the proceeding was in the nature of an enforcement proceeding, the staff subsequently objected to the prehearing order claiming that it should not be considered the proponent of the agency sanction with the concomitant ultimate burden of proof. In reconsidering his earlier order, the judge below reiterated that the burden could not fall properly upon Mr. Husted. But he accepted the staff's argument that it should not be directed to be an advocate for the sanction against Mr. Husted and to have the ultimate burden of persuasion on the propriety of the sanction. His ruling was silent, however, as to what party had the ultimate burden although he instructed the staff to declare prior to the hearing whether it supported or opposed the sanction.<sup>16</sup> Thereafter, the staff announced it advocated vacating the sanction affecting Mr. Husted.<sup>17</sup>

The Administrative Law Judge heard the testimony of five staff witnesses, six witnesses on Mr. Husted's behalf (including Mr. Husted), and one witness subpoenaed by TMIA. Like the Licensing Board in the *TMI restart* proceeding, the trial judge found, first, that there was no convincing evidence that Mr. Husted cheated on the 1981 senior reactor operator licensing test by soliciting an examination answer.<sup>18</sup> Second, the judge below found that Mr. Husted failed to cooperate with the agency investigators probing the cheating incidents by providing unreliable and misleading information. In this regard, he determined that, although the agency investigators' first interview with Mr. Husted was marked by Mr. Husted's resistance to answering questions and other deficiencies, it should not be viewed as an overall failure to cooperate with the investigation. But when the deficiencies of the first interview were added to Mr. Husted's conduct in the second (where he concluded Mr. Husted misled the interviewer), the hearing judge found the record convincing that Mr. Husted failed to cooperate with the NRC investigators.<sup>19</sup>

Third, the trial judge found that Mr. Husted's testimony before the Special Master was not forthright (i.e., lacking ambiguity, straightforward) and that the internal inconsistencies in Mr. Husted's testimony resulted in testimony that lacked credibility and obfuscated what occurred. The judge also found that Mr. Husted's explanations for the various inconsistencies, contradictions and

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judge concluded that the hearing best fit the mold of an enforcement action. He buttressed this conclusion by noting that when the Commission ordered the hearing for Mr. Husted and instructed the staff to participate as a full party there were just two parties so, at that time, the hearing only could be viewed as an enforcement proceeding. He found, therefore, that the subsequent intervention of TMIA could not change the nature of the proceeding and that TMIA could not be saddled with the burden of proof. Similarly, he concluded that constitutional constraints of due process precluded Mr. Husted, the target of the possible sanction, from bearing the burden of proof. *Id.* at 7-9.

<sup>16</sup> Ruling on Staff Objections to Prehearing Conference Order (March 26, 1986).

<sup>17</sup> Letter from George E. Johnson, Counsel for NRC Staff, to Judge Margulies (June 12, 1986).

<sup>18</sup> ALJ-87-3, 25 NRC 345, 355-57 (1987).

<sup>19</sup> *Id.* at 366-70.

lack of seriousness in parts of his testimony were unsatisfactory and evidenced a disregard for the regulatory process.<sup>20</sup> Fourth, the judge below found that the evidence establishing that Mr. Husted had failed to cooperate with NRC investigators, and had been neither completely forthright nor serious in some of his testimony, also demonstrated that Mr. Husted had a poor attitude toward the hearing on the cheating incidents. The judge could find no basis for excusing or overlooking Mr. Husted's poor attitude and found that, in the current hearing, Mr. Husted continued to display some of the same traits that led to the initial conclusion about his bad attitude.<sup>21</sup>

With regard to the issue that he added to the proceeding, the judge found that Mr. Husted's job performance in a variety of positions over all his years at GPUN was satisfactory and that the uncontroverted evidence established that Mr. Husted's attitude toward his job, nuclear safety, the NRC, and regulatory requirements always had been professional and appropriate to his responsibilities. Further, the Administrative Law Judge found that Mr. Husted's classroom evaluations from his time as an instructor showed that he was a generally competent instructor who had never revealed any demeanor or attitudinal problems.<sup>22</sup> Nevertheless, in deciding the last issue (i.e., whether the "punishment" fit the "crime"), the trial judge concluded that the original license condition should not be vacated and that Mr. Husted also should be disqualified from serving as a licensed operator or an instructor or supervisor of such operators. In short, the judge found from Mr. Husted's failure to cooperate with the NRC investigators, his lack of forthrightness before the Special Master, and his continuing disregard in the current hearing for the regulatory process that "[t]he potential continues to exist that this unacceptable attitude toward the NRC regulatory process can adversely affect his teaching performance or the exercise of his management responsibilities contrary to public health and safety."<sup>23</sup>

## II.

In his appeal from the trial judge's decision, Mr. Husted claims the judge erred in refusing to vacate the condition barring him from his former position as supervisor of non-licensed operator training. He argues that the judge below applied an erroneous legal standard that permitted the judge to ignore the favorable evidence regarding Mr. Husted's job performance and attitude as an employee of GPUN.<sup>24</sup> Next, Mr. Husted asserts that the hearing judge erred in

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<sup>20</sup> *Id.* at 370-73.

<sup>21</sup> *Id.* at 373-76.

<sup>22</sup> *Id.* at 376-81.

<sup>23</sup> *Id.* at 384.

<sup>24</sup> Brief of Charles Husted (May 18, 1987) at 14-38.



finding that he (1) failed to cooperate with the NRC investigators, (2) was not forthright in his testimony before the Special Master, and (3) had a poor attitude toward the hearing on the cheating incidents — the factual findings supporting the trial judge's determination not to vacate the license condition.<sup>25</sup> The NRC staff supports Mr. Husted's appeal and essentially mirrors his arguments.<sup>26</sup> Similarly, GPUN supports Mr. Husted's appeal but it focuses its argument almost entirely on the legal standard it perceives the trial judge applied in continuing the disqualification of Mr. Husted from his former position.<sup>27</sup> On the other side of the coin, TMIA urges affirmance of the Administrative Law Judge's decision, arguing generally that the trial judge's factual findings are all supported by the record.<sup>28</sup>

We initially address the second argument of Mr. Husted and the staff attacking the trial judge's factual findings. We then turn to the other arguments of the parties.

A. As the briefs of Mr. Husted and the staff recognize, we clearly have the power in reviewing the factual findings of an administrative law judge or a licensing board to substitute our judgment for that of the fact finder if the record fairly sustains a different result.<sup>29</sup> That is not to say, however, that in conducting our appellate review we may ignore the trial judge's findings and simply find the facts anew for "we are not free to disregard the fact that the Licensing Boards [and Administrative Law Judges] are the Commission's primary fact find[ers]."<sup>30</sup> Rather, when we review findings of fact we will "reject or modify findings of the [trial judge] if, after giving [his] decision the probative force it intrinsically commands, we are convinced that the record compels a different result."<sup>31</sup> Thus, we must be persuaded that the record evidence as a whole compels a different conclusion and we will not overturn the hearing judge's findings simply because we might have reached a different result had we been the initial fact finder.<sup>32</sup>

Before us, Mr. Husted complains that the trial judge erred in finding that he failed to cooperate with NRC investigators, was not forthright in his testimony before the Special Master, and had a poor attitude toward the hearing on the cheating incidents. He places these three findings under a microscope, arguing as to each that the judge below should have reached an opposite conclusion and

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<sup>25</sup> *Id.* at 38-54.

<sup>26</sup> Brief of NRC Staff (June 30, 1987).

<sup>27</sup> Brief of GPUN (June 30, 1987).

<sup>28</sup> Brief of TMIA (August 3, 1987).

<sup>29</sup> *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 403 (1976).

<sup>30</sup> *Northern Indiana Public Service Co.* (Bailey Generating Station, Nuclear 1), ALAB-303, 2 NRC 858, 867 (1975).

<sup>31</sup> *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 357 (1975). See *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 531 (1986).

<sup>32</sup> See *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 2), ALAB-78, 5 AEC 319, 322 (1972).

thus that none of these findings can support the further finding that the license condition should not be vacated. We disagree. When we apply the test under which we review factual findings, we can find no convincing bases upon which to dispute the Administrative Law Judge's findings.<sup>33</sup>

The trial judge's findings on each issue and the support for them are set forth at length in his decision and no purpose is served by reiterating them here.<sup>34</sup> Suffice it to note that we have reviewed the evidentiary record and closely examined the findings on each issue and conclude that they are supported by record evidence or valid inferences drawn from such evidence. Likewise, we have scrutinized each of Mr. Husted's numerous arguments. Although his brief offers a multitude of interpretations, rationalizations, explanations and excuses for the critical evidence relied upon by the trial judge, Mr. Husted's arguments are no more credible for reaching his result than the explication presented by the Administrative Law Judge. Further, in reviewing these factual findings, we must bear in mind that it was the trial judge, not us, that observed Mr. Husted as he testified and from that observation and testimony concluded that part of Mr. Husted's testimony "lacked credibility" and that the witness had a "selective" memory that left a "negative impression."<sup>35</sup> We simply are not convinced, as we must be to overturn the trial judge's findings, that the record compels the conclusion that Mr. Husted cooperated with the NRC investigators, was forthright in his testimony before the Special Master, and had a satisfactory attitude toward the hearing on the cheating incidents. Indeed, after reviewing the entire record on these three issues, we cannot state with conviction that we would not have made similar findings had we been the initial fact finder. (We might, however, have explained some of our findings differently.) Moreover, although it has played no part in our decision, we note that the Special Master, the Licensing Board and another Appeal Board in the *TMI restart* proceeding reached essentially the same conclusions on nearly the same evidence.

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<sup>33</sup> Although in their briefs the parties ignore the question, our review of the trial judge's factual findings is not affected by the unusual circumstance in the hearing below that no party was assigned the ultimate burden of proof. *See supra* p. 470 & note 15. In spite of that, the parties presented evidence on each of the issues and the trial judge made his findings without turning his decision on the burden question. Because the question of which party bears the burden is significant only where the evidence is evenly balanced and here the trial judge did not find the evidence in equipoise, the burden question now is largely immaterial.

In this regard, we note that at oral argument each party was quick to disclaim that the burden fell on it or him but none could tell us where the burden properly lay. At this point, the proceeding simply can be viewed as one where the burden fell on the proponent of the contentions encompassing the issues identified in the hearing notice. But we think the far better view is the one initially expressed by the trial judge that the Commission intended the hearing to mimic a typical enforcement proceeding where the burden would fall upon the staff. *See supra* note 15. In that circumstance, if the staff felt, for whatever reason, that it could not prosecute the case pursuant to the Commission's instructions, the better course would have been for it to return to the Commission and seek to have the license condition vacated or the burden question clarified.

<sup>34</sup> 25 NRC at 355-85.

<sup>35</sup> *Id.* at 376.

Similarly, we cannot find from the evidentiary bases of those three findings that the trial judge's determination that the license condition should not be lifted is in error. In reaching that conclusion, the judge below added to the equation his belief that Mr. Husted's conduct in the current hearing evidenced some of the same traits that led to the judge's other findings: "Mr. Husted has been unable or unwilling to change his attitude toward the NRC's regulatory process sufficiently for it to be found acceptable."<sup>36</sup> But even without this added factor, and putting aside the evidence on the issue added to the proceeding by the hearing judge concerning Mr. Husted's job performance at GPUN (a subject we deal with in Part II.B), the trial judge's determination that the license condition should not be vacated is fully supported by a valid inference drawn from the evidence underlying his other findings. Thus, the judge found that "[t]he potential continues to exist that this unacceptable attitude toward the NRC regulatory process can adversely affect his teaching performance or the exercise of his management responsibilities contrary to public health and safety" and that the license condition should not be lifted.<sup>37</sup> But that inference is valid only if the uncontradicted evidence of Mr. Husted's job performance at GPUN cannot be considered. We now turn to that issue.

B. We agree with Mr. Husted, staff and GPUN to the extent they contend that the license condition barring Mr. Husted from his prior position as supervisor of non-licensed operator training cannot stand in the face of the substantial, uncontroverted, direct evidence that Mr. Husted's actual job performance at GPUN was satisfactory and his attitude at work toward safety, the NRC, and regulatory requirements was professional and appropriate to his responsibilities. As previously indicated, the trial judge found Mr. Husted fulfilled his job responsibilities without showing any signs of a negative attitude toward the licensing

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<sup>36</sup> *Id.* at 384.

<sup>37</sup> *Id.*

Rather than simply reading the trial judge's findings as drawing an inference from the evidentiary facts that Mr. Husted's bad attitude toward the regulatory process was quite likely to carry over into his work if he was allowed to return to his former position, Mr. Husted (joined by his supporters) took this finding as a legal standard by which the judge assessed Mr. Husted's conduct. Specifically, he argues the hearing judge established a legal standard to the effect that the mere existence of the potentiality that a bad attitude will adversely affect job performance is sufficient basis for job disqualification. As Mr. Husted recognizes, the trial judge's decision on this score is subject to various interpretations. We think the better view, however, is to read the portion of the hearing judge's initial decision labeled "Findings of Fact" as factual findings, not as establishing a legal standard.

We note that our reading also comports with ALAB-772, 19 NRC at 1223-24. There the Appeal Board, exercising its *sua sponte* review authority and its authority to make supplemental factual findings based on the existing record (see *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 42 (1977), *aff'd*, CLI-78-1, 7 NRC 1 (1978)), inferred from the evidence supporting the Licensing Board's factual findings that Mr. Husted's bad attitude likely would adversely affect his job performance. (See *supra* pp. 468-69.) Our interpretation of the trial judge's decision is also consistent with the Commission's view, cited by the trial judge in his findings (25 NRC at 381 n.11), that "[t]he focus of this hearing is not a legal one, but rather a factual determination of whether the Appeal Board's condition should remain in place." Commission Order (March 20, 1986) at 2.

process or GPUN's training program.<sup>38</sup> But instead of accepting this evidence as controlling, the trial judge inferred from Mr. Husted's past conduct during the agency's investigation and hearing on the cheating episodes and from his actions in the current hearing, that Mr. Husted's past and present bad attitude likely would infect Mr. Husted's teaching performance or management responsibilities to the detriment of the public health and safety if he were allowed to return to his prior positions.<sup>39</sup> In the absence of any direct evidence to the contrary, this inference is not unreasonable and is sustainable from the facts found by the hearing judge. But that inference can no longer be drawn reasonably in the face of overwhelming uncontroverted evidence that Mr. Husted always demonstrated a proper attitude in his job performance toward safety and the regulatory process. Nor is there any question that the evidence convincingly establishes the correctness of the trial judge's findings regarding Mr. Husted's on-the-job performance and attitude.<sup>40</sup> Thus, the inference the trial judge drew from the evidence underlying his other findings that Mr. Husted's bad attitude toward the hearings on the cheating incidents would corrupt Mr. Husted's job performance cannot stand if the direct evidence of Mr. Husted's job performance is properly part of the record. Likewise, the license condition supported by that inference must fall. But the issue of Mr. Husted's job performance, and the corresponding evidence on that point, is beyond the subject matter jurisdiction of the Administrative Law Judge set by the Commission in its hearing notice. Consequently, that evidence cannot be considered as the case now stands.

It is well settled that NRC licensing boards and administrative law judges do not have plenary subject matter jurisdiction in adjudicatory proceedings. Agency fact finders are delegates of the Commission who may exercise jurisdiction only over those matters the Commission specifically commits to them in the various hearing notices that initiate the proceedings.<sup>41</sup> Thus, the scope of the proceeding spelled out in the notice of hearing identifies the subject matter of the hearing and the hearing judge "can neither enlarge nor contract the jurisdiction conferred by the Commission."<sup>42</sup> Here, the Commission's hearing notice is clear and explicit regarding the scope of the proceeding. It states that the hearing shall "focus on whether the following four concerns regarding Mr. Husted are true, and, if so, whether they require that he not be employed in the jobs in question."<sup>43</sup> The notice then lists the four factual issues of whether Mr. Husted (1) cheated on the NRC licensing examination, (2) was forthright in his testimony before the

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<sup>38</sup> 25 NRC at 380.

<sup>39</sup> *Id.* at 384.

<sup>40</sup> *Id.* at 376-81.

<sup>41</sup> *Duke Power Co. (Catawba Nuclear Station, Units 1 and 2)*, ALAB-825, 22 NRC 785, 790 (1985).

<sup>42</sup> *Consumers Power Co. (Midland Plant, Units 1 and 2)*, ALAB-235, 8 AEC 645, 647 (1974).

<sup>43</sup> 50 Fed. Reg. at 37,098.

Special Master, (3) exhibited a poor attitude toward the hearing on the cheating incidents, and (4) failed to cooperate with NRC investigators.<sup>44</sup>

The hearing notice limits the inquiry to the period of the NRC investigation into the cheating incidents and the subsequent hearing before the Special Master, and nothing in the notice authorizes a general inquiry into Mr. Husted's past or present job performance at GPUN. Nor can such an inquiry be justified as part of the question whether Mr. Husted should be barred from his former positions because the Commission expressly limited this inquiry to whether the four particularized factual issues should preclude Mr. Husted from his prior jobs. The trial judge, however, added the issue of Mr. Husted's job performance at GPUN to the hearing, declaring that "[a] full and fair hearing" requires it<sup>45</sup> and that such an issue is a "logical extension[ ] of [the other] factual issues."<sup>46</sup> But that ruling is simply contrary to the plain language of the hearing notice and such an issue cannot be fairly found within its four corners.

