NUCLEAR REGULATORY COMMISSION ISSUANCES

OPINIONS AND DECISIONS OF THE NUCLEAR REGULATORY COMMISSION WITH SELECTED ORDERS

July 1, 1988 - December 31, 1988

Volume 28
Pages 1 - 833

Prepared by the
Division of Freedom of Information and Publications Services
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555
(301/492-8925)

COMMISSIONERS

Lando W. Zech, Jr., Chairman
Thomas M. Roberts
Kenneth M. Carr
Kenneth C. Rogers
James R. Curtiss*

Victor Stello, Executive Director for Operations
William C. Parler, General Counsel

Alan S. Rosenthal, Chairman, Atomic Safety & Licensing Appeal Panel**
Christine N. Kohl, Chairman, Atomic Safety & Licensing Appeal Panel***
B. Paul Cotter, Chairman, Atomic Safety & Licensing Board Panel

*Mr. Curtiss began serving as Commissioner on October 20, 1988.
**Mr. Rosenthal retired from full-time government service as of July 30, 1988.
***Ms. Kohl was appointed Chairman effective August 1, 1988.

ATOMIC SAFETY AND LICENSING APPEAL PANEL

Alan S. Rosenthal, Chairman*
Christine N. Kohl, Chairman**

Members

Alan S. Rosenthal*
Dr. W. Reed Johnson
Thomas S. Moore
Christine N. Kohl**
Howard A. Wilber

*Retired from full-time government service as of July 30, 1988; continues on the Panel as a part-time member.
**Appointed Chairman effective August 1, 1988.

ATOMIC SAFETY AND LICENSING BOARD PANEL

B. Paul Cotter,* *Chairman*
Robert M. Lazo,* *Vice Chairman (Executive)*
Frederick J. Shon,* *Vice Chairman (Technical)*

Members

Dr. George C. Anderson
Charles Bechhoefer*
Peter B. Bloch*
Glenn O. Bright*
Dr. A. Dixon Callihan
James H. Carpenter*
Dr. Richard F. Cole*
Dr. George A. Ferguson
Dr. Harry Foreman
Richard F. Foster
John H Frye III*
James P. Gleason
Dr. Cadet H. Hand, Jr.
Jerry Harbour*
Dr. David L. Hetrick
Ernest E. Hill
Dr. Frank F. Hooper
Helen F. Hoyt*
Elizabeth B. Johnson
Dr. Walter H. Jordon
Dr. Michael A. Kirk-Duggan
Jerry R. Kline*
Dr. James C. Lamb III
Gustave A. Linenberger*
Dr. Emmeth A. Luebke
Dr. Kenneth A. McCollom
Morton B. Margulies*
Gary L. Milhollin
Marshall E. Miller
Dr. Oscar H. Paris*
Dr. David R. Schink
Ivan W. Smith*
Dr. Martin J. Steindler
Seymour Wenner
Sheldon J. Wolfe*

**Permanent panel members*

ADMINISTRATIVE LAW JUDGES

Ivan W. Smith
Morton B. Margulies

PREFACE

This is the twenty-eighth volume of issuances (1 - 833) 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, 1988 to December 31, 1988.

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.

CONTENTS

Issuances of the Nuclear Regulatory Commission

Issuances of the Atomic Safety and Licensing Appeal Boards

Issuances of the Atomic Safety and Licensing Boards

Issuance of the Administrative Law Judge

Issuances of Directors' Decisions

Issuances of Denials of Petitions for Rulemaking

Indexes

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman
Thomas M. Roberts
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) **July 15, 1988**

The Commission denies Intervenors' motion for reconsideration and reversal of CLI-87-5, 27 NRC 884 (1987), in which the Commission had declined to reopen the record on issues concerning the role of the American Red Cross in an emergency and the adequacy of "congregate care" facilities for sheltering evacuees in an emergency. The Commission finds no new information in Intervenors' motion to suggest that the result reached in CLI-87-5 was incorrect.

RULES OF PRACTICE: REOPENING OF RECORD (SATISFACTION OF REQUIREMENTS)

Movants carry a heavy burden in satisfying the requirements for reopening of a record, under standards outlined by the Commission in *Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), CLI-85-3, 21 NRC 471 (1985), *aff'd, Oystershell Alliance v. NRC*, 800 F.2d 1201 (D.C. Cir. 1986).

RULES OF PRACTICE: REOPENING OF RECORD

Motions to reopen cannot be permitted to be a means for parties to pass off old, unsuccessful contentions as new and relitigate them in hopes of a better result the next time around.

RULES OF PRACTICE: MOTION FOR RECONSIDERATION

The opportunity to file motions for reconsideration should not become a game in which the resources of the Commission and the parties are wasted in endless reiteration of the same arguments. At some point the adjudicatory process must come to an end.

MEMORANDUM AND ORDER

In CLI-87-5 (27 NRC 884), decided June 11, 1987, the Commission granted in part and denied in part a motion, filed by Intervenors New York State, Suffolk County, and the Town of Southampton, to reopen the record of this operating license proceeding. The motion was granted as to issues raised by the withdrawal of a radio station from the Shoreham emergency broadcast system, but denied as to Intervenors' claims regarding the role of the American Red Cross in an emergency and the adequacy of "congregate care" facilities for sheltering evacuees in an emergency. On June 30, 1987, Intervenors filed a motion for reconsideration of those parts of CLI-87-5 which denied their motion to reopen. Finding no new information in that motion for reconsideration to suggest that the result reached in CLI-87-5 was incorrect, the Commission denies the motion for reconsideration, which was, moreover, untimely filed, having been filed 19 days after the issuance of CLI-87-5, rather than the 10 days provided by 10 C.F.R. § 2.771(a), with no showing of good cause for its lateness.

Movants' first argument is that the Commission erred in reasoning that it made little difference whether the American Red Cross provided assistance to the public pursuant to a formal agreement with the utility or simply in accordance with its established policy of coming to the aid of the public when the need arises. On this point, the motion for reconsideration offers no facts and no arguments that were not considered and rejected by the Commission at the time it issued CLI-87-5, and the Commission sees no reason to alter its earlier judgment. Contrary to the movants' claim that "there is no assurance of ARC support in an emergency" (Motion for Reconsideration at 6), the August 21, 1986 letter from the Nassau County Chapter of the American Red Cross stated plainly that it was "mandated" by charter to perform the role outlined in an earlier letter from that organization, dated July 25, 1984. The gist of the August

1986 letter was merely that the July 1984 letter had erroneously been captioned an "agreement."

Movants' second argument is that it was error for the Commission to refuse to reopen the record on the issue of congregate care facilities. The Commission disagrees. To the extent that the motion to reopen was based on the letter from the American Red Cross, the same reasoning outlined above is applicable. Again, that letter by no means constituted, as the Intervenors' motion to reopen boldly declared (at 2), the Red Cross's "refusal to agree, identify, designate, open, or operate such centers in a Shoreham emergency." Movants manifestly failed to carry the heavy burden that the proponent of a motion to reopen faces, under the standards outlined by the Commission in *Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), CLI-85-3, 21 NRC 471 (1985), *aff'd, Oystershell Alliance v. NRC*, 800 F.2d 1201 (D.C. Cir. 1986).

The motion to reopen was also based (at 12-13) upon certain letters from facility owners, presented to the Licensing Board on September 26, 1986, by Mr. Howard M. Koenig, Superintendent of Schools of the East Meadow Union-Free School District. Although the September 1986 date cited might suggest at first glance that the information offered was new, having come to light after the Licensing Board's August 1985 decision on congregate care centers, that is not the case. Reference to Mr. Koenig's September 1986 testimony (Tr. 17,003) reveals that his major complaint was that the Atomic Safety and Licensing Board had declined to accept those same letters into evidence when they were presented by a subordinate of his, Mr. Leon Campo, in early 1985.

In fact, Mr. Campo's testimony, with letters attached, was proffered to the Licensing Board by the Intervenors on February 19, 1985. By order of May 6, 1985, the Board rejected it as outside the scope of the proceeding. On May 17, 1985, Intervenors again offered the letters to the Licensing Board as part of a Motion for Reconsideration and in the alternative, Motion to Reopen the Record. On June 10, 1985, the Licensing Board denied that motion. On June 25, 1985, Intervenors moved for the admission of the letters into evidence for a third time. Tr. 15,940. The Licensing Board denied the motion. After the Licensing Board rejected the Intervenors' contention on congregate care centers in LBP-85-31 (22 NRC 410), issued on August 26, 1985, the exclusion of the letters was raised unsuccessfully before both the Appeal Board (as part of the Intervenors' appeal of the August 26, 1985 Concluding Partial Initial Decision on Emergency Planning) and the Commission (as part of the Intervenors' petition for review of the Appeal Board's decision in ALAB-832, 23 NRC 135 (1986)). On the issue of the letters, therefore, the Motion to Reopen and the instant Motion for Reconsideration represent the Intervenors' sixth and seventh bite at the apple, respectively.

Motions to reopen cannot be permitted to be a means for parties to pass off old, unsuccessful contentions as new and relitigate them in hopes of a

better result the next time around. Nor should the opportunity to file motions for reconsideration become a game in which the resources of the Commission and the parties are wasted in endless reiteration of the same arguments. At some point the adjudicatory process must come to an end. The motion for reconsideration is denied.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 15th day of July 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of **Docket No. 55-60755-SP**

ALFRED J. MORABITO
(Senior Operator License for
Beaver Valley Power Station,
Unit 1) **July 15, 1988**

The Administrative Judge in this proceeding has determined that Staff incorrectly denied a senior reactor operator license to Mr. Morabito. However, since Mr. Morabito has taken employment outside the nuclear industry and has no present need for a license, he cannot, under Commission rules, hold a license. Since this fact is undisputed by Mr. Morabito, the controversy over the license denial is now moot. The Commission therefore vacates the Administrative Judge's decision, as well as the Staff's license denial.

MEMORANDUM

On April 20, 1988, the Administrative Judge determined after a hearing that the NRC Staff had erred in determining that Mr. Alfred J. Morabito had failed the simulator portion of his senior reactor operator license examination, and that the Staff had therefore incorrectly denied Mr. Morabito a senior reactor operator license. The Judge later modified that decision, by order of May 18, 1988 (LBP-88-16, 27 NRC 583), to make clear that it related only to issues adjudicated in the proceeding, and that the Staff retained the authority to determine whether other requirements for a license had been met.

Also on April 20, 1988, Duquesne Light Company advised the NRC Staff that the candidate had taken employment outside the company's nuclear group, and that the request for his senior reactor operator's license should be considered withdrawn.

Under the Commission's rules, 10 C.F.R. Part 55, possession of an operator's license is conditioned on there being a present need for the license. Although Mr. Morabito has suggested, in a May 10, 1988 letter to the Judge, that the license be issued retroactively and then cancelled as of the date that the company withdrew its certification of need, we believe that this would be an empty exercise. Since Mr. Morabito does not dispute that he cannot now hold a senior reactor operator license, the controversy over the Staff's denial of the license is now moot, and the Administrative Judge's decision and the Staff's underlying denial are therefore vacated.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 15th day of July 1988.

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. 50-443-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)

July 5, 1988

On appeal from the Licensing Board's denial of the intervenors' petition pursuant to 10 C.F.R. § 2.758 to waive the electric utility exemption provisions of the Commission's financial qualification regulations, the Appeal Board affirms the denial of the petition. With respect to a separate petition filed by the Attorney General of Massachusetts with the Appeal Board, the Board certifies the petition to the Commission for a determination whether the rule provision should be waived.

RULES OF PRACTICE: CHALLENGE TO COMMISSION REGULATIONS

The Commission's Rules of Practice prohibit direct challenges to any NRC regulations in agency adjudicatory proceedings. 10 C.F.R. § 2.758(a).

RULES OF PRACTICE: WAIVER OF RULES

The Rules of Practice contain a limited exception to the proscription against challenging NRC regulations and provide that a party to a licensing proceeding may petition for a waiver of a regulation if "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: WAIVER OF RULES

The Rules of Practice further require that a waiver petition be accompanied by an affidavit that both sets forth the special circumstances justifying the requested waiver and explains why the regulation would not serve its intended purpose. 10 C.F.R. § 2.758(b).

RULES OF PRACTICE: WAIVER OF RULES

Only the Commission, however, is authorized to grant the petition and waive a rule. A subordinate board may deny a petition but if a board determines that the petition makes a prima facie showing that application of the regulation at issue does not serve the purpose for which it was adopted, the petition must be certified to the Commission for a determination whether the regulation should be waived. 10 C.F.R. § 2758(c) & (d).

FINANCIAL QUALIFICATIONS: APPLICABLE STANDARD

The Commission's substantive financial qualification regulations require that certain applicants for operating licenses, as part of the license application, submit information demonstrating that the applicant possesses, or has a reasonable assurance of obtaining, the funds necessary to cover estimated operation costs for the period of the license, plus the estimated costs of permanently shutting down and maintaining the facility in a safe condition. Similarly, before granting an operating license to an applicant, the regulations obligate the agency to determine whether the applicant is financially qualified to operate the facility. 10 C.F.R. §§ 50.33(f), 50.40(b), 50.57(a)(4).

FINANCIAL QUALIFICATIONS: APPLICABLE STANDARD

The Commission's regulations specifically exempt from the financial qualification reporting requirements applicants that are electric utilities, i.e., entities that generate or distribute electricity and whose rates for service are self-determined

or established by a separate regulatory authority. 10 C.F.R. §§ 50.2, 50.33(f), 50.40(b), 50.57(a)(4).

RULES OF PRACTICE: WAIVER OF RULES

The relatively small number of waiver petitions filed in NRC adjudicatory proceedings and the fact that few, if any, such petitions have been successful evidence the difficulty of meeting the waiver standard. It also underscores the Commission's comment that such a petition "can be granted only in unusual and compelling circumstances." *Northern States Power Co.* (Monticello Nuclear Generating Plant, Unit 1), CLI-72-31, 5 AEC 25, 26 (1972).

FINANCIAL QUALIFICATIONS: CONSIDERATION IN OPERATING LICENSE PROCEEDINGS

The Commission's *purpose* in promulgating the electric utility exemption to the financial qualification regulations was to eliminate case-by-case review by the staff of an individual applicant's financial qualifications as part of the operating license review process and to remove such issue from adjudication in any operating license proceeding. Its rationale for the exemption was straightforward: electric utilities were presumed to be able to finance the safe operation of their facilities through the ratemaking process.

RULES OF PRACTICE: WAIVER OF RULES

A prima facie showing within the meaning of 10 C.F.R. § 2.758(d) is one that is "legally sufficient to establish a fact or case unless disproved." *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-653, 16 NRC 55, 72 (1981).

APPEARANCES

Paul McEachern, Portsmouth, New Hampshire, and **Robert A. Backus,** Manchester, New Hampshire (with whom **Matthew T. Brock,** Portsmouth, New Hampshire, was on the brief) for the intervenors-appellants Town of Hampton, New Hampshire, New England Coalition on Nuclear Pollution and Seacoast Anti-Pollution League.

Stephen A. Jonas and **George B. Dean,** Boston, Massachusetts, for intervenor-petitioner James M. Shannon, Attorney General of Massachusetts.

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.*

Gregory Alan Berry for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

We have before us the appeal of the intervenors Town of Hampton, the New England Coalition on Nuclear Pollution, and the Seacoast Anti-Pollution League (hereinafter "appellants") from the Licensing Board's denial of their joint petition to waive the electric utility exemption provisions of the Commission's financial qualification regulations.[1] Those provisions prohibit any examination during an operating license proceeding of an electric utility–applicant's financial ability to operate a commercial nuclear power plant. The appellants seek to have them set aside in this case so that Public Service of New Hampshire (PSNH), the lead applicant and principal owner of the Seabrook facility,[2] could be made to demonstrate, prior to low-power operation, that it is financially qualified to operate the facility safely at low power.

While the appellants' appeal was pending, PSNH filed a petition for reorganization under Chapter 11 of the Bankruptcy Code in the United States Bankruptcy Court for the District of New Hampshire. Recognizing that this new development would likely lead to the filing of additional waiver petitions, we provided the appellants an opportunity to amend their petition or, alternatively, to file a new one. Further, we directed any other party seeking a waiver of the Commission's financial qualification regulations before authorization of low-power operation to file a petition at this time so we could consider all petitions together.[3] In response to our order, the appellants filed a supplemental brief and the intervenor Attorney General of Massachusetts joined the fray and filed a petition to waive the same provisions of the financial qualification regulations.

For the reasons that follow, we affirm the Licensing Board's denial of the appellants' waiver petition and certify to the Commission the petition of the Massachusetts Attorney General for a determination whether the electric utility exemption provisions of the financial qualification regulations should be waived.

---

[1] Memorandum and Order (August 20, 1987).

[2] PSNH owns 35.56952% of the Seabrook facility and eleven other public and investor-owned power companies own the remainder.

[3] Memorandum and Order (January 29, 1988) at 2-3.

I.

A. The Commission's Rules of Practice prohibit direct challenges to any NRC regulations in agency adjudicatory proceedings.[4] The same rules, however, contain a limited exception to that proscription and provide that a party to a licensing proceeding may petition for a waiver of a regulation if "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."[5] The Rules of Practice further require that a petition be accompanied by an affidavit that both sets forth the special circumstances justifying the requested waiver and explains why the regulation would not serve its intended purpose.[6] Only the Commission, however, is authorized to grant the petition and waive a rule. A subordinate board may deny a petition but if a board determines, on the basis of the petition and any responses (including counteraffidavits), that the petition makes a prima facie showing that the regulation at issue does not serve the purpose for which it was adopted, the petition must be certified to the Commission for a determination whether the regulation should be waived.[7] As part of its consideration, the Rules of Practice provide that the Commission "may direct such further proceedings as it deems appropriate to aid its determination."[8] Here, both the appellants and the Massachusetts Attorney General invoke these procedural provisions in seeking a rule waiver.

B. In turn, the Commission's substantive financial qualification regulations require that certain applicants for operating licenses, as part of the license application, submit information demonstrating that the applicant possesses, or has a reasonable assurance of obtaining, the funds necessary to cover estimated operation costs for the period of the license, plus the estimated costs of permanently shutting down and maintaining the facility in a safe condition.[9] Similarly, before granting an operating license to an applicant, the regulations obligate the agency to determine whether the applicant is financially qualified to operate the facility.[10] But the regulations specifically exempt from these requirements applicants that are electric utilities, i.e., entities that generate

---

[4] 10 C.F.R. § 2.758(a).
[5] 10 C.F.R. § 2.758(b).
[6] *Id.*
[7] 10 C.F.R. § 2.758(c) & (d).
[8] 10 C.F.R. § 2.758(d).
[9] 10 C.F.R. § 50.33(f).
[10] 10 C.F.R. §§ 50.40(b), 50.57(a)(4).

The Commission's Rules of Practice, 10 C.F.R. § 2.104(c)(4), also provide that the agency's published hearing notice in an operating license proceeding state that the presiding officer is empowered to consider, *sua sponte*, whether certain applicants are financially qualified to operate the facility.

or distribute electricity and whose rates for service are self-determined or established by a separate regulatory authority.[11]

It is the relatively new electric utility exemption provisions that the appellants and the Massachusetts Attorney General seek to have waived. For a number of years prior to 1982, the Commission's regulations required applicants for construction permits and operating licenses for commercial nuclear power plants to file financial information sufficient to establish, respectively, their qualifications (1) to build and (2) to operate and to decommission the facilities.[12] In 1982, the Commission amended the regulations to eliminate entirely the requirements for financial qualification review and findings for electric utilities applying for construction permits or operating licenses.[13] Upon judicial review, however, the Court of Appeals for the District of Columbia Circuit found that the amendment was not supported by the Commission's stated rationale contained in the accompanying statement of basis and purpose. Accordingly, the court remanded the rules to the agency for further proceedings.[14] Thereafter, the Commission amended the regulations a second time to eliminate only the financial review and findings requirements for electric utility–operating license applicants while retaining such provisions for construction permit applicants.[15] The validity of these amendments was then upheld by the District of Columbia Circuit.[16]

The Commission explained its rationale for exempting electric utilities from the review and findings requirements of the financial qualification regulations in a four-part statement of considerations accompanying the 1984 enactment. Because the purpose underlying the exclusion of electric utilities from the provisions of the agency's financial qualification regulations is central to the resolution of the waiver petitions at hand, a brief rehearsal of the Commission's major points in its statement of considerations is in order.

First, after reciting the litigation history of the regulations, the Commission stated its belief that

> case-by-case review of financial qualifications for all electric utilities at the operating license stage is unnecessary due to the ability of such utilities to recover, to a sufficient degree, all or a portion of the costs of construction and sufficient costs of safe operation through the ratemaking process.[17]

---

[11] 10 C.F.R. §§ 50.2, 50.33(f), 50.40(b), 50.57(a)(4).
[12] *See* 10 C.F.R. §§ 50.33(f), 50.40(b), 50.57(a)(4) (1982).
[13] 47 Fed. Reg. 13,750 (1982).
[14] *See New England Coalition on Nuclear Pollution v. NRC*, 727 F.2d 1127 (D.C. Cir. 1984).
[15] 49 Fed. Reg. 35,747 (1984).
[16] *Coalition for the Environment v. NRC*, 795 F.2d 168 (D.C. Cir. 1986).
[17] 49 Fed. Reg. at 35,748.

According to the Commission, such funding was assured because all public utility commissions are legally obligated to set a utility's rates so that all reasonable costs of serving the public are recovered.[18]

Next, the Commission responded to comments opposing the proposed amendment and challenging the premise that the ratemaking process provides reasonable assurance that nuclear utilities will be able to recover sufficient funds to operate safely. In general, it determined that such comments misapprehend the limited function of the financial disclosure requirements and the NRC's prior practice. In reaching this conclusion, the Commission traced the history of the agency's financial qualification regulations and found that their initial focus had been on the availability of funds rather than on whether the funds were properly spent on safe operation. Likewise, the agency's long-standing practice had been to confine its review of financial submissions to assuring access to a source of funds; the agency had never sought assurance that the monies would be properly spent. Further, the Commission pointed out that a financial disability is not a safety hazard per se because the licensee is required under the Commission's regulations to cease operating if necessary funds for safe operation are not available. Finally, it noted that concern for safe performance is not confined to those utilities with just financial problems and that safe operation is best ensured by other regulatory tools such as the NRC's inspection and enforcement process.[19]

From these considerations, the Commission concluded that the concerns of commenters to the effect that ratemaking bodies do not guarantee funds received by utilities will be applied to safe operation of a facility are irrelevant to the limited assurance the Commission's regulations were intended to provide. Similarly, it found far wide of the mark commenters' assertions to the effect that the ratemaking process does not provide assurance of safe operation because it does not ensure a fixed level of profitability, which, in turn, can only be guaranteed by allowing recovery of all requested rate increases. The Commission observed that its regulations made no assumptions concerning rate of return or level of profits; rather, its premise was that reasonable and prudent costs of safely operating a nuclear plant will be recovered through the ratemaking process. It stated that any profits or return beyond that are of no regulatory concern because "[t]he Commission's concern is with safe operation, not profits."[20]

The Commission based its conclusion that expenses associated with safe plant operation will be recovered through the ratemaking process on a national survey of the National Association of Regulatory Utility Commissioners and the NRC staff's analysis of that survey. According to the Commission, the survey established that, even though rate commissions often deny certain requested cost

---

[18] *Id.*
[19] *Id.* at 35,748-49.
[20] *Id.* at 35,749.

items that lead to smaller profit margins, such disallowances are never so great as to preclude the recovery of operating costs. Moreover, the survey showed that all ratemaking authorities have the ability to ensure that utility revenues meet the costs of NRC safety requirements, although the mechanisms vary from state to state.[21] From this survey, the Commission concluded that the rulemaking record

> demonstrates generically that the rate process assures that funds needed for safe operation will be made available to regulated electric utilities. Since obtaining such assurance was the sole objective of the financial qualification rule the Commission concludes that, other than in exceptional cases, no case-by-case litigation of the financial qualification of such applicants is warranted.[22]

The Commission also pointed out that there was some support in the rulemaking record for the proposition that there is no connection between the agency's financial qualification review and safe operation of a facility but it specifically eschewed footing the electric utility exemption on that basis. Importantly, however, it declared that "if such a link could be identified for any given facility, the Commission would not be precluded from examining the financial qualification of that facility under 10 C.F.R. § 2.758."[23]

In the final portions of the statement of considerations, and after reserving its full authority pursuant to section 182a of the Atomic Energy Act of 1954, as amended,[24] to require additional financial information from an applicant, the Commission noted that

> [a]n exception to or waiver from the rule precluding consideration of financial qualification in an operating license proceeding will be made if, pursuant to 10 C.F.R. § 2.758, special circumstances are shown. For example, such an exception to permit financial qualification review for an operating license applicant might be appropriate where a threshold showing is made that, in a particular case, the local public utility commission will not allow the total cost of operating the facility to be recovered through rates.[25]

It then indicated that in normal circumstances the amendment will reduce the time all participants in the operating license process spend reviewing an electric utility–applicant's financial qualifications because the utility is presumed to be able to finance operation of the nuclear plant and that "[t]he rationale for the

---

[21] *Id.*

[22] *Id.* at 35,750.

[23] *Id.* at 35,751 n.5. In subsequently promulgating a rule requiring that a commercial reactor licensee, including an electric utility, notify the agency of the filing of a bankruptcy petition, the Commission seemingly has recognized the possibility of a connection between safety and the financial difficulty of an electric utility. 10 C.F.R. § 50.54(cc)(1). *See* 52 Fed. Reg. 1292 (1987).

[24] 42 U.S.C. § 2232.

[25] 49 Fed. Reg. at 35,751.

rule is in effect a generic determination that regulated or self-regulating public utilities are financially qualified to operate nuclear power plants."[26]

II.

As earlier indicated, the appellants' petition sought a waiver of the regulations exempting the applicants' lead owner, PSNH, from having to demonstrate, prior to low-power authorization, its financial ability to operate at low power and then to decommission the Seabrook facility. In support of their request, the appellants primarily relied upon PSNH's then recent, July 1987, 8-K filing with the Securities and Exchange Commission that, *inter alia*, described the electric utility's severe financial crisis and forecast the likelihood of proceedings under the Bankruptcy Code if a financial plan to improve its dire circumstances could not be developed by the end of 1987. The petition also rested on the New Hampshire anti-CWIP (Construction Work in Progress) statute that precludes any recovery of costs for operating the Seabrook plant unless and until it enters commercial service.[27] According to the petition these factors, combined with the uncertainties of the inevitable bankruptcy proceedings, presented sufficient special circumstances to justify the requested waiver.

In denying the appellants' petition, the Licensing Board looked to the Commission's statement of considerations accompanying the rules and concluded that "[t]he Commission did not implicitly or expressly contemplate or state that an operating license Applicant's financial distress and possible bankruptcy were special circumstances which could result in an exception or waiver under 10 C.F.R. § 2.758."[28] At the urging of the applicants and the staff, the Board determined that a waiver was appropriate solely where there was a showing that a ratesetter will not permit a utility to recover reasonable costs of construction and sufficient costs of safe operation. Hence, the Licensing Board held that the appellants' petition was fatally defective because it failed to demonstrate that, in the event of the issuance of a full-power license, the New Hampshire Public Utilities Commission would not allow recovery of construction and operation costs.[29] Alternatively, the Board determined that the appellants' forecast for PSNH's future in the event the utility filed for protection from its creditors was "wholly speculative" and thus could not form the basis for a prima facie showing that the application of the electric utility provisions of the finan-

[26] *Id.*
[27] *See* N.H. Rev. Stat. An. 378:30-a.
[28] Memorandum and Order (August 20, 1987) at 7.
[29] *Id.* at 8.

cial qualification regulations does not serve the purpose for which they were adopted.[30]

Although 10 C.F.R. § 2.758 provides a mechanism for setting aside an agency rule in a specific case, its provisions are intended to ensure that duly promulgated regulations are not lightly discarded. Thus, only the Commission can authorize the waiver of a regulation, and in order even to get the waiver question before it, a party first must make a prima facie showing to a subordinate board that special circumstances in the particular case are such that application of the regulation would not serve the purpose for which it was adopted. The relatively small number of waiver petitions filed in NRC adjudicatory proceedings and the fact that few, if any, such petitions have been successful evidence the difficulty of meeting the waiver standard. It also underscores the Commission's comment that such a petition "can be granted only in unusual and compelling circumstances."[31]

On the basis of the factors asserted by the appellants in their petition and in their supplemental brief before us, such compelling circumstances are not present with respect to PSNH's low-power operation of the Seabrook facility. Therefore, the Licensing Board reached the correct result in denying the appellants' petition. The appellants are correct that PSNH's recent bankruptcy filing is the first by a major utility since the Great Depression and that bankruptcy raises a host of uncertainties for PSNH. But, without more, these developments, even when considered with the New Hampshire anti-CWIP laws, do not meet the test of section 2.758 for certifying their waiver petition to the Commission. Because PSNH's bankruptcy filing is so unprecedented, the appellants' arguments have a certain visceral attraction. Such a reaction, however, can never be a proper substitute for the showing required under 10 C.F.R. § 2.758 — the only basis on which we are authorized to act.