Although the considerable passage of time since the original hearing before the Special Master makes the evidence of Mr. Husted's job performance at GPUN useful in assessing whether the public health and safety require the continuation of the license condition, only the Commission can expand the subject matter of a hearing. That principle is so fundamental to the agency's adjudicatory process that we simply cannot gloss over the addition of this issue to the proceeding by the trial judge even though such a step admittedly would be an easy and practical way to resolve the case. Indeed, because maintenance of the public health and safety, not punishment, is the purpose behind every license

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<sup>44</sup> *Id.*

<sup>45</sup> Report and Order on Initial Prehearing Conference (February 27, 1986) at 5.

<sup>46</sup> *Id.* at 12.

The trial judge also sought to justify the addition of this issue by relying upon the Commission's hearing notice. He stated that the notice "calls for what is a *de novo* hearing to provide 'Mr. Husted with an opportunity to demonstrate his fitness for the position at issue.'" Report and Order on Initial Prehearing Conference (February 27, 1986) at 5. By taking the quoted language from the hearing notice entirely out of context, however, the judge below misapprehended the meaning of the Commission's notice.

As we pointed out previously (*supra* p. 469), at the same time he requested a hearing, Mr. Husted asked the Commission to expand its scope to include the question of whether Mr. Husted should be excluded from the positions covered by the stipulation between the Commonwealth of Pennsylvania and GPUN. Mr. Husted's request was premised upon the fact that an expanded hearing "would involve consideration of the same factual issues as would the proffered hearing." 50 Fed. Reg. at 37,098. In granting his request in the hearing notice, the Commission relied upon the fact that the factual issues would remain the same so no additional agency resources would be required. It then stated:

The Commission recognizes the rights of the parties to this Stipulation. Nonetheless, the Stipulation resulted, at least in part, from an NRC proceeding to which Mr. Husted was not a party. Therefore, in fairness to Mr. Husted the Commission has decided to grant Mr. Husted's request for an expanded scope of hearing. This will provide Mr. Husted with an opportunity to demonstrate his fitness for the positions at issue, and, if results of the hearing are favorable to Mr. Husted, he can then take up the Stipulation with GPU Nuclear and the Commonwealth.

50 Fed. Reg. at 37,099. As is evident from the full text, the language quoted by the trial judge does not support his expansive reading of the Commission's hearing notice.

condition, it is not unlikely that the Commission would have included this issue in the original hearing notice had the matter been brought to its attention.

Accordingly, we *certify* to the Commission the question whether it wishes to expand retroactively the subject matter jurisdiction of the proceeding to include the issue of Mr. Husted's job performance at GPUN. Because that evidence is already in the record no further hearing is necessary. When the Commission responds to the certified question, we will then decide the appeal. As we have explained, the evidence of Mr. Husted's job performance requires that the license condition barring Mr. Husted from his former position be vacated. On the other hand, if that evidence is excluded from the record, we must affirm the trial judge's result.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker  
Secretary to the  
Appeal Board

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

John H Frye, III, Chairman  
Dr. Oscar H. Paris  
Frederick J. Shon

In the Matter of

Docket No. 50-322-OL-5  
(ASLBP No. 86-534-01-OL)  
(EP Exercise)

LONG ISLAND LIGHTING  
COMPANY

(Shoreham Nuclear Power Station,  
Unit 1)

December 7, 1987

Board concludes that the February 13, 1986 Exercise of LILCO's offsite emergency plan for the Shoreham Station did not comply with ¶IV.F.1 of Appendix E to 10 C.F.R. Part 50 in that the following portions of the plan were not tested: transmission of an EBS message to and authentication of that message by the EBS radio station; school emergency plans; ingestion exposure pathway emergency plans; and coordination and communication between LERO and special facilities.

**EMERGENCY PLANS: SCOPE OF INITIAL EXERCISE**

Paragraph IV.F.1 of Appendix E to 10 C.F.R. Part 50 requires that the initial full-participation exercise, which is required prior to operation in excess of 5% of power, must test as much of the plan as is reasonably achievable and must include participation by all response organizations within both the plume and ingestion exposure EPZs.

## **EMERGENCY PLANS: SCOPE OF INITIAL EXERCISE**

Where local government action or the lack of federal standards prevents the testing or evaluation of a portion of an emergency plan, testing of that portion is deemed to be not reasonably achievable.

## **TECHNICAL ISSUE DISCUSSED**

Statistical validity of FEMA's sampling technique.

## **APPEARANCES**

Donald P. Irwin, Lee B. Zeugin, Kathy E.B. McCleskey, and Jessine A. Monaghan, Hunton & Williams, Richmond, Virginia, for the Long Island Lighting Company.

Lawrence Coe Lanpher, Karla J. Letsche, and Michael S. Miller, Kirkpatrick & Lockhart, Washington, D.C., for Suffolk County, New York.

Richard J. Zahnleuter, Albany, New York, for Mario M. Cuomo, Governor of the State of New York.

Oreste R. Pirfo, Charles A. Barth, and George E. Johnson, Bethesda, Maryland, for the Nuclear Regulatory Commission Staff.

William R. Cumming, Washington, D.C., for the Federal Emergency Management Agency.

## **PARTIAL INITIAL DECISION**

### **Introduction**

In this Partial Initial Decision, we address the question whether the February 13, 1986 Exercise of the offsite emergency plan for the Shoreham Nuclear Power Station satisfied the terms of 10 C.F.R. Part 50, Appendix E, ¶ IV.F.1. That provision states the requirements for initial exercises of offsite emergency plans for power reactors that must occur prior to commercial operation. This question was presented by Contentions EX-15 and EX-16, which assert that the Exercise was too limited in scope, and by Contention EX-21, which asserts that the sample sizes used by FEMA were too small to support its conclusions. We have



concluded that, because of the failure to test certain functions, the Exercise did not meet the requirements of ¶IV.F.1.

The issues raised by these contentions present questions not previously resolved in an adjudication. Our conclusions on those questions may have a substantial impact on the posture of this proceeding. Thus, while we are still considering the parties' positions with respect to LERO's performance during the Exercise, we have decided to issue this Partial Initial Decision detailing the reasons for our conclusion in advance of our decision on the remainder of the contentions. We believe this to be consistent with the Commission's direction to expedite this proceeding to the maximum extent consistent with fundamental fairness.

This case represents the first time that, because of state and local government opposition to its application, a power reactor operating license applicant has taken on the entire responsibility for offsite emergency preparedness. Long Island Lighting Company ("LILCO") has done this by preparing an offsite emergency response plan, known as the "SNPS Local Offsite Radiological Emergency Response Plan" ("LILCO Plan"), and by setting up an organization that would implement the Plan in an emergency, known as "LERO" (Local Emergency Response Organization). LERO is composed primarily of LILCO employees and contractors, working with support organizations such as the American Red Cross, the U.S. Coast Guard, the U.S. Department of Energy, and various bus, ambulance, and service companies. *See* LILCO Plan, Chap. 2.

The adequacy of offsite preparedness was extensively considered by the Licensing Board in proceedings spanning 1983 through 1985. Intervenor Suffolk County, the Shoreham Opponents Coalition, the Town of Southampton, the North Shore Coalition, and New York State raised issues regarding the planning aspects of the LILCO Plan. After hearing, the Licensing Board issued a Partial Initial Decision ("PID") on offsite emergency planning. *See* LBP-85-12, 21 NRC 644 (1985). The PID included findings of fact and conclusions of law on issues of human behavior, credibility, conflict of interest, EPZ boundary, LERO workers, training, notification, information to the public, sheltering, protective action recommendations, evacuation, special facilities, schools, ingestion pathway, loss of offsite power, strike by LILCO employees, and legal authority issues.

After further hearings on the issue of relocation centers, the Licensing Board issued a concluding Partial Initial Decision on emergency planning, ruling on the relocation center issues and on whether the LILCO Plan provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at Shoreham. LBP-85-31, 22 NRC 410 (1985). The Board found that it did not. The Board found that there is not "anything unique about the demography, topography, access routes, or jurisdictional boundaries in the area in which Shoreham is located. To the contrary, the record fails to reveal any basis to conclude that it would be impossible to fashion and implement

an effective offsite emergency plan for the Shoreham plant." However, the Board noted that its inability to find reasonable assurance stemmed in large part from Suffolk County's and New York State's opposition to the plan. *Id.* at 427. Portions of these decisions on offsite emergency planning were appealed; certain aspects were remanded for further consideration before another Licensing Board, and some are still pending appeal.<sup>1</sup>

On June 20, 1985, the NRC, at LILCO's request, asked FEMA to conduct an Exercise to test offsite emergency preparedness at Shoreham based upon the LILCO Plan. In a one-day Exercise held between 05:30 and 16:00 on February 13, 1986, a team of thirty-eight federal evaluators observed and graded LERO's performance pursuant to that Plan. The results of the Exercise are set forth in a Post-Exercise Assessment issued by the Federal Emergency Management Agency on April 17, 1986 ("FEMA Report"), which was admitted into evidence as FEMA Exhibit 1.

In a motion dated March 7, 1986, Suffolk County, New York State, and the Town of Southampton ("Intervenors") requested that the Commission advise the parties to this proceeding of their procedural responsibilities concerning any hearings on the February 13, 1986 Exercise. LILCO and the NRC Staff responded later that month; LILCO requested the appointment of a board to hear exercise-related matters and the conduct of expedited hearings. On June 6, 1986, the Commission ordered "immediate initiation of the exercise hearing to consider evidence which Intervenors might wish to offer to show that there is a fundamental flaw in the LILCO emergency plan." CLI-86-11, 23 NRC 577, 579 (1986). It directed the Chairman of the Atomic Safety and Licensing Board Panel to appoint a Board consisting of the members of the Board that issued the PID, if they were available. It directed that Board "to expedite the hearing to the maximum extent consistent with fairness to the parties, and to issue its decision upon the completion of the proceeding." *Id.* at 582.

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<sup>1</sup> LILCO took appeals on three issues from the PID (legal authority, conflict of interest, and lack of state plan) and one issue from the concluding PID (concerning the number of persons who might seek monitoring). Intervenors appealed a host of issues from both PIDs. The Appeal Board severed LILCO's legal authority appeals from the factual appeals, and affirmed the Licensing Board's findings on LILCO's preemption, realism, and immateriality arguments. ALAB-818, 22 NRC 651 (1985). On review the Commission reversed, deferring consideration of the preemption question while remanding on the realism and immateriality arguments. CLI-86-13, 24 NRC 22 (1986). The Licensing Board has not yet initiated proceedings on the realism remand.

The Appeal Board initially took up only Intervenors' factual appeals; it affirmed the Licensing Board on most findings but remanded four issues: (1) EPZ size; (2) role conflict/school bus drivers; (3) hospital evacuation plans; and (4) denial of discovery and evidentiary rulings relating to reception center issues. ALAB-832, 23 NRC 135 (1986). On petitions for review, the Commission accepted review of just three issues, two concerning EPZ size and the third concerning hospital evacuation plans. Order of September 19, 1986. In CLI-87-12, 26 NRC 383 (1987), the Commission affirmed the remand of the hospital evacuation issue and reversed the remand of the two EPZ size issues. Upon the Commission's suggestion in CLI-86-13, the Appeal Board considered LILCO's appeals, ruling in LILCO's favor on conflict of interest and remanding on the absence of a state plan. ALAB-847, 24 NRC 412 (1986). The issue of the suitability of the reception centers was litigated recently before the OL-3 Board; that Board has recently resolved the state plan issue by summary disposition. LBP-87-30, 26 NRC 425 (1987).

The litigation of the Exercise issues proceeded. The Intervenor in this phase of the emergency planning litigation are Suffolk County, New York State, and the Town of Southampton, although the Town of Southampton did not participate in the prehearing conferences or the hearing. On August 1, 1986, Intervenor submitted 162 pages of contentions which were ruled on by the Board in an unpublished Prehearing Conference Order of October 3, 1986. That Order prompted a motion for reconsideration from FEMA and objections from Intervenor. In an unpublished Memorandum and Order of December 11, 1986, we clarified and largely reaffirmed the October 3 Order. FEMA sought interlocutory review of that portion of the latter Order that reaffirmed the admission of Contentions EX-15 and EX-16 which are decided herein. Its petition was denied in ALAB-861, 25 NRC 129 (1987).

The hearings on Contentions EX-15 and EX-16 began on May 13, 1987, with LILCO's witnesses and continued through May 15.<sup>2</sup> Tr. 5961-6247. LILCO's panel resumed the stand and completed their testimony on May 20. Tr. 6801-978. LILCO's witness on Contention EX-21 testified on May 26.<sup>3</sup> Tr. 7255-354. New York State and Suffolk County presented testimony on Contentions EX-15 and EX-16 beginning on May 20 and concluding on May 21.<sup>4</sup> Tr. 6918-7250. Suffolk's witness on Contention EX-21 testified on May 26 and June 18.<sup>5</sup> Tr. 7354-411, 8876-915, respectively. FEMA presented its entire testimony June 9 through 12, 16 and 17.<sup>6</sup> Tr. 7446-8750. Staff presented testimony on June 18.<sup>7</sup> Tr. 8764-876.

All of the proposed findings of fact and conclusions of law submitted by the parties on Contentions EX-15, EX-16, and EX-21 have been considered in formulating this Decision. Those not incorporated directly or inferentially in this Decision are rejected as unsupported in fact or law or as unnecessary to the rendering of this Decision.

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<sup>2</sup> LILCO's EX-15 and EX-16 testimony was presented by Charles A. Daverio and Dennis M. Behr. It was admitted as LILCO Exhibit 12. Tr. 5968.

<sup>3</sup> LILCO's testimony on EX-21 was presented by Charles A. Daverio. It was admitted as LILCO Exhibit 21. Tr. 7267, 7359.

<sup>4</sup> This testimony was presented by James C. Baranski, William Lee Colwell, Lawrence B. Czech, Gregory C. Minor, James D. Papile, Charles B. Perrow, Frank R. Petrone, and Harold Richard Zook. It was admitted as New York State Exhibits 1, 2, and 3. Tr. 7080. Mr. Zook withdrew for personal reasons. Tr. 7054.

<sup>5</sup> Suffolk's prefiled testimony was sponsored by Gary A. Simon and Stephen Cole. The latter was unavailable to testify and the testimony was corrected appropriately. It was admitted as Suffolk County Exhibit 99. Tr. 7354-59.

<sup>6</sup> FEMA's testimony was presented by Roger B. Kowieski, Joseph H. Keller, and Thomas E. Baldwin. It was admitted as FEMA Exhibit 5. Tr. 7453. In general, we found FEMA's testimony to be forthright, candid, and unbiased. It has been most valuable to us in the preparation of our decision on these and the remaining issues.

<sup>7</sup> Staff's testimony was presented by Sheldon Schwartz and Bernard H. Weiss. It was admitted as Staff Exhibit 1. Tr. 8765.

## Discussion

### I. CONTENTIONS EX-15 AND EX-16

#### A. The Allegations

Contentions EX-15 and EX-16 allege that the February 13, 1986 Exercise of the LILCO Plan was not a "full-participation" exercise as defined in NRC regulations. Intervenors allege that the Exercise did not yield meaningful results on implementation capability as required by 10 C.F.R. § 50.47 in that it did not include demonstrations or evaluations of (1) major portions of the LILCO Plan or (2) the emergency response capability of many persons and entities relied upon for Plan implementation.

#### B. The Regulatory Scheme

The Commission's regulations bearing on these contentions state:

A full-participation<sup>4</sup> exercise which tests as much of the licensee, State and local emergency plans as is reasonably achievable without mandatory public participation shall be conducted for each site at which a power reactor is located for which the first operating license for that site is issued after July 13, 1982. This exercise shall be conducted within two years before the issuance of the first operating license for full power (one authorizing operation above 5% of rated power) of the first reactor and shall include participation by each State and local government within the plume exposure pathway EPZ and each State within the ingestion exposure pathway EPZ. . . .

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<sup>4</sup> "Full participation" when used in conjunction with emergency preparedness exercises for a particular site means appropriate offsite local and State authorities and licensee personnel physically and actively take part in testing their integrated capability to adequately assess and respond to an accident at a commercial nuclear power plant. "Full participation" includes testing the major observable portions of the onsite and offsite emergency plans and mobilization of State, local and licensee personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario.