Simply stated, the Commission's *purpose* in promulgating the electric utility exemption to the financial qualification regulations was to eliminate case-by-case review by the staff of an individual applicant's financial qualifications as part of the operating license review process and to remove such issue from adjudication in any operating license proceeding. Its rationale for this change

---

[30] *Id.* at 10. The Licensing Board also denied the appellants' petition on two procedural grounds: (1) that the Town of Hampton, which filed the joint petition on behalf of all three appellants, lacked standing to file it by virtue of an earlier order assertedly barring it from participating in the proceeding; and (2) that the Seacoast Anti-Pollution League and the New England Coalition on Nuclear Pollution were not properly represented before the Board because no notice of appearance in accordance with 10 C.F.R. § 2.713 had been filed on their behalf by counsel for the Town of Hampton. *Id.* at 2-3. Not surprisingly, the staff does not support the Licensing Board's procedural rulings and the applicants pay only lip service to them. *See* NRC Staff's Response to Intervenors' Appeal (November 5, 1987) at 2 n.2; Brief of Applicants-Appellees (October 26, 1987) at 9-10. In light of our affirmance of the Licensing Board's result denying the appellants' waiver petition, it is unnecessary for us to decide the correctness of these procedural rulings. We note, however, that the standing ruling appears to be based on a highly dubious reading of its earlier order in LBP-86-24, 24 NRC 132, 135-36 (1986). Further, the Board's construction of section 2.713 of the Rules of Practice appears to be hypertechnical and not only elevates form over substance but also disregards the common pleading practice of agency proceedings.

[31] *Northern States Power Co.* (Monticello Nuclear Generating Plant, Unit 1), CLI-72-31, 5 AEC 25, 26 (1972).

was straightforward: electric utilities were presumed to be able to finance the safe operation of their facilities through the ratemaking process. Thus, as we earlier recited in reviewing the statement of considerations accompanying the amendment, the Commission stated that "case-by-case review of financial qualifications for all electric utilities at the operating license stage is unnecessary due to the ability of such utilities to recover . . . costs of safe operation through the ratemaking process."[32]

In its statement accompanying the regulatory change, the Commission also elaborated upon the special circumstances that would establish that the purpose of the regulations was not being served and therefore warrant waiving the electric utility exemption to permit litigation of an applicant's financial qualifications. Specifically, it pointed out that a waiver would be appropriate to review an electric utility–applicant's financial qualifications upon a showing that a local public utility commission would not allow recovery of the cost of operating a nuclear facility.[33] Contrary to the determination of the Licensing Board (and the arguments of the applicants and the staff[34]), however, this Commission example was merely illustrative and does not constitute the exclusive method for meeting the standard of 10 C.F.R. §2.758. Not only is this clear from the context of its statement, but the Commission noted at another point that a waiver to explore the financial qualifications of an electric utility–operating license applicant would be appropriate if a nexus between the safe operation of the facility and the applicant's financial situation were shown.[35] But the appellants have not established any special circumstances of the type noted by the Commission that might warrant adjudicating PSNH's financial qualification to operate Seabrook safely at low power.

Before us, the appellants initially argue that the Commission exempted electric utilities from the financial qualification requirements because such entities are "assured" of funds for safe operation through the ratemaking process. They then claim that, in setting forth this rationale in the statement of considerations accompanying the amendment, the Commission used the word "assure" as it is defined in Black's Law Dictionary, i.e., " '[t]o make certain and put beyond doubt.' "[36] Thus, the argument goes, to meet the regulatory waiver standard the appellants need only show that the New Hampshire Public Utilities

[32] 49 Fed. Reg. at 35,748. In proposing the change in the financial qualification rules, the Commission noted that "case experience bolsters the Commission's conclusion that as a generic matter electric utilities should be presumed financially qualified to operate the nuclear plants they have constructed and that further case-by-case review on this issue is neither necessary nor productive." 49 Fed. Reg. 13,045 (1984).

[33] 49 Fed. Reg. at 35,751.

[34] Brief of Applicants-Appellees (October 26, 1987) at 5; Applicants' Reply to Brief of Seacoast Anti-Pollution League (March 29, 1988) at 9-11; Tr. 41-45, 49, 55; NRC Staff's Response to Intervenors' Appeal (November 5, 1987) at 13; NRC Staff Responses (March 29, 1988) at 10-15; Tr. 62, 64.

[35] 49 Fed. Reg. at 35,751 n.5.

[36] Intervenors' Brief in Support of Appeal (September 24, 1987) at 5 & n.3.

Commission cannot "assure" that the cost of operating Seabrook at low power will be recovered through rates. In their view, the waiver petition does this because the New Hampshire statute bars PSNH from recovering operating costs for low power if Seabrook never enters commercial service and there can be no "assurance" Seabrook will be licensed for full power by reason of PSNH's dire financial condition.[37]

The appellants' argument is seriously flawed. To begin with, it is erroneously premised on a definition of the word "assure" that finds no support in the language of the Commission's financial qualification regulations or their history. Indeed, those regulations use the term "reasonable assurance" — a term fundamentally at odds with the appellants' asserted meaning.[38] Moreover, the appellants' meaning, if accepted, would effectively nullify the Commission's stated rationale for the amendment. Rather, as the District of Columbia Circuit stated in upholding its validity,

> financial qualification review, even when case-by-case, never required absolute certainty, only a showing that there was "reasonable assurance" of financing the costs of operation. The Commission has determined that the ratemaking process provides that reasonable assurance, and that determination is not rendered infirm simply because speculative conditions can be posited under which the funds would not all be available, received, and properly spent.[39]

Because the appellants' entire argument is built on an erroneous and totally unsupported premise, it must fail.

Furthermore, the appellants' argument cannot be saved by their reliance on the New Hampshire anti-CWIP statute. That law, like similar enactments of many states, precludes only the recovery of operating costs until the facility is put into commercial service. As the appellants concede, it does not bar the applicants from using currently available funds to cover the costs of low-power operation.[40] And the "specific aspect . . . of the subject matter of the proceeding"[41] to which appellants' waiver petition is addressed however is the operation of Seabrook at low power. Thus, absent a showing that the applicants have insufficient funds to cover the costs of low-power operation, this statute does nothing to advance their cause. Nor have the appellants even attempted such a showing.[42] They have

---

[37] *Id.* at 6-7.

[38] *See* 10 C.F.R. § 50.33(f)(1) & (2).

[39] *Coalition for the Environment v. NRC*, 795 F.2d at 175.

[40] Tr. 20.

[41] 10 C.F.R. § 2.758(b).

[42] Ironically, the appellants attached to their brief a document seemingly helping to establish just the opposite. Acting pursuant to section 182a of the Atomic Energy Act of 1954, as amended, the staff, in August 1987, requested financial information from PSNH demonstrating that the applicants at that time could meet the anticipated cost of low-power operation. *See infra* p. 23. The appellants attached PSNH's September 1987 response to that staff request to their brief. Intervenors' Brief in Support of Appeal (September 24, 1987), Exh. E (enclosure to letter from Robert J. Harrison, PSNH, to United States Nuclear Regulatory Commission (September 3, 1987)).

failed, therefore, to make out a prima facie showing of special circumstances that warrant a waiver of the electric utility exemption of the financial qualification regulations. Accordingly, the Licensing Board correctly denied the petition.

In their supplemental brief filed after PSNH sought protection under Chapter 11 of the Bankruptcy Code, the appellants claim simply that the bankruptcy filing, per se, requires a grant of the requested waiver. This is so, they argue, because the assumption underlying the electric utility exemption, i.e., that the ratemaking process will provide the necessary funds to operate Seabrook, is inapplicable in the case of a bankrupt utility where "[j]urisdiction over PSNH as debtor in possession is now vested in the U.S. Bankruptcy Court, which may or may not attempt itself to exercise rate-setting authority."[43] The appellants add, however, that they believe it highly unlikely that the bankruptcy judge would attempt to exercise any rate-setting authority.[44]

The appellants' new position suffers from much the same defect as that portion of their initial argument based on the New Hampshire anti-CWIP statute. The appellants seek to have the regulations in question waived in order to permit an inquiry into PSNH's financial qualifications to operate Seabrook safely at low power. Once again, therefore, the appellants need to establish that PSNH and the other applicants lack sufficient funds to operate Seabrook safely at low power. In other words, if they are to rely on PSNH's filing of a Chapter 11 reorganization petition, they must demonstrate that the bankruptcy proceeding deprives PSNH and the other applicants of the financial resources to operate the facility safely at that power level. The appellants have totally failed to make this required showing.[45]

Rather, the appellants merely aver, without more, that PSNH's reorganization petition may exclude PSNH from the ratemaking process. Similarly, they have not even substantiated their claim that the Bankruptcy Court has either the authority or the inclination to preempt the state ratemaking process. Indeed, they opine that this scenario is unlikely. Such bald assertions, even assuming their relevancy to low-power operation, fall far short of meeting the appellants' burden under 10 C.F.R. § 2.758.[46]

---

[43] Seacoast Anti-Pollution League Response to Appeal Board Memorandum and Order (February 23, 1988) at 5 (footnote omitted).

[44] *Id.* at n.3.

[45] As previously noted (*see supra* p. 10), we provided the appellants with an opportunity to amend their waiver petition or to file a new one after PSNH filed a petition for reorganization under Chapter 11 of the Bankruptcy Code. Our order specifically "caution[ed] all parties to comply fully with the provisions of 10 C.F.R. § 2.758 and other applicable Rules of Practice." Memorandum and Order (January 29, 1988) at 4 n.2. Rather than amend their waiver petition or file a new one, the appellants filed a supplemental brief with attachments. As the applicants point out in their reply, the appellants' filing neither complies with our order nor the provisions of section 2.758. Although we reject their arguments on the merits, the appellants' failure to comply with our order and the Rules of Practice provides an independent basis for disposing of the appellants' supplemental filing.

[46] The appellants also assert that filing of a reorganization petition by PSNH requires a financial qualification inquiry because bankruptcy raises such major uncertainties that there can be no reasonable assurance that PSNH

(Continued)

III.

We now turn to the petition of the Attorney General of Massachusetts. In response to our instructions, the Attorney General filed his petition to waive the electric utility provisions of the financial qualification regulations directly with us and, like the petition of the appellants, it also is directed at the low-power aspect of the proceeding.[47] The Attorney General's petition is accompanied by several affidavits and numerous other documents arranged in fourteen appendices that total some ninety-five pages. Since submitting his initial petition, the Attorney General has filed two supplements containing some 150 pages of attachments that purportedly contain previously unavailable information.[48]

In a nutshell, the Attorney General's initial petition and supporting documentation purport to show the substantial present and potential future costs associated with low-power operation of Seabrook and the constraints on the availability of funds to PSNH caused by the New Hampshire anti-CWIP statutes and the ongoing bankruptcy proceeding. The petition also seeks to establish the inability or unwillingness of the other joint owners to cover any part of PSNH's share of the current and future low-power costs. According to the petition, these factors demonstrate that PSNH has a shortage of funds for its share of Seabrook costs and hence the applicants have insufficient funds for

---

can obtain the funds necessary for safe operation. Seacoast Anti-Pollution League Response to Appeal Board Memorandum and Order (February 23, 1988) at 4, 6-10. Although it is self-evident that bankruptcy creates major uncertainties, this circumstance, without a great deal more, does not satisfy the appellants' burden of establishing that application of the electric utility provisions of the financial qualification regulations will not serve the purposes for which they were adopted. In short, the appellants have pointed to nothing in the proceedings before the Bankruptcy Court that even suggests, much less establishes, that PSNH and the other applicants lack sufficient funds to operate Seabrook safely at low power. Nor have they demonstrated any other link between PSNH's bankruptcy filing and safety at the facility.

[47] *See supra* p. 10. When PSNH filed its reorganization petition and we, in turn, provided the appellants an opportunity to amend their waiver petition or to file a new one, we also directed any other party that intended to file a waiver petition with respect to the low-power aspect of the proceeding to do so immediately in order that we could consider all such petitions together. *See* Memorandum and Order (January 29, 1988) at 3. Pursuant to that instruction, the Massachusetts Attorney General filed his petition.

In their opposition to the Attorney General's petition, the applicants erroneously suggest that the Attorney General has not complied with our order because the petition is not confined to the low-power aspect of the operating license proceeding. Applicants' Response in Opposition to Massachusetts Attorney General's Petition under 10 C.F.R. 2.758 (April 11, 1988) at 3. For support, the applicants primarily point to the first sentence of the Attorney General's petition that requests a waiver of "the public utility exemption from the Commission's requirement that a demonstration of financial qualification be made prior to the issuance of a *commercial nuclear power plant operating license*." *Id.* (emphasis supplied by the applicants). To arrive at their mistaken conclusion, the applicants apparently equate the Attorney General's use of the word "commercial" with "full-power." No such conclusion is justified from a neutral reading of the first sentence of the petition or a reading of the whole petition. Indeed, the closing sentence of the first paragraph completely dispels the applicants' suggestion. It states that the petition "demonstrate[s] that it is more likely than not that adequate funding for the costs of safe low-power operation . . . will not be available during the pendency of the PSNH bankruptcy." Massachusetts Attorney General James M. Shannon's Petition Under 10 C.F.R. 2.758 (March 7, 1988) at 2 [hereinafter Petition].

[48] Supplement to Massachusetts Attorney General James M. Shannon's Petition Under 10 C.F.R. 2.758 (May 13, 1988) [hereinafter Supplement I]; Second Supplement to Massachusetts Attorney General James M. Shannon's Petition Under 10 C.F.R. 2.758 (June 2, 1988) [hereinafter Supplement II].

the safe low-power operation of Seabrook and any subsequent shutdown and maintenance of the facility should that be necessary. In the second supplement to the petition, the Attorney General asserts that another joint owner holding an 11.59340% interest in Seabrook, Massachusetts Municipal Wholesale Electric Company (MMWEC), has halted its monthly pro rata share payments to the project, thereby creating an additional shortage of the funds needed to operate the facility at low power.

Although the applicants and the staff oppose the petition, they have not filed any counteraffidavits or other exhibits attempting to rebut the Attorney General's documentary filings.[49] Rather, as they did in successfully opposing the appellants' waiver petition before the Licensing Board, the applicants and the staff merely point to the Commission's statement of considerations accompanying the amendment and argue that the sole method for obtaining a waiver is to demonstrate that the electric utility–applicants will be unable to recover the costs of safe operation of the Seabrook facility through the ratemaking process. In their view, the Attorney General must make a prima facie case that the New Hampshire Public Utility Commission will deny the applicants recourse to the ratemaking process once Seabrook is fully licensed and achieves commercial operation. Because the Attorney General has not even attempted such a showing, they claim his waiver petition must be denied.[50]

As previously pointed out (*see supra* p. 17), the Achilles' heel of this argument is that the Commission in its statement of considerations did not limit to this single situation the special circumstances in which a waiver would be appropriate. Rather, the instance of a local public utility commission disallowing any recovery for operating a nuclear power plant was cited by the Commission as an illustration of special circumstances where application of the amendment would not serve the purpose for which it was adopted. Contrary to the apparent belief of the applicants and the staff, the Commission's example was just that, and neither the language used to introduce it ("[f]or example") nor the surrounding context support the notion that no other conditions can present special circumstances warranting a waiver of the electric utility exemption provisions.[51] Moreover, in the same statement, the Commission indicated that a showing of a link between an electric utility operating license applicant's poor

[49] The applicants filed no responses to the two supplements the Attorney General filed to his waiver petition. The staff, on the other hand, filed brief responses but did not oppose the inclusion of the Attorney General's documentary exhibits in the record. NRC Staff Response (May 18, 1988); NRC Staff Response (June 9, 1988). Even though it did not object to the filing of the Attorney General's petition supplements, the staff states in its first response that such supplemental filings are not permitted by the Rules of Practice. Contrary to the staff's assertion, however, the Commission's Rules do not speak at all to the subject of amendments to waiver petitions. Because nothing prevents a party from filing a second, third or fourth waiver petition, each adding new facts as they develop, sound practice dictates that amendments or supplements to petitions be allowed.

[50] Applicants' Response in Opposition to Massachusetts Attorney General's Petition Under 10 C.F.R. 2.758 (April 11, 1988) at 6-8; NRC Staff Responses (March 29, 1988) at 10, 19-20.

[51] 49 Fed. Reg. at 35,751.

financial health and safe operation of its nuclear facility would justify exploring the financial qualification of the troubled utility under 10 C.F.R. § 2.758.[52] Obviously, if the Commission intended its first example to be exclusive, it would not have recited the other. The applicants and the staff have misapprehended the Commission's statement, and the premise of their argument opposing the Attorney General's petition is simply incorrect.

Further, their argument ignores that it is the low-power operation of Seabrook that, in the language of section 2.758(b), is "the subject matter of the particular proceeding" or, more precisely, "the specific aspect . . . of the subject matter of the proceeding as to which application of the rule or regulation (or provision thereof) would not serve the purposes for which the rule or regulation was adopted." The fact that at some indeterminate time in the future, when Seabrook is fully licensed and enters commercial service, PSNH can recover its operating costs does not answer the Attorney General's assertion that PSNH currently lacks sufficient funds to operate Seabrook safely at low power. It is the financial inability or unwillingness of PSNH or some other joint owner to fund its share of the cost to operate Seabrook safely at low power that, if established, provides the special circumstances warranting a rule waiver. And, the factors that have created the deficiency in funds to operate the plant safely at low power comprise the Attorney General's prima facie case that the electric utility exemption in the financial qualification regulations does not serve the purpose for which it was adopted. Yet the applicants and the staff have not even addressed these factors.

We have found that a prima facie showing within the meaning of 10 C.F.R. § 2.758(d) is one that is "legally sufficient to establish a fact or case unless disproved."[53] Here, in order for us to certify the petition to the Commission, the Attorney General must establish that the applicants lack sufficient funds to operate Seabrook safely at low power. In an attempt to do this, the Attorney General first chronicles, with appropriate documentation, the ownership share of each of the twelve joint owners and co-applicants of the Seabrook facility and notes that the Seabrook Joint Ownership Agreement does not obligate any joint owner to assume the obligations of another defaulting owner.[54] The petition

---

[52] *Id.* at n.5.

[53] *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-653, 16 NRC 55, 72 (1981).

[54] Petition at 4. Although they do not request that it should be dismissed or denied on this ground, the applicants suggest in their response to the Attorney General's petition that the petition fails to comply with the affidavit requirement of 10 C.F.R. § 2.758(b). Applicants' Response in Opposition to Massachusetts Attorney General's Petition Under 10 C.F.R. 2.758 (April 11, 1988) at 5-6. That provision provides that the petition shall be accompanied by an affidavit that identifies the aspect of the subject matter of the proceeding to which application of the relevant regulations would not serve the purpose for which they were adopted. Further, it states that the affidavit should set forth the circumstances justifying the requested waiver. As the applicants are well aware, however, an affidavit is a sworn instrument in which the affiant relates facts within his knowledge. In a case such as this where the pertinent facts are contained in various documents, it is appropriate for the Attorney General to spell out his case in the waiver petition with reference to documentary exhibits.

then shows that none of the joint owners has made any commitment to meet any payment shortfalls that result from PSNH's financial difficulties.[55]

The Attorney General also details the costs of operating Seabrook at low power. Based on the figures PSNH provided the staff in response to a request for financial information several months before PSNH's bankruptcy filing, the petition recites that the cost of low-power operation over the current Seabrook operating budget of $10 million a month is an additional $3,658,000 over a three-month period. Further, the cost of insurance will increase approximately $2,785,000. PSNH's share of these costs as a 35.56952% owner will total $2,291,607.[56] In addition, the petition lists the various salvage values for the facility in its present condition and after it is contaminated by low-power operation and details the costs associated with permanently shutting down and maintaining the facility in a safe condition.[57]

Next, the Attorney General turns to what he terms the consequences of PSNH's bankruptcy filing. Relying upon hornbook bankruptcy principles and the Bankruptcy Code, the Attorney General claims that low-power operation of Seabrook would substantially alter the status quo of the debtor's estate because it entails substantial additional costs and impairs the current salvage value of the plant. He concludes, therefore, that such operation is not in the ordinary course of business and requires approval by the Bankruptcy Court. He then asserts that such approval is extremely unlikely because Seabrook, in turn, is unlikely to receive a full-power license due to the irremediable flaws in its emergency plans.[58] Lastly, the Attorney General points out that the New Hampshire anti-CWIP statute precludes any rate relief for PSNH for low-power operation.[59] Thus, the Attorney General claims that these factors demonstrate a shortfall in PSNH's portion of the funds necessary for low-power operation and the standard for a rule waiver has been met.[60]

In the first supplement to the petition, the Attorney General added information aimed at bolstering his claim that PSNH lacked funds to meet its share of the

---

[55] Petition at 5. In this regard, the Attorney General relies upon the answer to a Connecticut Department of Public Utility Control (DPUC) interrogatory by United Illuminating Company, the second largest owner of Seabrook with a 17.5% interest, stating that none of the Seabrook owners has made a commitment to meet any PSNH payment shortfalls. *Id.*, Appendix IV.

The Attorney General's petition also includes specific information on United Illuminating and the joint owners holding the third, fourth and fifth largest interests in the project. That information is designed to show that these owners are either financially unable or currently unwilling to increase their share of Seabrook costs. *Id.* at 5-7. For example, the Attorney General cites the same interrogatory answer by United Illuminating to show that UI cannot increase its share of Seabrook payments without DPUC approval. *Id.*, Appendix IV. In addition, the petition also relates that the joint owner with the third smallest ownership interest, Vermont Electric Cooperative, Inc., with a 0.41259% share, ceased making its monthly Seabrook payments in 1986. *Id.* at 7 & Appendix VIII.

[56] *Id.* at 8-10.

[57] *Id.* at 9-11.

[58] *Id.* at 11-14.

[59] *Id.* at 17.

[60] *Id.* at 16-18.

costs for low-power operation of Seabrook. Specifically, the supplement included documentation that the Bankruptcy Court had authorized PSNH to pay interest on its First and Second Mortgage Bonds and that the trustee for the Third Mortgage Bonds was seeking similar interest payments.[61] It also included PSNH's 1987 Form 10-K filed with the Securities and Exchange Commission stating that PSNH would lack sufficient funds to maintain its monthly Seabrook payments if it was ordered to pay interest on the Third Mortgage Bonds.[62] Further, the supplement provided information on the worsening financial condition of the owners holding the third, fourth, fifth and seventh largest interests in Seabrook.[63]

Finally, in the second supplement to the petition, the Attorney General states that the Board of Directors of MMWEC, the fourth largest owner of Seabrook with an 11.59340% interest, voted on June 1, 1988 not to make its monthly payment, due June 2, 1988, of ongoing Seabrook costs and to get out of the project.[64] According to the Attorney General, the MMWEC Board voted unanimously to endorse the recommendations in two reports of its General Manager that advise drawing down MMWEC's pre-funded construction payments by ceasing future payments beginning with June. The reports note that these payments will meet MMWEC's obligations for two or three months at current levels of expenditures. They also call for MMWEC to prepare a proof of claim for filing with the PSNH bankruptcy proceeding and to prepare to take legal action against the constructors of Seabrook.[65]

The Attorney General's waiver petition clearly establishes the current monthly operating costs for Seabrook and the additional costs associated with low power. It also establishes that in the event PSNH experiences a shortfall in meeting its Seabrook payments none of the other joint owners is obligated to make up the shortage and none of them has made any commitment to do so. Although not critical to his case, the Attorney General's petition goes a long way toward demonstrating that several of the joint owners with the larger interests in Seabrook are fiscally unable to pick up any of PSNH's funding deficiencies.

Notwithstanding these considerations, the initial waiver petition fails to demonstrate the essential fact that PSNH, even though it is in the midst of a bankruptcy reorganization proceeding, cannot meet its share of the low-power operation costs for Seabrook. Rather than establish this point, the Attorney General offers only speculation: first, that Seabrook is unlikely to receive a full-power license and second, that the Bankruptcy Court is unlikely to

[61] Supplement I at 4 & Appendices II, III.
[62] *Id.* at 5 & Appendix IV.
[63] *Id.* at 6-7 & Appendices VI, VII.
[64] Supplement II at 3-4.
[65] *Id.* at 4 & Attachment 1.

approve any expenditures by PSNH for low-power operation because Seabrook is unlikely to receive a full-power license. This chain of events, however, is just too tenuous to meet the Attorney General's burden under 10 C.F.R. § 2.758(c). Moreover, such prognostication on the ultimate full-power licensing of Seabrook ignores the Commission's prohibition on speculating on the outcome of ongoing proceedings in applying specific regulations — here the waiver provisions.[66] Accordingly, the initial petition does not establish a shortfall in funds by PSNH and, in turn, the applicants' funds to operate Seabrook at low power.

But the gap in the initial petition is filled by the Attorney General's second supplement. It clearly establishes that the joint owner with the fourth largest interest in Seabrook has ceased its monthly payments and is moving to get out of the project. Because MMWEC already had made pre-funded payments to the project, which at current expenditure levels will continue to meet its obligations for two to three months, the impact of MMWEC's action on Seabrook funding will not be felt for sixty to ninety days. In effect, MMWEC's action is the same as if the Board of Directors voted on June 1 to cease payments effective on August 2 or September 2. As matters now stand, the remaining joint owners and applicants will have a substantial 11.59340% deficiency in monthly operating expenses and the additional funds necessary to operate Seabrook safely at low power at the expiration of that period.

It is possible, of course, that other joint owners will step forward to meet the shortfall caused by MMWEC's action, although it is a reasonable inference from the Attorney General's documentation with respect to those owners and the possibility of a shortfall by PSNH that the other joint owners will not do so. It is also possible that MMWEC may return to the fold. Indeed, any number of possibilities can be postulated. But the Attorney General's prima facie case need not foresee and foreclose every such possibility. In the same way that the Attorney General cannot meet his burden by speculating on future

---

[66] *Long Island Lighting Co.* (Shoreham Nuclear Power Station), CLI-85-1, 21 NRC 275, 278-79 (1985). *See* CLI-84-9, 19 NRC 1323, 1327 (1984); CLI-83-17, 17 NRC 1032, 1034 (1983).

Although the emphasis of the Attorney General's petition is on the applicants' shortage of funds for operating Seabrook at low power, the petition also purports to show that PSNH has insufficient funds to decommission Seabrook after low-power operation should that be necessary. Petition at 9-11. *See supra* p. 23. Decommissioning, however, is an action that is normally applicable only after a facility has reached the end of its useful life. This being the case, any consideration at this point of the applicants' purported lack of funds to decommission Seabrook after low-power operation seemingly runs afoul of the Commission's prohibition on speculating about the outcome of the operating license proceeding. This is in contrast to the operation of Seabrook at low power that requires immediate funding for such operation whether or not the facility ever operates at full power.

Moreover, when the amendments to the financial qualification regulations were first promulgated in 1982, the Commission, in the statement of considerations accompanying those amendments, stated that all consideration of decommissioning funding should be eliminated from financial qualification review and instead be considered under the forthcoming decommissioning regulations. 47 Fed. Reg. at 13,751. Although long delayed, the Commission's final decommissioning rule has now been issued. 53 Fed. Reg. 24,018 (June 27, 1988). Even though the 1982 amendment was remanded to the Commission by the District of Columbia Circuit (*see supra* p. 12 & note 14), the Commission's instruction with regard to decommissioning appears to have survived and remains controlling.

events, speculation on future events cannot defeat the Attorney General's present showing that, as matters now stand, the applicants shortly will have more than an eleven percent shortfall in the funds necessary to operate Seabrook safely at low power. Thus, the Attorney General's waiver petition presents a prima facie case that the applicants lack sufficient funds to operate Seabrook safely at low power and, pursuant to 10 C.F.R. § 2.758(c), we must certify the petition to the Commission.[67]

As earlier noted, it will be for the Commission to decide whether to grant the petition and thus to waive the financial qualification regulations in question. Only if the Commission provides that relief will the Attorney General or another party be in a position to file a new contention directed to the applicants' asserted lack of the requisite financial ability to operate the facility safely at low power. (Up to now, any contention along that line would have been subject to summary rejection as constituting an impermissible attack upon the Commission's regulations.) In submitting any such new contention, the Attorney General will be required to address the five factors governing the admission of late-filed contentions that are set forth in 10 C.F.R. § 2.714(a)(1) and demonstrate that, on balance, those factors support its acceptance.

For the foregoing reasons, we *affirm* the Licensing Board's denial of the appellants' waiver petition and *certify* to the Commission the Attorney General's petition.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

[67] In its opposition to the Attorney General's petition, the staff closes with a footnote stating that "it should be noted again that the NRC Staff will exercise its authority under section 182a of the Atomic Energy Act to require from Applicants such information as may be necessary for the Commission to determine whether its application for a license should be granted or denied." NRC Staff Responses (March 29, 1988) at 21 n.24. Although its comment is not directly relevant to the question before us, the staff appears to be saying that even though in this case the question of the applicants' financial qualifications is pivotal to the licensing decision, it is appropriate to leave the inquiry into the financial status of the applicants to the staff. The staff's approach is difficult to reconcile with the decision in *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), *cert. denied*, 469 U.S. 1132 (1985). There the court found that one of the Commission's emergency planning rules precluding any hearing on issues of fact material to the licensing decision violated a party's hearing rights under section 189(a) of the Atomic Energy Act.

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)

July 15, 1988

The Appeal Board denies, as interlocutory, the applicants' appeal from a Licensing Board ruling that a particular contention was not moot; the Board also denies the applicants' alternative request that it undertake discretionary review of the Licensing Board ruling.

RULES OF PRACTICE: APPELLATE REVIEW

The single exception to the general proscription against interlocutory appeals contained in 10 C.F.R. 2.730(f) of the Commission's Rules of Practice is found in section 2.714a. That section permits an appeal, on certain limited and precisely defined questions, from an order on a petition for leave to intervene in a proceeding. In the instance of an order granting such a petition, the authorization extends only to appeals by a party "other than the petitioner on the question whether the petition . . . should have been wholly denied." 10 C.F.R. 2.714a(c).

RULES OF PRACTICE: INTERLOCUTORY REVIEW

A request for discretionary review of a Licensing Board ruling is not ordinarily granted unless the challenged ruling either (1) threatens the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated by a later appeal or (2) affects the basic structure of the proceeding in a pervasive or 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: APPELLATE REVIEW (SCHEDULING DECISIONS)

The Appeal Board has emphasized repeatedly in the past that matters of scheduling rest peculiarly within the licensing board's discretion; the Appeal Board enters that thicket reluctantly, particularly so when it is on an interlocutory basis. *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-541, 9 NRC 436, 437-38 (1979).

APPEARANCES

Thomas G. Dignan, Jr., and **Deborah S. Steenland,** Boston, Massachusetts, for the applicants Public Service Company of New Hampshire, *et al.*

Diane Curran and **Dean R. Tousley,** Washington, D.C., for the intervenor New England Coalition on Nuclear Pollution.

Gregory Alan Berry for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

Last April, we remanded to the Licensing Board once again the issue of the environmental qualification of the RG58 coaxial cable used, according to the information in the evidentiary record, for data transmission in the Seabrook nuclear power facility's computer system.[1] Subsequently, the applicants filed with the Licensing Board a suggestion of mootness, accompanied by several affidavits. The suggestion was founded on the applicants' assertions, said to

[1] *See* ALAB-891, 27 NRC 341 (1988). As detailed therein, the issue had been returned to that Board on two earlier occasions.

be supported by the affidavits, that (1) only twelve of the 126 installed RG58 cables were routed at least partially through a harsh environment within what the applicants characterized as the "nuclear island" and, as a consequence, required environmental qualification by reason of 10 C.F.R. 50.49; and (2) those twelve cables would be replaced by RG59 coaxial cables with respect to which there is no current environmental qualification issue.[2]

The suggestion of mootness was opposed by both the NRC staff and the intervenor New England Coalition on Nuclear Pollution (Coalition), the sponsor of the contention that had put the environmental qualification of the RG58 cable into question. In the staff's view, the matter was not susceptible of resolution on mootness grounds. Rather, according to the staff, the appropriate course was the reopening of the record to receive, first, the affidavits submitted by the applicants and, thereafter, any "relevant and admissible evidence in support of or opposition to [a]pplicants' position" that either the Coalition or staff might wish to submit.[3] For its part, the Coalition maintained, *inter alia*, that the applicants' filing had "all the characteristics of a summary disposition motion," yet left unresolved "material issues of dispute between the parties."[4]

In a June 23, 1988 transcribed telephone conference call, the Licensing Board rejected the suggestion of mootness, directed the commencement of discovery and invited the institution of summary disposition procedures.[5] As the Board saw it, still open questions stood in the path of a finding that the environmental qualification issue had become moot.[6]

The applicants now seek an immediate appellate examination of this result.[7] To begin with, they claim an entitlement to appeal the Licensing Board's ruling under 10 C.F.R. 2.714a.[8] Alternatively, should we find the ruling not appealable as a matter of right, they ask that we exercise our discretion to review the ruling by way of a grant of directed certification under 10 C.F.R. 2.718(i) and 2.785(b)(1).[9]

---

[2] *See* Applicants' Suggestion of Mootness (May 19, 1988) at 2 *et seq.* It appears from the affidavit of Gerald A. Kotkowski (at 2) that, contrary to the impression left by the existing evidentiary record, some of the twelve cables are to be used for purposes not associated with the Seabrook computer system.

[3] NRC Staff Response to Applicants' Suggestion of Mootness (June 2, 1988) at 11-12.

[4] New England Coalition on Nuclear Pollution's Response to Applicants' Suggestion of Mootness Regarding Environmental Qualification of RG-58 Cable (June 9, 1988) at 1, 3-4. In part, the Coalition's filing relied upon an attached affidavit.

[5] *See* Tr. 1177-79, 1181. On June 28, the Board issued a memorandum in which it memorialized those actions and noted that the relevant pages of the transcript were being served on the parties.

[6] *See* Tr. 1178-79.

[7] The Licensing Board declined the applicants' request that it refer this matter to us. *See* Tr. 1178.

[8] *See* Applicants' Appeal and Petition for Directed Certification of an Order of the Atomic Safety and Licensing Board Rejecting Applicants' Suggestion of Mootness With Respect to the Issue of Environmental Qualification of RG-58 Cable (June 28, 1988) [hereinafter, Applicants' Appeal] at 14.

[9] *Id.* at 14-15. *See Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478, 482-83 (1975).

We agree with the staff and the Coalition that the appeal will not lie and, further, that the well-settled standards for granting discretionary interlocutory review of a Licensing Board order are not met in this instance. Accordingly, we dismiss the appeal and deny directed certification.

1. It scarcely could be more obvious that the provisions of 10 C.F.R. 2.714a have no application in the circumstances of this case. As the single exception to the general proscription against interlocutory appeals contained elsewhere in the Commission's Rules of Practice,[10] section 2.714a permits an appeal, on certain limited and precisely defined questions, from an order on a petition for leave to intervene in a proceeding. In the instance of an order granting such a petition, the authorization extends only to appeals by a party "other than the petitioner on the question whether the petition . . . should have been wholly denied."[11] In other words, to invoke section 2.714a the utility applicant must be in a position to assert that the petitioner for intervention should have been totally excluded from participation in the proceeding. It will not suffice to claim merely that, although properly granting intervention, the Licensing Board should have rejected certain of the contentions advanced by the petitioner.

The Licensing Board ruling here under attack has nothing at all to do with the grant or denial of the Coalition's intervention petition — which was filed and acted upon many years ago. Nor, as it happens, does the ruling bear upon the Coalition's right to participate in this operating license proceeding. Not only is the Coalition taking an active role in the litigation of the issues presented in the offsite emergency planning phase of the proceeding, but also it still has an appeal pending before us on another matter raised in the onsite emergency planning and safety issues phase (i.e., the phase that embraces the environmental qualification issue now at hand).[12] In short, the absolute condition precedent to the resort to section 2.714a is simply not present.[13]

---

[10] *See* 10 C.F.R. 2.730(f).

[11] 10 C.F.R. 2.714a(c). The entitlement to appeal from an order denying an intervention petition, of no relevance here, is covered in section 2.714a(b).

[12] *See* ALAB-894, 27 NRC 632 (1988). In noting these facts, we do not mean to imply that, had the challenged order addressed the question of the Coalition's continued entitlement to participate in the proceeding, section 2.714a would have been available to the applicants. For the applicants would still have been confronted with the fact that the order would not have been entered on, and would not have disposed of, an intervention petition and its supplement containing the intervenor's proposed contentions.

[13] Even if factually correct, the applicants' insistence that the Licensing Board "wholly changed" the "contention to be litigated" (Applicants' Appeal at 14) is quite beside the point. As we have seen, section 2.714a does not authorize an interlocutory appeal based upon a claim of that character. It is equally irrelevant that, as the applicants further stress (*ibid.*), were they to prevail on their attempted appeal, "this discrete matter [would be brought] to a close." Whenever, for example, a licensing board denies a motion for summary disposition on a particular issue, a successful interlocutory appeal from that denial similarly would bring a discrete matter to a close. That consideration has never been thought sufficient to justify entertaining, in contravention of 10 C.F.R. 2.730(f), appeals from summary disposition denials. *See, e.g., Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-220, 8 AEC 93, 94 (1974).

2. The applicants' alternative request that we undertake review of the Licensing Board ruling in the exercise of our discretion stands on scant better footing. As the applicants acknowledge, such relief is not ordinarily granted unless the challenged ruling either (1) "threaten[s] the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated by a later appeal or (2) affect[s] the basic structure of the proceeding in a pervasive or unusual manner."[14] We are satisfied that neither of these standards is met here.

The applicants do not appear to assert that the ruling below will have a serious irreparable impact upon them, and it is clear to us that any such assertion would be unavailing. Insofar as the other prong of the *Marble Hill* test is concerned, we are told by the applicants that, because it purportedly "has resulted in a proceeding, or discrete portion thereof, not being wholly terminated when it should have been," the ruling below "does not merely affect the structure of a proceeding, it creates it."[15] But the same could be said of *any* licensing board determination that declines to end the litigation of a particular issue at a time when one of the parties thinks it should be terminated. Inasmuch as determinations of that stripe are quite commonplace in NRC licensing proceedings,[16] one would have to stretch the reach of the second *Marble Hill* prong a considerable distance in order to bring them within its bounds. Neither have we been given nor do we perceive any good reason to indulge these applicants in that regard. To the contrary, there is absolutely nothing before us to distinguish this case from the myriad others in which, although dissatisfied with a ruling that has the effect of prolonging the litigation of one or more issues, the party must abide the event of further developments before seeking (if still necessary) appellate relief.[17]

---

[14] *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977) (footnote omitted).

[15] Applicants' Appeal at 15.

[16] Every time a licensing board admits a contention over objection or denies a motion for summary disposition, it leaves for additional proceedings and possible trial an issue that at least one party believes should not be explored further.

[17] This is so even though the result may be that, once further litigation is conducted, the question whether the issue(s) warranted additional examination "will be moot and of academic interest only." Applicants' Appeal at 15. It is only in highly unusual circumstances where there is the potential of irreparable harm — not present here — that the prospect of mootness will be deemed a relevant consideration on the question whether interlocutory appellate review of a particular licensing board order should be allowed. *See, e.g., Kansas Gas and Electric Co.* (Wolf Creek Nuclear Generating Station, Unit No. 1), ALAB-327, 3 NRC 408 (1976) (interlocutory review of the denial by the Licensing Board of a protective order with respect to the disclosure of certain pricing terms of a nuclear fuel supply contract).

Appeal *dismissed;* petition for directed certification *denied.*[18]
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

[18] Although opposing the relief sought by the applicants, the NRC staff asks us to direct the Licensing Board to expedite its determination of the RG58 cable environmental qualification issue. In this connection, the staff maintains that the hearing schedule established by the Board below in the June 23 telephone conference is excessive, particularly in allowing more than six weeks for discovery. *See* Tr. 1181-85. But "[w]e have emphasized repeatedly in the past that matters of scheduling rest peculiarly within the licensing board's discretion; we enter that thicket reluctantly, particularly so when it is on an interlocutory basis." *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-541, 9 NRC 436, 437-38 (1979), and decisions there cited. In this case, there is insufficient cause to put that reluctance to one side. The staff is free, of course, to seek reconsideration of the schedule by the Licensing 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 No. 50-352-OLA**
(TS Iodine)

PHILADELPHIA ELECTRIC COMPANY
(Limerick Generating Station, Unit 1) **July 18, 1988**

Upon *sua sponte* review, the Appeal Board affirms a Licensing Board order authorizing the issuance of a proposed amendment to the technical specifications for the Limerick nuclear facility.

DECISION

Before us is the Licensing Board's May 5, 1988 memorandum and order, authorizing the issuance of a proposed amendment to the technical specifications for the Limerick nuclear facility.[1] The intervenor Air and Water Pollution Patrol (AWPP) attempted to appeal that order. Because of the failure of AWPP's representative to comply with governing provisions of the Commission's Rules

[1] *See* LBP-88-12, 27 NRC 495.

of Practice, the Appeal Panel Chairman rejected the appeal.[2] No other appeals having been filed, this Board has reviewed the Licensing Board's determination *sua sponte*. That review has disclosed no error requiring corrective action.

Insofar as challenged by the intervenors,[3] the technical specification amendment in question is concerned with certain of the actions to be taken in the event of a temporary increase in the concentration of radioactive iodine in the reactor coolant. This phenomenon, referred to as an "iodine spike," is occasioned by such developments as a change in the power level of the reactor that, because of fuel cladding defects, may cause the transitory release of additional radioactive iodine from the fuel rods. The amendment would remove certain existing reporting requirements in the wake of an iodine spike. In seeking the removal of these requirements, the utility applicant was following the suggestion of the NRC staff. In a generic letter sent several years ago to all nuclear facility licensees and applicants, the staff had expressed the view that the reporting requirements were no longer necessary.[4]

The Licensing Board granted the applicant's motion for summary disposition of the intervenors' consolidated contention to the effect that the proposed amendment would "downgrade" reporting requirements for iodine spikes to the detriment of the public health and safety.[5] In doing so, the Board concurred in the staff's conclusion that other reporting requirements, not affected by the proposed amendment, would ensure that the Commission is kept appropriately informed of iodine spike events having possible implications for the public health and safety.[6]

We agree with the Licensing Board's disposition of the issue. The short of the matter is that nothing was put before the Board that raised a genuine issue of material fact with regard to the need to continue the specific reporting requirements that the technical specification amendment would eliminate. The affidavits submitted in connection with the applicant's summary disposition motion and the staff's filing in support of that motion demonstrated that

---

[2] *See* June 15, 1988 order (unpublished). The June 15 order noted that this failure continued even after AWPP's representative received specific guidance from the Appeal Panel counsel respecting what need be done to perfect the appeal.

[3] In addition to the Air and Water Pollution Patrol, Robert L. Anthony was granted leave to intervene in the proceeding. Mr. Anthony did not endeavor to appeal from the Licensing Board's May 5 order.

[4] *See* Generic Letter No. 85-19 (September 27, 1985), signed by Hugh L. Thompson, then Director of the Division of Licensing in the Office of Nuclear Reactor Regulation. The letter was attached to the Licensee's Answer in Opposition to Request for Hearing and Leave to Intervene by Air and Water Pollution Patrol (May 20, 1987).

[5] LBP-88-12, 27 NRC at 497, 507.

[6] *Id.* at 506-07. As the staff observed in a *Federal Register* notice published on March 12, 1987 (*see* 52 Fed. Reg. 7675, 7692), these other reporting requirements are found in 10 C.F.R. 50.72(b)(1)(i), 50.72(b)(1)(ii), and 50.73(a)(2)(i). In addition, the information regarding iodine spikes that formerly was to be contained in a special 30-day report must, as the result of the technical specification amendment, now be included in the utility's annual report to the NRC.

the retained reporting requirements will suffice. That demonstration was not countered to any extent by the intervenors.

For the foregoing reasons, LBP-88-12, 27 NRC 495, is *affirmed.*
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
Christine N. Kohl
Howard A. Wilber

In the Matter of **Docket Nos. 50-250-OLA-2**
50-251-OLA-2
(Spent Fuel Pool Expansion)

FLORIDA POWER & LIGHT COMPANY
(Turkey Point Nuclear Generating Plant, Units 3 and 4) **July 28, 1988**

Upon *sua sponte* review, the Appeal Board affirms, with the addition of a condition, the Licensing Board's decision (LBP-88-9A, 27 NRC 387 (1984)) approving amendments to the operating licenses for Turkey Point nuclear facility that allow the applicant to expand the capacity of the spent fuel pools at the facility.

OPERATING LICENSE: TECHNICAL SPECIFICATIONS

There is neither a statutory nor a regulatory requirement that every operational detail set forth in an applicant's safety analysis report (or equivalent) be subject to a technical specification, to be included in the license as an absolute condition of operation which is legally binding upon the licensee unless and until changed with specific Commission approval. *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979).

OPERATING LICENSE: TECHNICAL SPECIFICATIONS

The contemplation of both the Atomic Energy Act and the Commission's regulations is that technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety. *Ibid.*

OPERATING LICENSE: LICENSE CONDITIONS

Pledges by applicants to the staff or adjudicatory boards to guard against certain specified safety problems need not be turned into technical specifications to become enforceable as a license condition; those pledges can be formally incorporated into a Licensing or Appeal Board order in the proceeding, which is enforceable to the same extent as a Commission decision. *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 423-24 (1980).

APPEARANCES

Joette Lorion, Miami, Florida, *pro se* and for the intervenor Center for Nuclear Responsibility, Inc.

Steven P. Frantz, Washington, D.C., and **Norman A. Coll,** Miami, Florida, for the applicant Florida Power & Light Company.

Benjamin H. Vogler for the Nuclear Regulatory Commission staff.

DECISION

1. In March 1984, the Florida Power & Light Company (applicant) submitted an application for amendments to the operating licenses for its two-unit Turkey Point nuclear facility to enable it to expand the capacity of the spent fuel pools at the facility. In July 1984, the Center for Nuclear Responsibility, Inc., and Joette Lorion (intervenors) filed with the Licensing Board a timely request for a hearing and petition for leave to intervene in the proceeding.

While the intervenors' submission was still under Licensing Board advisement, the NRC staff determined that the proposed license amendments "involve[d] no significant hazards consideration" within the meaning of 10 C.F.R. 50.92(c). Accordingly, in November 1984 and under the authority of

10 C.F.R. 50.91(a)(4), the staff issued the amendments subject to the outcome of the pending intervention petition.[1]

In September 1985, the intervenors were admitted to the proceeding, together with seven of their proffered contentions.[2] Subsequently, the applicant obtained summary disposition on five of the contentions and the other two (contentions 5 and 6) went to hearing.

On April 19, 1988, the Licensing Board rendered its initial decision in which it resolved contentions 5 and 6 in the applicant's favor.[3] The Board therefore concluded that the license amendments issued by the staff in 1984 should remain in effect without modification.[4]

The intervenors have not appealed this conclusion and, thus, the initial decision is now before us for review on our own initiative.[5] That review has disclosed no reason to disturb the license amendments. For the reasons set forth below, however, we are constrained to incorporate in our affirmance of the Licensing Board result a direction that the applicant give effect to a representation it made to the staff.

2. The expansion of the capacity of each Turkey Point spent fuel pool has been accomplished by the replacement of the former fuel storage racks with ones that provide less spacing between the individual fuel assemblies. To ensure that the interaction between assemblies remains subcritical by a specified amount, the applicant has placed a neutron-absorbing material, Boraflex, in the new racks.

The applicant supplied the Licensing Board with copies of letters to the staff in which it stated that it would (1) establish surveillance programs to assess the continued effectiveness of the Boraflex;[6] and (2) not store any fuel with an enrichment in U-235 greater than 4.1 weight percent prior to completion of the next surveillance in approximately three years.[7]

In the initial decision, the Licensing Board took both of these representations to be commitments on the applicant's part and, in reaching its result, placed considerable reliance upon them. Given that reliance, we thought it desirable to seek the parties' views on whether the Licensing Board should have converted the representations into license conditions. Although our June 27 order (unpublished) soliciting those views did not so note, in taking that step we were

---

[1] *See* 49 Fed. Reg. 46,832 (1984).

[2] *See* LBP-85-36, 22 NRC 590.

[3] *See* LBP-88-9A, 27 NRC 387.

[4] *Id.* at 415.

[5] *See Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), ALAB-859, 25 NRC 23, 27 (1987), and cases cited therein.

[6] *See* letter from Steven P. Frantz to the Licensing Board (July 15, 1987), Attachment (letter from C.O. Woody to the Commission (July 10, 1987), designated L-87-279).

[7] *See* letter from Steven P. Frantz to the Licensing Board (August 31, 1987), Attachment (letter from C.O. Woody to the Commission (August 27, 1987), designated L-87-363). According to applicant witness Russell Gouldy, the surveillance has now been scheduled for December 1989. Tr. 246-47, 312.

also influenced by the seeming internal disagreement within the staff respecting whether, in fact, the applicant had committed itself not to store fuel with more than a particular U-235 enrichment prior to the next surveillance. Staff witness Laurence I. Kopp, a nuclear engineer in the Reactor Systems Branch of the Office of Nuclear Reactor Regulation (NRR), expressed the opinion that no such commitment had been made or, indeed, was warranted.[8] But shortly thereafter, Conrad E. McCracken, the Acting Chief of a different NRR Branch and a member of the same panel of staff witnesses, stated unequivocally that letters from applicants such as the one embracing the representations in question are treated as commitments.[9]

In their response to our order, the intervenors maintain that a license condition embracing the two representations should have been imposed by the Licensing Board and should now be imposed by us.[10] For their part, the applicant and the staff take the opposite position. In this connection, those parties call attention to our decision almost a decade ago in the proceeding involving the proposed expansion of the capacity of the Trojan facility's spent fuel pool. Rejecting the insistence of the intervenor State of Oregon that, *inter alia*, certain operational details set forth in the applicants' "design report" for the expansion be converted into technical specifications to be imposed upon the operating license, we observed:

> there is neither a statutory nor a regulatory requirement that every operational detail set forth in an applicant's safety analysis report (or equivalent) be subject to a technical specification, to be included in the license as an absolute condition of operation which is legally binding upon the licensee unless and until changed with specific Commission approval. Rather, as best we can discern it, the contemplation of both the [Atomic Energy] Act and the regulations is that technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety.[11]

We need not decide here whether that standard is satisfied. For there is an acceptable alternative means of ensuring the observance of the applicant's representations.

---

[8] Tr. 358-59. Dr. Kopp was not asked about the representation concerning the surveillance programs.

[9] Tr. 376. Mr. McCracken made this statement after being reminded of Dr. Kopp's earlier contrary testimony.

[10] In exercising our discretion to hear from all of the parties below on the matter of the warrant for a license condition, we saw no need to pass upon whether, by not taking an appeal from the initial decision, the intervenors gave up any further entitlement to participate as of right in the proceeding. We similarly now reserve judgment on that question.

[11] *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979) (footnote omitted). *See* "Proposed Policy Statement on Technical Specification Improvements for Nuclear Power Reactors," 52 Fed. Reg. 3788 (1987).

The year after the *Trojan* decision, we confronted in *Zion* an appeal by the State of Illinois from the Licensing Board's authorization of the expansion of the storage capacity of a spent fuel pool. The State claimed, *inter alia*, that that Board should have raised to the level of a technical specification certain commitments of the applicant respecting such matters as the conduct of a corrosion surveillance program. Although concluding that the *Trojan* standard was not met, we went on to say:

> This does not mean the State's concerns are frivolous. The slow action of corrosion and a gradual loss of neutron-absorbent material can present serious problems if left unchecked. However, Illinois' fears — that the commitments to guard against these possibilities might be withdrawn without prior staff notification or approval and that the means for enforcing them are inadequate — can be allayed without freighting the applicant's license with additional technical specifications. The applicant has pledged to the staff, to the Licensing Board and to this Board not to change or drop those commitments without prior staff approval; it has expressly acknowledged that those promises were made to obtain favorable action on the proposal now before us. . . . We perceive no reason why that pledge should not be formally incorporated in our own order in this case, which is of course enforceable to the same extent as a Commission decision. This disposition settles the permanence and enforceability of the applicant's commitments without trampling on any party's rights . . . .[12]

If anything, there is even greater cause to follow the *Zion* route in this case. As we have seen, the record leaves in doubt whether the staff deems the applicant to have made a commitment not to store, prior to completion of the next surveillance program, fuel with an enrichment in U-235 greater than 4.1 weight percent.[13] In this connection, there is at least some foundation for Dr. Kopp's opinion that no commitment was made. For the evidence indicates that (1) in their present form the license amendments unconditionally authorize the storage of fuel with an enrichment in U-235 of 4.5 weight percent; and (2) the applicant has agreed, at most, merely to notify the staff if it decides to exceed the 4.1 weight percent limit before the next surveillance.[14]

In short, at present there is a lack of full assurance that the applicant will adhere to what the Licensing Board (perhaps mistakenly) took to be a commitment that could be relied upon in arriving at its ultimate determination that the reracking of the spent fuel pools did not pose a significant safety concern.[15] On the basis of the evidence before it, however, the Licensing Board was quite right in attaching importance to the applicant's representations.

---

[12] *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 423-24 (1980) (footnote omitted).

[13] It is not clear from the staff's submission to us whether it supports Dr. Kopp's position on the question or, instead, that of Mr. McCracken.

[14] Tr. 282-83, 303.

[15] *See* LBP-88-9A, 27 NRC at 413-14.

The testimony of witnesses for both the applicant and the staff cited the Boraflex degradation that had occurred in the spent fuel storage racks at the Quad Cities nuclear facility. That degradation brought about, among other things, gaps (i.e., holes) in the Boraflex sheets incorporated into those racks.[16]

Whether such gaps will be experienced at Turkey Point remains to be seen.[17] Should gaps develop, however, they would have an effect upon the neutron absorption efficacy of the Boraflex sheets. The extent of that effect would hinge upon the size and location of the gaps. The results of a gap sensitivity study performed by the Westinghouse Electric Corporation, taken in conjunction with the Quad Cities experience, suggests that it is unlikely that, so long as the stored fuel does not have an enrichment greater than 4.1 weight percent, the reactivity limit specified for the pools will be exceeded.[18] But, should the enrichment level be 4.5 weight percent, there will be much less room for confidence that any gaps at Turkey Point will not occasion the violation of that limit.[19]

In the circumstances, we might remand this matter to the Board for a reassessment of its determination that no safety concern attends upon the reracking. As we see it, however, the preferable course is to invoke the *Zion* precedent and, by doing so, to bring the proceeding to a close without further delay. More particularly, we direct that, pending the obtaining of satisfactory results from the next surveillance, the applicant shall not store in either of the reracked pools any fuel with an enrichment in U-235 greater than 4.1 weight percent unless it requests approval to do so pursuant to 10 C.F.R. 50.59(a)(1) as if a technical specification were involved.[20]

On the basis of that direction, coupled with our review of the balance of the record, LBP-88-9A, 27 NRC 387, is *affirmed.*

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

---

[16] *See* Kilp and Gouldy, fol. Tr. 222, at 27-28; Wing, fol. Tr. 339, at 6-9.

[17] According to staff witness James Wing, the mechanism causing gap formation remains undetermined. *See* Wing, fol. Tr. 339, at 7. Dr. Wing did offer the conjecture that the gaps might be produced by the shrinkage of the sheets as the result of gamma radiation. *Ibid.*

[18] *See* Boyd, fol. Tr. 222, at 3, 7-9 & Figure 3.

[19] *Id.*, Figure 2.

[20] We see no need for a specific incorporation into this order of the applicant's representation respecting the conduct of surveillance programs to assess the continued effectiveness of the Boraflex. The staff's filing with us characterizes that representation as a commitment and we are confident that the staff will enforce it as such. Moreover, our direction with regard to the enrichment limitation provides an additional incentive to carry out the promised surveillance programs.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Glenn O. Bright
Dr. James H. Carpenter

In the Matter of **Docket No. 50-271-OLA**
(ASLBP No. 87-547-02-LA)

VERMONT YANKEE NUCLEAR POWER CORPORATION
(Vermont Yankee Nuclear Power Station) **July 12, 1988**

In a proceeding involving the proposed expansion in capacity of a spent fuel pool by means of reracking, the Licensing Board denies a request for an emergency, temporary stay of a license amendment that permitted the reracking (although not the requested expansion in capacity). The Board also summarizes the discussions and rulings at the proceeding's second prehearing conference.

RULES OF PRACTICE: STAY OF AGENCY ACTION

The proponent of an emergency, temporary stay of agency action pending review of a motion seeking permanent relief must demonstrate irreparable injury in order to obtain such emergency relief.

TECHNICAL ISSUE DISCUSSED

Consideration of Alternatives.

SECOND PREHEARING CONFERENCE ORDER
(Rulings on Temporary Stay Order and on Schedules)

On June 28, 1988, the Licensing Board conducted a prehearing conference in this proceeding, in which Vermont Yankee Nuclear Power Corp. (Applicant) is seeking authority to expand the capacity of the spent fuel storage pool at the Vermont Yankee Nuclear Power Station.[1] Participating in the conference were the Applicant, the New England Coalition on Nuclear Pollution (NECNP) (Intervenor), and the Commonwealth of Massachusetts and the State of Vermont (both currently participating as "interested States" pursuant to 10 C.F.R. § 2.715(c)).

The conference was initially billed as a "status" conference, in which the Board was to be apprised of the status of various documents being prepared by the Applicant or NRC Staff, to enable the setting of further schedules for the proceeding. On June 13, 1988, however, the Commonwealth of Massachusetts and NECNP filed a Joint Motion to stay the operation of License Amendment 104 to the Vermont Yankee operating license, which had been issued by the NRC Staff on May 20, 1988. That amendment by its terms permitted the Applicant to install new racks in the spent fuel pool, capable of storing up to 2870 fuel elements, but continued the present limitation on the capacity for which the racks could be used to the currently authorized 2000 fuel elements. By Memorandum dated June 20, 1988 (unpublished), the Board posed three questions to the parties concerning certain matters raised by the Joint Motion, to be addressed at the prehearing conference.

Following is a summary of the matters discussed and rulings made by the Board at the conference.

1. The Applicant confirmed that the document setting forth details of its revised fuel pool cooling system, about which the Board had inquired in the Notice of the prehearing conference, had been submitted to the Board and parties on June 7, 1988 (Tr. 230). The Staff indicated that it expected its review of the cooling system to be completed in August and that its safety evaluation (SER) and environmental assessment (EA) would be issued in early September (Tr. 231). Upon inquiry from the Board, however, the Staff indicated that the EA had already been written, although not released (Tr. 250, 322). The Staff held out the possibility that the EA might be issued somewhat earlier, in August. The Board requested the Staff to provide a status report on the issuance of the EA (or other environmental review document, as applicable) as of August 1, 1988 (Tr. 325).

[1] Notice of this conference, dated May 24, 1988, was published in the *Federal Register* on May 31, 1988 (53 Fed. Reg. 19,836).