10 C.F.R. Part 50, Appendix E, ¶ IV.F.1; 52 Fed. Reg. 16,823, 16,829 (May 6, 1987).

While the parties have focused principally on the terms of the quoted paragraph of the regulation, it is necessary to understand how that paragraph fits into the scheme of the provision dealing with exercises in order to understand the Commission's intent with regard to the scope of the exercise required prior to reactor operations in excess of 5% of rated power at a particular site (hereafter referred to as the "initial exercise"). The structure of ¶ IV.F, which contains the quoted paragraph as well as four others dealing with exercises, makes it clear that the initial exercise is to meet certain requirements that do not apply to

subsequent exercises. After providing that exercises are to be conducted, that provision lays down requirements applicable to initial exercises in ¶ 1, requires annual licensee exercises in ¶ 2, requires that state and local government plans for each operating reactor site be exercised biennially with either full or partial participation (hereafter referred to as "biennial exercises"), and sets standards governing the frequency of both full and partial state and local government participation in ¶ 3, provides for remedial exercises in ¶ 4, and requires critiques of exercises in ¶ 5.

The quoted paragraph is unique in this scheme in that it requires full participation in the initial exercise for a site by each state and local government within the plume exposure pathway EPZ and each state within the ingestion exposure pathway EPZ. In contrast, ¶ 3, while requiring full participation in at least one exercise at least biennially by each state and local government, permits partial participation with respect to any given site if the state or local government has fully participated at another site. Further, ¶ 3 allows a state that is included in any ingestion exposure pathway EPZ to exercise its related emergency plans only every 5 years.

Moreover, ¶ 1 states that the initial exercise is to "[test] as much of the licensee, State and local emergency plans as is reasonably achievable without mandatory public participation. . . ." No similar requirement is placed on subsequent exercises. Clearly, ¶ 1 states requirements for state and local participation in initial exercises, which are unique to those exercises.

Thus it appears that the definition of "full participation" found in footnote 4 applies to both initial and biennial exercises, and that ¶ IV.F.1 places certain requirements on initial full-participation exercises that do not apply to biennial full-participation exercises.

### C. LILCO's and Staff's Positions

LILCO nonetheless takes the position that there are no additional requirements placed on initial full-participation exercises. Staff agrees. LILCO notes that the Commission's regulations, as originally adopted in 1980, contained a requirement that offsite exercises for all plants — whether achieving their full-power licenses for the first time or already licensed — must test "as much of the licensee, State and local emergency plans as is reasonably achievable without mandatory public participation." This condition applied to all offsite exercises until the paragraph was amended in July 1984. LILCO states that during this period, exercises deemed "full scale" omitted various elements such as ingestion pathway and recovery/reentry, citing Tr. 7208-12 (Papile, Baranski).

LILCO notes that the July 1984 amendment relaxed the frequency of full-participation exercises for sites with operating licenses.<sup>8</sup> See 49 Fed. Reg. 27,733-35 (July 6, 1984). In so doing the Commission revised the language of ¶IV.F.1 to read essentially as it appears today, aside from a few unrelated differences. LILCO maintains that this amendment addressed only the frequency of exercises and was not intended by the Commission to make substantive changes in the scope of initial and biennial full-participation exercises. Tr. 6219-20 (Behr); Tr. 6191, 6853 (Daverio).

LILCO correctly notes that the sentence structure:

A full participation exercise which tests as much of the licensee, State and local emergency plans as is reasonably achievable without mandatory public participation shall be conducted . . .

is ambiguous because it confuses the grammatical rules concerning restrictive and nonrestrictive clauses. However, LILCO believes that the grammatical confusion is largely cleared up by the derivation of the sentence which shows that (1) the phrase "full-participation" exercise (and its apparently synonymous predecessor "full scale" exercise) applied to both initial exercises and plants that already held full-power licenses, (2) exercises run during that period omitted various plan elements, yet were still found to comply with the Commission's regulations, and (3) there was no intent on the part of the Commission, evident from the Statement of Consideration in the 1984 amendment to the rule, to alter the general applicability or meaning of the phrase.

LILCO finds support for its position in the preface to the Commission's latest revision to these rules. See 52 Fed. Reg. 16,823-29 (May 6, 1987). It notes that when the Commission revised its rules in 1984, it did not make a similar change regarding the required frequency of initial full-participation exercises. However, concerned about scheduling burdens as a result of a judicially imposed requirement to subject exercise results to the hearing process as well as the resource burden placed on state and local governments by the requirements for annual full-participation exercises, on May 6, 1987, the Commission revised its rules to require a full-participation exercise within 2 years prior to the full-power licensing of a power plant — the same scheduling requirement mandated for full-participation exercises after licensing. 52 Fed. Reg. at 16,824.

In response to comments filed by citizen groups that opposed this latest rule change on the basis, *inter alia*, that it ignored a previously drawn distinction

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<sup>8</sup> It is interesting to note that the July 1984 amendment transformed a statement that the initial exercise for a site should permit each state and local government within the plume exposure pathway EPZ and each state within the ingestion exposure pathway to participate into a requirement that they participate, while dropping the requirement that biennial exercises test "as much of the . . . plans as is reasonably achievable. . . ."

between pre- and post-operational exercises, the Commission said there was no reason to treat NTOLs and operating plants differently:

The Commission has . . . been left with a regulatory scheme for frequency of full participation emergency preparedness exercises that treats sites with an operating license differently than sites without an operating license. The Commission does not believe this disparity in treatment is warranted. . . .

52 Fed. Reg. at 16,826.

As in the 1984 rulemaking, there is no discussion in the Statement of Consideration of imposing any special additional substantive requirements regarding the scope of initial exercises. LILCO believes that such additional requirements are a concept the Commission almost surely would have mentioned in the context of its remarks had it intended a substantive scope change for NTOLs, especially in light of the fact that in practice, no distinction had historically been made between operating sites and NTOLs.<sup>9</sup>

#### D. Intervenor's Position

Intervenors do not share LILCO's view. They begin with the proposition that, in ¶IV.F.1 of Appendix E, the Commission addresses the scope of the initial full-participation exercise prior to reactor operations in excess of 5% of power. Their testimony, Intervenors maintain, demonstrated that, prior to the initial full-participation exercise, there is no "track record" regarding the capabilities or preparedness related to that particular site. Accordingly, it makes sense that the initial full-participation exercise be comprehensive. NYS Exh. 1 at 25. Intervenors believe that this is an especially important consideration for Shoreham because implementation of the Plan is largely dependent upon LILCO personnel whose everyday work does not include emergency response.

Intervenors find support for this interpretation in the regulatory history. They believe that the original requirement of Appendix E that all sites, regardless of their previous operating history, "test[] as much of the licensee, State, and local emergency plans as is reasonably achievable without mandatory public participation . . ." (45 Fed. Reg. 55,413, col. 1 (1980); see Tr. 7102 (Petrone)) made sense because, at that time, there was no track record of performance at any site.

Intervenors believe that, in dropping the requirement that operating plants "test[] as much of the . . . plans as is reasonably achievable without mandatory

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<sup>9</sup> Staff also makes this argument. Additionally, Staff states that the notion that the initial exercise may lead to major changes is probably an illusion, citing the fact that neither FEMA nor Staff has found this to be the case. Staff urges us not to "read into" ¶IV.F.1 any additional requirements for initial exercises. See Staff's Proposed Findings at 30-31. However, those additional requirements are clearly stated in that paragraph.

public participation . . ." in 1984, the Commission indicated its intent that initial full-participation exercises should be more complete than full-participation exercises at operating sites. Indeed, in relaxing the exercise frequency requirement from 1 to 2 years, the Commission noted that by 1984, it had gained experience at about 150 exercises. *See* 49 Fed. Reg. 27,735, col. 1 (1984). While the Commission did not expressly link this experience to its removal of the "as much as reasonably achievable" language, the rationale for the change in exercise frequency applies to that change as well.

## E. Legal Conclusion

Intervenors read the regulation correctly. It is clear that the July 1984 amendment did make substantive changes in the required scope of initial and biennial exercises.<sup>10</sup> Despite the ambiguity in footnote 4, LILCO's arguments simply do not overcome the clear language of § IV.F.1. Consequently, we do not find it necessary to address Intervenors' arguments in support of their reading. Suffice it to say that although the Commission has found it necessary to amend the regulation twice, it did not see fit to change these clear requirements or, for that matter, to specifically address them in a statement of consideration accompanying either a proposed or final rule.<sup>11</sup>

Our conclusion concerning § IV.F.1 makes it unnecessary for us to consider the parties' positions regarding the interpretation of the definition of full participation found in footnote 4 of that paragraph. Because the initial exercise must

<sup>10</sup> *See* note 8, *supra*.

<sup>11</sup> The language quoted by LILCO from the Statement of Consideration supporting the rule permitting initial exercises to be conducted within 2 years, rather than 1 year, of commercial operation does not dictate a contrary conclusion. That language, when placed in context, was directed to the problem posed by the necessity to complete both an exercise and any related litigation within a 1-year time period and simply points to the fact that there is no reason why the initial exercise should occur within a shorter time period than subsequent exercises. It does not contradict the clear language of § IV.F.1. Indeed, logic would suggest that, having mandated the more complete initial exercise prior to licensing, the Commission could well rely on its results for at least as long a period as that which would apply to the less complete biennial exercises.

LILCO also relies on Planning Standard N of NUREG-0654/FEMA-REP-1 (LILCO Exh. 12, Attach. C), FEMA Guidance Memorandum (GM) PR-1 (*id.*, Attach. E), and draft GMEX-3 (*id.*, Attach. G). LILCO's witnesses argued that this guidance is directly applicable. They attempted to point (1) to explicit references in FEMA Guidance Memoranda to the NRC's Appendix E regulations (Tr. 6199-200, 6222, 6235-38, 6242, 6804-05 (Daverio, Behr)); (2) to language appearing in Appendix E that is echoed by language in FEMA Guidance Memoranda (Tr. 6822-23 (Behr)), and in NUREG-0654 Planning Standard N (Tr. 6184-85 (Daverio)); and (3) to their understanding of the real-world interrelationship between FEMA and NRC as a result of their practical experience in the emergency planning area (Tr. 6184-85, 6190-92, 6231-33, 6242-44, 6815-23 (Daverio, Behr)). LILCO believes that FEMA and NRC Staff witnesses agreed that the FEMA guidance documents and NUREG-0654 are applicable. *See* FEMA Exh. 5 at 89-90; NRC Exh. 1 at 5; Tr. 7492 (Keller); Tr. 7620-21 (Keller, Kowieski).

While this guidance may accurately reflect the practice that Staff and FEMA have followed in conducting exercises, a cursory perusal of it reveals that it either ignores the distinction between initial and biennial exercises or was intended to be limited to biennial exercises. Thus, it is of no value in understanding the additional requirements for initial full-participation exercises. Moreover, because it is guidance only and does not rise to the status of a regulation, it does not override the clear language of § IV.F.1.



be more comprehensive than the biennial exercises, *a fortiori* an exercise that meets that requirement will qualify as a full-participation exercise.

## F. The Alleged Omissions from the Exercise

We now consider whether the facts alleged in these contentions demonstrate a fundamental flaw. Intervenor's point to certain specific omissions and inadequacies in the Exercise in support of their views. For purposes of this discussion, these have been grouped under the standard exercise objective to which they relate.

### 1. Alert and Notification

Standard exercise objective 13 governs this topic. It provides: Demonstrate the ability to alert the public within the 10-mile EPZ, and disseminate an initial instructional message, within 15 minutes. This objective was evaluated under the following Emergency Operations Center (EOC) objectives:

13. Demonstrate the ability to provide advance coordination of public alerting and instructional messages with the State and county (State and county participation simulated);
14. Demonstrate the ability to activate the prompt notification siren system in coordination with the State and county (State and county participation simulated);
15. Demonstrate the capability for providing both an alert signal and an informational or instructional message to the population on an area-wide basis throughout the 10-mile EPZ within 15 minutes (to be simulated); and
21. Demonstrate the ability to prepare and implement EBS in a timely manner (to be simulated within 15 minutes after command and control decision for implementation of protective action recommendations).

FEMA Exh. 5 at 97; FEMA Exh. 1 at 10.

FEMA concluded that objectives EOC 13, 15, and 21 were met, while EOC 14 was partly met. *See* FEMA Exh. 1 at 33-34, 38. Intervenor's assert that the scope of the Exercise and the participation of response organizations was too limited with respect to these objectives. Specifically, Intervenor's assert that "[p]rocedures for the actual notification of the public and actual issuance of emergency information and protective action recommendations to the public . . . were excluded from the exercise, in that sirens, the LILCO EBS system, and WALK Radio were not tested, used, demonstrated, or involved in the exer-

cise.<sup>12</sup> Thus neither the notification capabilities of LILCO or WALK Radio personnel, nor the notification capabilities of LILCO's EBS system, were evaluated during the exercise." Contention EX-15A. *See also* Contentions EX-16C, EX-16D, and EX-24.

Additionally, although Intervenor's asserted in Contentions EX-15B and EX-18C(iv) that procedures for notifying and issuing protective action recommendations to the public in the water portion of the EPZ were excluded in that the U.S. Coast Guard did not participate, in their prefiled testimony (NYS Exh. 1 at 119), they state that they have no basis on which to dispute LILCO's and FEMA's accounts of the Coast Guard's participation. *See* LILCO Exh. 12 at 33-34; FEMA Exh. 5 at 108-09. Consequently, we have not further considered these contentions. However, in our discussion of EOC 16, we address Intervenor's position stated in Contention EX-16B that the testing of the implementation of protective action recommendations in the water portion of the EPZ was inadequate.

There is no dispute concerning the sirens, EBS system, and WALK Radio. All parties acknowledge that the sirens were not sounded, no EBS messages were broadcast, and WALK Radio did not participate. FEMA concluded that the sirens should be sounded in the future (FEMA Exh. 1 at 34; FEMA Exh. 5 at 106, 123), and the FEMA witnesses voiced their opinion that this test should occur prior to operation at more than 5% of power, although they were uncertain whether such a regulatory requirement exists. Tr. 8383-87. Such a test would necessarily involve the broadcast of a test EBS message to inform the public of the reason the sirens were sounded. Tr. 7553-54. More importantly, FEMA agreed with Intervenor's that the test of the alert and notification system was not as complete as FEMA normally expects (Tr. 7563-65), and that there was no evaluation of WALK Radio's capability to carry out its responsibilities under the Plan (Tr. 7579).

LILCO notes that certain legal developments prevented the testing of the alert and notification system. Specifically, a February 1985 decision of the New York Supreme Court in *Cuomo v. LILCO* (Consol. Index 84-4615) raised the possibility that any sounding of sirens or broadcast of EBS messages might be deemed to be an unlawful exercise of police power. In January 1986, the Suffolk County legislature adopted Local Law 2-86 which imposed civil and criminal sanctions on anyone participating in an exercise activity that could affect the general public. Although that law was enjoined as unconstitutional in *LILCO v. County of Suffolk*, 628 F. Supp. 654, 666 (E.D.N.Y. 1986), that decision,

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<sup>12</sup> Contention EX-16E asserts that Marketing Evaluations, Inc., which has responsibility to verify siren operation and to assess the progress of any evacuation, did not participate in the Exercise. Because the sirens were not sounded and no actual evacuation was demonstrated, we find that there was no need for Marketing Evaluations to participate. *See* Intervenor's Proposed Findings at 43 n.51.

coming only 3 days prior to the Exercise, was too late to permit a test of the alert and notification system to be inserted into the Exercise. LILCO maintains that the system was tested to the fullest extent possible. *See* LILCO Exh. 12 at 16-17.

Intervenors do not agree. They believe that the failure to activate the sirens and EBS system and to interact with WALK Radio is significant in determining whether the Exercise met the standards for full-participation exercises. They testified that it was standard practice in FEMA Region 2 to sound the sirens and air a test EBS message. Tr. 7149. They believe that the sounding of the sirens and accompanying radio broadcasts are a "major observable portion" of the Plan as that term is used in 10 C.F.R. Part 50, Appendix E, ¶ IV.F. They also believe that the failure to activate also necessarily precluded observation and evaluation of critical mechanical and human interactions. Tr. 7183. Specifically, they believe that the following elements were omitted:

1. sounding of the sirens;
2. broadcast of an EBS message;
3. activation of tone alert radios;
4. contact with WALK Radio; and
5. authentication of the EBS message by WALK.

Tr. 7182-84.

LILCO maintains that what was done at the Exercise was sufficient to constitute full participation and that the untested mechanical aspects of the system will be demonstrated during a so-called FEMA-REP-10 test (LILCO Exh. 12 at 32). Given the County's efforts to preclude any testing of the alert and notification system at the Exercise, it ill behooves the Intervenors to complain that steps one through three above were not carried out at the Exercise. Moreover, those efforts clearly dictate the conclusion that testing of these portions of the Plan was not reasonably achievable. Consequently, we do not consider their omission in determining whether the requirements of ¶ IV.F.1 were met.<sup>13</sup>

The last two items, which concern the lack of communication with WALK Radio, present a different question. The record does not reflect whether the County prevented their inclusion in the Exercise, and LILCO concedes that their inclusion would not have involved mandatory public participation. *See* Tr. 6828-33 (Daverio). However, LILCO maintains that the interaction with

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<sup>13</sup> This conclusion also applies to Intervenors' Contention EX-15C, which asserts that there was no evaluation of the adequacy of LERO's public information materials. The local law enacted by the Suffolk County legislature similarly prevented any distribution of those materials and thus prevented any evaluation of their adequacy as a part of the Exercise. We also note that there is no standard objective that covers the public information materials. Tr. 8424-25.

the EBS station is much more mechanical than Intervenor's portray and that FEMA was satisfied with LERO's performance in this regard. *See* LILCO's Reply Findings, Vol. II, at 3 (comment on Intervenor's Proposed Finding 59). This may well be so. Nonetheless, FEMA found that LERO exhibited weaknesses in communications skills.<sup>14</sup> Clearly, accurate communication of the text of EBS messages to the radio station which is to broadcast them is of paramount importance. It is not a mechanical activity that appropriately can be covered in a FEMA-REP-10 test. Consequently, we conclude that the testing of communications with WALK Radio was reasonably achievable and should have been included in the Exercise. We conclude that the alert and notification system was partially tested at the Exercise.

## **2. Evacuation of the EPZ**

Intervenor's assert that the Exercise failed to test various functions related to this topic, which is governed by standard objective 15: Demonstrate the organizational ability and resources necessary to manage an orderly evacuation of all or part of the plume EPZ. This objective was evaluated under the specific objectives EOC 16 and Field 9.

Intervenor's assert in Contentions EX-15H and EX-16B that implementation of protective action recommendations in the water portion of the EPZ and by transients on beaches and in parks was not adequately tested. In Contentions EX-16K and EX-18C(i), Intervenor's assert that the participation of certain commercial bus companies, which are relied upon to furnish buses in the event of an evacuation, was too limited. In Contentions EX-18C(iii) and EX-18C(vi), Intervenor's also assert that the participation of the Nassau County Red Cross, which is relied upon in connection with congregate care centers, and Nassau County itself, which is relied upon to perform police functions in connection with the coliseum, were both too limited. Finally, in Contentions EX-15D and EX-16H, Intervenor's note that procedures related to evacuation of EPZ hospitals were not demonstrated and hospital officials did not participate in the Exercise.

Under EOC 16, FEMA evaluated LERO's organizational ability to manage an orderly evacuation. FEMA observed LERO's ability to coordinate notification of the public and access control on the waters of the EPZ with the Coast Guard. FEMA Exh. 5 at 110; FEMA Exh. 1 at 34. FEMA also verified that the Coast Guard simulated establishing a Maritime Safety Zone and simulated emergency radio broadcasts to all shipping on the distress frequencies, as well as actually dispatching a boat for access control, although there was no objective to evaluate

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<sup>14</sup> FEMA assigned a deficiency to the communications within the EOC and an ARCA because of the confusing state of EBS messages furnished to the press at the ENC. In our forthcoming decision on the contentions related to LERO's performance, we will address these matters in detail.

Coast Guard performance. *See* FEMA Exh. 5 at 109; Tr. 7661. FEMA did not observe any other elements relevant to Contentions EX-15H and EX-16B under either this objective or Field 9. FEMA believes that, in light of the fact that the Exercise occurred in February, further evaluation of the challenged portions of these objectives should await a summer exercise. *See* FEMA Exh. 5 at 111.

LILCO believes that there was an adequate demonstration of the implementation of protective action recommendations. *See* LILCO Exh. 12 at 34. Intervenor's take the position that FEMA should have evaluated the Coast Guard's ability to formulate a message and get that message to boaters within 45 minutes. They point out that the water portion of the EPZ constitutes approximately 50% of the EPZ which, during certain months of the year, might contain large numbers of boaters. NYS Exh. 1 at 121.

The record indicates that the organizational ability and resources necessary to manage an orderly evacuation in the water portion of the EPZ were adequately tested. FEMA either observed or verified the actions that were taken in this regard.

Contentions EX-16K and EX-18C(i) basically concern the participation of bus companies that have agreed to provide buses in the event of an evacuation. In its direct testimony, FEMA notes that it is standard practice in Region II to evaluate a sample of bus companies at each exercise, taking care not to evaluate the same sample at each exercise. In order to evaluate LERO's integrated capability to provide buses, FEMA independently selected eight out of a total of forty-three transit-dependent general population bus routes to be run and "randomly" picked the drivers to run them. FEMA Exh. 5 at 130-31. Each FEMA evaluator who picked a driver accompanied that driver to the bus yard and along the route. FEMA's records do not indicate whether these evaluators may have spoken to bus company officials concerning the availability of buses. However, FEMA did not, as it had indicated it would on page 73 of its testimony filed in this proceeding on April 17, 1984, verify with the bus companies the actual number of buses that were available. Tr. 7680-86.

Intervenor's take the position that, first, FEMA's actions provide an inadequate basis on which to conclude that an adequate number of buses would be available and, second, those actions did not comport with its actions in other exercises where it generally requires that all bus companies affected by the scenario be contacted and verifies with those companies the number of buses that are available. NYS Exh. 1 at 138-39. LILCO believes that there is no reason to doubt that the bus companies would provide the number of buses to which they have agreed, noting that the provision of buses is their only function, and thus there is no reason why the bus companies should have had a greater role in the Exercise. LILCO Exh. 12 at 41-42.

We agree with LILCO. Clearly, what is involved is counting buses. Intervenor's advance no concrete reason why this should be accomplished in con-

nection with an exercise other than the fact that FEMA testified in 1984 that it would do so. There does not appear to be any reason to doubt the bus companies' ability to provide buses and thus no reason to insist on a greater role in the exercise for them.<sup>15</sup>

Contentions EX-18C(iii) and EX-18C(vi) assert that the participation by the Nassau County Red Cross and Nassau County was too limited. Intervenor offered no direct testimony or proposed findings on these contentions, and we see no need to further consider them.<sup>16</sup>

Contentions EX-15D and EX-16H assert that procedures related to the evacuation of EPZ hospitals should have been demonstrated and hospital officials should have participated in the Exercise. Intervenor filed extensive direct testimony on these contentions. NYS Exh. 1 at 92, *et seq.* FEMA points out that sheltering is the primary protective action to be undertaken by EPZ hospitals. Therefore, no objective was included concerning the hospitals and there was no need for them to participate. FEMA Exh. 5 at 114-15. This is in accord with the Licensing Board's holding that it was not necessary to plan for the evacuation of hospitals. *See* LBP-85-12, *supra*, 21 NRC at 844. This holding was, subsequent to the Exercise, remanded to the Licensing Board with directions to require "the applicant to fulfill the same planning obligations with regard to possible hospital evacuation as the Board imposed in connection with the nursing/adult homes." The Board was directed by the Appeal Board to hold the remand in abeyance pending instructions from the Commission. ALAB-832, *supra*, 23 NRC at 154-57, 163. In CLI-87-12, *supra*, the Commission affirmed the remand, but indicated that the Licensing Board might again conclude that hospital evacuation need not be considered. In light of this, we conclude that FEMA correctly excluded any objectives concerning hospitals from the exercise scenario. Moreover, the fact that the Appeal Board directed that the remand be held in abeyance, coupled with the Commission's decision to take review of the Appeal Board's decision, dictates that FEMA's conclusion should remain undisturbed.

We conclude that the exercise of the elements of LERO's organizational ability and resources necessary to manage an orderly evacuation called into question by these contentions complied with ¶ IV.F.1.

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<sup>15</sup> Our conclusion is based on the fact that the bus companies' role is limited to providing buses. Were they also responsible for briefing, equipping, and dispatching drivers, our conclusion would be different.

<sup>16</sup> FEMA notes that one Red Cross representative participated in the EOC throughout the Exercise and that several participated at the Nassau County Coliseum and congregate care centers. FEMA Exh. 5 at 139. LILCO notes that both the Red Cross and Nassau County participated. LILCO Exh. 12 at 42-43.

### 3. *Protective Actions for Schools*

Intervenors raise a number of issues under this heading which cut across several exercise objectives. First, standard exercise objective 19 provides: Demonstrate the organizational ability and resources necessary to effect an orderly evacuation of the schools within the plume EPZ. This objective was evaluated under specific objectives EOC 20 and Field 16. Second, FEMA added specific objective EOC 18 which provides: Demonstrate the organizational ability necessary to effect an early dismissal of schools within the 10-mile EPZ; and a corresponding specific objective, Field 15, which provides: Demonstrate a sample of resources necessary to effect an early dismissal of schools within the 10-mile EPZ. The specific objectives added by FEMA are not covered by a standard objective.

In their contentions, Intervenors assert that a demonstration of sheltering of schoolchildren should have been included as an objective (EX-15E), that there was no observation of the organizational ability necessary to effect an early dismissal of schools (EX-15F), that evacuation procedures for schools were omitted from the Exercise (EX-15G), and that the participation of school officials and personnel, as well as school bus drivers, was too limited (EX-16F, EX-16G, EX-26, and EX-18C(v)).

FEMA testified that, pursuant to the Board's conclusion in LBP-85-12, *supra*, 21 NRC at 858, that "the written emergency plans required by New York State are adequate to provide reasonable assurance that adequate protective measures [at schools] can and will be implemented in the event of an emergency . . .," it did not adopt an objective that would have required a demonstration of the ability to shelter schoolchildren. At the time he was preparing for the Exercise, FEMA's Region II RAC Chairman, Roger Kowieski, was not aware of an evolving FEMA policy that would have dictated that such an objective be included. Further, the FEMA witnesses were of the opinion that school emergency plans are required by the State Board of Education as a part of the school certification process. See FEMA Exh. 5 at 116; Tr. 8394-421, 8596-99.

In its direct testimony, FEMA noted, in response to the allegation that it did not observe any demonstration of the organizational ability to effect an early dismissal of schools, that such an observation could not be made because simulated telephonic advice not to open schools was given to school officials by LERO officials from the latter's homes prior to reporting to the EOC. FEMA Exh. 5 at 117. On cross-examination, the FEMA witnesses equated early dismissal and not opening for the day. Tr. 7595, 7601. They testified that the organizational ability necessary to effect either was demonstrated by the act of telephoning the schools (Tr. 7599-601), and that while the telephone calls were not observed by a FEMA evaluator, they were verified by interviewing the individual who made the calls (Tr. 7595). Thus it appears that, although the

telephone calls were not observed, FEMA nonetheless regards objective EOC 18 as having been met.

Only the Shoreham-Wading River School District participated in the Exercise. Tr. 6848, 6932. Therefore, FEMA based its conclusions with regard to objectives Field 15 and 16 on interviews of those school officials and school bus personnel and on actual observation of the completion of one school bus route using LERO resources. FEMA Exh. 5 at 119. FEMA concluded that the simulated dispatch of seventeen school buses to the Shoreham-Wading River High School<sup>17</sup> and the release of students for transportation to their homes demonstrated these objectives (FEMA Exh. 1 at 43), and that objective Field 16 was only partly met by the Patchogue Staging Area with respect to the bus route run by a LERO bus because of a 40-minute delay in dispatching the bus (FEMA Exh. 1 at 66). The FEMA witnesses believe that a greater degree of participation on the part of the schools is necessary "in order to reach any kind of a conclusion [concerning] the capability of school districts more generally to respond to a Shoreham emergency" (Tr. 7603), and assigned an ARCA recommending that, in the future, all schools must be included in federally evaluated exercises and drills (FEMA Exh. 1 at 41). FEMA had requested such participation prior to the Exercise, but LILCO determined not to invite other school districts to participate. Tr. 7605-09.

In its direct testimony, LILCO offered no explanation of its determination not to invite more school districts to participate. On examination by Staff counsel, LILCO's witness Daverio testified that he was aware of various resolutions and other expressions of opinion concerning emergency preparedness attributed to school districts and related organizations. See NYS Exh. 2, Attach. 7. The following colloquy then took place:

- Q Given the apparent position of these resolutions and petitions, would participation by the schools have been a reasonably achievable objective, in your view, for the February 13th exercise?
- A Given the resolutions as I think I said before, I didn't have direct knowledge that they wouldn't participate but I would have a hard time believing they would have.
- Q . . . was the same view expressed to you by LILCO management?
- A They expressed the view that they did not want to write the letter. And, I assume that was the reason but I don't know.

Tr. 6973-75; *see also* Tr. 6848. This is the only explanation in the record of LILCO's decision not to seek participation by the school districts, although even Intervenors acknowledge that it is unlikely that the schools would have

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<sup>17</sup> Under the Plan, the schools utilize their own resources to implement protective actions with LERO providing backup resources if necessary. LILCO Exh. 12 at 37; Tr. 6940-41.



participated if invited. Intervenor's Proposed Findings at 135. LILCO has committed to seek broader participation by school districts in the future. Tr. 6953.

LILCO maintains that sheltering, early dismissal, and evacuation are activities that are frequently carried out by schools under their existing emergency plans, and consequently, they need not be exercised. Further, LILCO asserts that the means to effect early dismissal were demonstrated, as well as LERO's ability to assist in evacuation. *See* LILCO Exh. 12 at 36-38. On cross-examination, LILCO's witnesses conceded that more schools should have been involved in the Exercise. They adhered to their position, however, that one could infer from the participation that in fact occurred and from the existence of emergency plans in the schools that the affected schools could implement protective actions in the event of a Shoreham emergency. Tr. 6951-53.

Intervenor's have no substantial disagreement with the facts set forth above. They argue that these facts show that FEMA did not conform to its normal practices in the Shoreham Exercise insofar as its evaluation of school preparedness is concerned and that the Exercise did not conform to regulatory requirements. NYS Exh. 1 at 68-84.

All parties recognize that there must be more extensive school participation. We agree that school participation is of great importance. The issue that we must decide is whether the participation that did in fact take place was all that was reasonably achievable. There is nothing in the record that indicates whether the schools would have participated if asked. Indeed, we have only Mr. Daverio's speculation, elicited by Staff counsel, on the reason LILCO management decided not to issue the invitation when asked to do so by FEMA, and the probable response of the schools had an invitation been issued. LILCO bears the burden of proof. *See* 10 C.F.R. § 2.732. It has not established that the school participation that did take place was all that was reasonably achievable. Consequently, we must conclude that greater participation was reasonably achievable.<sup>18</sup>

Certain subsidiary issues concerning the scope of school participation are raised by this record. We decline to decide them. It appears that at the time of the Exercise, guidance on these issues was developing. GM EV-2, the purpose of which is to provide guidance to federal, state, and local government officials with respect to emergency preparedness for schools, came into existence in draft form shortly before the February 13 exercise and was issued on November 13, 1986. As a result, the present policy with respect to participation by schools in exercises differs from that which existed when the Exercise was planned and executed. *See* NYS Exh. 2, Attach. 6; Tr. 8394-96, 8406-08. Given our

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<sup>18</sup> Were the burden of proof on Intervenor's, we would be forced to conclude that they had not demonstrated that greater school participation was reasonably achievable, and consequently decide this issue in LILCO's favor. This is a rare instance when, evidence establishing one condition or the other lacking, the issue must be decided against the party bearing the burden of proof.

conclusion that greater school participation was reasonably achievable, it makes little sense to consider whether the policy with respect to schools in effect at the time of the Exercise was both appropriate under the regulation and satisfied by what transpired.

#### **4. *Ingestion Pathway***

This topic is covered by the following standard exercise objectives:

9. Demonstrate appropriate equipment and procedures for collection, transport, and analysis of samples of soil, vegetation, snow, water, and milk;
11. Demonstrate the ability to project dosage to the public via ingestion pathway exposure, based on field data, and to determine appropriate protective measures, based on PAGs and other relevant factors; and
12. Demonstrate the ability to implement protective actions for ingestion pathway hazards. Contentions EX-15I, EX-16A, EX-37A, EX-37B, EX-37C, and EX-37D raise matters concerning the ingestion exposure pathway.

None of these objectives were evaluated during the Exercise. FEMA takes the position that not "all major planning and preparedness elements incorporated in the 35 exercise objectives . . ." need to be included in every full-scale exercise. It notes that the NRC requested an exercise that emphasized a demonstration of response capabilities within the plume exposure EPZ and did not object when ingestion pathway objectives were not included. Tr. 7529-30. FEMA also notes that there has not been a full-scale exercise of the ingestion exposure pathway at any of the three operating nuclear sites in New York. Tr. 7526-28. Consequently, FEMA agreed with LILCO that ingestion pathway objectives would not be included in the Exercise.<sup>19</sup> FEMA Exh. 5 at 125-26.