2. NECNP (as well as the Commonwealth of Massachusetts and the State of Vermont) requested additional discovery concerning the revised fuel pool cooling system (which is the subject of Contention 1). The Board rejected the Applicant's claim that the contention had become moot as a result of the filing of an FSAR amendment (on June 7, 1988) incorporating a revised fuel pool cooling system, on the basis that the question whether the revised system was capable of performing as specified was still open (Tr. 323).

The Board granted 60 days' additional discovery on Contention 1 between the Applicant and NECNP and the interested States (Tr. 323-24). Further, the Board ruled that discovery between various parties and the Staff on this contention should await the issuance by the Staff of its SER. On Contention 1, discovery against the Staff will extend for 30 days from the date of service of the SER; the 30-day period will encompass second-round interrogatory questions but not responses (Tr. 338-39). (The schedule for the submission of new contentions based on the Staff review documents, and for discovery with respect to new contentions which may be accepted, remains as set forth in our Prehearing Conference Order dated May 26, 1987, LBP-87-17, 25 NRC 838, 862.)

3. With respect to the Joint Motion, in which the State of Vermont indicated that it had joined (Tr. 280),[2] the Commonwealth of Massachusetts moved orally for emergency relief, for a temporary stay of License Amendment 104 pending our decision on the merits of the motion (Tr. 267). The Commonwealth explained that such emergency relief was subsumed within the Joint Motion's request for "such other relief [beyond the injunctive relief primarily sought by the motion] as may be necessary and equitable under the circumstances" (Tr. 271). Vermont and NECNP joined in the request for a temporary stay (Tr. 280, 281).

The Applicant and NRC Staff each opposed our granting of a temporary stay. They raised jurisdictional, as well as procedural and substantive, reasons for our denying the request for emergency relief.

The alleged basis for both the permanent and temporary stay requests is that the Staff, in issuing an amendment that permitted reracking, without preparing and releasing an environmental review of the entire fuel pool capacity expansion, violated the requirements of the National Environmental Policy Act, 42 U.S.C. § 4332, as implemented by NRC in 10 C.F.R. Part 51. The claim is that the Staff, by reviewing only the environmental aspects of reracking (which it found to qualify as a categorical exclusion under 10 C.F.R. § 51.22(c)(9)), has improperly segmented the environmental review of the entire application. The Intervenor and interested States asserted that there is no "independent utility" to the reracking apart from its contribution to the entire project. If that were so, the

[2] On June 24, 1988, the State of Vermont filed a timely response in support of the Joint Motion, indicating that it joined in the motion seeking a stay of License Amendment 104. At the time of the prehearing conference, the Board had not yet received that response.

Staff's action in approving License Amendment 104 without an environmental review of the entire proposal might well be void. The Board perceives at least a *prima facie* basis for the validity of this claim. But because of the significant procedural and substantive objections asserted by the Applicant and Staff at the prehearing conference, the Board declined to decide any of these questions prior to considering the written responses of the Applicant and Staff to the motion.

The Board denied the request for a temporary stay solely on the basis that the Intervenor and interested States had not demonstrated irreparable injury, as required by 10 C.F.R. § 2.788(e)(2) (Tr. 316). That ruling was without prejudice to a ruling on the permanent injunctive request or even to whether irreparable injury would have to be considered in ruling on the permanent injunction. The only injury asserted was that our eventual consideration of alternatives, as sought by the interested States and NECNP, would be prejudiced if most of the physical work leading to the expansion in capacity had already been performed (Tr. 266, 276). However, it appears that the Applicant has already purchased and paid for the new racks (Tr. 243). Moreover, any review of alternatives which we may be called on to undertake will be carried out on the assumption that no expenditure at all had been made with respect to any of the expansion alternatives — in other words, all expenses for purchase and installation of the new racks are at the risk of the Applicant. This is not to say that the Staff may ignore the mandates of NEPA with impunity; it is only that, for temporary injunctive relief to be granted prior to our decision on the merits, a strong showing of irreparable injury must be — but has not been — made.

For the foregoing reasons, it is, this 12th day of July 1988, ORDERED:

1. The motion of the Commonwealth of Massachusetts, NECNP and the State of Vermont for a temporary stay of License Amendment 104 is hereby *denied*, without prejudice to our ruling on the request for a permanent injunction.

2. Further discovery, as set forth in ¶ 2, *supra*, is hereby *authorized*.

3. The NRC Staff is hereby *requested* to provide us by August 1, 1988, with a status report on its preparation and schedule for release of its EA (or

other environmental review document, as applicable) for the entire spent fuel pool expansion application.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 12th day of July 1988.

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
(Enrico Fermi Atomic Power Plant,
Unit 2) July 28, 1988

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by the Honorable James Caldwell, the Honorable Steven Langdon, the Honorable Herb Gray, and the Honorable Howard McCurdy, members of the Canadian Parliament, concerning their request that the Fermi-2 nuclear reactor not be allowed to operate.

VIOLATIONS AND CIVIL PENALTIES

Discrete violations at a nuclear facility do not give rise to a significant safety concern so long as they have been cured or are being cured, and there has been no overall breakdown in a licensee's programs that would raise legitimate doubt about the safety of the facility. Although it is expected that licensees will pay meticulous attention to, and achieve and maintain a high level of compliance with, NRC requirements, it is recognized that errors may occur. What is most significant is that violations, when identified, are properly assessed in terms of understanding their significance and cause, and that necessary corrective actions are taken to prevent their recurrence.

THE GENERAL ELECTRIC MARK I REACTOR

A petitioner's concerns regarding possible containment failure at a General Electric Mark I reactor are misplaced because the estimated mean frequency of core damage for this reactor is only 1 chance in 100,000 per year, and the

probability of a large accident resulting in one or more early fatalities is only 1 in 1 million to 1 in 1 billion.

EXEMPTIONS FROM INERTING

It was not a safety concern for the NRC to grant an exemption to a boiling water reactor from inerting primary containment during initial startup testing since the potential for an accident was small while the plant was operating at lower power levels. Moreover, it was important not to inert the reactor's containment because of the need for startup testing and the need for personnel to enter the containment during this testing for visual inspections.

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

INTRODUCTION

By Petition to the Director, Office of Nuclear Reactor Regulation, dated February 4, 1988, pursuant to 10 C.F.R. § 2.206, the Honorable James Caldwell, the Honorable Steven Langdon, the Honorable Herb Gray, and the Honorable Howard McCurdy, members of the Canadian Parliament (Petitioners), have appealed the decision to allow Fermi-2 to go into full-power operation. The Petitioners base this request upon information contained in a January 15, 1988 letter to Detroit Edison Company (Licensee) from Mr. A. Bert Davis, Regional Administrator, Region III of the U.S. Nuclear Regulatory Commission (NRC), and an attached Regulatory Assessment, authorizing Fermi-2 to operate at full power. According to the Petitioners, these documents reveal the existence of a number of deficiencies at the plant that should have prevented the NRC from granting this authorization. The Petitioners also base this request on their assertion that Fermi-2 should not be allowed to operate because of certain deficiencies in the plant's design and certain past attempts by the Licensee to withhold information from the NRC.

As specific relief, the Petitioners request: (1) that the January 15, 1988 decision authorizing full-power operation be overturned; (2) that the license to operate Fermi-2 be revoked; and (3) that the Licensee be required to prove, to the satisfaction of both the NRC and the relevant Canadian authorities, that it is absolutely safe to operate the plant and that such operation does not endanger the health and safety of the people of Windsor and Essex County, Canada.

By letter dated March 16, 1988, I advised the Petitioners that the issues raised in the Petition were under consideration and that the NRC would respond within

a reasonable time. For the reasons set forth below, I have determined that the Petition should be denied.

DISCUSSION

A. Background

Before assessing Petitioners' contentions, a review of the background of this matter would be helpful. Detroit Edison Company, the Licensee for Fermi-2, received a full-power operating license for Fermi-2 on July 15, 1985. This license was granted without NRC knowledge of an out-of-sequence rod-pull event that occurred under a lower-power license on July 2, 1985, and resulted in the reactor going critical prematurely. Following disclosure of the event, the NRC issued a Confirmatory Action Letter (CAL), dated July 19, 1985, to the Licensee. This CAL, among other things, confirmed the Licensee's commitment to obtain concurrence from NRC prior to exceeding 5% power.

In addition to the rod-pull event, numerous Technical Specification and procedural violations occurred at Fermi-2 between July 1, 1985, and October 15, 1985. These violations, along with the out-of-sequence rod-pull event, were described in an NRC inspection report for Fermi-2 (50-341/85040(DRP)) dated November 14, 1985. A total of $375,000 in civil penalties was assessed by the NRC for these violations.

Because of the nature and magnitude of the Fermi-2 problems, the Licensee was not allowed to resume operating the unit beyond 5% power. A 10 C.F.R. § 50.54(f) letter was issued on December 24, 1985, identifying the NRC's concern and requesting that the Licensee evaluate and address management weaknesses, develop a comprehensive plan to ensure the readiness of the facility to restart, and identify the actions necessary to improve regulatory and operational performance.

The Licensee responded to the § 50.54(f) letter on January 29, 1986. Actions taken by the Licensee included improving its operations and security plans, changing management personnel and structure, and forming an Independent Overview Committee (IOC). The NRC reviewed and found these corrective actions to be acceptable. Additionally, hold points in the power ascension of Fermi-2 at 20, 50, and 75% of full power were established which could not be exceeded until the NRC had assessed Fermi's operations at each stage and found them acceptable. To accomplish these assessments, an NRC Restart Team was formed, led by a senior NRC manager. The IOC also independently assessed the Licensee's ability to exceed these regulatory hold points. The power ascension and assessments required almost 2½ years to complete. By letter of January 15, 1988, Fermi-2 was released from the final hold point of 75% and allowed to go to full power. This letter is the subject of the Petition.

B. The Petitioners' Concerns with the January 15, 1988 Letter and the Attached Regulatory Assessment

Regional Administrator A. Bert Davis' January 15, 1988 letter authorizing the Licensee to allow Fermi-2 to proceed beyond 75% power is based primarily on the recommendations of a special NRC team of managers and technical experts established to monitor the Licensee's initiatives and plant performance. This team closely monitored the Licensee's performance during Fermi-2's operation up to and through each hold point. As part of its decision of whether to release the plant from the 75% power hold point, the team considered all known areas of weakness. It then analyzed whether sufficient improvement had been made or would be expected in these areas to support full-power operation. Input for the Regional Administrator's decision to release the plant from the 75% power hold point was also provided by the NRC's Office of Nuclear Reactor Regulation and by Region III technical divisions. During this period, the IOC also independently assessed the Licensee's performance.

The Restart Team's conclusions were listed in a detailed written assessment (hereinafter referred to as the NRC Staff Assessment) which was included as an attachment to the January 15, 1988 letter. The Restart Team concluded that identified problems at the facility had either been resolved or sufficient progress had been made in resolving them to allow Fermi-2 to be operated safely at full power. It also noted that some areas still required improvement. The January 15, 1988 letter of Mr. Davis incorporated these same conclusions and also stated that continued work and effort by the Licensee were required.

The Petitioners claim that these words of caution by the Restart Team and Mr. Davis, advising the Licensee that improvement is required, are grounds for their requested relief since they signify that the facility is not ready to be operated. We do not agree, since the statements in question[1] were intended to encourage the Licensee to strive for excellence and to improve its past performance. A challenge to achieve excellence is often given by the NRC to licensees, and it was not intended to imply that the Licensee is not competent

[1] One of these statements relied upon by the Petitioners is Mr. Davis' advice to the Licensee that "while your almost three months of continuous operation has shown a positive trend toward improved performance, and your overall operation is considered acceptable, significant work and effort on your part is still required to become a good performer." The Petitioners also quoted a statement by Mr. Davis that, "attention to detail, good communications, adherence to procedures and operational performance standards, as well as a slow and cautious approach with strong management oversight and teamwork are requisites to continued successful performance." The Petitioners claim these statements establish that the Licensee lacks important attributes necessary to operate a nuclear facility and that the Licensee is not a "good performer." However, the Petitioners mischaracterize these statements since they were not intended to convey that the Licensee lacks these attributes (i.e., attention to detail, good communications, etc.); rather, the Licensee was being reminded, as might any licensee who is about to begin full-power operation, that these are the types of qualities necessary to safely operate a nuclear facility. Similarly, the encouragement for the Licensee to become a "good performer" was not intended to mean that the Licensee was incapable of operating the facility safely; it was merely a recommendation that the Licensee strive to be better.

to safely operate Fermi-2. If the NRC had believed that Fermi-2 could not be safely operated, then the Licensee would have been ordered to shut down the facility.

The Petitioners also claim that the NRC Staff Assessment reveals that there are a number of problem areas[2] remaining at the facility that should have prevented the NRC from allowing it to be operated. As a basis for this claim, the Petitioners have quoted from those portions of the report where deficiencies were listed. Significantly, however, they have ignored those portions of the report that explained that these deficiencies had either been corrected in whole or at least sufficiently to allow the facility to operate safely at full power. By ignoring the corrective measures that were taken, they have failed to provide any basis to suggest that the facility cannot be safely operated. Under these circumstances, no basis has been provided for the relief the Petitioners seek.

The Petitioners' underlying basis for their request to shut down Fermi-2 appears to be that nuclear plants with identified problems should not be allowed to operate. However, although it is expected that licensees will pay meticulous attention to, and achieve and maintain a high level of compliance with, NRC requirements, it is recognized that errors may occur. What is most significant is that violations, when identified, are properly assessed in terms of understanding their significance and cause, and that necessary corrective actions are taken to prevent their recurrence. Discrete violations at a nuclear facility do not give rise to a significant safety concern so long as they have been cured or are being cured, and there has been no overall breakdown in a licensee's programs that would raise legitimate doubt about the safety of the facility. *See Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), DD-85-11, 22 NRC 149, 161 n.7 (1985); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Unit 2), DD-86-8, 24 NRC 151, 166 (1986). In the case of Fermi-2, after deficiencies and programmatic breakdowns were identified in 1985, the NRC Staff ensured safe operation by requiring the facility to operate at reduced power levels until the problems were sufficiently addressed. A special team was assigned to monitor the Licensee's initiatives to resolve these problems and the plant's performance. Only after this team, the Region, and the Office

[2] According to the Petitioners, these alleged problem areas, as listed in the NRC Staff Assessment, include: the adequacy of the T-C-3 testing of the feedwater system; the unexpected vibration of the reheater tank emergency drain line; the need for repairs and replacement of parts following the plant scram of December 31, 1987; the concern for main steam line and RHR head spray piping vibration; the failure to have site-specific loop accuracy calculations to justify the performance of instruments during harsh accident conditions; the failure to have the safety parameter display system fully operational; the higher-than-normal number of events that occurred since the last assessment; an increase in the corrective maintenance backlog; the failure to conduct early review sessions of the Control Room Evaluation Program; several NRC enforcement matters that had not yet been fully resolved; the failure to have a final emergency response plan in place for all of Windsor and Essex Counties; concerns with the Licensee's program to improve Technical Specifications; and a failure of the Licensee's testing program to verify feedwater control.

of Nuclear Reactor Regulation were satisfied that these problems were being properly addressed was Fermi-2 allowed to operate at full power.

In reaching its decision to release Fermi-2 from the 75% power hold point, the NRC considered in detail the items now cited by the Petitioners from the January 15, 1988 letter and attached NRC Staff Assessment. The NRC also carefully weighed many of these same issues in allowing Fermi-2 to proceed past the hold points for power ascension that had been previously set. The Petitioners have not produced any facts to undermine these findings. Under these circumstances, I conclude that the issues cited by the Petitioners with respect to the January 15, 1988 letter and the NRC Staff Assessment do not provide a basis for granting the requested relief.

C. Other Concerns Raised by the Petitioners

In addition to their concerns arising out of the January 15, 1988 letter and the NRC Staff Assessment, the Petitioners have identified the following additional problems concerning Fermi-2.

1. The General Electric Mark I Reactor

The Petitioners claim that certain NRC research establishes that the General Electric Mark I reactor, which is the design for Fermi-2, is an old and inherently risky reactor design whose containment will fail in 90% of severe-accident scenarios.

The Petitioners' concerns are based on information contained in Draft NUREG-1150, "Reactor Risk Reference Document" (February 1987), which is a recent NRC draft analysis of different reactor designs.

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. That study included an evaluation for Peach Bottom, a plant quite similar to Fermi 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. 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 1 in 1 million to 1 in 1 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 Fermi 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 Fermi plant. One contributing factor is that the massive reactor containment structures 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 soley 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 assure that our risk conclusions are applicable to all oper-

ating 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.

2. *The Exemption from Inerting*

The Petitioners also contend that Fermi-2 is unsafe because of the exemption it has received from the general rule requiring the inerting of the primary containment system with nitrogen. According to the Petitioners, this exemption endangers the surrounding area by increasing the risk for an accident at the reactor.

At the outset, it should be noted that the inerting exemption is no longer operative and the facility is now required to be inerted in accordance with its technical specifications. Nevertheless, in addressing this contention, a brief technical explanation of this subject is helpful. The purpose of inerting is to limit the possibility of post-accident hydrogen explosions inside the primary containment. To prevent such explosions, the containments of boiling water reactors (BWRs) are normally inerted during operation. However, there is an exception to this general rule, which has been granted to Fermi-2 and almost all other recently licensed BWRs, that allows reactor licensees limited exemptions from inerting during initial operation so that they can perform startup testing. These exemptions are limited to the end of startup testing or 120 effective full-power days, whichever occurs first. Startup tests are important since they ensure that the nuclear facility's systems function as designed and that problems identified during the testing are corrected. It is best that the reactor's containment not be inerted during certain tests so that personnel can enter it for visual inspections. The potential for an accident and subsequent hydrogen explosion during startup testing is small because the plant generally operates at lower power levels and experiences several startups and shutdowns during this period which decrease the potential buildup of fission products.

Because of the need for startup testing and the small degree of risk of explosion during this testing, the decision to allow Fermi-2 and other BWRs limited exemptions from inerting was fully justified. Upon expiration of this exemption, Fermi-2 was inerted in accordance with the requirements of the technical specifications governing the operation of the facility.

3. *The Alleged Inadequate Infrastructures*

The Petitioners claim that there have been "continual discoveries of inadequate infrastructure included in the construction of the reactor" that have resulted in continuing accidents and problems at the plant.

Although it is not entirely clear what the Petitioners mean by their use of the word "infrastructure," I disagree with this characterization if they are implying that the design of Fermi-2 is deficient. The NRC has found that the design of this unit meets our regulations. Nevertheless, I acknowledge that there have been deficiencies in the implementation of this design into the as-built features of the plant and the plant's technical specifications and operating procedures. Many of the Fermi-2 operational problems were caused by these deficiencies. However, as discussed above, these deficiencies, and the Licensee's resolution of them, were taken into account during the NRC's detailed regulatory assessment following its Confirmatory Action Letter of July 19, 1985. Based upon this assessment, the NRC Staff determined that these deficiencies had been adequately resolved or were in the process of being resolved in a time frame and manner acceptable to support NRC's release from each hold point.

For these reasons, to the extent that Fermi-2 may have had an "infrastructure" problem, the Petitioners' concern is not valid since remedial action has already been taken.

4. *The Large Number of Violations at Fermi-2 and the Withholding of Information from the NRC*

The Petitioners also claim that Fermi-2 has one of the highest levels of "fines" for breaches of NRC regulations of any nuclear reactor in the United States, and that one of these violations, which involved the Licensee withholding information about the facility reaching criticality just before it was issued an operating license in 1985, is grounds for now revoking this license.

Although Fermi-2 has experienced a large number of violations compared to other reactors, the NRC has devoted considerable regulatory oversight to Fermi-2 to assure that the problems causing these violations have been adequately addressed. Regulatory actions taken by this Agency have included issuance of the July 19, 1985 Confirmatory Action Letter and the December 24, 1985, § 50.54(f) letter, discussed above. In addition, civil penalties have been levied to emphasize the seriousness of the violations and the need for the Licensee to improve its operations. The Licensee's initiatives, designed to rectify these problems, have included significant management and organizational changes, and numerous improvement programs focused on improving personnel and hardware performance.

These improvements and regulatory actions have provided reasonable assurance to the NRC that the problems causing these violations are being properly addressed and that the present operation of Fermi-2 at full power is justified. The NRC will continue to closely monitor the operation of Fermi-2 in the future. The information-withholding incident in 1985, which the Petitioners claim constitutes a basis for withdrawing the facility's operating license, was acted upon by the NRC in 1985 by the imposition of substantial civil monetary penalties on the Licensee and not allowing the facility to operate beyond 5% power. (*See* Discussion, § A, *supra.*) There is no new information that would provide a reasonable basis for now reopening the question of whether additional penalties should be assessed for this past violation.

5. *The Licensee's SAFETEAM Program*

The Petitioners further claim that the Licensee's SAFETEAM program "holds back information from the NRC." However, they have offered no facts to substantiate their claim, and there have been no problems or occurrences at the facility to indicate that the SAFETEAM program has inhibited or restricted employee communication with the NRC.

SAFETEAM is a voluntary program not required by the NRC, established by the Licensee in 1983, to assist plant managers in the early identification of errors or omissions during the construction and operation of the plant. The program provides an opportunity for site workers, in confidence, to express to a select group of Licensee's representatives concerns that may not be recognized or effectively responded to through normal channels of communication within the Licensee organization. Past NRC inspections and investigations have indicated that issues brought into the SAFETEAM program have been addressed. Although the NRC identified certain programmatic weaknesses, safety-related concerns were found to have been properly addressed by the Licensee.[3]

The Licensee's SAFETEAM program does not interfere with its employees' rights to report safety-related matters to the NRC. Employees at the facility are still encouraged to report safety-related problems directly to the NRC by notices that the Licensee has visibly posted on site. In these notices, employees are alerted of their right to contact the NRC and advised that their confidentiality will be maintained in the event such contacts are made.

Under these circumstances, I conclude that Petitioners' contention regarding SAFETEAM lacks merit.

---

[3] The results of these NRC inspection findings are documented in NRC Inspection Report Nos. 50-341/85029 and 50-341/85037, dated July 26, 1985, and October 25, 1985, respectively.

CONCLUSION

The deficiencies at Fermi-2 identified by the Petitioners as issues in their Petition were all well known to the NRC and were previously considered in our regulatory decisions. Civil penalties were imposed and a Confirmatory Action letter and a § 50.54(f) letter were issued to ensure that these deficiencies were adequately addressed. To ensure the safe operation of Fermi-2, this facility was not allowed to operate at full power for over a 2-year period until adequate assurances had been received that these deficiencies were adequately addressed. The NRC's January 15, 1988 letter allowing full-power operation was thus fully justified.

For these and the other reasons discussed above, I find no basis for taking the actions requested by the Petitioners. Accordingly, the Petitioners' requests pursuant to 10 C.F.R. § 2.206 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 NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 28th day of July 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF THE EXECUTIVE DIRECTOR FOR OPERATIONS

Victor J. Stello, Jr., Executive Director for Operations

In the Matter of Docket No. PRM 50-47

QUALITY TECHNOLOGY COMPANY July 11, 1988

The Nuclear Regulatory Commission (NRC) is denying a petition for rulemaking (PRM-50-47) filed by Mr. Owen L. Thero, President of Quality Technology Company. The petition is being denied because (1) the existing regulations provide adequate assurance that safety-related concerns are being reported; (2) the proposed additional regulation would not substantially increase the overall protection of the public health and safety; and (3) the need for the proposed rule is not otherwise demonstrated by the information provided.

The Petitioner requested that NRC require all utilities involved in a nuclear program to (1) report *all* identified concerns relating to wrongdoing activities to the Office of Investigation and (2) maintain a nationwide employee concern program. Wrongdoing activities are not specifically defined by the Petitioner but are assumed to be criminal-type activities. Examples might include use of drugs or alcohol on the job and the falsification of documents or records. The NRC has carefully considered the issues raised in the petition and has taken them into account in reaching a decision on the areas that fall within its jurisdiction.

NRC: RULEMAKING AUTHORITY

In contemplating the addition of new regulations, NRC must ask if the new regulations are required to provide adequate protection of the public health and safety. The next level of questioning is: Will the proposed rule result in enhanced health and safety or an improved plant operation? Finally, what is the cost of the new regulation versus the benefits to be derived? This applies to the licensee as well as NRC. Before considering the implementation of a

mandatory program on all nuclear power plants in the United States, a definitive basis should be established to show that such a requirement is in fact needed.

PERSONNEL: NUCLEAR POWER PLANT (FITNESS FOR DUTY)

The objective of the proposed fitness-for-duty rule is to provide for the public health and safety by eliminating access to protected areas at nuclear power plants by personnel who are judged to be unfit for duty. Personnel considered unfit for duty are those who are under the influence of any substance, legal or illegal, or mentally or physically impaired from any cause that in any way affects their ability to safely and competently perform their duties. Employee assistance programs would be available for rehabilitation.

SAFETY-RELATED MATTERS: REPORTING REQUIREMENTS

Although there are no regulations currently in effect regarding specific reporting of identified concerns related to wrongdoing activities (assumed to be criminal activities such as use of drugs or alcohol on the job and fabrication of documents or records) there are several regulations in effect concerning the reporting of safety-related matters. These regulations are found in: 10 C.F.R. Part 21 (reporting of defects and noncompliance); 10 C.F.R. § 50.55(e); 10 C.F.R. § 50.7; 10 C.F.R. § 50.72; 10 C.F.R. § 50.73; Appendix B to 10 C.F.R. Part 50, criteria 15 and 16; 10 C.F.R. § 70.52; and 10 C.F.R. § 73.71.

SAFETY-RELATED MATTERS: REPORTING REQUIREMENTS

The regulations concerning the reporting of safety-related matters have been promulgated by NRC with the intention of identifying deficiencies and noncompliances that either reduce or have the potential to reduce the degree of protection afforded to public health and safety or the environment. It is not NRC's intention to receive all employee nonsafety-related concerns. The management of the utilities has certain responsibilities relative to employee concerns and as long as the concerns do not affect safety, they should remain the responsibility of utility management. If the utility management is not responsive or if there is concern with retaliation, there are adequate alternative means to bring matters of health and safety concern to the NRC for resolution.

SAFETY-RELATED MATTERS: REPORTING REQUIREMENTS

The present regulations set up a rather extensive system of reporting requirements that licensees are required to follow. The regulatory system is designed

to provide a framework to ensure that events that are significant to the safe operation of nuclear power plants are reported to NRC so that the appropriate corrective action can be taken. In cases where employee concerns have not been resolved to the employee's satisfaction, there are means available for discussing their concerns with NRC. To date, nonsafety-related concerns have essentially been the responsibility of licensee management. If licensee management demonstrates that it is unwilling or unable to handle such concerns, and NRC determines that these concerns are a problem at more than a few isolated plants, then NRC can consider taking a more direct action. Until then, licensee management should be given the opportunity to address the matter.

LICENSEE EMPLOYEES: INVESTIGATION AND CORRECTION OF CONCERNS

Good management practices by the utilities and the existing regulatory structure together provide reasonable assurance that valid problems identified by employees will be investigated and corrected.

LICENSEE EMPLOYEES: IDENTIFICATION AND RESOLUTION OF CONCERNS

Employees who wish to provide information or who have concerns have two options available to them. They may discuss the particular concern with their supervisor or plant management. If they cannot obtain satisfactory resolution or if they do not desire to use this avenue, they can take the concern directly to the NRC. NRC has maintained a policy that allows licensee employees to bring concerns to its attention. This can be done either verbally or in writing and can be done through the resident inspector, regional personnel, or NRC Headquarters personnel. This option may afford the individual confidentiality.

LICENSEE EMPLOYEES: IDENTIFICATION AND RESOLUTION OF CONCERNS

The main purpose of an employee concern program is to provide a forum in which to resolve employee concerns about the safety of a nuclear plant. Several utilities have established such programs, on a voluntary basis, some at a considerable expenditure of resources to assure that all employee concerns are investigated and resolved. Many of these programs have continued into the operation phases of a plant's existence. There is no question that these programs can and will identify employee concerns. Such concerns might surface through

some other mechanism such as a good quality assurance program, the normal employer-employee working relationship, or by reporting to the NRC.

DENIAL OF PETITION FOR RULEMAKING

I. THE PETITION

In a letter dated October 27, 1986, Mr. Owen L. Thero, President of Quality Technology Company (QTC) filed with the NRC a petition for rulemaking. The Petitioner requested that NRC expand the scope of its regulations so that all utilities involved in a nuclear program (1) report *all* identified concerns relating to wrongdoing activities to the Office of Investigation, much along the same lines as is required to report nuclear-safety-related issues, and (2) maintain a nationwide employee concern program incorporating the applicable facets of the Employee Response Team recently conducted at the Tennessee Valley Authority Watts Bar facility.

II. BASIS FOR REQUEST

The Petitioner (QTC) bases the petition on its experience gained from involvement in employee concern programs at several utilities, most recently the TVA Watts Bar facility. This involvement included the collection, collation, and investigation of safety concerns. As a result of this experience, the Petitioner states that it had been in the unique position to observe the program's effectiveness from both the perspective of management and the perspective of the employee. The Petitioner contends that because of this unique vantage point and experience, it has observed that employees engaged in the construction or operation of a nuclear facility have the most accurate and insightful information about safety-related issues. The Petitioner claims that several thousand nuclear-safety-related concerns and several hundred wrongdoing activities have been identified through the efforts of the employee concern programs conducted by QTC at Watts Bar and other facilities, which otherwise would not have surfaced.