LILCO's position is that ingestion exposure pathway objectives need not be tested in order to qualify as a full-participation exercise. LILCO Exh. 12 at 39. Intervenors' position is contrary, although they concede that ingestion pathway objectives are not currently included in exercises at other New York nuclear sites. NYS Exh. 1 at 148-49. State officials testified that they have refused to include such objectives until guidance concerning them is forthcoming from FEMA. Tr. 7208-10, 7232-33. While FEMA apparently has accepted this position on the part of New York State, it acknowledges that ingestion pathway objectives could have been tested and that the major factor dictating that they be excluded was the guidance emanating from Staff that "FEMA emphasize evaluation of the functional areas of emergency preparedness related to the

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<sup>19</sup> LILCO takes the position that it wanted ingestion pathway objectives tested at the Exercise. Tr. 6837.

demonstration of response capabilities within the plume exposure (10-mile) Emergency Planning Zone." Tr. 7239; June 20, 1985 Memorandum for Richard W. Krimm of FEMA from Edward L. Jordan of NRC.

Paragraph IV.F.1 clearly requires, in addition to testing as much of a plan as is reasonably achievable, that each state within the ingestion exposure pathway EPZ participate in the initial full-participation exercise. Thus both Connecticut and LERO, substituting for New York, should have been included and the exercise scenario should have included ingestion pathway objectives.<sup>20</sup> It is unfortunate that these objectives were excluded on the suggestion of the Staff. Nonetheless, that circumstance cannot alter the fact that this Exercise did not meet the requirements of ¶ IV.F.1 in this respect.

## **5. Recovery and Reentry**

Like the ingestion exposure pathway, this topic was not included in the Exercise. It is covered by the following standard objectives:

34. Demonstrate the ability to estimate total population exposure; and
35. Demonstrate the ability to determine and implement appropriate measures for controlled recovery and reentry.

Contention EX-15M asserts that recovery and reentry objectives should have been included in the Exercise. FEMA excluded these objectives for largely the same reasons that it excluded ingestion pathway objectives, plus the fact that the U.S. Environmental Protection Agency had not promulgated final guidance governing these activities. FEMA regards its decision in this regard as consistent with its practice in other full-scale Region II exercises. FEMA Exh. 5 at 128. On cross-examination, the FEMA witnesses indicated that, while recovery and reentry is a major observable portion of the Plan, the lack of final guidance from EPA concerning doses that would be considered acceptable on reentry meant that there was no standard against which to measure Exercise performance. This situation led Region II to agree with New York State officials that it was appropriate to exclude recovery and reentry objectives from New York exercises. These objectives had been included until August 1983. Tr. 7673-79.

LILCO concedes that recovery and reentry activities were excluded from the Exercise despite LILCO's willingness to include them, but does not believe that that fact demonstrates a fundamental flaw. LILCO Exh. 12 at 40-41; Tr. 6921. We conclude that the lack of final EPA guidance on acceptable reentry doses dictates the conclusion that testing these functions was not reasonably

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<sup>20</sup> We cannot agree with LILCO that the requirement for participation by ingestion exposure pathway states merely requires participation to the extent dictated by the scenario. Tr. 6850-52. Such an interpretation would effectively read this requirement out of the regulations.

achievable. Therefore, we do not consider the absence of this demonstration in determining whether this Exercise met the requirements of ¶ IV.F.1.

## 6. *Special Facilities*

Standard objective 18 provides: Demonstrate the organizational ability and resources necessary to effect an orderly evacuation of mobility-impaired individuals within the plume EPZ. This objective was evaluated under specific objectives Field 13 and Field 14. Intervenors assert in Contention EX-16I that officials of nine nursing and adult homes located in the EPZ did not participate, in Contention EX-16J that officials from facilities outside the EPZ that are relied on to receive the special-facility evacuees did not participate, in Contention EX-15K that procedures related to the radiological monitoring and decontamination of these evacuees were excluded, and in Contentions EX-16I and EX-18C(ii) that certain ambulance companies did not participate.

During the Exercise, LILCO assessed the seriousness of the accident and decided to evacuate residents of special facilities. With perhaps two or three exceptions (*see* Tr. 6833-34, 2904 (Daverio)) LILCO's communications with special facilities were simulated. Tr. 7592, 7628 (Baldwin). FEMA evaluated the performance of one ambulance and one ambulette that were sent to two special facilities within the EPZ and then to locations outside the EPZ. There was no test of the availability of facilities outside the EPZ to handle special-facility evacuees. NYS Exh. 1 at 87, 105, 106-07; Tr. 6931 (Daverio). Most special-facility reception centers have yet to be arranged. Tr. 2913 (Daverio); FEMA Exh. 3, Attach. 1, at 12; Harris and Mayer, *ff.* Tr. 2992, at 13. There was no specific test of LILCO's capability to register, monitor, or decontaminate special-facility evacuees. NYS Exh. 1 at 104-05. LILCO takes the position that the techniques are the same as those demonstrated at the Nassau Coliseum for the general population.<sup>21</sup> LILCO Exh. 12 at 40; FEMA Exh. 5 at 127. FEMA did not evaluate whether LILCO had enough ambulances and ambulettes or drivers available to handle an evacuation, although it acknowledged that this was something that it had committed to evaluate in a Shoreham exercise. NYS Exh. 1 at 109-10; Tr. 7689-92 (Kowieski, Keller). FEMA interviewed no ambulance company officials and thus did not evaluate whether ambulance company officials were knowledgeable about what was expected under the Plan. NYS Exh. 1 at 108-10, 112; Tr. 7192-94 (Petrone). FEMA did not evaluate, even on a spot-check basis, the capabilities of the personnel at special facilities inside or outside the EPZ to carry out the actions contemplated under the LILCO Plan. NYS Exh. 1 at 87, 100, 102, 103, 105.

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<sup>21</sup> We will consider this issue in detail under Contention EX-47.

The FEMA witnesses indicated that it is not standard practice to evaluate the capabilities of special-facility personnel. FEMA Exh. 5 at 115. The evidence indicates generally that, with respect to special-facility residents, the Shoreham test was approximately the same as at most other exercises, with the exception that actual phone calls are often made to special facilities at other exercises. NYS Exh. 1 at 100 n.46; Tr. 8663 (Kowieski).

In 1984, FEMA testified that it would evaluate, through a sampling approach during an exercise, the level of coordination between LILCO and adult and nursing homes. Tr. 7662-63 (Keller). In this hearing, the FEMA witnesses stated that this was necessary because such coordination constitutes a major observable portion of the Plan. They took the position, however, that this evaluation did not have to occur during the first Shoreham exercise. Tr. 7663-64 (Keller).

We agree that the level of coordination between LERO and the special facilities should be evaluated and add only that such evaluation must include an evaluation of LERO's ability to communicate with special facilities. Further, we agree that an evaluation of the preparedness of the ambulance and ambulette companies should have been included. No showing has been made that a test of these aspects of the Plan was not reasonably achievable. Consequently we conclude that such an evaluation should have been a part of this Exercise in order to satisfy the requirements of ¶IV.F.1.

We do not agree with Intervenor's that we should disapprove FEMA's practice of declining to review the emergency plans of special facilities themselves. *See* Intervenor's Proposed Findings at 137. No reason is apparent on this record why FEMA's practice should be disapproved. Similarly, we see no reason to reject LILCO's position that the monitoring and decontamination of special-facility populations requires no showing in addition to that made for the general population.

#### **G. Conclusion on Contentions EX-15 and EX-16**

In sum, we find that testing of the following portions of the Plan was reasonably achievable and should have been accomplished:

- a. transmission of an EBS message to WALK Radio and authentication of that message by WALK Radio;
- b. participation by more school districts in the exercise scenario;
- c. implementation of protective actions in the ingestion exposure pathway in both Connecticut and New York; and
- d. coordination and communication between LERO and special facilities, including a review of the preparedness of ambulance companies relied on by LERO.

In reaching these conclusions, we do not question the oft-repeated testimony of the FEMA witnesses that the February 13, 1986 Exercise was as compre-

hensive as any conducted in FEMA Region II up to that time. *See, e.g.*, FEMA Exh. 5 at 92, 105; Tr. 7633, 7645-46, 8476, 8491. However, the fact remains that the exercise scenario failed to properly take the Commission's regulatory requirements for initial full-participation exercises into account. As a result, the Exercise failed to test some parts of the Plan that reasonably could have been tested, and therefore failed to comply with 10 C.F.R. Part 50, Appendix E, ¶ IV.F.1.

## II. CONTENTION EX-21

### A. The Allegations

Contention EX-21 alleges that FEMA had insufficient data to support the conclusion that certain exercise objectives were met. The sample sizes used by FEMA in making its review, it alleges, were much too small to support FEMA's conclusions concerning these objectives.

While Contention EX-21 was admitted as an independent contention, it is closely related to and was heard with Contentions EX-15 and EX-16. In their proposed findings (at 146-47) Intervenor's point out that the conceptual difference between the contentions is that Contention EX-21 focuses on whether FEMA had a valid basis to find that particular Shoreham objectives had been satisfied, while Contentions EX-15 and EX-16 focus on Appendix E. For decisional purposes, they believe Contention EX-21 is best addressed as a further basis for the Intervenor's position that the Shoreham Exercise was too limited.

In Intervenor's view, most of the factual matters raised in Contention EX-21 and which are the subject of dispute, namely the sufficiency of school (EX-21C), bus (EX-21B), and special-facility (EX-21D) testing, are covered in Contentions EX-15 and EX-16. In our discussion of those contentions, we concluded that the testing of schools and special facilities had been insufficient to comply with ¶ IV.F.1 of Appendix E, and we do not address these matters again. We did not reach the same conclusion with respect to buses, because Intervenor's position boiled down to the proposition that available buses should have been counted during the Exercise. The question of the adequacy of the sample of bus drivers tested by FEMA was raised only by Contention EX-21; that question is discussed below.

Two subparts of Contention EX-21 — dealing with Traffic Guides and Congregate Care Centers — were not addressed in great detail or at all by Intervenor's in the context of that contention. Intervenor's state that there was no substantial evidence to support the view that the Exercise was too limited with respect to the Traffic Guides (EX-21E). Intervenor's Proposed Findings at 146 n.145; Suffolk Exh. 99 at 62-63; Tr. 7393-94 (Simon) (County's witness does not strenuously criticize looking at 32 of 165 Traffic Guides). On the question

of Congregate Care Centers, Intervenor offered no testimony in support of the allegations in Contentions EX-15L, EX-32, EX-22K, and EX-16N, which were not separately admitted, but considered as additional bases for Contention EX-21. We do not address either of these matters.

The alleged failure of FEMA to include a realistic number of road impediments (EX-21F) will be dealt with in connection with Contention EX-41. The only other Contention EX-21 factual area concerns the testing of LILCO's Route Alert Drivers (EX-21A), who are to provide notification to the public in the event of siren failures. The route alerting situation is discussed below.

## B. Suffolk County's Testimony

Suffolk's witness on Contention EX-21 was Dr. Gary A. Simon, an Associate Professor of Statistics at New York University's Graduate School of Business Administration. Suffolk Exh. 99. Dr. Simon testified that the evaluation of the Exercise was done without reasonable thought as to sample sizes or random selection mechanisms. *Id.* at 5.

The FEMA evaluation was a decisionmaking investigation, designed to determine whether Exercise objectives were met, based on the performance of particular emergency functions. Dr. Simon believes that, in order for FEMA to determine the appropriate size of the samples it reviewed, it should have specified in advance its target value (what proportion of adequate player performances constitutes meeting the Exercise objective), its bad value (what proportion of inadequate performance would constitute unambiguously or definitely not meeting the Exercise objective), and the probability with which it wished to be able to make that distinction. A large sample selected without regard to these criteria will nonetheless succeed in revealing blatant aspects of the population. Small samples, on the other hand, will produce results with such large error bounds that they are virtually meaningless. *Id.* at 16-17; Tr. 7404-05. LILCO and FEMA agreed that the use of small samples produces results that are subject to wide statistical variation. Tr. 7300 (Daverio); Tr. 8480 (Kowieski).

Dr. Simon testified that, from what he had been able to review, FEMA essentially made no reasoned sample-size decisions based on what it was trying to determine or how accurately it was trying to determine it. A casual, haphazard selection process, as opposed to randomization, was used by FEMA in its evaluation.<sup>22</sup> He believes that FEMA's failure to use the principles of random sampling, at least in some modified form, greatly diminishes the validity of

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<sup>22</sup> Tr. 7292 (Daverio). As witness Daverio pointed out, a nonstatistical synonym for "random" is "haphazard." In statistics, however, "random selection" refers to a process in which every item or individual in the population has the same probability of being selected; a selection process that depends on chance but in which procedures are not taken to ensure equal probability of selection is referred to as "haphazard." Our use of these terms will be consistent with the statistical definitions.

FEMA's conclusions. Suffolk Exh. 99 at 18; Tr. 7367-68. FEMA acknowledged that its method of selection was haphazard. Tr. 8582-83 (Baldwin, Keller, Kowieski).

Subcontention EX-21A alleges that only three Route Alert Drivers, one from each Staging Area, were dispatched by LERO during the Exercise in response to simulated siren failures, and that this small sample of Route Alert Drivers observed invalidates FEMA's conclusion with respect to objectives Field 5, SA 9, and EOC 15. Suffolk Exh. 99 at 27-28.

Dr. Simon testified that a sample size of three out of a total of sixty was not enough to reach a valid conclusion about the entire population of Route Alert Drivers. *Id.* at 28. Nor was a sample of one driver out of a total of twenty in each staging area sufficient to justify conclusions about the entire population of drivers in each staging area. Because of the small sample sizes, Dr. Simon believes that there was no basis for FEMA to conclude that exercise objective Field 5 was "partly met" at each Staging Area.<sup>23</sup>

Subcontention EX-21B alleges that FEMA observed only two bus drivers from each of the Riverhead and Port Jefferson Staging Areas, whereas 100 bus drivers are required to make 139 trips out of the Riverhead Staging Area, and 108 bus drivers are required to make 169 trips out of the Port Jefferson Staging Area. Suffolk alleges that FEMA's conclusions that objective Field 9 was met at the Riverhead and Port Jefferson Staging Areas are without basis and invalid. At the Patchogue Staging Area, FEMA observed four bus drivers, and on the basis of their inadequate performance concluded that objective Field 9 was not met. Based on its observations of these eight drivers making a total of eight runs, of which three were judged unsatisfactory, FEMA concluded that objective EOC 16 was met. Suffolk alleges that the small sample size invalidates this conclusion. Suffolk Exh. 99 at 36-37.

Dr. Simon testified that observing 8 out of a total of 333 bus drivers is inadequate to determine whether there are significant departures from the desired performance targets or to determine the actual probability of good performance from the population as a whole. Moreover, since at least three of the eight drivers in the sample performed inadequately, a positive conclusion concerning

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<sup>23</sup> Suffolk Exh. 99 at 29. Dr. Simon presented some hypothetical statistics based on a sample size of three taken from a population of sixty, to show what the 95% confidence limits would be in zero to three successes in the three samples. For only one success out of three, the result would be: it is 95% certain that anywhere from one to fifty-one of sixty Route Alert Drivers would perform properly. For three out of three, the result would be: it is 95% certain that anywhere from twenty-three to sixty out of sixty Route Alert Drivers would perform properly. Dr. Simon characterized these confidence intervals as "terribly wide." *Id.* at 33-34. If a sample size of ten were used with a target value of 75% proper performance and a range of "bad" values from 0% to 35%, one could make distinctions with a confidence of 70%. Finer distinctions would require still larger sample sizes. *Id.* at 35.



the performance capabilities of the entire population would be particularly improper.<sup>24</sup>

### C. Discussion and Conclusion

Dr. Simon's testimony was essentially unchallenged, and appears to accurately reflect, from a statistical standpoint, the nature of FEMA's observations on these points. LILCO took the position in its proposed findings (at 56-58) that it was not necessary to employ the statistical techniques advocated by Dr. Simon for purposes of evaluating emergency planning exercises. Staff views Dr. Simon's testimony as failing to allege or prove: first, that a fundamental flaw exists in the Plan, and, second, that FEMA's method of observation is unreliable. Staff also views the testimony as a challenge to the regulations.<sup>25</sup> Staff Proposed Findings at 32-39.

In their proposed findings (at 149-51), Intervenor's note that the definition of "Full participation" contained in footnote 4 to ¶ IV.F.1 requires "mobilization of . . . personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario." They raise the question whether FEMA's sampling technique permits any valid conclusions with regard to response capability, given its statistical infirmities. However, they also note that LILCO and FEMA correctly point out that the regulations do not call for any statistically valid technique, and that FEMA's expertness and experience enable it to reach a judgment with regard to performance. They urge that neither position be accepted in full. They also urge us not to decide the issue. Based on this, in its reply findings (at 25-26), LILCO urges that this contention be dismissed.

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<sup>24</sup> Suffolk Exh. 99 at 40; Tr. 7377. Again Dr. Simon presented a table of hypothetical statistics to show what results could be expected from a sample of 8 out of a population of 333. *Id.* at 41. With five out of eight bus drivers performing adequately, as FEMA found during the Exercise, the confidence interval ranges from 29% to 89%; that is, it is 95% certain that between 29% and 89% of the LERO bus drivers could adequately perform their jobs in a Shoreham accident. In Dr. Simon's opinion, this result does not support the conclusion that there is reasonable assurance that the busing plan can and will be implemented effectively. In addition, Dr. Simon criticizes FEMA's haphazard selection of the bus drivers to be observed, as opposed to random selection. He believes a haphazard selection process could be a good substitute for a scientifically random process, but states that we have no way of knowing what kind of biases were introduced into the process. For example, he suggests the selections might have been based upon the ease of FEMA evaluators to observe particular bus routes, which may have resulted in selection of routes that were particularly easy, or particularly difficult, etc. But even if the selection had been properly randomized, the small sample sizes would still have precluded reasonable findings. *Id.* at 42-43; Tr. 7377-78, 7396-97.

<sup>25</sup> Staff, citing Tr. 7609, claims that Dr. Simon stated, in concluding his testimony, that the NRC regulations should require random statistical sampling. We find no statement by Dr. Simon on the cited transcript page. At Tr. 7408-09, however, Staff counsel Barth asked Dr. Simon, "Is it your view that the NRC should require statistical samples in these exercises?" Dr. Simon replied, "Well, you know, it is like asking a Minister if he believes in God, I suppose. It is a statistical Article of Faith that samples randomly selected have many features that make them desirable and appropriate. So, the answer is, 'yes.'" With that counsel Barth concluded his questions. If Staff intended to cite this exchange to support the position that Dr. Simon's testimony was a challenge to the regulations, we strongly disagree — it looks more like the witness was being set up. Dr. Simon's response was an honest, if whimsical, answer to a devious question, the subtlety of which we believe he did not appreciate.

We are happy to accept Intervenors' invitation to refrain from deciding what appears to us to be a complicated issue. While Dr. Simon's conclusions regarding the statistical validity of FEMA's observations of route alert and bus drivers appear to be beyond question, the issue of whether statistically valid sampling techniques are required involves considerations far beyond those dealt with at this hearing. Consequently we reach no conclusion as to the requirements of footnote 4 to ¶ IV.F.1, and have included a discussion of Dr. Simon's testimony so as to bring this issue to the attention of the Commission.

### III. CONCLUSION

We have concluded, for the reasons indicated in the foregoing, that the February 13, 1986 Exercise of the offsite emergency plan for the Shoreham Nuclear Power Station did not comply with the requirements of 10 C.F.R. Part 50, Appendix E, ¶ IV.F.1.

In accord with 10 C.F.R. § 2.760(a), this Partial Initial Decision will constitute the final action of the Nuclear Regulatory Commission thirty (30) days after its date unless an appeal is taken. In accordance with 10 C.F.R. § 2.762(a), any party may take an appeal by filing a notice of appeal within ten (10) days after service of this Partial Initial Decision.

THE ATOMIC SAFETY AND  
LICENSING BOARD

Oscar H. Paris  
ADMINISTRATIVE JUDGE

Frederick J. Shon  
ADMINISTRATIVE JUDGE

John H Frye, III  
ADMINISTRATIVE JUDGE

Bethesda, Maryland  
December 7, 1987

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

Docket No. 50-341

DETROIT EDISON COMPANY, *et al.*  
(Enrico Fermi Atomic Power  
Plant, Unit 2)

December 8, 1987

The Director of the Office of Nuclear Reactor Regulation denies the petition filed by the Government Accountability Project pursuant to 10 C.F.R. § 2.206, requesting the U.S. Nuclear Regulatory Commission to take certain actions with regard to Detroit Edison Company's "employee concern" program at Fermi-2 Plant entitled SAFETEAM, due to the absence of a substantial health and safety issue that could cause the Staff to initiate show-cause proceedings.

**DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206**

***I. Introduction***

The Government Accountability Project (GAP or the Petitioner) submitted a Petition dated May 7, 1987, pursuant to 10 C.F.R. § 2.206, on behalf of the Safe Energy Coalition of Michigan and the Sisters, Servants of the Immaculate Heart of Mary Congregation, requesting that the U.S. Nuclear Regulatory Commission (the NRC) take certain actions with regard to Detroit Edison Company's (Licensee) "employee concern" program entitled SAFETEAM at Fermi-2 Plant and, as necessary, modify, suspend, or revoke the facility's operating license. The actions GAP has requested the NRC to take with regard to SAFETEAM include (1) taking possession of all the SAFETEAM files, reviewing the safety-related allegations, and making these concerns public; (2) requiring that all SAFETEAM allegations be processed by the Licensee in accordance with 10 C.F.R. Part 50, Appendix B; and (3) requiring the Licensee to inform all its employees about

the SAFETEM program before the employees choose to submit information to the program rather than submitting information to the NRC.

As bases for these requests, GAP asserts that (a) allegations of wrongdoing were identified; that is, workers who turned over allegations to the SAFETEM were harassed, fired, or otherwise discriminated against; (b) the Office of Investigations (OI) did not analyze the safety significance of the investigative shortcomings of the SAFETEM program; (c) the SAFETEM program was not being properly implemented and was ineffective; (d) SAFETEM interviewers are inadequately trained; (e) deficiencies reported to the SAFETEM are not recorded on nonconformance reports and are not evaluated by the site quality assurance/quality control staff; and (f) there is no quality check or accountability for the SAFETEM program.

## **2. Background**

The SAFETEM program at the Fermi-2 plant was instituted in 1983 and implemented voluntarily by the Licensee to assist plant managers in the early identification and investigation of errors or omissions during all phases of plant construction and operation. The program, in principle, provides an opportunity for site workers to express, in confidence, concerns that may not be recognized or effectively responded to through normal channels of communication within the Licensee's organization. The program is designed to provide early identification and correction of problems pertaining to public safety, industrial safety, and other less significant problems. The Licensee considers the program to be a safety net surrounding the project. The SAFETEM program is not required by current NRC regulations and is separate and independent from the Licensee's programs and controls required to comply with NRC regulatory requirements. These latter programs are inspected against existing NRC regulations and license requirements.

As a result of allegations received by the NRC in 1985 expressing concern with the SAFETEM program, the Licensee agreed to complete a review of the SAFETEM program prior to the Commission's consideration of the issuance of a full-power operating license for Fermi-2. At that time, the SAFETEM files contained approximately 750 concerns. Based on discussions held with the NRC, the Licensee agreed to sample at least 50% of the safety-related concerns on file. The NRC regional inspection staff then reviewed all of the SAFETEM files with the Licensee in order to appropriately classify concerns having potential safety significance. All of the safety-related concerns were then divided equally between the Licensee and the NRC inspectors for subsequent review. In addition, the NRC randomly reviewed about 20% of the safety-related concerns initially reviewed by the Licensee. Further, the OI independently investigated the SAFETEM program, at the request of the Region III Regional

Administrator, to assess the adequacy and effectiveness of the SAFETEM program and its implementation in the identification, disposition, and resolution of both the technical and wrongdoing issues.

As a result of these inspections and the OI investigation, certain programmatic weaknesses were identified; however, safety-related concerns were found to have been properly addressed by the Licensee. The results of the NRC inspection findings were documented in NRC Inspection Report Nos. 50-341/85029 and 50-341/85037, and were discussed during a subsequent Commission meeting (see Commission Meeting Transcript, July 10, 1985, at 27-34). SAFETEM issues were deliberated and no impediments to full-power licensing were found by the NRC.

### 3. Discussion

The NRC has reviewed the Petitioner's request that a proceeding be initiated to modify, suspend, or revoke the Fermi-2 license pursuant to § 2.206 in light of the assertions made in the May 7, 1987 Petition concerning the Fermi-2 SAFETEM program. The NRC findings and determinations relative to each asserted basis follow:

(a) *Workers Who Turned Over Allegations to the SAFETEM Were Harassed, Pressured, Forced to Quit, Fired, or Otherwise Discriminated Against*

The Petitioner provides no specific information to support its claim. None of the NRC inspections or the OI evaluation of the SAFETEM identified any concern regarding discriminatory action against workers because they had turned over allegations to the SAFETEM. Notably, the Safe Energy Coalition of Michigan (SECOM) was requested by letter dated March 30, 1987, before the § 2.206 Petition was filed, to provide specific factual information related to any safety issue. SECOM has not responded to the NRC request.

(b) *OI Did Not Analyze the Safety Significance of the Investigative Shortcomings of the SAFETEM Program*

The Petitioner is correct in that OI did not analyze the safety significance of the discrete inspection matters contained in the SAFETEM program. This is not the function of OI. The purpose of the OI independent review of the SAFETEM program was to evaluate the SAFETEM process. OI investigated the SAFETEM program for overall adequacy and effectiveness; the SAFETEM program was specifically checked to determine how issues of po-

tential safety significance and/or wrongdoing were identified, investigated, and ultimately resolved. It is a matter of record that OI identified deficiencies in the program. In a letter to James G. Keppler from Ben B. Hayes, dated October 4, 1985, OI determined that:

the Fermi Safeteam Program was not staffed or supervised by experienced investigative personnel. It was also discovered that interviews, in many cases, lacked sufficient information because of this apparent inexperience. OI bases this conclusion on the fact that the interviews which were reviewed in the investigative files could not provide information concerning basic questions such as who, what, when, where, how or why. The Fermi Safeteam Program, therefore, did not exhibit the characteristics normally attributed to an investigative activity.

Notwithstanding this finding and a similar conclusion reached by the regional inspection staff, the NRC concluded that the technical issues identified in SAFETEAM file cases were satisfactorily resolved and they did not impact public health and safety. This review is documented in NRC Inspection Report No. 50-341/85037 (§ 4.b at 7 and § 12.e at 14-15).

*(c) The SAFETEAM Program Was Not Being Properly Implemented and Was Ineffective*

The Petitioner reiterates findings contained in NRC Inspection Report No. 50-341/85037 and those resulting from GAP's own interview of site workers who have expressed dissatisfaction with the SAFETEAM process. However, as stated above, the Licensee was informed of the programmatic weaknesses of the SAFETEAM program and has since improved the effectiveness of its voluntary program. The programmatic weaknesses cited by the Petitioner (at 4-5 of the Petition) are taken from NRC Inspection Report No. 50-341/85037 (at 15). Although the Petitioner highlights the weaknesses, it fails to acknowledge the follow-on conclusion which states:

Although some flaws were identified . . . an overall good effort went into the SAFETEAM project . . . Overall the inspectors believe the packages were complete and well documented and the concerns were adequately addressed.

Because the SAFETEAM program is a voluntary program and the special inspections and OI evaluation identified no safety-related concerns that were not properly addressed, the NRC considers this issue resolved. No additional inspection of the SAFETEAM program has been conducted nor is one contemplated.

*(d) SAFETEM Interviewers Are Inadequately Trained*

The Petitioners state (at 6 of the Petition):

Another basic problem with the SAFETEM system results from the inadequate training SAFETEM interviewers receive in the areas of allegation investigation, and nuclear power plant regulation.

This shortcoming was identified by both the independent OI and the regional inspection staffs from their reviews of the SAFETEM process. The OI evaluation report was especially critical of this shortcoming. Notwithstanding this shortcoming, the NRC found no impact on public health and safety. The Licensee has improved the overall effectiveness of the SAFETEM program processes.

*(e) Deficiencies Reported to the SAFETEM Are Not Recorded on Nonconformance Reports and Are Not Evaluated by the Site Quality Assurance/Quality Control Staff*

The Petitioner asserts (at 8 of the Petition) that because of deficiencies that exist in the documentation of SAFETEM reviews, a large number of safety-related deficiencies are allowed to exist in the SAFETEM files without requiring compliance with federal regulations. Existing federal regulations (i.e., 10 C.F.R. Part 50, Appendix B) address the handling and disposition of safety-related deficiencies. Furthermore, none of the special inspections or the OI evaluation identified deficiencies in the Licensee's treatment of safety-related issues with respect to the requirements of Part 50, Appendix B. The NRC inspectors have found (as documented in NRC Inspection Report No. 50-341/85037 at 15) that appropriate action is being taken to resolve safety-related matters brought to the attention of the SAFETEM by site workers.

*(f) There Is No Quality Check or Accountability for the SAFETEM Program*

The Petitioner states (at 8 of the Petition):

The NRC has provided the SAFETEM with a mechanism to avoid regulatory accountability for violations of federal requirements. The program does not even attempt to comply with 10 C.F.R. Part 50, Appendix B criteria.

While the NRC encourages programs like SAFETEM, such programs are voluntary and are not required by NRC regulations. The requirements of Part

50, Appendix B, have been and are currently adequately implemented by the Fermi-2 quality assurance program.<sup>1</sup>

#### 4. Conclusion

In summary, the asserted concerns regarding the SAFETeam program have been reviewed by the Licensee and the NRC, including a review by NRC OI. These reviews indicate that there is no support for the relief requested in the Petition and that there is an absence of a substantial health and safety issue that would cause the Staff to initiate show-cause proceedings. *See Northern Indiana Public Service Co. (Bailly Generating Station, Nuclear-1), CLI-78-7, 7 NRC 429, 433-34 (1978), aff'd sub nom. Porter County Chapter of the Izaak Walton League, Inc. v. NRC, 606 F.2d 1363 (D.C. Cir. 1979)).*

Accordingly, the Petitioner's request for action pursuant to § 2.206 is denied.

FOR THE NUCLEAR  
REGULATORY COMMISSION

Thomas E. Murley, Director  
Office of Nuclear Reactor  
Regulation

Dated at Bethesda, Maryland,  
this 8th day of December 1987.

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<sup>1</sup> The Petitioner also argues that allegations received by SAFETeam must be processed in accordance with NRC Manual Chapter 0517 (Petition at 14-17). This argument is misplaced. Manual Chapter 0517 makes clear that the policies and procedures set forth therein apply only to allegations "received for resolution by NRC offices." *See* Chapters 0517-01 and 0517-022. The policies and procedures of these Manual Chapters are internal NRC procedures which are not applicable to allegations received by a licensee through the SAFETeam program.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

Docket Nos. 50-498-OL  
50-499-OL

HOUSTON LIGHTING AND  
POWER COMPANY, *et al.*  
(South Texas Project, Units 1  
and 2)

December 13, 1987

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by Lanny Sinkin on behalf of Citizens Concerned About Nuclear Power, Inc. (CCANP) requesting that the record in the South Texas Nuclear Project (STNP) licensing hearings be reopened and that fuel loading be suspended. CCANP based its request on testimony of intimidation and harassment by NRC personnel before a Senate Committee, which CCANP claims sheds doubt on the credibility of NRC witnesses at the STNP licensing hearing.

**RULES OF PRACTICE: PETITIONS UNDER 10 C.F.R. § 2.206**

The Nuclear Regulatory Commission, having already considered and resolved in a licensing proceeding the issues that a petitioner raises, need not reconsider those issues if the petitioner provides no information relating the testimony before Congress with the specific facility and petitioner already had an opportunity to examine NRC witnesses to determine credibility at the prior hearing. Conjecture by petitioners is not enough.

## **THE STANDARDS FOR INITIATING PROCEEDING UNDER 10 C.F.R. § 2.206**

The standards for initiating a proceeding under 10 C.F.R. § 2.206 based on alleged defects in the earlier licensing hearing record is the same as that for a motion to reopen under 10 C.F.R. § 2.734 (i.e., requiring a demonstration that a different result would be reached).

## **DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206**

### **INTRODUCTION**

On May 29, 1987, Lanny Sinkin, on behalf of Citizens Concerned About Nuclear Power, Inc. (CCANP or Petitioner), filed a motion before the Commission requesting that the record in the South Texas Nuclear Project (STNP) licensing hearings be reopened and that fuel loading, then scheduled for June 1987, be suspended pending resolution of the matters described in the motion. By Memorandum and Order dated July 24, 1987, the Commission denied the request for a stay of fuel loading and referred the remainder of the motion to the Staff for consideration under 10 C.F.R. § 2.206.<sup>1</sup>

In its motion, entitled "Intervenor Citizens Concerned About Nuclear Power, Inc. Motion to Reopen the Record," the Petitioner asserted that the Atomic Safety and Licensing Board (ASLB or Licensing Board) decisions with regard to STNP should be altered. The Petitioner asserted as grounds for this request that, based upon testimony given by NRC witnesses during hearings commencing on April 9, 1987, before the Senate Committee on Governmental Affairs, there is evidence of intimidation and harassment of NRC personnel in Region IV which sheds doubt on the credibility, accuracy, and objectivity of the testimony presented by NRC personnel in the operating license proceeding on which the Licensing Board relied in reaching its decisions.

By letter dated August 27, 1987, the Petitioner was informed that its petition would be treated under § 2.206 of the Commission's regulations and that a decision would be issued within a reasonable amount of time.

The evaluation of matters raised by the Petitioner have now been completed, and for the reasons stated in this Decision, the Petitioner's request is denied.

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<sup>1</sup> The Office of Nuclear Reactor Regulation authorized a low-power license for STNP Unit 1 on August 21, 1987.

## DISCUSSION

A brief historical review is helpful at this point in order to respond to the Petitioner's concerns.