QTC believes that without resolution of employee-identified safety-related concerns, the potential exists for costly hardware failures or potential danger to the employees of nuclear facilities or the general public.

The Petitioner further believes that the disposition of wrongdoing activities by the licensee is not clear, and in its experience the licensee has not allowed QTC to investigate reported wrongdoing issues nor has the licensee willingly reported such activities to the NRC or to the Department of Justice. QTC also claims

that licensees have no effective corrective action mechanism to investigate or resolve wrongdoing issues; therefore, a corrective action mechanism is needed.

The Petitioner concludes that the sheer number of identified concerns along with the very high rate of substantiation (greater than 50%) more than justifies the need for a nationwide employee concern program to be authorized and defined by law.

III. PUBLIC COMMENTS ON THE PETITION

A notice of filing of the petition for rulemaking was published in the *Federal Register* on January 12, 1987 (52 Fed. Reg. 1200) and included the full text of the proposal. Interested persons were invited to submit written comments. The comment period was subsequently extended 60 days to provide sufficient time for public comments. In response to the invitation in the *Federal Register* soliciting comments on the petition for rulemaking, a total of thirty-four letters was received. These letters came from individuals, law firms, public interest groups, utilities, and other companies that manage nuclear plants. Five comments favored the petition and twenty-six comments were opposed to the petition. One comment requested an extension of the comment period to allow more time to respond. One comment favored the thrust of the proposal, but recommended that it be held in abeyance pending congressional action on some proposed Inspector General bills. The remaining comment by a Congressman favored the first part of the petition (i.e., report all identified concerns related to wrongdoing activities) but could not support the second part (establish an employee concern program) if there were not attendant requirements as to how the program would be operated in order to guarantee its integrity. For the purpose of summarizing, this split comment was considered as a favorable response. Hence, there were seven comments (21%) favoring the petition and twenty-six comments (79%) opposed. The seven comments favoring the petition came from two sources. Three comments were from individual citizens, three from public interest groups, and one from a Congressman. A summary of the significant comments in favor of the proposal are highlighted below.

A rule promulgated in response to the petition would:

- Provide a safe, confidential means for information to be volunteered by employees with no fear of reprisal.
- Be conducive to the identification of personnel who are using drugs or alcohol.
- Define wrongdoing activities to include nonnuclear and nonutility business, e.g., drug sales and bookmaking.

— Require licensees and holders of construction permits to report allegations of management wrongdoing or evidence bearing on the character and/or suitability of management.

The twenty-six comments opposed to the petition included twenty-four from utilities or companies that run utilities, one from a company (SYNDECO) that is a subsidiary of Detroit Edison Company, and the remaining comment was from the Atomic Industrial Forum. A summary of the significant comments opposing the petition are highlighted below:

— The petition may be motivated by self-interest on the part of the Petitioner (not considered).
— Current regulations are adequate to ensure that safety problems are reported.
— Utilities' experience with employee concern programs does not support the Petitioner's claim that the rate of substantiation is greater than 50%.
— No evidence was presented to show that public safety would be significantly enhanced as a result of the proposed rule.
— Various utilities indicated that they were not aware of any industry problems regarding licensee treatment of employee concerns.
— Several employee concern programs voluntarily set up by utilities currently exist.
— No factual need was provided for the proposed rule.
— Mandatory employee concern programs could reduce the effectiveness of industry's voluntary programs by reducing management flexibility, and safety-related matters could go unreported.
— Current utility experience does not justify the imposition of additional regulatory reporting requirements.

One of the public comments raised an issue that was not raised by the Petitioner. The issue is: Provide a safe, confidential means for information to be provided by employees with no fear of reprisal. Employees who wish to provide information or who have concerns have two options available to them. They may discuss the particular concern with their supervisor or plant management. If they cannot obtain satisfactory resolution or if they do not desire to use this avenue, they can take the concern directly to the NRC. NRC has maintained a policy that allows licensee employees to bring concerns to its attention. This can be done either verbally or in writing and can be done through the resident inspector, regional personnel, or NRC Headquarters personnel. This option may afford the individual confidentiality.

IV. STAFF ACTION ON THE PETITION

The proposed petition was published in the *Federal Register* in January 1987. The comment period was extended (thru mid-May) in order to provide sufficient time for public comments. The resumption of action on the petition was delayed for approximately 6 months because of the NRC reorganization and the subsequent realignment of duties and responsibilities, and the prioritization of ongoing work. Action on the petition resumed in mid-November of 1987.

V. REASONS FOR DENIAL

The NRC has considered the petition, the public comments received, and the current regulatory structure. After consideration of the above, NRC has concluded that the Petitioner's request should be denied. The discussion that follows addresses the various allegations contained in the petition and the NRC response to each of these allegations.

1. Allegation

Several thousand nuclear-safety-related concerns and several hundred wrongdoing activities have been identified through the efforts of the employee concern programs that QTC has either conducted or been associated with at several nuclear facilities, which otherwise would not have surfaced.

Response

The main purpose of an employee concern program is to provide a forum in which to resolve employee concerns about the safety of a nuclear plant. Several utilities have established such programs, on a voluntary basis, some at a considerable expenditure of resources to ensure that all employee concerns are investigated and resolved. Many of these programs have continued into the operational phases of a plant's existence. There is no question that these programs can and will identify employee concerns. But no evidence was presented that these concerns would not have surfaced through some other mechanism such as a good quality assurance program, the normal employer-employee working relationship, or by reporting to the NRC. Although a large number of specific concern files from Watts Bar are in the possession of NRC, the information contained in these files is very cryptic and generally does not contain specific technical detail to support the assertions by the Petitioner. Additionally, no specific documentation concerning the rate of substantiation

at Watts Bar or other units has been provided by the Petitioner to support the assertions.

2. *Allegation*

Unresolved nuclear-safety-related concerns could have surfaced through a series of costly hardware failures and/or potential endangerment of the employees and the general public if allowed to go into operation uncorrected.

Response

In response to this assertion, one of the commenters (an engineering firm) felt strongly that there are very few engineering decisions made that are totally conclusive. Instead, considerable expertise and judgment go into the determination of most requirements of this type. The commenter stated that management makes decisions based on analysis and opinions. Experience has shown that very few, if any, employee concerns actually require hardware changes and very few of the hardware changes materially improve safety. No documented evidence of any type has been provided by the Petitioner to support this assertion.

3. *Allegation*

The disposition of wrongdoing activities by licensee is not clear. In our experience, the licensee has not allowed us to investigate wrongdoing issues reported. Neither has it been willing to report these activities to the NRC or to the Department of Justice. It has no effective corrective action mechanism to investigate or resolve wrongdoing issues. These issues fall into a "black hole."

Response

In contemplating the addition of new regulations, NRC must ask if the new regulations are required to provide adequate protection of the public health and safety. The next level of questioning is: Will the proposed rule result in enhanced health and safety or an improved plant operation? Finally, what is the cost of the new regulation versus the benefits to be derived? This applies to the licensee as well as NRC. The present regulations set up a rather extensive system of reporting requirements that licensees are required to follow. The regulatory system is designed to provide a framework to ensure that events that are significant to the safe operation of nuclear power plants are reported to NRC so that the appropriate corrective action can be taken. In cases where employee

concerns have not been resolved to the employees' satisfaction, there are means available for discussing their concerns with NRC. To date, nonsafety-related concerns have essentially been the responsibility of licensee management. If licensee management demonstrates that it is unwilling or unable to handle such concerns, and NRC determines that these concerns are a problem at more than a few isolated plants, then NRC can consider taking a more direct action. Until then, licensee management should be given the opportunity to address the matter. The Petitioner has not provided any factual evidence to show that a problem exists at any plant as alleged in the proposal.

4. Allegation

The sheer numbers of concerns identified along with the very high rate of substantiation (greater than 50%) more than justifies the need for a nationwide employee concern program to be authorized and defined by law.

Response

The Petitioner's assertion appears to be based on experience gained primarily at TVA's Watts Bar facility. Before considering the implementation of a mandatory program on all nuclear power plants in the United States, a definitive basis should be established to show that such a requirement is in fact needed. As noted in reason #1 on page 9, the Petitioner has provided no evidence or specific documentation other than its stated experience at one facility to support its assertion. With respect to experience with substantiation rates, three of the commenters stated that their experience does not support a substantiation rate in excess of 50%. In fact, their experience reflects a substantiation rate that is significantly less than 50%. The information provided is not sufficient to establish that a problem exists in the "industry" and that a rulemaking is needed to solve the problem.

In addition to reviewing the assertions of the Petitioner and the comments from the public, the petition was also examined in light of the existing regulatory structure. Although there are no regulations currently in effect regarding specific reporting of identified concerns related to wrongdoing activities as raised by the Petitioner, there are several regulations in effect concerning the reporting of safety-related matters. These regulations are briefly listed below.

- Part 21 of 10 C.F.R. requires reporting of defects and noncompliance.
- Section 50.55(e) requires holders of construction permits to notify NRC regarding deficiencies in design or construction, which could adversely affect safety.

— Section 50.7 prohibits licensees from discriminating against employees engaging in certain protected activities including providing information to the Commission regarding violations.
— Section 50.72 requires the notification of NRC regarding various classes of emergency and nonemergency events.
— Section 50.73 requires the notification of NRC of specific events reportable via the Licensee Event Report program.
— Appendix B to 10 C.F.R. Part 50, criteria 15 and 16, requires the licensees to document defects and take the appropriate corrective action including defects brought to the attention of the licensee by employees.
— Section 70.52 requires the licensees to report on accidental criticality or loss or theft of special nuclear material.
— Section 73.71 requires the licensees to report on unaccounted-for shipments, suspected thefts, unlawful diversion, radiological sabotage, or other events that significantly threaten safeguards.

In addition to the above regulations, the NRC is presently preparing a proposed rule concerning fitness for duty at nuclear power plants which is expected to be published for public comment in June or July 1988. The objective of the fitness-for-duty rule is to provide for the public health and safety by eliminating access to protected areas at nuclear power plants by personnel who are judged to be unfit for duty. Personnel considered unfit for duty are those who are under the influence of any substance, legal or illegal, or mentally or physically impaired from any cause that in any way affects their ability to safely and competently perform their duties. Employee assistance programs would be available for rehabilitation.

The regulations cited above have been promulgated by NRC with the intention of identifying deficiencies and noncompliances that either reduce or have the potential to reduce the degree of protection afforded to public health and safety or the environment. It is not NRC's intention to receive all employee nonsafety-related concerns. The management of the utilities has certain responsibilities relative to employee concerns, and as long as the concerns do not affect safety, they should remain the responsibility of utility management. If the utility management is not responsive or if there is concern with retaliation, there are adequate alternative means to bring matters of health and safety concern to the NRC for resolution, as discussed in this notice.

It appears that good management practices by the utilities and the existing regulatory structure together provide a reasonable assurance that valid problems identified by employees will be investigated and corrected. In light of the above, no additional action is required at this time.

Because each of the issues raised in the petition has been substantially addressed and resolved, the NRC has denied the petition.

For the Nuclear Regulatory
Commission

Victor Stello, Jr.
Executive Director for
Operations

Dated at Rockville, Maryland,
this 11th day of July 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of **Docket No. 55-60402**

DAVID W. HELD
(Senior Reactor Operator License for Beaver Valley Power Station, Unit 1) **August 8, 1988**

The Commission holds that under the particular circumstances of the case, the interests of justice and administrative economy warrant a hearing on an operator's claim that he was improperly found to have failed the simulator portion of his senior reactor operator examination.

ORDER

Upon consideration of the January 11, 1988 (LBP-88-1B, 27 NRC 29), and February 2, 1988 (LBP-88-3A, 27 NRC 233) decisions of the Administrative Judge and the filings of the parties, the Commission has determined that the interests of justice and administrative economy would be served, under the particular circumstances of this case, by allowing the case to proceed to a hearing at this time. We note in particular the fact that Mr. Held continues to work in the Beaver Valley nuclear group for a company that has made clear its intent to pursue dual licensing of supervisory personnel at Beaver Valley. We note as well that the NRC Staff was aware, even before the issuance of the August 7, 1987 Commission order (unpublished) authorizing the hearing on the denial of Mr. Held's Unit 1 license, that he had since obtained a senior reactor operator's

license for Unit 2. If it was the Staff's position that by applying for a Unit 2 license (and attaching a certification of need from his employer), Mr. Held had in effect waived his right to contest the denial of his Unit 1 license, it should have communicated that position to Mr. Held and to the Administrative Judge in a more timely manner. Accordingly, the case is remanded to the Administrative Judge for proceedings consistent with this order, on the specific issue of whether Mr. Held should have been found to have passed or failed the simulator examination. The additional views of Chairman Zech are attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 8th day of August 1988.

ADDITIONAL VIEWS OF CHAIRMAN ZECH

While I concur in the proposed order, I encourage the Staff to offer Mr. Held the option of having the results of the disputed test expunged from his records without going through a hearing. I question the meaningfulness of a hearing 2 years after the simulator exam when memories of the exam itself may have faded. Rather than conduct a hearing where the result may be that adequate information is not available to determine whether or not the individual has passed or failed the exam, I believe it is appropriate to offer Mr. Held the alternative of removing the exam results from his records. However, if he still desires a hearing on this issue I believe, as stated in the above order, that he should be allowed to have that hearing.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of **Docket No. MISC-87-1**

STATE OF ILLINOIS
(Section 274 Agreement) **August 5, 1988**

The Commission considers factual and legal issues concerning the distribution of regulatory jurisdiction over certain radiologically contaminated materials at or near the Kerr-McGee Chemical Corporation's West Chicago Rare Earths Facility and concludes that the contaminated materials in Kress Creek and the West Branch of the DuPage River remain in the Commission's jurisdiction, but that jurisdiction over the other contaminated materials at certain other locations belongs to Illinois.

ATOMIC ENERGY ACT: SECTION 11e(2) — DEFINITION OF BYPRODUCT MATERIAL

In a situation where two separate piles of radioactive wastes at the same site are virtually identical in content and pose the same health hazards, one pile can be "source material" under § 11z of the Atomic Energy Act, 42 U.S.C. § 2014z, while the other, because of a different history, is "by-product material" under § 11e(2) of the Atomic Energy Act, 42 U.S.C. § 2014e(2). Section 11e(2) requires the fact-finder to determine the primary purpose behind the processing that led to the wastes, and to search for a purpose that is primary not just because no processing would have taken place without it.

The Commission determines that one of the two piles is § 11e(2) byproduct material, because all the thorium was removed from it and sold, mostly for

AEC use, but while all the rare earths were removed, only part were sold. The thorium content of the ore appears to have been both a necessary and a sufficient reason for the processing to have taken place. Therefore, the ore was, in the words of § 11e(2), "processed primarily for its source material content."

NRC: LIMITS OF SCOPE OF COMMISSION AUTHORITY OVER DUE PROCESS IN SECTION 274 AGREEMENT STATES

The Commission simply does not have the authority to disqualify, on grounds of prejudgment of issues, an officer of another government, let alone disqualify an entire agency of another government. The licensee's recourse against prejudgment by a state officer lies in state, not Commission, law. The Commission's authority over due process in Agreement States is limited to determining that such recourse in fact exists. The Commission cannot judge whether particular incumbents in state regulatory offices will make such recourse necessary.

NUCLEAR WASTE POLICY ACT: ROLE OF AGREEMENT STATES IN REGULATING SPECIAL SITES UNDER SECTION 151(c)

The silence of § 151(c) of the Nuclear Waste Policy Act on Agreement States' role in regulating "special sites" does not bar a state from having such a role. Rather, it permits states to regulate a special site prior to its transfer to the Secretary of Energy, provided, however, that the Commission retains the authority to determine that all applicable requirements have been met prior to that transfer. NWPA § 151(c) does not prohibit Agreement States from administering the decontamination and stabilization of a site, with Commission review and approval of closure as a condition precedent to transfer. *Cf.* §§ 274b and 274c(4) of the Atomic Energy Act, 42 U.S.C. §§ 2021b and 2021c(4).

ATOMIC ENERGY ACT: DIVISION OF AUTHORITY BETWEEN STATE AND NRC OVER THE SAME SITE

Even though, at the same site, source materials subject to state authority, and AEA § 11e(2) byproduct materials subject to Commission authority coexist, no statutory provision permits, let alone requires, "elementary management considerations" against this divided authority to be controlling at the expense of the application of statutes and the right of a state to assume regulatory authority over source material but not § 11e(2) byproduct material. *See* 42 U.S.C. § 2021b. While such divided authority may appear at best to be a complication without redeeming regulatory value, it is an unavoidable consequence of the mixed statutory regimes that govern the regulation of radioactive wastes.

It is no argument against transfer of jurisdiction over certain wastes to the state that the NRC Staff's preferred plan for the stabilization of the wastes might be scotched by the state. No doubt there are many instances in which the NRC Staff's preferences are upset by a § 274 Agreement, but Agreement States are not mere ministers of the Commission's will. Indeed, no state may become an Agreement State unless it can demonstrate the capacity for judgment which, though in compliance with minimum federal standards, displays independence.

DECISION

On September 11, 1987, the Commission issued an unpublished order that established a proceeding before the Commission for the consideration of certain factual and legal issues concerning the distribution of regulatory jurisdiction over certain radiologically contaminated materials at or near the Kerr-McGee Chemical Corporation's West Chicago Rare Earths Facility. The issues arose in the wake of the Agreement entered into last year by the Commission and Illinois for relinquishment of some regulatory authority to Illinois. Section I, below, sets forth the procedural background of this proceeding. Sections II and III set forth the factual and legal bases for the Commission's conclusions that the contaminated materials in Kress Creek and the West Branch of the DuPage River remain in the Commission's jurisdiction, but that jurisdiction over the other contaminated materials at other locations identified below properly belongs to Illinois.

I. BACKGROUND

On June 1, 1987, an Agreement between the Commission and the State of Illinois, entered into under § 274 of the Atomic Energy Act, 42 U.S.C. § 2021, became effective. Under the Agreement, Illinois assumed regulatory authority over "source material" as defined in § 11z of the Atomic Energy Act, 42 U.S.C. § 2014z, while the NRC retained authority over "byproduct material" as defined in § 11e(2) of the Act, 42 U.S.C. § 2014e(2), since Illinois had not at that point requested authority to regulate under the more involved statutory regime that governs § 11e(2) byproduct material.[1] However, there has arisen in the wake of the Agreement a dispute over whether certain materials at or

[1] For the definitions of the two kinds of materials, see § II, below.

near Kerr-McGee Chemical Corporation's West Chicago Rare Earths Facility are source material or § 11e(2) byproduct material.

In the supplementary material accompanying publication of the proposed Agreement for public comment, the Staff asserted that the disputed materials were source material and therefore in Illinois' jurisdiction. 52 Fed. Reg. 2309, 2322, cols. 1-2 (Jan. 21, 1987). Kerr-McGee argued against this characterization in its comments on the proposed Agreement. The Staff, relying on two internal Kerr-McGee memoranda on the production and sales history of the West Chicago Facility, replied to Kerr-McGee's arguments in its response to public comments. SECY-87-104 (Apr. 21, 1987), Enclosure C at 2-8. However, the final text of the Agreement did not classify the disputed materials, and the Commission did not, in its deliberations on the Agreement, resolve the dispute.

The extent and importance of the uncertainty about the proper division of responsibility between Illinois and the NRC first became clear in an NRC adjudicatory proceeding on a show-cause order. On March 2, 1984, the NRC Staff issued an order calling on Kerr-McGee to show cause why it should not be required to prepare a remedial action plan for the cleanup and disposal of contaminated material in Kress Creek and the West Branch of the DuPage River (hereinafter "Kress Creek") and to expeditiously execute the plan following NRC approval. A hearing was requested and held on the order, and on June 19, 1986, the Licensing Board dismissed the order, ruling that, among other things, the applicable dose limits were those in 10 C.F.R. Part 20 and that those limits were not exceeded by the radiation emanating from the contaminated material in the Creek. *Kerr-McGee Chemical Corp.* (Kress Creek Decontamination), LBP-86-18, 23 NRC 799 (1986). The Staff then appealed the Board's decision.

After the Agreement with Illinois was approved, the Staff filed a motion on May 28, 1987, before the Appeal Board calling for termination of the Kress Creek decontamination proceeding on the grounds that the material in the Creek was source material and therefore in the jurisdiction of Illinois. On June 5, Kerr-McGee opposed the Staff's motion, arguing, among other things, that the material was in fact § 11e(2) material and therefore still in the Commission's jurisdiction. The Staff's and Kerr-McGee's filings disputed the characterization not only of the material in Kress Creek but also of the other materials that the Staff had claimed in connection with the proposed Agreement were source material. On June 23, 1987, the Appeal Board ruled in Kerr-McGee's favor on Kress Creek and denied the Staff's motion. *Kerr-McGee Chemical Corp.* (Kress Creek Decontamination), ALAB-867, 25 NRC 900 (1987). On July 13, 1987, the Staff filed a petition for Commission review of the Appeal Board's ruling.

In order to resolve this uncertainty surrounding the Agreement's division of regulatory authority for public health and safety, the Commission's September 11, 1987 Order established a further proceeding for consideration of the factual and legal issues raised by the dispute between the Staff and Kerr-McGee.

Illinois, any interested county or municipality, any present or former party to either the Kress Creek decontamination proceeding or the West Chicago decommissioning proceeding, and any person who filed comments on the proposed Agreement with Illinois, were invited to participate in this further proceeding. The Order established a briefing schedule which ended on November 12, 1987. In addition to briefs from Kerr-McGee and the Staff (including a reply brief from Kerr-McGee), briefs were filed by Illinois and the City of West Chicago, and comments were filed by the Nichiren Shoshu Temple, whose property is crossed by Kress Creek. Pending the outcome of this further proceeding, the Commission held in abeyance any ruling on the Staff's July 13, 1987 petition for review of ALAB-867[2] and has exercised jurisdiction over the disputed materials to the extent that it did prior to the effectiveness of the Agreement.[3]

Below, the Commission finds that the contaminated materials in Kress Creek and the West Branch of the DuPage River are, on the basis of the evidence available, best described as § 11e(2) byproduct material and are thus within the Commission's jurisdiction. The Staff's July 13, 1987 motion for review of ALAB-867 will therefore be denied in a separate order being issued today. However, the Commission also finds below that the other disputed materials are, on the basis of the same evidence, best described as source material and are thus within the jurisdiction of the State of Illinois. In arriving at these factual conclusions, the Commission has examined in detail the internal Kerr-McGee memoranda the Staff relied on in replying to Kerr-McGee's comments on the proposed Agreement. The Commission has found the

---

[2] Kerr-McGee argues that the Commission cannot grant the Staff's motion for "review of factual matters" concerning Kress Creek unless the Appeal Board has resolved the issue (1) in a "clearly erroneous manner" and (2) contrary to the resolution of the same issue by the Licensing Board (*see* 10 C.F.R. § 2.786(b)(4)(ii)), and that neither condition is satisfied here. Kerr-McGee Brief at 19 n.17. As is explained above, this further proceeding grows out of the proceeding that culminated in the Agreement between the Commission and Illinois; this further proceeding is thus only incidentally concerned with the Appeal Board's decision. But more important, the purpose behind the cited portion of § 2.786 is met here. That purpose is to ensure that the Commission does not needlessly insert a third layer of adjudicatory review of a given set of factual issues. 42 Fed. Reg. 22,128, col. 3 (May 2, 1977). As Kerr-McGee acknowledges, the Licensing Board did not reach the question of whether the material in the Creek was § 11e(2) byproduct material. Kerr-McGee Brief at 12 n.11; *see also Kress Creek*, LBP-86-18, *supra*, 23 NRC at 805. Therefore, this further proceeding involves only a second level of adjudicatory review of the factual issues involving Kress Creek. Of course, the proceeding involves only the *first* level of adjudicatory fact-finding on the factual issues involving the other disputed materials.

[3] On October 20, 1987, while the issues in this proceeding were being briefed, Illinois announced in a letter to the NRC's Assistant Director for the State Agreements Program that Illinois intends to file an application for an amendment to the Agreement in order to empower Illinois to regulate § 11e(2) byproduct material. The Staff and the City of West Chicago suggest that this letter may make a Commission decision in this further proceeding unnecessary. Staff Brief at 8; West Chicago Brief at 1. However, amendments of such importance are not implemented without careful discussion and review, including an opportunity for public comment; moreover, such amendments sometimes entail changes in state legislation and regulation. *See* the NRC policy for evaluation of agreement state programs, 52 Fed. Reg. 21,132, 21,135, cols. 1-2 (June 4, 1987). Thus, the process of amending the Agreement with Illinois may take some time. As of the date of this Decision, Illinois has not yet filed a formal application for amendment of the Agreement, although on July 8, 1988, the State did submit a draft proposal. Meanwhile, the disputed materials remain on the verge of regulatory limbo. Therefore, the Commission is issuing this Decision.

earlier of the two memoranda particularly helpful. The Commission concludes, moreover, that neither statutory law, nor due process, nor consideration of prudent administrative practice requires that the Commission retain jurisdiction over the materials it determines below to be source material.

II.

In this section, we set forth the bases for the Commission's conclusions that the materials in Kress Creek are § 11e(2) byproduct material but that the other disputed materials are source material.

Generally, radioactive material is "source material" if it is uranium or thorium, or any ore that is by weight 0.05% uranium or thorium.[4] 42 U.S.C. § 2014z and 10 C.F.R. § 40.4(h). However, radioactive material is "§ 11e(2) byproduct material" if it consists of "tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed *primarily* for its source material content." 42 U.S.C. § 2014e(2) (emphasis added). The former definition is based wholly on the content of the material, while the latter definition leaves room for consideration of the purpose for which the ore was processed; the latter definition thus leaves room for production and sales history, which will play a large part in the resolution of the issues in this proceeding. Accordingly, two waste piles may be identical in content and thus pose the same health hazard and yet one pile may be "§ 11e(2) byproduct material" because of its history. Such will, in fact, prove to be the case here.[5]

The Staff's argument that all the disputed materials should be characterized as source material first focuses on the materials not in Kress Creek. Some of these materials are on site and some are off.[6] The Staff maintains that the production history of the site shows that these materials were processed "primarily" for their rare earths content. To arrive at this conclusion, the Staff first argues that these materials were generated between 1936 and 1953.[7] The

---

[4] But source material does not include "special nuclear material." 10 C.F.R. § 40.4(h).

[5] There is no dispute that the materials in question in this proceeding are source material if they are not § 11e(2) byproduct material.

[6] In addition to the radiologically contaminated materials in Kress Creek, the disputed materials include radiologically contaminated landfill in Reed-Keppler Park and certain residential areas of DuPage County, and the radiologically contaminated landfill brought back to the West Chicago site from residential areas and a sewage treatment plant in West Chicago. *See* 52 Fed. Reg. at 2322. The material that has been returned to the site is segregated from the waste material that has never left the site. There is no dispute that the latter material is § 11e(2) byproduct material and thus within the Commission's jurisdiction as the Agreement now stands.

[7] There is no longer any dispute that the materials other than those in Kress Creek came from the West Chicago site before it was licensed by the AEC, that is, before 1954. In its opening brief in this further proceeding, Kerr-McGee asserted that the Staff had not adequately documented its claim that these materials had come from the site in the period 1936-1953. Kerr-McGee Brief at 17 n.16. However, in its response to Kerr-McGee's brief, the Staff quoted at length from the documents on which it had based its claim. Staff Brief at 5. In its reply to the Staff's response, Kerr-McGee does not dispute these documents.

Staff then cites production figures for that period from an internal Kerr-McGee memorandum, which appears as Exhibit 1 in the Staff's brief in this proceeding.[8] The memorandum, the Staff says,

> characterizes the tailings production for the period 1936-1953 as being predominantly "[d]riven by commercial rare earth demand." Specifically, of 3,828 tons of total oxide in tailings, 3,480 was [sic] characterized as "Non-Th-Driven." [348 tons were characterized as "Th-Driven."] A similar breakdown was found with respect to the 1966-1973 period. By contrast, for the period 1954-1965, processing was driven by thorium demand.

Staff Brief at 3-4.[9] *See also* Staff's Response to Comments on the Proposed Agreement with Illinois, Enclosure C to SECY-87-104 (Apr. 21, 1987), at 7 n.2 (Appendix 2 to Kerr-McGee Brief).

In the paragraph just quoted, the Staff assumes that processing of the ore at the West Chicago site was, in the words of § 11e(2), "primarily" for its thorium content if the processing was, in the language of the memorandum, "driven" by the demand for thorium, and that the processing was in turn "driven" by thorium demand if the memorandum labels more tailings tons "thorium-driven" than "non-thorium-driven." The Staff thus concludes that since 10 times as many tons of tailings are marked "non-thorium-driven" as are marked "thorium-driven" in the memorandum, the materials from this early period are not § 11e(2) byproduct material and are therefore source material.

As will be shown below, the Staff is right to look to the memoranda for information that will resolve the factual issues. However, the Staff's position ultimately does not withstand scrutiny. For example, the Staff's argument fails to come to terms with what the memorandum means by "driven." If the Staff's argument were correct, the memorandum should also characterize the processing in the period 1966-1973 as driven by rare earth demand, since in that period, as in the earliest period, 10 times as much total oxide in the tailings were non-thorium-driven as were thorium-driven. *See* Table 1 in Exhibit 1 of the Staff's Brief. Yet, despite this same ratio in both periods, the memorandum says that the processing in the later period was "equally driven" by thorium and rare earth demand. *See id.* at 2.

Moreover, even if the Staff's argument is accepted, it contradicts the Staff's conclusion that the material in Kress Creek is source material. It is not in

---

[8] The memorandum is by H.E. Kremers of Kerr-McGee and is dated January 21, 1983. The Staff has relied on this memorandum, and a second memorandum to be discussed below, twice before in connection with proceedings that involve the West Chicago site, once in testimony before the Licensing Board in the Kress Creek decontamination proceeding, ff. Tr. 349 (testimony of Merri Horn, April 28, 1986), and again in response to comments on the proposed Agreement with Illinois, Enclosure C to SECY-87-104 (April 21, 1987), at 7 n.2. Enclosure C appears as Appendix 2 to Kerr-McGee's brief in this proceeding.

[9] The Staff gets its figures from Table 1 on the first page of the memorandum. The characterization of the earliest period as "driven by rare earth demand" comes from page 2 of the memorandum.

dispute in this proceeding that the material in Kress Creek came from the West Chicago site at least mainly while it was licensed under the Atomic Energy Act, that is, after 1953.[10] But Table 1 of the memorandum characterizes the tailings produced during that period as 7576 tons thorium-driven and 4889 non-thorium-driven. *See* Staff Brief, Exh. 1 at 1. By the Staff's argument that the larger of these two figures determines whether the processing was "primarily" for the thorium in the ore, the processing after 1953 would be "primarily" for the thorium in the ore, since more tons of tailings were driven by demand for thorium than were driven by demand for rare earths. Thus the tailings from this period would be § 11e(2) byproduct material, not source material as the Staff claims.

The Staff does in fact now agree that the material in the Creek "could be classified" as byproduct material. Staff Brief at 7. Indeed, in the Final Environmental Statement for the West Chicago site, the Staff was even more firm. It concluded that of the ore processed during the years the site was in operation, about 60% was processed after 1953 and primarily for its thorium content and thus was § 11e(2) byproduct material. *See* NUREG-0904, Final Environmental Statement Related to the Decommissioning of the Rare Earths Facility, West Chicago, Illinois (May 1983), at H-4 to H-5.

The Staff's way of reading the memorandum thus not only cannot account for the memorandum's judgments about what processing was driven by thorium demand, it also leads to a self-contradictory position on the contamination in Kress Creek.

The Staff tries to avoid the contradiction by dropping the historical approach. The Staff first ignores § 11e(2)'s requirement that the primary purpose of the processing be determined and says simply that the material in Kress Creek contains thorium and is therefore source material. Staff Brief at 7. The Staff then asserts that since Illinois has jurisdiction over "all other offsite radiological contamination," it should also have jurisdiction over the contamination in Kress Creek. *Id.* at 7-8. The Staff here begs the question, since one of the aims of this proceeding is to determine whether Illinois indeed has jurisdiction over all the other offsite material. But even assuming Illinois does have such jurisdiction, the Staff cannot with consistency argue that there should be a single authority off site; for if Illinois should have jurisdiction over Kress Creek because Illinois has jurisdiction over the rest of the offsite material, then the Commission should have jurisdiction over the disputed material *on* site because it has jurisdiction

[10] In the Kress Creek decontamination proceeding, the Staff testified that evidence was not available to determine definitively how and when the Creek was contaminated, but that it was proper to assume that the contamination reflected the preponderance of the facility's output, which occurred after 1953. Ff. Tr. 349 at 14-20. The Licensing Board in the Kress Creek decontamination proceeding concluded that the material in the Creek came from the site after 1953 (LBP-86-18, *supra*, 23 NRC at 806), and the Staff did not contest this finding on appeal. *See* Staff Brief at 7.

over the rest of the material on site (*see* note 6, *supra*), yet the Staff argues in this proceeding for transferring jurisdiction over some of the onsite material to Illinois.[11]

In sum, the Staff has not fully come to terms with the memorandum it cites and has not found an approach to the issues which is consistent with § 11e(2).

Kerr-McGee, on the other hand, adopts an historical approach only in relation to Kress Creek. Kerr-McGee argues that the Staff has already committed itself to classifying the material in Kress Creek as § 11e(2) byproduct material, since the Staff has not disputed that the material in the Creek came from the site after 1953 (*see* note 10, *supra*), and thus is of the same vintage as certain onsite materials which are not at issue here and which no one disputes are § 11e(2) byproduct material. Kerr-McGee Brief at 15.

But Kerr-McGee objects to any reliance on history for characterizing the disputed materials other than those in Kress Creek. According to Kerr-McGee, the memorandum the Staff relies on for its conclusions about the period 1936-1953 is ambiguous and its sources unclear. Kerr-McGee Reply Brief at 9-10. More generally, Kerr-McGee argues, neither it nor the Staff has complete records or reliable first-hand reports of the early years of operations. *Id.* at 8. Kerr-McGee concludes, therefore, that "[a]ny examination of the early history of the site is thus inevitably surrounded by significant uncertainty." *Id.*

Kerr-McGee asserts that jurisdiction over the disputed materials exclusive of those in the Creek should be determined by their content, not their history. To elucidate their content, Kerr-McGee submitted with its opening brief in this proceeding the results of radiochemical examinations, chemical analyses, and x-ray diffraction studies performed for this proceeding[12] which show that the onsite materials in dispute "do not exhibit the properties that would be anticipated if they were the result of rare earths processing" and are therefore similar to the onsite materials that no one disputes are § 11e(2) byproduct material. *Id.* at 5-6. The Staff does not dispute the results of these studies.[13] Staff Brief at 5.

The company argues that if an historical approach to the characterization of the materials other than those in the Creek is to be taken at all, more reliable historical information can be gleaned from the minutes of annual meetings of the shareholders of the Lindsay Light and Chemical Company,[14] the previous

---

[11] The Nicheren Shoshu Temple proposes, with consistency, that the State have offsite jurisdiction and the Commission onsite jurisdiction. Comments at 3-5. It is the Commission's opinion, more fully expressed below, that the terms of the Agreement as it presently stands, together with the application of § 11e(2) to the production and sales history of the site, do not permit such an apparently straightforward allocation of jurisdiction.

[12] G.E. Van De Steeg and J.C. Stauter, Comparison of Characteristics of Byproduct Materials at the West Chicago Rare Earths Facility with Various Materials from Offsite Locations (Oct. 9, 1987), Appendix 4 to Kerr-McGee Brief.

[13] The Staff does argue, however, that the studies do not answer the relevant question, namely whether the processing of the ore from which the analyzed wastes came was primarily for the thorium content of the ore. Staff Brief at 5. As will be shown below, the Staff is correct here.

[14] Appendix 2 of Kerr-McGee's reply brief consists of several of these reports.

owner of the site, than from "*a few phrases from a single* [Kerr-McGee internal] *memorandum*." *Id.* at 9 (emphases in original). These minutes show that "the recovery of thorium was a principal focus of operations throughout the Facility's history, including the period before 1954." *Id.* at 11.[15] Kerr-McGee also suggests that in looking at the history of the site, the Commission might adopt a looser notion of what § 11e(2) means by the word "primarily."

> One could imagine a circumstance in which no processing of ore would take place but for the prospect of profit from all of the extracted byproducts. In such a case the production of each byproduct could properly be seen as the "primary" purpose of processing in that no processing would have taken place absent its recovery.

Id. at 8 n.8.

The Commission believes, however, that § 11e(2) requires the fact-finder to determine, where possible, the primary purpose behind the processing of ore containing source material, and to search for a purpose that is "primary" not just because no processing would have taken place without it. To this extent, the Commission agrees with the Staff. The Commission believes, moreover, that the two Kerr-McGee memoranda cited by the Staff provide more than "a few phrases" as bases for a resolution of the issues here and make a resort either to minutes of shareholders' meetings or to analysis of the content of the disputed materials unnecessary. To be sure, the two memoranda are based on incomplete records. However, as will be shown below, the memoranda are internally consistent, and the writer has clearly identified the elements of his calculations which had to be based on best estimates and assumptions rather than records. Moreover, the uncertainty in the estimates and assumptions is concentrated on figures that have little effect on the results of applying § 11e(2) to the history in the memoranda. Kerr-McGee has proffered no persuasive reason to doubt the conclusions in the memoranda.[16]

The earlier of the two memoranda ("the 1982 memorandum") the Staff cited in its response to comments on the proposed Agreement provides a detailed accounting of product input and output, and residues, both for the period 1936-1953, when the disputed materials other than those in the Creek left the site, and for the later period, when most of the contamination in the Creek originated. This accounting will make it clear what the later memorandum ("the 1983

---

[15] Indeed, Kerr-McGee could have pointed out that Lindsay, according to the minutes of April 8, 1947, was the "principal" producer of thorium in the United States at the time. Kerr-McGee Reply Brief, Appendix 2, Minutes of April 8, 1947, at 4 (pages unnumbered).

[16] Kerr-McGee does assert, without citation, that the focus of the memoranda is "solely on the onsite wastes." However, the memoranda recognize that some materials went offsite (*see* February 2, 1982 Memoranda at 2, ¶ (4)), and nonetheless clearly cover *all* of the processing, not just that portion of the processing which would have generated the onsite wastes. Thus, the conclusions of the memoranda should apply to all the materials in dispute here.

memorandum"), the one the Staff cites in its brief in this proceeding, means when it calls the processing at the West Chicago facility "driven" by one or another product, and what numbers should be used in determining the primary purpose of processing in each of the two periods.

We begin with the period during which most of the contaminated materials in Kress Creek originated, that is, 1954-1973. Relying on sales records and assumptions about the thorium and rare earth content of monazite ore, the 1982 memorandum calculates that, for the first part of that period, 1954-1965, 82,706 tons of monazite ore were processed to remove thorium. 1982 Memorandum at 3. Of this 82,706 tons, by far the greater number, 74,159 tons, were processed for sales to the government, principally the General Services Administration ("GSA"),[17] while 8547 were processed for commercial thorium sales (*id.*), which were relatively constant over the operating life of the facility.[18] *Id.* at 2. However, during the same period, only 34,518 of those same 82,706 tons of monazite ore were processed for commercial and governmental rare earth sales. *Id.* at 3. The 1982 memorandum states that "[o]re input was determined by the need for thorium nitrate . . . ." *Id.* at 2. Rare earths were extracted from the remaining 48,188 tons of the original 82,706, but those rare earths were "surplus" (*id.*), "by-product, stored as rare earth sodium sulfate . . . ." *Id.* Thus the 1983 memorandum calls the processing during this period "driven by thorium demand." 1983 Memorandum at 2.

In sum, during the years 1954-1965, more than twice as many tons of ore were processed for thorium sales as were processed for rare earth sales.[19] It

---

[17] The GSA was buying thorium for one, perhaps two, national stockpiles, the oldest of them established by the Strategic and Critical Materials Stockpiling Act of 1946. Beginning in 1953, the Office of Emergency Preparedness determined what materials should be bought under the Act, and GSA bought, stored, and disposed of the materials. *See* R.D. Cuff, Stockpiles and Defense Escalation, 1965-1968, in 9 The Public Historian 45, 47-50 (Fall 1987). The AEC also bought some thorium from the West Chicago facility during the late 1950s. *See* NUREG-0904, Final Environmental Statement Related to the Decommissioning of the Rare Earths Facility, West Chicago, Illinois (May 1983), at 4-3 to 4-4 (Kerr-McGee Brief, Appendix, Tab 1).

[18] These commercial thorium sales were principally for use in gas mantles and lighting fixtures. 1982 Memorandum at 2 and cover memorandum.

[19] The exact ratio of tons processed for thorium sales to tons processed for rare earth sales in the period 1954-1965 is subject to some uncertainty, because records are missing on ore input (1982 Memorandum at 1), and therefore both figures in the ratio have to be reconstructed using figures from sales records and assumptions about the thorium and rare earths content of the ore used in processing. However, as we said above, the uncertainty does not affect the soundness of the conclusion that during this period ore was processed primarily for its thorium content.

For example, the figure of 74,159 for the number of tons of ore processed for thorium sales to the government was reconstructed in the following way: The sales records show sales of 14,963,367 pounds of thorium nitrate to the government. 1982 Memorandum at 3. The question is, how much monazite ore must be processed to yield enough thorium for 14,963,367 pounds of thorium nitrate? Forty-six pounds of thorium oxide, which is the form thorium takes in monazite ore, yields 100 pounds of thorium nitrate. *Id.* at 1. Thus, to produce those 14,963,367 pounds of thorium nitrate requires 6,883,149 pounds, or 3441 tons (rounding down to the nearest ton), of thorium oxide. The question then becomes, how much ore is required to produce 3441 tons of thorium oxide? The 1982 Memorandum assumes that, on average, monazite ore is 5.8% thorium oxide to begin with, and that 20% of the oxide is lost during processing. *Id.* At this stage in the calculation, only simple algebra is needed to calculate the number of tons of monazite ore (X) processed to produce the 3441 tons of thorium oxide needed for the

(Continued)

would appear likely that not only would the bulk of the processing, in the words of Kerr-McGee, "not have taken place *but for*" the thorium sales, most of the processing would have taken place even if there had been no rare earth sales. Thus, the thorium content of the ore appears to have been both a necessary reason and a sufficient one for the processing to have taken place.[20] Clearly, then, during these 11 years, the ore was processed "primarily for its source material content," in a strong sense of the word "primarily," and the wastes from that processing are therefore § 11e(2) byproduct material.

The same conclusion holds for all the wastes generated during the period in which most of the contamination in Kress Creek originated. According to the 1983 Memorandum, the processing after 1965 was equally driven by thorium and rare earth demand. 1983 Memorandum at 3. That is, during this period, 1966-1973, the same number of tons were processed for thorium sales as were processed for rare earth sales.[21] Thus, it cannot be said that the ore processed during this last period was processed primarily for the thorium in it. However, for the *whole* period 1954-1973, the same conclusion holds as holds for the first 11 years of that period: More tons of ore were processed for thorium sales than were processed for rare earth sales, by a margin wide enough to compensate for any uncertainties in the figures.[22] Thus, for the whole period during which the contaminated materials in Kress Creek originated, the facility processed ore primarily for its thorium content. Therefore, the radiologically contaminated waste material in the creek is § 11e(2) byproduct material and under the regulatory authority of the Commission until such time as

---

14,963,367 pounds of thorium nitrate sold to the government: X tons monazite ore * 0.058 * 0.8 = 3441 tons ThO_2; thus X = 74,159. By means of similar calculations, the 1982 Memorandum reconstructs the number of tons processed in the same period for commercial thorium sales and commercial rare earth sales.

Of course, the thorium and rare earths content of the ore processed may have varied significantly, and thus the actual number of tons processed to extract the amounts of thorium and rare earths sold may differ significantly from the reconstructed numbers. However, our conclusion that during this period ore was processed primarily for its thorium content depends not on particular numbers but rather simply on the fact that *all* the ore was processed for thorium sales, but only part (less than half, if the figures in the 1982 Memorandum are accurate) of the ore was processed for rare earth sales.

[20] The Staff's approach in its brief to determining the primary purpose of a given period of processing obscures this connection between processing and sales. The Staff looks to the ratio of tons of thorium oxide in the tailings to tons of rare earth oxide in the tailings to determine the primary purpose of processing. But where, as here, the ore is fully processed, this ratio will always be 1 to 10, no matter what the sales, since, on average, the ore contained 10 times as much rare earth oxide as thorium oxide, and processing recovered only 80% of each.

[21] These sales were all commercial. The sales to the government having ceased, the number of tons processed annually dropped to near its pre-1954 level.

[22] During the period 1954-1965, 82,706 tons of ore were processed for thorium sales, and during the period 1966-1973, 12,150 tons of ore were processed for thorium sales; thus, for the whole period, 1954-1973, 94,856 were processed for thorium sales. Similarly, during the period 1954-1965, 34,518 tons were processed for rare earth sales, and during the period 1966-1973, again 12,150 tons were processed for rare earth sales; thus, for the whole period, 1954-1973, 46,668 tons were processed for rare earth sales. Therefore, during the whole period in which most of the contaminated materials in the Creek originated, roughly twice as many tons were processed for thorium sales as were processed for rare earth sales.

the Commission's Agreement with Illinois is amended to give Illinois authority over such byproduct material.

Nevertheless, the history of the other materials in dispute in this proceeding shows that they are not § 11e(2) byproduct material and therefore should be under the jurisdiction of Illinois, absent some legal or administrative reason that would compel the Commission to retain jurisdiction over these materials. As has been said above, these materials originated before 1954. The sales and production figures for that period show that processing was driven by the demand for rare earths: During the period 1936-1953, processing at the facility aimed to extract all the rare earths and thorium from 30,000 tons of ore, and all that was extracted was sold. 1982 Memorandum at 2; 1983 Memorandum at 1. However, of that 30,000 tons, only 13,986 were initially processed for thorium sales. 1982 Memorandum at 2. The other 16,104 tons were initially processed only for their rare earths content, and the byproduct of that processing, still with its full complement of thorium, was stockpiled. *Id.* Only later was that stockpiled byproduct *re*processed for its thorium, for sales to the AEC. *Id.* Thus, although all 30,000 tons eventually were processed for their thorium, the demand for rare earths was apparently sufficient to cause all 30,000 tons to be processed. Conversely, the demand for thorium was not necessary to cause all 30,000 tons to be processed, and thus was not a primary purpose for the processing even in Kerr-McGee's suggested weak sense of the word "primary."[23] Thus the ore processed before 1954 was processed primarily for its rare earths content, and the wastes from that processing are not § 11e(2) byproduct material.[24] Therefore, jurisdiction over those wastes should be transferred to Illinois, absent some compelling legal or administrative reason to the contrary.

[23] Since all 30,000 tons were eventually processed for their thorium, the tailings look just like the tailings would have looked had the ore been processed primarily for its thorium content. Thus it is not surprising that Kerr-McGee's studies of these tailings show that they are indistinguishable from § 11e(2) byproduct material. However, the fact remains that all 30,000 tons would have been processed for their rare earths whether there had been an AEC or not.

[24] The figures for the period 1936-1953 are subject to even more uncertainty than the figures for the later period, for (1) records of the sales to the AEC do not exist any longer, and so the figures for those sales must be reconstructed from figures for commercial thorium sales (1982 Memorandum at 1-2), but also (2) the figures for the commercial sales must themselves be reconstructed using commercial thorium sales figures for the years 1958-1971 and the assumption that commercial thorium sales were relatively constant throughout the operating life of the facility. *Id.* at 2. However, again, as with the uncertainties concerning the figures for the period 1954-1973, the uncertainties for the period before 1954 do not affect the determination that the wastes generated during that period are more properly classified as source material, for that determination depends not on particular figures but simply on the fact that the demand for rare earths was a sufficient reason for the 30,000 tons to be processed during that early period, while the demand for thorium was not sufficient to cause all 30,000 tons to be processed.

III.

Kerr-McGee puts forward three arguments for the proposition that not even source material wastes connected with the West Chicago site should be under the regulatory authority of Illinois. We reject all three of these arguments.

Kerr-McGee's first argument is that the present Director of the Illinois Department of Nuclear Safety (IDNS) has so "clear[ly] and unequivocal[ly] prejudg[ed] . . . the most fundamental issues arising from regulation of the West Chicago materials" that there exists a "serious bar" to the transfer of jurisdiction under the agreement. Kerr-McGee Brief at 26. Indeed, Kerr-McGee goes so far as to argue that "given the history of IDNS's participation in proceedings concerning the West Chicago materials, it is plain that the *entire agency* is disqualified and cannot properly assume jurisdiction over the materials." Kerr-McGee Reply Brief at 17-18 (emphasis added). "The transfer of any authority over the disposal of the West Chicago materials to the State would be an unconstitutional delegation of an important decision to a party that has already prejudged the issues and reached a firm position on them." *Id.* Moreover, asserts Kerr-McGee, § 274(d) of the Atomic Energy Act requires that the Commission not transfer jurisdiction to Illinois, since that section requires that the State program be in all respects "compatible with the Commission's program for the regulation of such materials," and regulation by an authority that has prejudged all the fundamental issues is not consistent with the Commission's program. Kerr-McGee Reply Brief at 16-17, *quoting* 42 U.S.C. § 2021(d).[25]

We agree with the Staff that the Commission simply does not have the authority to disqualify an officer of another government, let alone disqualify an entire agency of another government for these reasons.[26] Kerr-McGee's recourse against the IDNS or its chief officer lies under State law, not Commission law. *See* 52 Fed. Reg. at 2322, col. 1 (Illinois law provides for administrative and judicial review of actions taken by the Department of Nuclear Safety); *see also* SECY-87-104, Enclosure C at 7-8 (Illinois procedures appear adequate to ensure fair and impartial administration of regulatory law). The Commission's authority on matters of process in Illinois is limited to determining that in fact such recourse exists. *Cf.* 42 U.S.C. § 2021o(3) (due process requirements for state regulation of activity resulting in byproduct material). It is not our place to judge whether particular incumbents in state regulatory offices will make such recourse necessary.

---

[25] Kerr-McGee also makes due process arguments that the Kress Creek decontamination proceeding cannot be halted as a result of the Agreement. Kerr-McGee Brief at 21-23, Kerr-McGee Reply Brief at 13-15. Since we have permitted that proceeding to run its course, we need not consider these arguments.

[26] Of course, we take no position on whether the officer or the agency has in fact prejudged fundamental issues concerning the regulation of the West Chicago wastes.

Kerr-McGee's second argument against transferring jurisdiction over the West Chicago source material to Illinois is that such a transfer is barred by statute. Section 151(c) of the Nuclear Waste Policy Act of 1982 provides for the transfer of title and custody of any "special site" to the Secretary of Energy on request of the owner of the site. *See* 42 U.S.C. § 10171. A site is "special" if the low-level waste at the site "was the result of a licensed activity to recover zirconium, hafnium, and *rare earths* from source material." 42 U.S.C. § 10171(c) (emphasis added). The transfer may not take place, however, until the site "has been decontaminated and stabilized in accordance with the requirements established by the Commission and when such owner has made adequate financial arrangements approved by the Commission for the long-term maintenance and monitoring of such site." *Id.* Kerr-McGee argues that this section's silence on any state role for these sites bars the states from regulating such sites, that whenever Congress gives the states a role in regulating low-level waste sites, it does so explicitly, as in subsection (a) of the same section of the Nuclear Waste Policy Act, where states with which the Commission has entered into Agreements under § 274 of the Atomic Energy Act are given a role in the approval of financial arrangements for site closure. Kerr-McGee Brief at 27-29.

The Staff questions whether the West Chicago site is a "special site" under § 151(c) at all, in part because most of the production of rare earths took place before the site was licensed by the AEC. Staff Brief at 13-14. The Staff also argues that, even assuming that § 151(c) applies to the West Chicago site, the silence of § 151(c) does not prohibit an Agreement State from administering the decontamination and stabilization of the site, with Commission review and approval of closure as a condition precedent to transfer. Staff Brief at 14-16.

Without deciding whether § 151(c) applies to the West Chicago site, we agree with the Staff that § 151(c) does not prohibit Illinois from regulating the source material at issue in this proceeding.[27] The silence in that section does not bar the state from a role in regulating such sites. Analogy, not silence, is the better guide to interpreting § 151(c), and the analogy, handily enough, is with the statute governing the termination of licenses for § 11e(2) byproduct material. Section 274b of the Atomic Energy Act permits states to acquire authority over § 11e(2) byproduct material by way of an Agreement with the Commission, but § 274c(4) states that "[t]he Commission shall also retain authority under any such agreement to make a determination that all applicable standards and requirements have been met prior to termination of a license for byproduct material, as defined in section 11e.(2)." 42 U.S.C. §§ 2021b, 2021c(4). Analogously, we believe, § 151(c) of the Nuclear Waste Policy Act permits states to regulate a special

[27] However, the parties agree that under § 151(c) only the Commission can review and approve financial arrangements for federal long-term maintenance and monitoring of any "special site" which is to be transferred to the ownership and custody of the Secretary of Energy. Staff Brief at 16 n.11.

site before its transfer to the Secretary — indeed, § 274b of the Atomic Energy Act explicitly permits states to regulate source material under an Agreement, with no exception made for source material at special sites — but § 151(c) also requires that the Commission retain authority to determine that all applicable requirements have been met before transfer to the Secretary.

Kerr-McGee's third and last argument against transferring the West Chicago source material to the jurisdiction of Illinois is that divided jurisdiction is prohibited by "elementary management considerations." Kerr-McGee Brief at 32. Indeed, says Kerr-McGee, divided jurisdiction "defies common sense" (*id.* at 29) and is possessed of "total illogic." *Id.* at 30. More specifically, Kerr-McGee argues that the Staff's preferred resolution for the stabilization of the West Chicago wastes — onsite storage and regulation by a single agency — will be frustrated if jurisdiction over the West Chicago wastes is divided between the Commission and Illinois and the State is able to enforce its stated desire to prohibit onsite storage. *Id.* at 29. Divided authority would, claims Kerr-McGee, "create the prospect of irreconcilable conflict between the two regulatory bodies." *Id.* at 31. Kerr-McGee also claims that having two disposal locations, one on site and one off, would be "directly contrary" to the Commission's guidance, in 10 C.F.R. Part 40, Appendix A, Criterion 2, urging that proliferation of waste disposal sites be avoided.

The Staff replies simply that if the Agreement with Illinois is amended to give Illinois regulatory authority over § 11e(2) byproduct material, there will eventually be only one agency regulating the West Chicago wastes, and that until then, the chance of "irreconcilable conflict" between Illinois and the Commission is reduced by the fact that the Commission retains jurisdiction over the West Chicago *site*, and by the fact that the onsite wastes that the Staff believes should be in the jurisdiction of Illinois have been kept separate from the onsite materials that remain in the Commission's jurisdiction. Staff Brief at 17-18.

To be sure, divided authority over the West Chicago wastes may appear at best to be a complication without redeeming regulatory value. Even granting the appearance, however, such divided authority is also an unavoidable consequence of the mixed statutory regimes that govern the regulation of radioactive wastes. As we have said before, material that is source material by content may be § 11e(2) byproduct material by history. Moreover, § 274b of the Atomic Energy Act permits a state to enter into an Agreement that authorizes the state to regulate source material alone. 42 U.S.C. § 2021b. As a consequence of these two statutory provisions, there will be instances in which, as here, the Commission and a state regulate two separate agglomerations of waste materials which are virtually the same physically. We know of no statutory provision that permits, let alone requires, that what might be claimed to be "elementary management considerations" should control in such instances, at the expense of the application of statutes and the right of a state to assume regulatory authority in stages.

It is no argument to the contrary that the Staff's preferred plan for the stabilization of the West Chicago wastes might be scotched by Illinois. No doubt there are many instances in which the Staff's preferences are upset by a § 274 Agreement, but Agreement States are not mere ministers of the Commission's will. Indeed, no state may become an Agreement State unless it can demonstrate the capacity for judgment which, though in compliance with minimum federal standards, displays independence.

Finally, divided authority over the West Chicago wastes is not "directly contrary" to the Commission's guidance in 10 C.F.R. Part 40, Appendix A, Criterion 2. For one thing, that Appendix, as its title clearly shows, governs only wastes that can be classified as § 11e(2) byproduct material.[28] But by this Decision such wastes remain wholly within the Commission's jurisdiction. More important, if any plan for disposal of the West Chicago source material is in conflict with Appendix A, it is the plan for *on*site storage, for Criterion 2 explicitly prefers *off*site storage at an *existing* large mill tailings disposal site, rather than *on*site storage, and thus the addition of a new storage site, "unless . . . such offsite disposal is demonstrated to be impracticable or the advantages of onsite burial clearly outweigh the benefits of reducing the perpetual surveillance obligations."[29] 10 C.F.R. Part 40, Appendix A, Criterion 2.

IV. CONCLUSION

Given the facts and the law as the Commission believes them to be most reasonably interpreted, the Commission concludes,

1. that the radiologically contaminated material that is the subject of the Kress Creek decontamination proceeding is byproduct material as defined by § 11e(2) of the Atomic Energy Act, 42 U.S.C. § 2014e(2), and therefore remains under the regulatory authority of the Commission, until such time as the § 274 Agreement with the State of Illinois is amended to give Illinois regulatory authority over such material; and

2. that the radiologically contaminated landfill in Reed-Keppler Park and certain residential areas of DuPage County, and the radiologically contaminated landfill brought back to the West Chicago site from residential areas and a sewage treatment plant in West Chicago, are source material and, having been

[28] "Appendix A to Part 40 — Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material from Ores Processed Primarily for Their Source Material Content." 10 C.F.R. Part 40, Appendix A.

[29] We are not suggesting that the Staff's proposed resolution conflicts with Criterion 2. That question is not before us. We are only saying that offsite burial need not add to the number of storage sites, while onsite storage will add to that number.

in the Commission's jurisdiction pending the outcome of this further proceeding (*see* September 11, 1987 Order at 4) are hereby transferred to the jurisdiction of Illinois.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 5th day of August 1988.

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)

August 23, 1988

The Appeal Board affirms a Licensing Board's order dismissing, as abandoned, an intervenor's contention concerning cooling flow blockage from build-up of macrobiological organisms.

RULES OF PRACTICE: CONTENTIONS (SCOPE)

The reach of a contention necessarily hinges upon its terms coupled with its stated bases.

RULES OF PRACTICE: CONTENTIONS (PURPOSE)

One purpose of the requirement in 10 C.F.R. 2.714(b) that the bases of a contention be set forth with reasonable specificity is to put the other parties on notice as to what issues they will have to defend against or oppose. *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).