An Atomic Safety and Licensing Board conducted hearings involving the application for operating licenses for the South Texas Nuclear Project, Units 1 and 2, by Houston Lighting & Power Company (HL&P), the City Public Service Board of San Antonio, Central Power and Light Company, and the City of Austin, Texas (hereinafter referred to collectively as the Applicants). HL&P was the Lead Applicant and was designated the responsibility for constructing and operating the plant. This proceeding was divided into three phases. The first phase included various contentions that bear on the managerial character and competence of HL&P to operate nuclear facilities. The intervenors in that proceeding included the Petitioner here, CCANP.<sup>2</sup> As a result of information that was revealed during the course of the Phase I hearings — particularly (1) the issuance of the Quadrex Report, a consultant's study that was extremely critical of the design-engineering efforts of HL&P's contractor, Brown & Root, Inc. (B&R), and (2) the subsequent replacement of B&R by new contractors — the ASLB was not able to complete the record on the character and competence issues. The ASLB deferred to Phase II those issues that were not resolved in Phase I.<sup>3</sup>

In Phase II, the ASLB considered five additional issues related to character and competence, one issue related to the Applicants' quality assurance program for operation, and a contention dealing with the design and construction of the STNP to withstand hurricanes.<sup>4</sup> The ASLB found that, subject to certain caveats, HL&P possessed adequate managerial character and competence for the Applicants to be granted operating licenses for STNP Units 1 and 2.

In Phase III, two aspects were considered related to the contention dealing with the adequacy of the design and construction of STNP to withstand hurricanes and hurricane missiles<sup>5</sup> In its Partial Initial Decision for Phase III, the ASLB authorized the Staff to issue licenses permitting fuel loading and low-power operations upon completion of its technical review.<sup>6</sup>

On October 8, 1986, the Atomic Safety and Licensing Appeal Board, *sua sponte*, reviewed and affirmed the last two of the Licensing Board's decisions. ALAB-849, 24 NRC 523 (1986). The Commission did not review the

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<sup>2</sup> The only other intervenor besides CCANP was Citizens for Equitable Utilities, Inc. (CEU). CEU withdrew from the proceeding prior to the Phase I hearings.

<sup>3</sup> LBP-84-13, 19 NRC 659 (1984), *aff'd in part*, ALAB-799, 21 NRC 360 (1985), *review declined by the Commission*, Letter dated July 30, 1985.

<sup>4</sup> LBP-86-15, 23 NRC 595 (1986).

<sup>5</sup> LBP-86-29, 24 NRC 295 (1986).

<sup>6</sup> *Id.* at 318.

Appeal Board's decision, and it became a final agency decision in December 1986.

On April 9, 1987, Senator John Glenn, Chairman of the Senate Committee on Governmental Affairs, held hearings to examine, among other matters, the conduct of certain NRC actions, none of which is directly related to the South Texas Nuclear Project.

The thrust of the petition is that, based on the statements made by a number of individuals before this Committee of Congress, the validity of the testimony heard and certain other information considered by the ASLB in the *South Texas* hearing is brought into question. The Petitioner suggests that both the Staff's testimony and a response filed by the Staff (treated by the ASLB as a response to a motion for summary disposition) may be biased as a result of undue influence by NRC management at Region IV and/or Headquarters. For this reason, the Petitioner requests that further hearings be held to permit examination of all NRC witnesses testifying in the *South Texas* proceeding as well as of other witnesses who provided information to the NRC's Office of Inspector and Auditor (OIA Investigator, Mr. George Mulley.<sup>7</sup> For the following reasons, the relief requested is denied.

The only testimony referenced by the Petitioner that was given before the Senate Committee on Governmental Affairs which is arguably pertinent to the relief sought by the Petitioner is that given by Messrs. H. Shannon Phillips and George Mulley.<sup>8</sup> However, their testimony, as well as the OIA investigation that was the subject of their testimony, both pertain to circumstances arising in connection with the Comanche Peak Steam Electric Station, another facility located in the State of Texas but being constructed by wholly different applicants than the South Texas Nuclear Project.

Messrs. Mulley and Phillips have been consulted by NRC Staff, and it has been determined that their testimony before Congress on April 9, 1987, was not intended by either to raise concerns about the South Texas Nuclear Project review performed by the Staff. Mr. Phillips also confirms that neither the testimony that he gave in the *South Texas* proceeding as a member of the NRC Staff panel nor his inspection efforts at the South Texas facility were biased as

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<sup>7</sup>In March 1986, OIA initiated an investigation concerning allegations by an NRC inspector, Mr. H. Shannon Phillips. Mr. Phillips had alleged that he had been intimidated and harassed by his superiors in the NRC's Region IV for reporting safety problems. Mr. Mulley and Mr. Phillips subsequently testified before the Senate Committee on Governmental Affairs regarding this investigation at the April 9 hearing.

<sup>8</sup>The Petitioner also provides excerpts of statements by Senator Glenn, Julian Greenspun, who, as Deputy Chief of Litigation in the General Litigation section of the Criminal Division of the Department of Justice, had supervised the prosecution of criminal violations of NRC regulations, and Ben Hayes, the Director of the NRC's Office of Investigations (OI). These excerpts are general statements that do not raise issues concerning the credibility of the evidence relied upon by the Licensing Board in reaching its decision in the *South Texas* proceeding, nor has the Petitioner attempted to show how these statements relate to the *South Texas* proceeding. Absent such a showing, further action with regard to this testimony is not warranted. See, e.g., *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), DD-85-11, 22 NRC 149, 154 (1985).

a result of influence by either Region IV or Headquarters management. Like assurances have been obtained from Mr. Shewmaker and Mr. D.W. Hayes, the other members of the Staff's witness panel that testified in the *South Texas* proceeding.

With respect to the Staff's testimony relating to the summary disposition ruling discussed by the Petitioner,<sup>9</sup> no substantive reason is presented to question the veracity of the statements made under oath by the Staff witnesses. The essence of Petitioner's assertions regarding this matter is that the Staff "grossly abused the use of 'open items' to avoid writing up violations," so as not to hinder the Applicants from obtaining operating licenses for STNP. However, no specific information regarding the South Texas Nuclear Project is given in the petition to support this assertion, which rests only on the inferences drawn by Petitioner from a reading of the statements made before Congress. As discussed above, Mr. Phillips, who was a principal inspector at the South Texas Nuclear Project, has confirmed that both his testimony and his inspection efforts were unaffected by pressure from either Region IV or Headquarters management. Thus, there is no reason to question the categorization of deficiencies found as either open items or violations.

In addition, the Petitioner's request does not seek to raise any new substantive issue but, at most, requests an opportunity to challenge the credibility of the testimony and a summary disposition granted by the ASLB. This opportunity was already afforded in the context of the hearing held in the past. The Petitioner, as a party to the proceeding, had full opportunity to cross-examine every Staff witness concerning the preparation of his testimony to determine whether there was any bias that might affect the weight to which it was properly entitled. And while the specific statements and views more recently made known through the OIA report and subsequent congressional testimony were not available to the Petitioner at the time of the hearing, there is no reason given by the Petitioner to believe that information regarding NRC management influence could not have been elicited at that time if it could be shown to be at all relevant to the *South Texas* proceeding, as opposed to Comanche Peak. Indeed, a review of the cross-examination of the Staff panel, which notably included one of the individuals who recently testified before Congress (Mr. Phillips), reveals that the panel's credibility was in fact questioned. See Tr. 9872. Consequently, the credibility of the Staff and the weight to be given its evidence was considered by the Licensing Board in its decisions. With respect to the summary disposition ruling cited by the Petitioner, the ASLB had found that the Petitioner had failed to provide any

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<sup>9</sup> The ruling in question occurred when the ASLB granted summary disposition during the Phase II proceeding for the remaining management competence issues. CCANP had contended that summary disposition was inappropriate since all open items in I&E inspection reports constituted unresolved factual questions bearing on the adequacy of Applicants' competence. LBP-86-15, 23 NRC at 629-36.

reasons why any particular open items should have been classified as a violation and had not even attempted to relate particular open items to the NRC criteria for violations. 23 NRC at 635-37. The record thus demonstrates that the Petitioner failed to thoroughly pursue the open-item issue at the time of the hearing in the *South Texas* proceeding.

The principle is firmly established that parties must be prevented from using § 2.206 procedures as a vehicle for reconsideration of issues previously decided. *See General Public Utilities Nuclear Corp.* (Three Mile Island Nuclear Station, Units 1 and 2; Oyster Creek Nuclear Generating Station), CLI-85-4, 21 NRC 561, 563-64 (1985) (citing cases). In this regard, the Commission's denial of a petition to review a Director's Decision under § 2.206 in *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), CLI-78-7, 7 NRC 429, 434 (1978), provides significant precedent. There, the Commission stated:

The Director properly has discretion to differentiate between those petitions which, upon examination, indicate that substantial issues have been raised warranting institution of a proceeding, and those which seek to reopen issues previously resolved, or those which serve merely to demonstrate that in hindsight, even the most thorough and reasonable of forecasts will prove to fall short of absolute prescience.

Here, nothing presented in the petition rises to more than mere speculation that, in connection with the *South Texas* proceeding, there may be some question as to the weight properly given to the Staff's testimony and the granting of summary disposition; however, no "substantial issues" have been raised.

And, while not minimizing the significant role of the Staff in the NRC's adjudicatory proceedings, even if it were shown with greater conviction that some doubt may be present with respect to the weight accorded the Staff's evidence, the institution of a further proceeding for the purposes described in the petition is not compelled. The unquestionable burden of proof with respect to matters in controversy in any NRC licensing proceeding (indeed, in regard to the entirety of the application for operating licenses) falls on the applicant. 10 C.F.R. § 2.732. Thus, under the circumstances described in the petition, to warrant the initiation of yet a further evidentiary proceeding as requested, the Petitioner would have to demonstrate that a different result would have been reached by the Licensing Board in spite of the evidence of record adduced by the Applicants. Stated otherwise, a petitioner would have to show that, but for the evidence given by the Staff on those matters in controversy, the evidence presented by the applicant was insufficient to sustain its burden and thus the application should not be granted.

The standard for reopening hearings under § 2.206 would thus be the same as that for a motion to reopen under 10 C.F.R. § 2.734 (i.e., requiring a demonstration that a different result would be reached). In this instance, the petition simply speculates as to the applicability of the statements made before

Congress concerning Comanche Peak to the *South Texas* proceeding and fails to establish how, even if applicable, these statements might have altered the outcome of the proceeding. Such conjecture falls far short of the requisite factual specificity that might provide a sufficient basis for action. See *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438, 443 (1980).

## CONCLUSION

In sum, the Petitioner has failed to provide any new evidence that would warrant the relief that it has requested. Consequently, the Petitioner's request 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.

FOR THE NUCLEAR  
REGULATORY COMMISSION

Thomas E. Murley, Director  
Office of Nuclear Reactor  
Regulation

Dated at Bethesda, Maryland,  
this 13th day of December 1987.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

POTENTIAL IMPLICATIONS OF  
CHERNOBYL ACCIDENT FOR ALL  
NRC-LICENSED FACILITIES

December 15, 1987

The Director of the Office of Nuclear Reactor Regulation acts on a request by the Government Accountability Project (GAP) and others (together, Petitioners) that the NRC (1) suspend further licensing of nuclear facilities in the United States pending completion of a study and report on the accident at the Chernobyl plant, (2) review the findings of the final report for their applicability to facilities licensed by the NRC, and (3) request public comments on whether the record should be reopened to consider new issues raised in the final report that are material to any pending licensing proceeding or current license. To the extent that the Petitioners request that the Staff undertake a study and review, those requests have, in effect, already been granted. Petitioners' other requests are found to be without merit and are denied.

**DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206**

**Introduction**

By letter to the Director of the Office of Nuclear Reactor Regulation, dated May 1, 1987 (Petition), Thomas Carpenter, on behalf of Government Accountability Project (GAP) and others (together, Petitioners), requested that the Commission order immediate implementation of the relief that the Petitioners had requested in a petition filed on May 6, 1986, as a result of the April 25, 1986 accident at the Chernobyl power station in the Ukraine, USSR. The action



requested in the May 6, 1986 petition was that the NRC (1) suspend further licensing of nuclear facilities in the United States pending completion of a study and report on the accident at the Chernobyl plant, (2) review the findings of the final report for their applicability to facilities licensed by the NRC, and (3) request public comments on whether the record should be reopened to consider new issues raised in the final report that are material to any pending licensing proceeding or current license.<sup>1</sup> The present Petition essentially requests the same relief. This Petition, which is supported by an enclosure entitled, "Memorandum of Points and Authorities in Support of Chernobyl Petition," asserts that there is a similarity between the Chernobyl reactor and boiling water plants in the United States. Furthermore, the Petition maintains that the Chernobyl accident provides important experience that warrants a review of existing industry standards under NRC regulations.

By letter dated June 8, 1987, the Petitioners were informed that immediate implementation of their requests was not warranted, but that their Petition would be treated under 10 C.F.R. § 2.206 of the Commission's regulations and that action would be taken on their requests within a reasonable time.

I have now completed my evaluation of the matters raised by the Petitioners. As discussed below, the Staff has completed a study and prepared a final report of the Chernobyl accident and reviewed the findings of the final report for their applicability to currently licensed facilities or facilities under construction. Thus, to the extent that the Petition requests that the Staff undertake such a study and review, those requests have, in effect, already been granted. For the reasons discussed below, the additional relief requested by the Petitioners is denied.

## Discussion

### I.

The Petitioners request that the NRC (1) initiate all currently available legal options to learn as expeditiously as possible all material facts concerning the Soviet accident; (2) prepare and make publicly available ongoing analyses of the relevance of this information to NRC-licensed facilities; (3) prepare a final, published report of these findings; (4) review the findings of the final report to determine the safety consequences with respect to licensed facilities operating or under construction in the United States; and (5) suspend the granting of operating licenses for facilities under construction in the United States until the final report is completed.

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<sup>1</sup>The May 6, 1986 petition was denied by letter dated May 27, 1986. The denial was based upon the Petitioners' failure to provide specific information that would compel a halt to licensing of facilities in the United States.

Immediately upon learning of the event at the Chernobyl plant in the Soviet Union, the NRC formed a task force to evaluate thoroughly the accident and to learn as much as possible about its causes, course, and consequences. The results of this effort, including a detailed account of the accident progression at Chernobyl, were published in January 1987 in NUREG-1250, "Report on the Accident at the Chernobyl Nuclear Power Station," which was prepared collaboratively by the NRC, other U.S. government agencies, and other groups.

The NRC also has issued for public comment a draft report entitled, "Implications of the Accident at Chernobyl for Safety Regulation of Commercial Nuclear Power Plants in the United States" (NUREG-1251, August 1987). NUREG-1251 assesses the implications of the Chernobyl accident with respect to a number of reactor safety regulatory issues associated with significant factors that led to or exacerbated the consequences of the Chernobyl accident. These issues include the areas of administrative controls and operational practice, design, containment, emergency planning, severe-accident phenomena, and graphite-moderated reactors.

The causes of the accident at Chernobyl are documented and discussed in detail in NUREG-1250. As set forth therein, although the Chernobyl accident was initiated by serious operator violations of safety procedures, the ensuing reactor damage stemmed from basic design features of the RBMK 1000 reactor. The design of reactors in the United States specifically precludes the type of damage that occurred at Chernobyl. The RBMK reactor design does not use large steel reactor pressure vessels with water as a moderator, such as are employed in the designs of reactors in the United States. Rather, the RBMK uses a graphite-moderated pressure tube concept, which, in some conditions or modes of operation, has an undesirable characteristic known as a positive void coefficient.

A positive void coefficient means that rapid power increases, leading to vaporization of cooling water in the pressure tubes, will produce further power increases. This condition is extremely difficult to control. At Chernobyl, this condition developed so quickly that the operators and automatic safety systems had no opportunity to respond, and an explosion resulted. In addition, before the event, some safety systems had been deactivated and a number of operating procedures were violated. Moreover, the slow-acting safety control rod system of the RBMK design further contributed to the event, which was exacerbated still further by the ensuing graphite fire.

In the United States, as commercial nuclear power was being developed, the importance of control stability and negative void and negative power coefficients was explicitly recognized. As documented in NUREG-1251, the nuclear cores of commercial reactors in the United States are designed specifically to prevent the power instability that caused the Chernobyl accident. Unlike the Chernobyl reactor, the cores in reactors in the United States are equipped with fast-acting

safety control rod systems. Thus, because of the physics inherent in their design, reactors in the United States respond to an increase in voiding by reducing power.