RULES OF PRACTICE: CONTENTIONS (SCOPE)

Where a question arises as to the admissibility of a contention, adjudicatory boards should look to both the contention and its stated bases. *See, e.g., Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-869, 26 NRC 13, 20-25, *reconsideration denied*, ALAB-876, 26 NRC 277 (1987); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 229-33 (1986).

RULES OF PRACTICE: CONTENTIONS (SCOPE)

Where the issue is the scope of a contention, there is no good reason not to construe the contention and its bases together in order to get a sense of what precise issue the party seeks to raise.

APPEARANCES

Andrea Ferster, Washington, D.C., for the intervenor New England Coalition on Nuclear Pollution.

Thomas G. Dignan, Jr., and Deborah S. Steenland, Boston, Massachusetts, for the applicants Public Service Company of New Hampshire, *et al.*

Stephen A. Bergquist for the Nuclear Regulatory Commission staff.

DECISION

In ALAB-894,[1] we accepted the untimely appeal of the intervenor New England Coalition on Nuclear Pollution (Coalition) from the Licensing Board's unpublished May 12, 1988 Memorandum and Order in the onsite emergency planning and safety issues phase of this operating license proceeding. In that order, the Licensing Board dismissed as abandoned the Coalition's Contention IV. That contention, which had been rejected by the Licensing Board at the

[1] 27 NRC 632 (1988).

threshold in 1982 and reinstated by us last year in ALAB-875,[2] relates to the impact of aquatic organisms on the performance of cooling systems.

The basis of the Licensing Board's action in the May 12 order was the Coalition's announced election not to litigate further Contention IV. But, as noted in ALAB-894, that election was founded upon a previous Licensing Board ruling that, although addressed to the possibility of a coolant flow *blockage* resulting from the buildup of *macrobiological* organisms, Contention IV did not also encompass *microbiologically*-induced *corrosion.* The Coalition informed the Licensing Board that it did not accept that interpretation of the contention and, moreover, continues to believe that the applicants' program for detecting and controlling microbiologically-induced corrosion is inadequate.

In essence, then, the appeal at hand calls upon us to determine whether, as the Coalition insists, the Licensing Board erred in concluding that Contention IV did not embrace the issue of microbiologically-induced corrosion. For the reasons that follow, we agree with the applicants and the NRC staff that the Board below correctly construed the contention.[3]

A. Contention IV reads as follows:

> Blockage of Coolant Flow to Safety-Related Systems and Components by Buildup of Biological Organisms.
>
> 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.

At the time it submitted this contention in June 1982, the Coalition offered this as the entire basis:

> On May 19, 1982, the Commission published in the Federal Register a notice of abnormal occurrences at a number of nuclear reactors around the country. 47 FR 21653. The notice described the accumulation of asiatic clams, mussels, and other aquatic organisms in reactor cooling systems which had hitherto gone unnoticed. At one reactor, Brunswick Unit One, blockage of coolant flow paths resulted in the "total loss of both redundant trains of the residual heat removal system." 47 FR at 21653.
>
> Noting that the dissipation of heat to the environment is an essential safety function, the Commission found that blockage of coolant systems by biological organisms and debris could

[2] 26 NRC 251, 275 (1987). Contrary to the conclusion of the Licensing Board, we determined that the contention had an adequately stated basis and did not traverse territory covered in the Seabrook construction permit proceeding. *Id.* at 261-63.

[3] It is thus unnecessary to consider certain other arguments advanced by the Coalition on its appeal, all of which rest on the premise that Contention IV encompassed microbiologically-induced corrosion.

cause "possible degradation of the heat transfer capabilities of redundant safety systems to the point where system function is lost." *Id.* at 21655.

The abnormal occurrences at the six reactors showed that "preventive measures and methods of detecting gradual degradation have been inadequate in certain areas to preclude the occurrence." *Id.* The licensees in each case agreed to improve design features and detection techniques to prevent future significant fouling.

The Seabrook reactor uses ocean water for cooling and is particularly susceptible to fouling by aquatic organisms. The fouling does not occur only in the intake pipes of reactors. Organisms may find their way into the entire cooling system and even into the heat exchangers. *Id.* at 21654. In addition, the buildup of fouling organisms or corrosion products on piping walls, although not severe enough to block water flow during normal operation, could be dislodged by seismic activity and "collect in equipment bearing or seal coolers blocking the cooling water flow." *Id.* Because it is particularly vulnerable to intrusion by aquatic organisms, the Seabrook plant should be equipped with a maintenance and inspection program adequate to prevent the kind of degradation which current measures obviously do not achieve.[4]

The question respecting the scope of Contention IV came to the fore in a discovery motion filed by the Coalition in the wake of our reinstatement of the contention in ALAB-875. In that motion, the Coalition sought, *inter alia*, a declaration that microbiologically-induced corrosion is within the contention's ambit "for purposes of this litigation, or at minimum, for purposes of this, and all future, discovery."[5] Denying the motion in its entirety, the Licensing Board observed that, in terms, Contention IV is confined to concerns regarding the accumulation of mollusks, other aquatic organisms, and debris in Seabrook's cooling systems. In this regard, the Board found nothing in the contention, or the basis stated for it in 1982, that might reflect a concern that fouling by microbiological organisms might occasion leaks in and degradation of safety-related equipment. Still further, the Board noted that there was no mention by the Coalition of microbiologically-induced corrosion when it referred in the stated basis to the possibility that corrosion products might be dislodged by seismic activity and block cooling water flow.[6]

B. The body of Contention IV does not mention either blockage or corrosion. It is apparent from both its heading and the basis offered for it, however, that the contention is, in fact, addressed exclusively to the possibility of a

[4] NECNP's Supplemental Contentions (June 17, 1982) at 1-3.

[5] New England Coalition on Nuclear Pollution's Motion to Compel Applicants to Respond [to] NECNP's Second Set of Interrogatories and Request for Production of Documents on NECNP Contention IV (January 25, 1988) [hereinafter, Coalition's January 25 Motion to Compel] at 16.

[6] *See* Memorandum and Order (Granting NECNP's Motion for Leave; Denying NECNP's Motion to Compel) (February 17, 1988) at 5-7 (unpublished). On March 1, the Coalition filed a motion for reconsideration that the Licensing Board denied on March 18. In another filing on March 22, the Coalition pressed anew its claim that the issue of microbiologically-induced corrosion was embraced by Contention IV. This endeavor was summarily rejected by the Board in an unpublished April 1 order.

blockage of coolant flow to safety-related systems. Indeed, the heading conveys precisely that message.[7] And, for its part, the assigned basis relies solely on a May 1982 *Federal Register* notice in which the Commission called attention to the fact that several nuclear facilities had experienced a previously undiscovered cooling system *blockage* as a consequence of the accumulation of asiatic clams, mussels, other aquatic organisms, and debris. Thus, according to the Coalition, because the Seabrook facility uses ocean water for cooling, it is particularly susceptible to fouling by aquatic organisms and may suffer a like cooling water blockage.[8]

The reach of a contention necessarily hinges upon its terms coupled with its stated bases. We have long held that one purpose of the requirement in 10 C.F.R. 2.714(b) that the bases of a contention be set forth with reasonable specificity is to put the other parties on notice as to what issues they will have to defend against or oppose.[9] Thus, where a question arises as to the admissibility of a contention, we look to both the contention and its stated bases.[10] Similarly, where, as here, the issue is the scope of a contention, there is no good reason not to construe the contention and its bases together in order to get a sense of what precise issue the party seeks to raise.[11] In this case, therefore, a fair reading of the Coalition's Contention IV and its stated basis compels us to conclude that that contention was intended to embrace only cooling system blockage.

The overall record in this proceeding lends further support to our construction of Contention IV. Barely a year ago, one of the Coalition's attorneys had this to say about Contention IV in the course of an exchange with a then member of this Board during the oral argument on the appeal from the Licensing Board's threshold rejection of the contention:

---

[7] *See supra* p. 95.

[8] *See supra* pp. 95-96.

[9] *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).

[10] *See, e.g., Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-869, 26 NRC 13, 20-25, *reconsideration denied*, ALAB-876, 26 NRC 277 (1987); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 229-33 (1986).

[11] In *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 709 (1985), *aff'd in part and review otherwise declined*, CLI-86-5, 23 NRC 125 (1986), we stated that an intervenor "is bound by the literal terms of its own contention." Thus, an intervenor is not free to change the focus of its admitted contention, at will, as the litigation progresses. We did not mean to suggest that, for the purpose of determining the scope of a contention, a board should exclude consideration of the contention's originally stated basis. In fact, in *Limerick*, it is apparent that we considered both the contention and its basis in an effort to ascertain the real scope of the issue intervenor sought to raise. *See id.* at 708 n.35, 709.

The realities of NRC practice are such that contentions and their bases must always be considered in tandem. As *Peach Bottom*, 8 AEC at 20, points out, section 2.714 does not impose technical pleading requirements. Consequently, every intervenor seems to follow a different format for contentions and bases, making it essential for boards to consider both when making any ruling in connection with a contention.

MS. CURRAN [Coalition Counsel]: . . . The contention asserts that the applicants must have a sufficient maintenance and inspection program to prevent the fouling of the Seabrook cooling systems by marine organisms such as mollusks, tube worms and barnacles.

It's based on a May [1982] notice of abnormal occurrences at six nuclear reactors around the country where the previous maintenance and inspection programs failed to show these problems up and they had serious problems with the cooling systems.

JUDGE EDLES: What about the applicants' argument, as I understand it, that that Commission notice really only related to situations where the cooling water involved the ultimate heat sink?

MS. CURRAN: Well, I think that is kind of a red herring because the problem is if something is fouling your cooling system and *if there are clams blocking the heat exchangers*, it doesn't really matter if you've got another source of water. The water is not going to go through the heat exchangers anyway. So the fact that there is a cooling tower there really is irrelevant to this contention.

What is relevant is that the safety equipment that is fed by these cooling tunnels *may be blocked by these organisms*. The argument that this was litigated at the construction permit phase again is misplaced.

First of all, *we are talking about the blockage of these cooling systems*. The construction permit case dealt with whether or not there was an earthquake and these cooling tunnels collapsed there might be another source of water for the heat exchangers. Again, that's a different issue.[12]

Subsequently, on her rebuttal argument, counsel once again characterized the contention as involving the "blockage of cooling systems."[13]

Further, throughout the Licensing Board examination of Contention IV following its reinstatement in ALAB-875, the Coalition eschewed any mention of potential blockage when referring to microbiologically-induced corrosion. This is not surprising. For it is quite apparent from one of its filings below that the Coalition views such corrosion as troublesome because it can lead to the through-wall pitting of tubes "in a matter of weeks"[14] — which would, of course, produce leakage but not blockage. The same dichotomy between the effects of the accumulation of macrobiological, as opposed to microbiological, organisms appears in a subsequent submission to the Licensing Board, where the Coalition (focusing only on the contention itself and ignoring its heading and assigned basis) stated:

The literal terms of Contention IV plainly encompasses [sic] *all* of the detrimental effects of the "accumulation" of "aquatic organisms" in cooling systems. This includes *both* blockage and subsequent heat transfer impairment caused by the build-up of macro-biological

[12] App. Tr. 33-34 (July 24, 1987) (emphasis supplied).
[13] App. Tr. 158.
[14] *See* Coalition's January 25 Motion to Compel at 10-13. In support of that view, the Coalition erroneously referred to NUREG/CR-4724, Volume 1. The correct reference is NUREG/CR-4626, Volume 2 (March 1987).

organisms, and microbiologically induced corrosion and subsequent leakage, caused by the accumulation of microbiological organisms.[15]

It need be added only that the Coalition has not taken a different tack in its brief to us. Once again, it uses the term blockage solely in the context of the accumulation of macrobiological organisms and debris.[16]

In these circumstances, it is manifest that the Coalition pursued the wrong course when, at some point after our reinstatement of Contention IV, it focused for seemingly the first time upon the possibility that extremely small marine organisms in cooling systems could bring about pipe or tube corrosion and thus cause leakage. Rather than endeavor to fit that concern within the four corners of an existing contention that related to an entirely different potential problem — i.e., blockage from the accumulation of larger marine organisms and debris — the Coalition should have submitted a new contention. To be sure, the admission of such a contention at that late date would not have been automatic. Among other things, the Licensing Board would have had to determine that a balancing of the five factors that govern the disposition of late-filed contentions favored acceptance in this instance.[17] We need not speculate here on whether a determination to that effect would have been appropriate. For, be that as it may, the divergent path the Coalition chose to follow instead was doomed to certain failure from the very outset.

The Licensing Board's May 12, 1988 Memorandum and Order is *affirmed*.[18] It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

---

[15] New England Coalition on Nuclear Pollution's Reply to Applicants' and the Staff's Responses to NECNP's Motion for Reconsideration of the Board's Denial of NECNP's Motion to Compel, Dated February 17, 1988 (March 22, 1988) at 6 (emphasis in original).

[16] *See* New England Coalition on Nuclear Pollution's Brief in Support of Its Appeal of the Licensing Board's Dismissal of NECNP Contention IV (July 1, 1988) at 7-11.

[17] *See* 10 C.F.R. 2.714(a); *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041 (1983).

[18] This disposition of the Coalition's appeal does not, of course, relieve the staff of its obligation to ensure the adequacy of the applicants' program for detecting and controlling microbiologically-induced corrosion. Stated otherwise, the admission or rejection of a particular contention advanced by an intervenor (or petitioner for intervention) has no bearing upon the nature and extent of staff's responsibilities in the fulfillment of its general regulatory function.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chair
Dr. Walter H. Jordan
Dr. Kenneth A. McCollom

In the Matter of

Docket Nos. 50-445-OL-2
50-446-OL-2
50-445-CPA
(ASLBP Nos. 79-430-06-OL
86-528-02-CPA)

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

July 5, 1988

The Board accepted the Joint Motion for Dismissal of Proceedings and the Joint Stipulation, filed on July 1. Consequently, the proceedings were dismissed, subject to the fulfillment of conditions set forth in those filings.

MEMORANDUM AND ORDER
(Terminating Proceedings Subject to Condition)

Based on the Joint Motion for Dismissal of Proceedings and the Joint Stipulation, both filed by all the parties on July 1, 1988, these cases shall be dismissed, subject to the fulfillment of the terms of the Joint Motion, at 3. This is our responsibility under the applicable law. A Licensing Board's authority is limited to deciding either matters in controversy or *sua sponte* (self-initiated)

issues. There are no further matters in controversy and we do not know of any significant issues that would require us to consider initiating an issue ourselves. 10 C.F.R. § 2.760a; *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-830, 23 NRC 59, 60 (1986).

To ensure that the terms of the agreement are fulfilled, the Board will hold a public prehearing conference at the Rio Grande Room, Sheraton Hotel and Towers, 400 N. Olive St., Dallas, Texas, on July 13, 1988, at 9 a.m.

ORDER

1. The Joint Stipulation of the parties is accepted.
2. The parties are directed to attend a prehearing conference on July 13 for the purpose of admitting into the evidentiary record of these proceedings the documents that the parties in their Joint Stipulation have agreed to tender for admission into the proceedings.
3. An Order dismissing these proceedings shall be issued as soon as the Board is satisfied that the conditions of paragraph 2 of this Order have been fulfilled.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Peter B. Bloch, Chair
ADMINISTRATIVE JUDGE

Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chair
Dr. Walter H. Jordan
Dr. Kenneth A. McCollom

In the Matter of **Docket Nos. 50-445-OL-2**
50-446-OL-2
50-445-CPA
(ASLBP Nos. 79-430-06-OL
79-430-06-CPA)

TEXAS UTILITIES ELECTRIC COMPANY, *et al.*
(Comanche Peak Steam Electric Station, Units 1 and 2) **July 13, 1988**

Following public proceedings in which the agreements among the parties were fully disclosed and their terms fulfilled, the Board dismissed the proceedings, attaching the settlement documents to the published order.

MEMORANDUM AND ORDER
(Dismissing Proceedings)

Pursuant to the Memorandum and Order (Terminating Proceedings Subject to Condition) dated July 5, 1988 (LBP-88-18A, 28 NRC 101), a prehearing conference was held on July 13, 1988, at which there was admitted into the record of these proceedings the documents that the parties in their Joint Stipulation agreed to tender.

The condition of ¶ 2 of that Memorandum and Order having thereby been satisfied, it is hereby ORDERED that these proceedings are dismissed.

THE ATOMIC SAFETY AND
LICENSING BOARD

Peter B. Bloch, Chair
ADMINISTRATIVE JUDGE

Dr. Walter H. Jordan
ADMINISTRATIVE JUDGE

Dr. Kenneth A. McCollom
ADMINISTRATIVE JUDGE

JOINT MOTION FOR DISMISSAL OF PROCEEDINGS

On June __, 1988, Citizens Association for Sound Energy ("CASE"), Texas Utilities Electric Company, *et al.* ("Applicants"), and the NRC Staff entered into a Joint Stipulation, filed herewith, to withdraw from controversy the contentions sponsored by CASE in the Comanche Peak operating license and construction permit amendment proceedings. The parties believe that the agreement contained in the Joint Stipulation is a fair and reasonable settlement of each of the contested issues and is in the interests of all parties and the public. CASE, Applicants, and the NRC Staff hereby move the Board to accept the Joint Stipulation and to dismiss these proceedings.[1]

There are compelling policy reasons for dismissal of these proceedings by virtue of the parties' settlement. Longstanding Commission policy supports dismissal:

> The Commission recognizes that the public interest may be served through settlement of particular issues in a proceeding or the entire proceeding. Therefore, to the extent that it is not inconsistent with the hearing requirements in section 189 of the [Atomic Energy] Act (42 U.S.C. 2239), the fair and reasonable settlement of contested initial licensing proceedings is

[1] The State of Texas, although appearing in the OL proceeding as an interested state pursuant to 10 C.F.R. § 2.715(c), has not filed a petition to intervene, requested a hearing, or sponsored any contentions, and is not a party to these proceedings under 10 C.F.R. § 2.714. Consequently, since all parties' contentions have been withdrawn, dismissal of these proceedings is appropriate. *Rochester Gas & Electric Corp.* (R.E. Ginna Nuclear Plant, Unit 1), LBP-84-34, 20 NRC 769 (1984). *See also Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), LBP-83-45, 18 NRC 213 (1983).

encouraged. It is expected that the presiding officer and all parties to those proceedings will take appropriate steps to carry out this purpose.

10 C.F.R. § 2.759. *See* 10 C.F.R. Part 2, Appendix A, ¶ V(d)(10); and the Commission Policy Statement on Conduct of Proceedings, 46 Fed. Reg. 28,533 (May 27, 1981). These policies favoring dismissal are consistent with the guidance of the Appeal Board, *see Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-830, 23 NRC 59, 60 (1986), and the practice of other licensing boards. *See, e.g., Public Service Electric and Gas Co.* (Hope Creek Generating Station), LBP-85-6A, 21 NRC 648 (1985); *Rochester Gas & Electric Corp.* (R.E. Ginna Nuclear Plant, Unit 1), LBP-84-34, 20 NRC 769 (1984); *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), LBP-84-51, 20 NRC 1478 (1984).

The parties agree that the existing hearing schedule remains in effect pending an order by the Board dismissing these proceedings. However, in order to prevent unnecessary burden upon the parties pending a ruling by the Board on this Joint Motion, the parties agree that they will not take any action required under the hearing schedule during the 30 days following filing of this Joint Motion, and the parties request that the Board issue an order permitting deferral nunc pro tunc of any actions required under the hearing schedule.[2] As a result, time is of the essence in receiving an order in response to this Joint Motion, and the parties request an expeditious ruling from the Board.

The parties' Joint Stipulation is supported by substantial technical basis and has been arrived at following extensive exchanges of information. Through the Joint Stipulation, the parties have agreed that the remaining issues can best be resolved and their interests can be protected by withdrawal of the remaining contentions, dismissal of the adjudicatory hearings, implementation of the programs and plans described in the Joint Stipulation, and active continued involvement by CASE in these programs and plans. The parties urge the Board to act promptly and decisively to end these proceedings.

Accordingly, the parties respectfully request that the Board:

1. Accept the Joint Stipulation of the parties filed herewith;
2. Admit into the evidentiary record of these proceedings the documents that the parties in their Joint Stipulation have agreed to tender for admission into the proceedings; and

[2]The agreement of the parties does not affect the issuance of any SSER by the NRC Staff, or the voluntary supplementation of interrogatories, but would defer nunc pro tunc any action of any party dependent upon such issuance or any subsequent action of a party.

3. Order dismissal of Docket No. 50-445-OL, Docket No. 50-446-OL, and Docket No. 50-445-CPA.

Respectfully submitted,

CASE (Citizens Association for Sound Energy)

(Mrs.) Juanita Ellis, President and Co-Representative
1426 South Polk Street
Dallas, Texas 75224
(214) 946-9446

ANTHONY Z. ROISMAN
BILLIE PIRNER GARDE

By: Billie Pirner Garde
Attorney for CASE

Texas Utilities Electric Company for the Owners of the CPSES

George L. Edgar
Jack R. Newman
Newman & Holtzinger, P.C.
Suite 1000
1615 L Street, N.W.
Washington, D.C. 20036
(202) 955-6600
Attorneys for Texas Utilities Electric Company

U.S. Nuclear Regulatory Commission Staff

Janice E. Moore
Counsel for the NRC Staff
Office of the General Counsel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

EXHIBIT A

JOINT STIPULATION

PREAMBLE:

1. On February 28, 1978, an application for operating licenses for Comanche Peak Steam Electric Station, Units 1 and 2 ("CPSES"), was filed by Texas Utilities Generating Company,[1] *et al.* ("Applicants"). This application was subsequently docketed as Docket Nos. 50-445-OL and 50-446-OL by the Nuclear Regulatory Commission ("NRC"), and the application has been amended from time to time.

2. Pursuant to a notice in the *Federal Register* (44 Fed. Reg. 6995), petitions to intervene in the CPSES OL proceeding were filed by several persons, including Citizens Association for Sound Energy ("CASE"). On June 27, 1979, the Atomic Safety and Licensing Board ("ASLB") presiding over the CPSES OL proceeding granted the petitions to intervene and subsequently admitted several contentions.

3. All intervenors except CASE withdrew from the CPSES OL proceeding. As a result of various decisions by the ASLB, all contentions in the CPSES OL proceeding have either been dismissed or withdrawn, except for Contention 5 related to quality assurance ("QA") at CPSES. A list of admitted Contentions is attached as Exhibit 14 hereto.

4. Following hearings on Contention 5, the ASLB issued a Memorandum and Order on December 28, 1983, which found CASE's contention concerning design QA to be meritorious in part and ordered that Applicants file a plan to satisfy the ASLB concerning the issues discussed in the decision. This decision was based upon concerns expressed by CASE witnesses Walsh and Doyle regarding piping and pipe supports and stated in part:

> The record before us casts doubt on the design quality of the Comanche Peak Steam Electric Station (Comanche Peak), both because the Texas Utilities Generating Company, *et al.* (applicant) has not demonstrated the existence of a system that promptly corrects design deficiencies and because our record is devoid of a satisfactory explanation for several design questions raised by the Citizens Association for Safe (sic-Sound) Energy (CASE). We suggest that there is a need for an independent design review and we require applicant to file a plan that may help to resolve our doubts.

On February 8, 1984, the ASLB issued a further Order on Reconsideration Concerning Quality Assurance for Design.

[1] The successor in interest is Texas Utilities Electric Company ("TU Electric").

5. A separate ASLB was appointed in the CPSES OL proceeding to preside over hearings pertaining to allegations of harassment, intimidation, and threats at CPSES. The ASLB presiding over these hearings has been disestablished and those matters have been consolidated with the matters being heard by the ASLB presiding over the CPSES OL proceeding.

6. On January 29, 1986, Applicants filed an application for amendment of its construction permit for CPSES Unit 1 in order to extend the latest date of completion of construction contained in the construction permit. This application was docketed under Docket No. 50-445-CPA by the NRC. The ASLB in the CPSES OL proceeding was also designated to preside over the CPSES CPA proceeding.

7. Petitions to intervene in the CPA proceeding were filed by CASE and Meddie Gregory. CASE and Meddie Gregory were granted leave to intervene (Ms. Gregory is now deceased and no longer a party). Ultimately, a joint contention (Contention 2) was admitted. Contention 2 alleges that "[t]he delay of construction of Unit 1 was caused by Applicants' intentional conduct, which had no valid purpose and was the result of corporate policies which have not been discarded or repudiated by Applicants."

8. Contention 5 (OL) and Contention 2 (CPA) have been the subject of extensive discussions and exchanges of information among the parties. Applicants and the NRC Staff have programs in place and plans for action, as discussed in paragraph 9 below, that are intended to address the concerns in the remaining contentions. CASE, through its involvement in these programs and plans in the manner and to the extent described in Sections A and B below, has an opportunity to participate in the resolution of the concerns raised by the remaining contentions without resort to the adjudicatory process. As a result, all parties now have concluded that the remaining issues can best be resolved and their interests can be protected by withdrawal of the remaining contentions, dismissal of the adjudicatory proceedings, implementation of the programs and plans described in paragraph 9 and Sections A and B below, and active continued involvement by CASE in these programs and plans. CASE believes that it can best serve the public interest through the implementation of the provisions of this Joint Stipulation.

9. Applicants and the NRC Staff have taken many actions which are designed to address the concerns reflected in Contentions 2 and 5, including the following:

a. TU Electric contracted with Cygna to perform an Independent Assessment Program ("IAP") of the design of CPSES, including a review of the methodologies for addressing the Walsh/Doyle issues. Cygna has issued Review Issue Lists ("RIL's") (attached as Exhibit 1 [not published]) which indicate Cygna's position on design issues. In particular, all Cygna technical issues have been closed. Cygna is

currently preparing its final report, which pertains to Phase IV of its activities.

b. In 1985, TU Electric contracted with Stone & Webster Engineering Corporation ("SWEC") to resolve piping/pipe support issues. As a result of the SWEC efforts, TU Electric decided to perform a design validation program and hardware validation program for piping and pipe supports. As discussed in the Project Status Reports (attached as Exhibit 9), design validation for piping and pipe supports has been completed, and hardware validation is in process.

c. The NRC Staff established a Technical Review Team ("TRT") to perform an extensive series of inspections in areas subject to concerns and allegations pertaining to CPSES. The majority of the results of these inspections have been reported in Supplemental Safety Evaluation Reports ("SSER's") 7, 8, 9, 10, and 11. SSER 11 stated in part, as follows:

> The pattern of failures by QA and QC personnel to detect and document deficiencies suggests an ineffective B&R and TUGCO inspection system. This pattern, coupled with (a) the past problems in the document control system, (b) deficiencies in the QC qualification program, (c) ineffectiveness of the quality audit and surveillance systems, (d) a rudimentary and ineffective trending and corrective action system, (e) QC problems as shown in QA/QC Category 8, AQ-50; and (f) instances of improper workmanship of hardware as found by all of the TRT groups, challenges the adequacy of the QC inspection program at CPSES on a system-wide basis.

The NRC Region IV office also continued to issue inspection reports and provide inspection and oversight until 1987. Additionally, in 1987 the NRC established an Office of Special Projects in order to provide increased inspection and oversight of CPSES and the plants owned by the Tennessee Valley Authority.

d. TU Electric established the Comanche Peak Response Team ("CPRT") to evaluate the issues identified by the TRT and other external sources (including issues identified during hearings and by the ASLB in the CPSES OL proceeding) and to perform a self-initiated evaluation of the design and construction of CPSES. Revisions 3 and 4 of the CPRT Program Plan (attached as Exhibit 2 [not published]) were approved by the NRC Staff in SSER 13 (attached as Exhibit 3 [not published]) and in a letter dated January 22, 1988, from Stewart D. Ebneter (NRC) to William G. Counsil (TU Electric) re: "CPSES Licensing and Corrective Action Programs" (hereinafter referred to as NRC Staff's January 22, 1988, letter) (attached as Exhibit 4 [not published]). The results of CPRT's evaluations have been provided in Results Reports (attached as Exhibit 5 [not published]) for Issue Specific Action Plans ("ISAP's") and

Discipline Specific Action Plans ("DSAP's"). Additionally, CPRT collectively evaluated its results and evaluated the collective significance of its results, and the results of these evaluations have been reported in the Collective Evaluation Report ("CER") (attached as Exhibit 6 [not published]) and the Collective Significance Report ("CSR") (attached as Exhibit 7 [not published]). Based upon the results of its activities, the CPRT concluded that there were problems arising from weaknesses in the historical programs, that the CPRT identified the weaknesses in the historical programs and defined appropriate corrective action, and that in conjunction with full implementation of the prescribed corrective actions, the current programs for design, construction, assurance of quality, and testing of CPSES are adequate. The CPRT also concluded that the Corrective Action Program ("CAP"), discussed in paragraph 9.e below, provides an acceptable means of validating the design and hardware for CPSES. The NRC Staff is in the process of reviewing the Results Reports, CER, CSR, and supporting information and preparing SSER's to document its results and conclusions regarding reasonable assurance as to whether or not the structures, systems, and components at CPSES will be capable of performing their intended safety functions.

e. Based in part on the preliminary results of the CPRT program, TU Electric established the CAP (attached documents in Exhibit 8 [not published] described CAP). The CAP includes a design validation program and a Post Construction Hardware Validation Program ("PCHVP") for CPSES. Furthermore, the CAP is subject to audits and overviews by the CPRT, the Technical Audit Program ("TAP"), and the Engineering Functional Evaluation ("EFE"), among others. The CAP plan was approved in NRC Staff's January 22, 1988, letter. The results of the design validation program have been provided in Project Status Reports ("PSR's") (attached as Exhibit 9 [not published]) for various design disciplines. Based upon its inspections and reviews, the NRC Staff has issued SSER 14 (attached as Exhibit 10 [not published]) which concluded that the design of large and small bore piping and pipe supports is acceptable and meets the applicable regulatory requirements. The NRC Staff is currently in the process of reviewing the remaining PSR's and supporting documents and preparing SSER's to document its results.

f. TU Electric has taken numerous actions to improve its management, organization, and programs for CPSES (description attached as Exhibit 13 [not published]). These include hiring experienced nuclear managers, obtaining the services of experienced nuclear contractors to implement CAP, and enhancing the CPSES QA program, including the design control program, as reported in the CER and CSR. Additionally, TU Electric has established the SAFETEAM program and the Hotline

program and has utilized its Corporate Security Department to provide employees with means of expressing any concerns they may have regarding CPSES. These improvements are described in part in amendments to the Final Safety Analysis Report for CPSES, correspondence with the NRC, policy statements and procedures reviewed by CASE and the NRC Staff, NRC Staff inspection reports for CPSES, statements at public meetings related to CPSES, pleadings filed in these proceedings, and other documents.

g. TU Electric has provided responses to numerous informal discovery requests by CASE, and it has provided CASE with the CPSES documents identified in the Index of Exhibits, attached. Additionally, TU Electric has held a series of public meetings with CASE to describe the CAP and TU Electric's methodology for resolving issues of concern to CASE and any other external source issues (transcripts attached as Exhibit 11 [not published]). These meetings also provide CASE and its technical consultants with an opportunity to seek resolution of many questions or concerns they have had regarding the CPSES design. Representatives of CASE have also toured CPSES to observe implementation of some design changes.