Notwithstanding important design differences between the Chernobyl reactor and commercial reactors in the United States, the findings from NUREG-1250 and NUREG-1251 have added to our understanding of some of the phenomena that may be involved in a severe nuclear accident, and they have provided some additional insights that are useful in guiding our severe-accident programs. The overall conclusion of the Staff regarding the implications of the Chernobyl accident for the safety regulation of commercial nuclear power plants in the United States is stated in NUREG-1251 as follows:

No immediate changes are needed in the NRC's regulations regarding the design or operation of U.S. commercial nuclear reactors. Nuclear design, shutdown margin, containment, and operational controls at U.S. reactors protect them against a combination of lapses such as those experienced at Chernobyl. Although the NRC has always acknowledged the possibility of major accidents, its regulatory requirements provide adequate protection against the risks, subject to continuing vigilance for any new information that may suggest particular weaknesses, and also subject to taking measures to secure compliance with the requirements. Assessments in the light of Chernobyl have indicated that the causes of the accident have been largely anticipated and accommodated for commercial U.S. reactor designs.

Thus, the Staff's actions have essentially satisfied the requests in the Petition that the NRC (1) study and prepare a report of the accident and (2) review the findings of the report for applicability to currently licensed facilities. With respect to the Petitioners' request that the NRC suspend the granting of operating licenses for facilities under construction until completion of the final report, this request is denied. As discussed above, the steam explosion in the reactor core, which ruptured the reactor core and the surrounding building, was caused by a nuclear physics design vulnerability specific to the RBMK reactor. On that basis and because of other factors discussed above, I find that the contention of the Petitioners concerning the suspension of the granting of operating licenses to facilities under construction is without merit.

## II.

The Petitioners further request that the NRC request public comments on whether the "record" should be opened to consider "new issues" raised in the final report on Chernobyl that are material to any pending licensing proceeding. In general, the Petitioners argue that, following the accident at Three Mile Island, the Commission established a precedent that mandates a review of existing industry standards whenever an event within the industry provides "important industry experience." The Petitioners assert that the Chernobyl accident meets

the requirement of "important industry experience" necessary for a review of Commission and industry standards. Hence, the Petitioners claim that the Commission must take the same initiative in response to the Chernobyl incident that it did in reviewing its regulations following the accident at Three Mile Island, and that a failure to do so, absent a full explanation, would constitute "arbitrary and capricious behavior" prohibited by the Administrative Procedure Act.

As discussed in the preceding paragraphs, the NRC did respond immediately to the accident at Chernobyl by forming a task force and coordinating a major fact-finding effort. The NRC's commitment to identify the lessons learned from the Chernobyl accident and determine their relevance to facilities in the United States and existing industry standards is evidenced by the publication of draft NUREG-1251, "Implications of the Accident at Chernobyl for Safety Regulation of Commercial Nuclear Power Plants in the United States." After all comments received during the public comment period are duly considered, a final report will be issued.

The basic design differences between the RBMK reactor at Chernobyl and reactors in the United States had a direct bearing on the NRC's response to the accident at Chernobyl. The accident at Chernobyl was a highly energetic reactivity excursion that mechanically disrupted the core. Fragmented fuel that came into contact with water rapidly vaporized the water. This generated combustible hydrogen by the chemical reaction of core materials and water at the high temperatures reached in the accident. Because of the basic design differences between the RBMK reactor at Chernobyl and reactors in the United States, the specific accident mechanisms involved at Chernobyl have no exact parallel in reactors in the United States. Within days of the accident at Chernobyl, it was recognized that the inherent vulnerabilities in the RBMK design were not present in commercial reactor design in the United States. Therefore, it was determined that immediate regulatory action was not warranted. However, as a precaution, it was deemed that the most prudent course of action was to undertake an intensive effort to understand the accident phenomenology and to assess U.S. power plant design and operational practices in light of the factors that led to and exacerbated the accident at Chernobyl. NUREG-1251 provides this assessment.

The Petitioners specifically identify three basic areas that they allege constitute "industry weaknesses," for which they claim consideration and revision of existing standards are warranted. Broadly stated, these areas involve (1) containment structures, (2) operator training, and (3) emergency planning. The Petitioners also state that consideration and revision of standards need not be limited to these areas.

With regard to containment, the Petitioners argue that the containment used at Chernobyl was the type commonly employed at many boiling water reactors in the United States, and that the Chernobyl accident, in light of this

similarity, creates new "industry experience" that must be considered by the Commission. In this connection, the Petitioners call for (1) a complete review of all containment structures at both completed plants and those under construction, in order to provide a uniform, complete standard of adequacy for all plants; and (2) a public forum on the containment standard proposed by the NRC.

Because the accident phenomenology at Chernobyl was unique to the RBMK design, it is impossible to directly compare how reactor containments in the United States would survive an accident similar to that at Chernobyl. However, the role of the containment building as a vital barrier to the release of fission products to the environment has been recognized for some time in power plant design and regulation in the United States. The NRC began to give attention to severe accidents even before the accident at Three Mile Island and has increased its emphasis in this area since that accident. The Chernobyl accident focused new attention on containments and their performance under severe-accident conditions. Thus, design differences notwithstanding, the implications of the Chernobyl accident were evaluated with respect to containment design and performance.

Specifically, the Staff evaluated the implications of the accident at Chernobyl with respect to activities already in place in the areas of containment integrity and the ability to prevent the release of large quantities of fission products during severe accidents. In its assessment of the impact of the Chernobyl experience on current programs addressing containment adequacy (NUREG-1251, Chap. 3), the Staff concludes that ongoing research programs and regulatory initiatives are adequate to identify and implement the design and operational improvements needed to provide greater assurance of containment survival in severe accidents. These programs under way include the systematic search for plant-specific vulnerabilities in containment structures and performance to be achieved through the implementation of the Commission's Severe Accident Policy. Section 3.1.1 of NUREG-1251 provides a brief summary of the basis and purpose of the Commission's Severe Accident Policy:

Severe-accident evaluations and research had progressed to the point that the Commission issued a Severe Accident Policy Statement in August 1985 (50 FR 32138) concluding that existing plants posed no undue risk to the public. However, the Commission pointed out that at each plant there will be systems, components, or procedures that are the most significant contributors to risk. Utilities should identify these contributors and develop appropriate courses of action, if and as needed to ensure acceptable margins of safety. Furthermore, the Commission stated that such examinations "will include specific attention to containment performance in striking a balance between accident prevention and consequence mitigation."

Implementation of the Severe Accident Policy Statement through the Individual Plant Examinations (IPEs), utilizing emerging research, is expected to indicate whether risk outliers exist at specific plants that justify improvements in contain-

ment system performance. This implementation is the principal NRC program for identifying plant-specific severe-accident risk outliers and for implementing new requirements. Other ongoing programs and initiatives that address the adequacy of containment designs are described in more detail in § 3.1.2 of NUREG-1251. Inasmuch as the implementation of the Commission's Severe Accident Policy will require the review of containments for all plants, the Petitioners' request for review of containment structures has been granted.

With regard to operator training, the Petitioners argue that the existing NRC regulations governing the establishment of training programs as set forth in 10 C.F.R. Part 50, Appendices E and F, do not provide for monitoring operator training or the individuals who will provide such training. Asserting that Chernobyl provides important "industry experience" in this area, the Petitioners claim that current regulations must be revised to provide for such monitoring.

Contrary to the Petitioners' assertion, 10 C.F.R. Part 50, Appendix E, § F requires initial training, periodic retraining, and exercises to test the adequacy of training for control room shift personnel to ensure their familiarity with emergency response plans and duties. The adequacy of this training is evaluated by NRC through inspections and exercise evaluations. With regard to training received by operators in the use of and adherence to operating procedures, Chapter 1 of NUREG-1251 describes and assesses the adequacy of administrative controls and operational practices for reactors in the United States. Section 1.1.1 provides details of NRC requirements and guidance for procedure development and use, required procedure coverage, standards, and NRC inspection and enforcement in these areas:

The NRC has a large body of guidance and requirements that includes general and specific measures for development and use of administrative procedures and controls. These controls govern all operating activities at nuclear power plants, and are designed to avoid the types of violations that occurred at Chernobyl. Procedures are violated in licensed plants, but only rarely with the knowledge that a violation is being committed. In its program to ensure safety and quality, the NRC has developed and published quality assurance requirements for activities affecting nuclear safety. Criterion V of 10 C.F.R. 50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," . . . prescribes the general requirement for having procedures and for following them. A second level of administrative controls for procedures is contained in each plant's Technical Specifications (TS), which are a part of the license. . . . Both Technical Specifications and Criterion V have the force of law.

Technical Specifications require procedures to be reviewed by the Unit Review Group when initially written and before being changed, except for temporary changes made on the spot that do not alter the intent. The Unit Review Group is made up of key plant supervisory personnel who are knowledgeable about plant safety. The objective of this review is to ensure that experts from the various technical disciplines review the procedures for operations or changes that could affect safety. This review backs up the technical procedure writer and his/her supervisor's decisions on safety. There is a further screening of procedures and changes to procedures to determine whether or not they may involve an unreviewed safety

question or technical specification, in which case prior NRC approval is required by 10 CFR 50.59. The NRC requires that all of these activities, including compliance with procedures, be periodically audited, and audit results be provided to appropriate management; corrective action is required when deficiencies are found.

Additionally, reactor operators must be licensed by the NRC. Because plant operation requires extensive use of procedures, operators are trained in both the technical details of procedures and in their implementation. NRC examines operators in these areas in accordance with 10 C.F.R Part 55.

In view of the fact that the Commission's existing regulations provide for operator training, an assessment of the adequacy of the training, and an examination of operators themselves, I find the Petitioners' contention that, in light of Chernobyl, regulations must be revised to provide for monitoring of operator training, to be without merit.

Finally, with regard to emergency planning, the Petitioners argue that reevaluation of NRC standards for individual emergency plans is necessary to incorporate lessons learned from Chernobyl. The Petitioners claim that at Chernobyl, even with well-established emergency and evacuation procedures, coordination with local officials hindered the effectiveness of emergency efforts. The Petitioners allege that Chernobyl provides important "industry experience" in this area and provides the greatest amount of data available against which existing emergency and evacuation plans can be compared. Thus, the Petitioners argue that the Commission must provide a comprehensive plan for review of emergency procedures currently in place at existing facilities. The Petitioners also request that the Commission provide a detailed plan for coordination among owners, the NRC, and the state officials during emergency situations and for the sharing of critical data on plant operation during the emergency. The Petitioners also request that the Commission provide a public forum on a detailed plan to be submitted by the NRC on evacuation, on a state-by-state basis, that will provide an overall strategy for evacuation based on individual plant design parameters.

The Petitioners did not support their claim that coordination with local officials hindered the effectiveness of emergency efforts at Chernobyl. Further, the Petitioners did not establish a relationship between Soviet emergency planning and U.S. emergency planning, nor do they establish a relationship between Soviet emergency response at Chernobyl and a possible U.S. response during a domestic accident. In addition, it should be noted that the NRC has reviewed the Soviet emergency response to the Chernobyl accident for implications for U.S. emergency planning and did not identify issues that would support the Petitioners' recommendations in this regard. Section 7.2 of NUREG-1250 states that, initially, Soviet emergency response was hindered by a lack of adequate equipment and facilities and an underestimation of the severity of the accident by plant personnel and local officials. However, these did not prevent a massive

and apparently effective response by the Soviets. NUREG-1250 also indicates that the delays in evacuation were dictated by local radiological conditions and logistics:

The available information indicates that Soviet protective actions during the Chernobyl emergency consisted of sheltering, administration of KI, evacuation, decontamination, and measures to prevent radiation exposure in the ingestion pathway.

\* \* \*

The decision to shelter the residents of Pripyat rather than to evacuate them on the day of the accident was based on the permissible levels of radiation measured in Pripyat, while at the same time high levels were measured along potential evacuation routes.

\* \* \*

Evacuation of Pripyat did not commence until about 36 hours after the accident at Chernobyl because of this delayed increase in radiation levels at Pripyat and the need for coordinating the needed logistical resources, and preparing evacuation routes. Ad hoc evacuation plans had to be prepared since not all "existing arrangements" could be applied (INSAG, 1986, p. 78).<sup>2</sup> Arrangements for transportation, setting up relocation centers, providing radiation monitoring and decontamination services for people, providing replacement clothing and other necessities, identifying and augmenting medical facilities, are some of the things that had to be done in order to carry out an effective evacuation. These actions were planned and put into place during the roughly 36 hours from the time of the accident to the start of the evacuation (Sanders, 1986, pp. 3-4).<sup>3</sup> Time was also needed to take precautions along the evacuation routes that had been contaminated above permissible levels. This was done by using a polymer substance to cover land areas along the roads used for the evacuation (Sanders, 1986, p. 4).<sup>4</sup>

In comparing the U.S. and Soviet programs, NUREG-1251 cautions that there is a substantial difference in the emergency planning base between the United States and the Soviet Union. Specifically, NUREG-1251 states that after the accident at Three Mile Island, large resources were expended to improve emergency planning and response capabilities around plants in the United States. The report also states that, in contrast, there is little indication that the Soviets have comparable *site-specific* emergency plans for the general public around their nuclear power plants. The report further cautions that economic and societal differences play a part. For example, in the United States, most people have access to private transportation, and necessary alternative transportation is preplanned around nuclear power plants.

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<sup>2</sup> International Nuclear Safety Advisory Group (INSAG), "Summary Report on the Post-Accident Review Meeting on the Chernobyl Accident," August 30-September 5, 1986, GLC (SPLI)/3, IAEA, Vienna, September 24, 1986.

<sup>3</sup> Sanders, Marshall, Federal Emergency Management Agency, testimony prepared for the U.S. Senate Subcommittee on Nuclear Regulation of the Committee on Environmental and Public Works (hearing cancelled), September 29, 1986, Washington, D.C.

<sup>4</sup> *Id.* at 4.



NUREG-1250 notes that the dimensions of the Soviet response and the utility of the Soviet planning were dictated by the magnitude of the accident at Chernobyl:

Similarly, the Russian delegation also stated . . . that when the response team from Moscow and other locations arrived at Chernobyl, it found the response plans had only limited value and that the team had to resort to "ad hoc" planning (Sanders, 1986).<sup>5</sup> The massive scale of the accident probably was a major factor in forcing ad hoc planning, as it was noted to have overwhelmed local resources. This was because the release of several million curies initially with similar though smaller releases daily was not included in Soviet preplanning (INSAG, 1986, p. 79;<sup>6</sup> Warman, 1986a, p. 3).<sup>7</sup> For example, a major difficulty was that, because of the "actual situation . . . not all existing arrangements could be applied" (INSAG, 1986, p. 78).<sup>8</sup>

As NUREG-1251 points out, specifics of the Chernobyl release are unique to the RBMK design. The amounts of radioactive material released from plants in the United States would, for most accident sequences, be considerably less because, among other things, plants in the United States have substantial containments. In addition, although low-probability, fast-moving accident sequences are possible, severe accidents at plants in the United States would, in general, progress more slowly, resulting in longer warning times before radioactive material would be released.

NUREG-1251 notes that the NRC did not find any apparent deficiency in emergency plans and preparedness in the United States, including the 10-mile plume exposure pathway EPZ (emergency planning zone) size and the 50-mile ingestion exposure pathway EPZ size. NUREG-1251 concludes that these zones provide an adequate basis to plan and carry out the full range of protective actions for the populations within these zones, as well as beyond them, if the need should arise. However, NUREG-1251 does note that the planning bases for relocation and decontamination and for protective measures for the food ingestion pathway are being reexamined in the light of new research information.

Regarding the Petitioners' recommendations, the Petitioners fail to establish a nexus between the alleged weaknesses in the Soviet emergency response to the accident at Chernobyl and U.S. emergency planning and preparedness for nuclear power plants. The Petitioners fail to show that their recommendations for review of U.S. planning are warranted by the Soviet experience at Chernobyl. Further, the United States' own review of the Soviet response at Chernobyl, and its

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<sup>5</sup> See note 3, *supra*.

<sup>6</sup> See note 2, *supra*.

<sup>7</sup> Warman, Edward A., Senior Consulting Engineer, Stone and Webster Engineering Corporation, Notes of Private Discussions with Soviet Delegates at Vienna Meeting, September 5, 1986.

<sup>8</sup> See note 2, *supra*.

review of implications for U.S. emergency planning and preparedness, still in draft form, do not support the Petitioners' recommendations.

## **Conclusion**

As discussed above, the NRC has already extensively studied the accident that occurred at the Chernobyl facility and the implications of the accident on facilities in the United States. The NRC has completed and published for comment a factual report (NUREG-1250) on the events of Chernobyl and a draft report (NUREG-1251) on the issue of the implications of the Chernobyl accident. Therefore, to the extent that the Petition requests that the NRC initiate all currently available legal options to learn the material facts concerning the Chernobyl accident, prepare analyses of the relevance of this information for NRC-licensed facilities, and prepare a final published report of findings on this issue and review these findings to determine the safety consequences with respect to facilities operating or under construction, those requests are, in effect, granted. For the reasons stated above, the additional relief requested by the Petitioners is not warranted and is denied. As provided in 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary for the Commission's review.

**FOR THE NUCLEAR  
REGULATORY COMMISSION**

**Thomas E. Murley, Director  
Office of Nuclear Reactor  
Regulation**

**Dated at Bethesda, Maryland,  
this 15th day of December 1987.**

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