10. The agreements set forth in this Joint Stipulation arise from the specific facts and circumstances involved in this proceeding and are not intended to serve as precedent in any other proceeding.

11. The parties are committed to execute in good faith the programs, plans, commitments, and agreements contained in this Joint Stipulation.

12. As a result of the agreements reached among the parties reflected in this Joint Stipulation, the parties agree that these proceedings should be dismissed.

NOW, THEREFORE, it is agreed among the parties that:

A. Contention 5 in Docket Nos. 50-445-OL and 50-446-OL and Contention 2 in Docket No. 50-445-CPA are withdrawn in their entirety, and the parties request that the ASLB accept this agreement and dismiss these proceedings, subject to the following conditions and agreements among the parties:

1. Cygna shall continue to implement the IAP under the terms of the current protocol. Cygna's activities shall be concluded under the IAP upon issuance of the Phase IV Report.

2. TU Electric shall continue to implement the CAP for CPSES Unit 1 as described in pages 6 through 12 of the enclosure of the NRC Staff's January 22, 1988, letter. TU Electric shall continue to implement the provisions for CPSES Unit 2 described in TU Electric's letter TXX-88373 to NRC dated April 14, 1988 (attached as Exhibit 8 [not published]). TU Electric may make changes in the programs as described above only in accordance with the provisions of paragraph A.3, below, and subject to the provisions of Section B, below.

3. TU Electric shall provide CASE with notice of any proposed change[2] in the programs as described in paragraph A.2, above. CASE shall have an opportunity within twenty-one (21) days of notice of the change to notify TU Electric and the NRC Staff of any concerns it may have regarding a proposed change, and TU Electric shall not implement a proposed change during this period.

4. The SAFETEAM program, the Hotline program, and the allegation investigation portion of the Corporate Security Program, will continue until at least 1993, at which time they will either be continued or replaced by some other employee allegation management program. In addition, until 1993, each worker who is discharged or terminates employment at CPSES shall receive a notice that describes TU Electric's policy toward intimidation and harassment and treatment of worker concerns, the methods by which workers may express any concerns they may have, and the means for directly informing senior TU Electric management of any concerns for which the workers may not have received a prompt response from SAFETEAM, and that immediately advises each worker of his rights under the Department of Labor ("DOL") and the statute of limitations to pursue his legal recourse.

5. CASE's representative or Mrs. Juanita Ellis or her designee, which may include Billie P. Garde or another attorney from the Government Accountability Project ("GAP"), shall be provided with an opportunity during 1988 to hold a session, of approximately two hours in length, with mid-level managers at CPSES to provide them with information on additional methods for dealing with worker concerns. If necessary to accommodate the number of mid-level managers at CPSES, more than one such session may be conducted. For the purpose of this paragraph, the term "mid-level manager" shall be defined as a TU Electric individual whose job title is "manager" or "supervisor" or a contractor individual who occupies an equivalent position. TU Electric agrees that it will make a good faith effort to work with CASE to develop a mechanism for more effectively addressing and resolving concerns raised by individuals who are directly or indirectly working for TU Electric at CPSES.

6. Upon the effective date of the Joint Stipulation, CASE's representative, Mrs. Juanita Ellis, shall be appointed as a full member of the CPSES Operations Review Committee ("ORC") for a period of at least five years and will be entitled to all of the rights and privileges that all other individuals have as members of the ORC. CASE's representative, Mrs. Juanita Ellis, at her discretion, may designate an alternate to attend and participate on her behalf. Although this is an unpaid position, TU Electric will reimburse CASE for all expenses associated with such participation by Mrs. Juanita Ellis or her designee. If at the time of

[2] "Change" as referred to in this paragraph means any modification, deletion or substitution of any of the programs described in A.2, above.

the expiration of such five (5) year period, Unit 2 is estimated by TU Electric to not be in commercial operation during the period of eighteen (18) months thereafter, then, in such event, the tenure on ORC of CASE's representative, Mrs. Ellis, shall be extended for at least an additional year.

7. TU Electric shall notify CASE in the event that any nuclear officer of TU Electric or a CAP contractor or a TU Electric consultant makes, and TU Electric rejects, a written recommendation for a change in the programs as described above in paragraph A.2, with a complete description of the proposed change and TU Electric's reasons for the rejection. Such notification shall be made in writing and delivered to CASE within ten (10) days of the date of rejection of such recommendation.

8. CASE shall continue to receive copies, at no charge, of all filings and correspondence between the NRC Staff and TU Electric until 1993 or one year after commercial operation of CPSES Unit 2, whichever occurs first. If requested by CASE, up to three copies of any documents will, at no charge, be delivered to CASE consultants, employees, or advisors specified by CASE.

9. TU Electric shall provide CASE with prior notice of and opportunity to attend all monthly exit meetings related to NRC Staff inspections of CPSES until at least 1993, all exit meetings for NRC Staff inspections related to the CAP, and all formally noticed meetings between NRC and TU Electric until at least 1993. TU Electric shall provide such notice telephonically at least two working days in advance of a scheduled meeting or within twenty-four (24) hours of the time any member of TU Electric nuclear management becomes aware of such scheduled meeting, and shall confirm such notice in writing transmitted by First Class mail or hand delivery.

10. CASE's representative, Mrs. Juanita Ellis (and her designated alternate to ORC), shall be provided until at least 1993, and the designated technical consultant of CASE shall be provided until twelve (12) months after CPSES Unit 1 initially achieves 5% of full power, with access to the CPSES site at all reasonable times, including Saturdays, upon providing TU Electric with forty-eight hours prior written or oral notice. TU Electric shall assist in obtaining whatever security or other clearances may be required for such access, and such access shall be subject to any CPSES procedures, controls or other limitations on access that may exist for reasons of security, safety, radiological protection, or similar concerns. During such visits, CASE's representative, or alternate shall be provided reasonable access to, and copies of, documents in good faith determined to be necessary to perform his/her responsibilities in the ORC.

11. Until twelve (12) months after CPSES Unit 1 initially achieves 5% of full power, TU Electric shall provide CASE with matrices of schedules of audits to be conducted by TU Electric's QA department at CPSES, and CASE's technical consultant shall be afforded an opportunity to accompany personnel performing such audits, subject to the provisions in paragraph A.10, above. It

is the intent of the parties that, during the performance of such audits, CASE's technical consultant or representative shall have the freedom to observe the work being audited. Additionally, following completion of the activities being audited, CASE's technical consultant shall be provided with independent access to copies of the documentation associated with such audits. Furthermore, CASE shall be provided with the opportunity to recommend areas or activities to be audited in addition to those identified on the matrices of schedules of audits to be conducted by TU Electric's QA department at CPSES. TU Electric shall, in good faith, consider whether to conduct such audits recommended by CASE. If such an audit is performed, CASE's technical consultant or representative shall be afforded an opportunity to accompany personnel performing such audits in accordance with the provisions discussed above.

B. In the event that any dispute between the Applicants and CASE arises relating to any matter under the jurisdiction of the NRC pertaining to the design, construction, or operation of CPSES prior to the issuance of the full power operating license for CPSES Unit 2, the Applicants or CASE, as the case may be, may seek resolution of the dispute by the NRC Staff as follows:

1. The Applicants or CASE shall promptly notify, but not later than ten (10) working days after identification of a dispute, the other party and the NRC Director of Special Projects for CPSES[3] as to the existence of any such dispute.

2. Applicants and CASE shall exercise their best efforts to resolve the dispute between themselves without a request for resolution by the NRC Staff pursuant to paragraphs B.3, B.4, and B.5, below.

3. The Applicants or CASE shall submit a documented request for action to the NRC Director of Special Projects for CPSES and to the other party within twenty-one (21) days after either Applicants or CASE notify the other party that resolution under paragraph B.2 cannot be effected; provided, however, that if the party raising such dispute fails to make a submission within the time required by this paragraph after said notice is given, then the dispute shall be deemed conclusively resolved as between the Applicants and CASE.

4. The Applicants or CASE shall submit to the NRC Staff and to the other party its response, if any, within twenty-one (21) days after receipt of any request for action under paragraph B.3, above.

5. Within twenty-one (21) days after receipt of any NRC Staff determination resolving a dispute submitted under paragraphs B.3 and B.4, above, the Applicants or CASE may seek review of the NRC Staff resolution of the dispute by the NRC Director of the Office of Nuclear Reactor Regulation

[3] In the event that the NRC Office of Special Projects is disbanded or CPSES is no longer under the jurisdiction of the Office of Special Projects, the responsibilities of the Director of Special Projects under this Joint Stipulation shall be exercised by the Branch Chief of the Office of Nuclear Reactor Regulation ("NRR") responsible for CPSES.

("NRR"). In the event that either the Applicants or CASE determines that an NRC Staff resolution pursuant to paragraphs B.3 and B.4, above, is, under the circumstances, unreasonably delayed, neither party shall object to the other's seeking a resolution by the Director of NRR. Any determination resolving a dispute by the Director of NRR or any determination by the NRC Staff pursuant to paragraphs B.3 and B.4, above, for which review by the Director of NRR is not sought within the time period provided above, shall be conclusive and binding upon the Applicants and CASE.

6. If the parties agree or either party concedes the issue in question at any time during the process discussed in paragraphs B.1 through B.5 above, the appeal channel will be abandoned, in writing, by the party making the appeal.

7. The provisions in this Joint Stipulation shall be the exclusive remedies of the Applicants and CASE for seeking resolution of any disputes related to any matter under the jurisdiction of the NRC pertaining to the design, construction, or operation of CPSES prior to issuance of full power operating license for CPSES Unit 2, which shall include any activities conducted under the CPSES construction permits and any matter in connection with the issuance of any operating licenses for CPSES, including any associated licenses or permits and any amendments to the construction permits for CPSES. The provisions in this Joint Stipulation do not prohibit CASE from contesting amendments to full power CPSES operating licenses or from seeking relief under the provisions of 10 C.F.R. 2.206 in the event that it is not satisfied with the resolution of any disputes raised under Section B. Nothing in this Stipulation shall prohibit CASE from continuing to exercise its existing rights to communicate with the NRC or any of its offices.

C. The documents described in the Index of Exhibits attached shall be jointly offered for admission into the evidentiary record of the CPSES OL and CPA proceedings. Nothing in this Joint Stipulation shall affect the evidentiary status of documents already in the record in such proceedings.

D. The following documents will remain as part of the record in the public docket file in this proceeding: all filings, progress reports, NRC inspection reports and responses thereto, correspondence relating to 10 C.F.R. 50.55(e), exchanges of discovery, voluntary supplementation of interrogatories, transcripts of all meetings and conference calls, and all of the items that have been docketed since the CPSES OL and CPA proceedings were originally noticed and scheduled.

E. This Joint Stipulation shall become effective when it is accepted by the ASLB and the CPSES OL and CPA proceedings are dismissed.

The undersigned warrant and represent that they have full and complete right, power, authority and capacity to execute this Joint Stipulation on behalf of the parties to this Joint Stipulation.

Respectfully submitted,

CASE (Citizens Association for Sound Energy), Intervenor

By: (Mrs.) Juanita Ellis, President

TEXAS UTILITIES ELECTRIC COMPANY, Separately and Acting as Project Manager under the Joint Ownership Agreement on behalf of all the Owners of CPSES

By: William G. Counsil
Executive Vice President, Generating Division

U.S. NUCLEAR REGULATORY COMMISSION STAFF

By: _____
Date: 6/30/88

APPROVED:

NEWMAN & HOLTZINGER, P.C.

By: Attorney for TU Electric

ANTHONY Z. ROISMAN
BILLIE PIRNER GARDE

By: Billie Pirner Garde
Attorney for CASE

By: Attorney for NRC

INDEX OF EXHIBITS*
TO THE JOINT STIPULATION

EXHIBIT 1 Cygna Energy Service, Comanche Peak Steam Electric Station, Independent Assessment Program, Review Issues List:

a. Conduit Support — Rev. 3 (Nov. 20, 1986).
b. Civil/Structural — Rev. 0 (July 21, 1987).
c. Cable Tray Support — Rev. 14 (July 31, 1987).
d. Pipe Stress — Rev. 4 (Sept. 16, 1987).
e. Pipe Support — Rev. 4 (Sept. 18, 1987).
f. Electrical/Instrumentation and Controls — Rev. 4 (Jan. 18, 1988).
g. Mechanical — Rev. 4 (Feb. 9, 1988).
h. Phase IV Report (to be included when available)

EXHIBIT 2 Comanche Peak Steam Electric Station (Units 1 and 2), Comanche Peak Response Team (CPRT) Program Plan:

a. Rev. 0 (Oct. 8, 1984).
b. Rev. 1 (Nov. 19, 1984).
c. Rev. 2 (June 28, 1985).
d. Rev. 3 (Jan. 27, 1986).
e. Rev. 4 (June 25, 1987).

EXHIBIT 3 NUREG-0797, Supplement No. 13, Safety Evaluation Report related to the operation of Comanche Peak Steam Electric Station, Units 1 and 2 (May 1986).

EXHIBIT 4 Letter from Stewart D. Ebneter, Director, Office of Special Projects, U.S. NRC to Wm. G. Counsil, TU Electric, regarding CPSES licensing and Corrective Action Programs, dated Jan. 22, 1988.

EXHIBIT 5 ISAP and DSAP Results Reports

No.	Name	Rev	SRT Approved
I.a.1	Heat Shrinkable Sleeves	4	12/17/86
I.a.2	Insp. Rprts. Butt Splices	4	03/31/87
I.a.3	Butt Splice Qualification	4	04/30/86
I.a.4	Dwgs/Terminations	4	06/25/86
I.a.5	NCR's on AMP Terminal Lugs	4	07/24/86
I.b.1	Flex/Flex Separation	4	12/09/86

*Exhibits are not attached, except Exhibit 14.

I.b.2	Flex/Cable Separation	4	12/09/86
I.b.3	Conduit/Cable Tray Separation	4	03/26/86
I.b.4	Barrier Removal	4	12/09/86
I.c	Conduit Supports	3	10/28/87
I.d.1	QC Inspector Qualifications	2	12/02/87
I.d.2	Admin. of Inspector Tests	2	09/17/86
I.d.3	Craft Personnel Training	2	08/27/86
II.a	Re Steel in Cavity	3	10/23/87
II.b	Concrete Compressive Strength	3	02/28/86
II.c	Air Gap	3	12/10/86
II.d	Control Room Ceiling	3	10/21/87
II.e	Rebar in Fuel Handling Building	3	09/03/87
III.a.1	HFT Data Packages	4	07/01/87
III.a.2	JTG Approval of Test Data	3	10/15/86
III.a.3	Tech Specs for Deferred Tests	3	10/15/86
III.a.4	Traceability of Test Inst.s	4	08/06/86
III.a.5	Preop Package Accept. Criteria	0	03/26/87
III.b	Conduct of CILRT	4	02/24/87
III.c	Prerequisite Testing	4	08/25/87
III.d	Preop Testing	4	03/13/86
V.a	Skewed Welds in NF Supports	2	10/22/86
V.b	Shortening of Anchor Bolts	2	10/29/87
V.c	Piping Between Buildings	2	10/29/86
V.d	Plug Welds	2	12/10/86
V.e	Install. of Main Steam Piping	2	10/15/86
VI.a	Insulation/Shield Wall Gap	2	03/10/87
VI.b	Polar Crane Shim	2	09/23/87
VII.a.1	Material Traceability	1	05/13/87
VII.a.2	NC and CA Systems	1	05/13/87
VII.a.3	Document Control	1	12/17/86
VII.a.4	Audit Pro. & Auditor Qual's	1	04/18/86
VII.a.5	Periodic Review of QA Program	1	07/28/86
VII.a.6	Exit Interviews	1	10/29/86
VII.a.7	Housekeeping and Sys. Clean	1	11/21/86
VII.a.8	Fuel Pool Liner	1	11/04/86
VII.a.9	Purch'd Safety Mat'l and Equip	0	02/26/86
VII.b.1	Onsite Fabrication	1	02/13/87
VII.b.2	Valve Disassembly	1	03/19/86
VII.b.3	Pipe Support Inspections	1	12/02/87
VII.b.4	Hilti Bolts/Inspection	1	05/13/87
VII.c	Results Report (Hardware)	1	12/31/87
VIII	Civil Struct. DSAP: Cable Tray	1	10/21/87

VIII	Civil Struct. DSAP: Conduit	1	11/10/87
IX	Piping and Supports DSAP: LBPS	1	09/03/87

EXHIBIT 6 Comanche Peak Steam Electric Station (Units 1 and 2), Comanche Peak Response Team, Collective Evaluation Report, Rev. 0 (Dec. 23, 1987).

EXHIBIT 7 Comanche Peak Steam Electric Station (Units 1 and 2), Comanche Peak Response Team, Collective Significance Report, Rev. 0 (Feb. 28, 1988).

EXHIBIT 8

a. Letters from Wm. G. Counsil, TU Electric, to U.S. NRC:
   i. TXX-6247 regarding Corrective Action Program (CAP) dated Jan. 29, 1987;
   ii. TXX-6500 regarding Response to Request for Additional Information in Conjunction with Program Plan Update dated June 25, 1987;
   iii. XX-6631 regarding CPSES Programs dated Aug. 20, 1987;
   iv. TXX-6675 regarding CAP Description and Flow Diagrams dated Aug. 28, 1987;
   v. TXX-6676 regarding Technical Audit Program and Engineering Functional Evaluation dated Sept. 8, 1987;
   vi. TXX-6712 regarding Post-Construction Hardware Validation Program (PCHVP), and Engineering Evaluation Methodology dated Sept. 8, 1987;
   vii. TXX-6783 regarding PCHVP Attribute Matrix dated Sept. 23, 1987;
   viii. TXX-6961 regarding Clarifications of CPSES Programs Descriptions dated Nov. 25, 1987.
b. Transcripts of meetings between TU Electric and U.S. NRC to discuss CPRT/CAP:
   i. Jan. 7, 1987;
   ii. April 2, 1987;
   iii. April 7, 1987;
   iv. July 29-30, 1987;
   v. Dec. 9, 1987.
c. Letters from Wm. G. Counsil, TU Electric, to U.S. NRC responding to questions at Dec. 9, 1987 meeting:
   i. TXX-7099 regarding Response to NRC comments on CPSES Corrective Action Efforts dated Dec. 18, 1987;

ii. TXX-88135 regarding status of Response to NRC comments on CPSES Corrective Action Efforts dated Feb. 1, 1988;
iii. TXX-88254 regarding Design Deficiencies Identified in the CAP dated March 16, 1988;
iv. TXX-88373 regarding Responses to NRC Staff Requests dated April 14, 1988.

EXHIBIT 9 Comanche Peak Steam Electric Station, Unit 1 and Common; Corrective Action Program — Project Status Reports:

a. Large Bore Piping and Pipe Supports — Rev. 0 (Nov. 3, 1987).
b. Small Bore Piping and Pipe Supports — Rev. 0 (Nov. 3, 1987).
c. Cable Tray and Cable Tray Hangers — Rev. 0 (Nov. 6, 1987).
d. Conduit Supports Train C 2-Inch Diameter and Less — Rev. 0 (Nov. 11, 1987).
e. Conduit Supports Trains A and B, and Train C Larger Than 2-Inch Diameter — Rev. 0 (Nov. 18, 1987).
f. Equipment Qualification — Rev. 0 (Jan. 8, 1988).
g. Electrical — Rev. 0 (Jan. 15, 1988).
h. Mechanical — Rev. 0 (Jan 25, 1988):
   i. Mechanical Supplement A — Systems Interaction, Rev. 0 (Jan. 25, 1988);
   ii. Mechanical Supplement B — Fire Protection, Rev. 0 (Jan. 25, 1988).
i. Instrumentation and Controls — Rev. 0 (Feb. 1, 1988).
j. Civil/Structural — Rev. 0 (Feb. 8, 1988).
k. Heating, Ventilation and Air Conditioning (HVAC) — Rev. 0 (Feb. 18, 1988).

EXHIBIT 10 NUREG-0797, Supplement No. 14, Safety Evaluation Report related to the operation of Comanche Peak Steam Electric Station, Units 1 and 2 (March 1988).

EXHIBIT 11 Transcripts of meetings between TU Electric and CASE to discuss Corrective Action Program and Project Status Reports:

Meeting Date	Description
a. 12/17/87	Meeting to discuss specific areas related to piping and pipe supports, cable tray hangers, and conduit and conduit supports.

b. 12/18/87	Meeting to discuss specific areas related to piping and pipe supports, cable tray hangers, and conduit and conduit supports.
c. 02/18/88	Meeting to discuss issues related to cable tray hangers, conduit and conduit supports.
d. 02/25/88	Meeting to discuss issues related to piping, pipe supports, civil/structural and mechanical.
e. 02/26/88	Meeting to discuss issues related to piping, pipe supports, civil/structural and mechanical.
f. 06/23/88	Meeting to discuss the upper lateral restraints, HVAC, and other issues.

EXHIBIT 12 "Investigation of Weld Quality for Safety Related Pipe Supports," prepared by Stone & Webster Engineering Corporation, dated Dec. 22, 1987.

EXHIBIT 13 Letter (TXX-88495) from Wm. G. Counsil, TU Electric, to U.S. NRC regarding CPSES Programmatic Enhancements dated June 9, 1988.

EXHIBIT 14 List of Contentions Admitted in Dockets 50-445-OL and 50-446-OL.

Other documents which the parties mutually agree are necessary to a sound record may also be jointly offered for admission into the record.

EXHIBIT 14

List of Contentions Admitted in Dockets 50-445/OL and 50-446/OL

Contention 1. Applicants have not demonstrated technical qualifications to operate CPSES in accordance with 10 C.F.R. § 50.57(a)(4) in that they have relied upon Westinghouse to prepare a portion of the Final Safety Analysis Report (FSAR). (CFUR 1)

Contention 2. One or more of the reports used in the construction of computer codes for the CPSES/FSAR have not been suitably verified and formally accepted; thus conclusions based upon these computer codes are invalid. (CFUR 2A)

Contention 3. The computer codes used in CPSES/FSAR must be tested and, if necessary, modified to accept the parameters reflecting the sequence of events at Three Mile Island and then to realistically predict plant behavior. (CFUR 2B)

Contention 4. Some accident sequences heretofore considered to have probabilities so low as to be considered incredible, based, in part, upon the findings of WASH-1400, are in fact more probable in light of additional findings, such as those of the Lewis Committee and should be evaluated as credible accidents for CPSES. This evaluation should include a hydrogen explosion accident. In order to insure conservatism, the probabilities associated with such accident sequences should be the highest probabilities within the specified confidence band. (CFUR 3A, 3B and ACORN 11)

Contention 5. The Applicant's failure to adhere to the quality assurance/quality control provisions required by the construction permits for Comanche Peak, Units 1 and 2, and the requirements of Appendix B of 10 C.F.R. Part 50, and the construction practices employed, specifically in regard to concrete work, mortar blocks, steel, fracture toughness testing, expansion joints, placement of the reactor vessel for Unit 2, welding, inspection and testing, materials used, craft labor qualifications and working conditions (as they may affect QA/QC), and training and organization of QA/QC personnel, have raised substantial questions as to the adequacy of the construction of the facility. As a result the Commission cannot make the findings required by 10 C.F.R. § 50.57(a) necessary for issuance of an operating license for Comanche Peak. (CFUR 4A–ACORN 14–CASE 19 Joint Contention)

Contention 6. There is no assurance that the Spent Fuel Pool area can withstand the effects of tornadoes, as required by 10 C.F.R. 50, Appendix A, Criterion 2 because:

a. The analyses upon which the Design Basis Tornado (DBT) is based on [is] perfunctory, outdated and unreliable;

b. The loading analyses based on the Design Basis Tornado (DBT) are inappropriate because they fail to consider the potential loading combination of the DBT and a tornado-generated missile.
c. The assignment of a loading factor of 1.0 for load combination equations incorporating tornado loadings in combination with "normal and accident conditions" is unacceptable.
d. The DBT parameters used in FSAR Section 3.3.2.1. are less conservative than the parameters found in NRC Regulatory Guide 1.76.c.2. (CFUR 5)

Contention 7. Applicants have failed to adequately evaluate whether the rock "overbreak" and subsequent fissure repair using concrete grout have impaired the ability of category I structures to withstand seismic disturbances. (CFUR 6)

Contention 8. Applicants have failed to adequately evaluate the impacts of the drawdown of the groundwater under CPSES during and as a result of plant operation. (CFUR 7)

Contention 9. Applicants have failed to make any effort to determine the effect of radioactive releases on the general public other than at the exclusion boundary. Various transport mechanisms may cause, in certain cases, the bulk of the health effects to occur some distance from the exclusion boundary. (CFUR 8)

Contention 10. The CPSES design fails to adequately account for the effect of asymmetric loading resulting from a pipe break in the areas between the reactor vessel and the shield wall. (ACORN 1)

Contention 11. Neither the Applicants nor the Staff has a reliable method for evaluating or insuring that Class IE safety-related equipment is designed to accommodate the effects of and to be compatible with the environmental conditions associated with the most severe postulated accident; thus General Design Criterion 4 has not been satisfied. (ACORN 3)

Contention 12. Neither the Applicants nor the Staff has reliable methods for evaluating and insuring that structures, systems and components important to safety are designed to withstand the effects of the safe shutdown earthquake without losing the capability to safely shut down the plant; thus, General Design Criterion 2 has not been satisfied. (ACORN 4)

Contention 13. Present fire protection measures proposed by Applicants are not adequate to minimize the probability and effect of a fire from disabling the electric cables for all redundant safety systems; thus, General Design Criterion 3 has not been satisfied. (ACORN 5)

Contention 14. The DC Power System for the CPSES plant fails to meet the single failure criterion as defined in 10 C.F.R. Part 50, Appendix A. (ACORN 6)

Contention 15. The CPSES design does not provide adequate, reliable instrumentation to monitor variables and systems affecting the integrity of the reactor core, the pressure boundary of the containment after an accident, in violation of General Design Criterion 13 of Appendix A of 10 C.F.R. Part 50. (ACORN 7)

Contention 16. The CPSES does not provide adequate equipment outside of the control room to promptly put the reactor in hot shutdown and so maintain it until attaining cold shutdown (also from outside the control room) as required by General Design Criterion 19 of Appendix A to 10 C.F.R. Part 50. (ACORN 9)

Contention 17. Neither the Applicants nor the Staff has adequately considered the effects of aging and cumulative radiation on safety-related equipment which must be seismically and environmentally qualified; thus, General Design Criterion 4 has not been satisfied. (ACORN 10)

Contention 18. The CPSES design fails to present a means for dealing with pressure transients produced by component failure, personnel error, or spurious valve actuation which exceed the pressure/temperature limits of the reactor vessel. (ACORN 13)

Contention 19. The CPSES design fails to protect against corrosion within the steam generators which causes cracking of pipes and leakage of radioactive water. (ACORN 15)

Contention 20. The CPSES design does not adequately insure that safety-related water supplies will be available for plant operation in the event of ice buildup at the service water intake structure. (ACORN 20)

Contention 21. The CPSES design fails to protect against accidents involving the movement and handling of heavy loads in the vicinity of spent fuel at the facility. (ACORN 22)

Contention 22. Applicants have failed to comply with 10 C.F.R. Part 50, Appendix E, regarding emergency planning, for the following reasons:

a. The FSAR does not identify state or regional authorities responsible for emergency planning or who have special qualifications for dealing with emergencies. (CASE 12(a))
b. No agreements have been reached with local and state officials and agencies for the early warning and evacuation of the public, including the identification of the principal officials by titles and agencies. (CASE 12(b))
c. These is no description of the arrangements for services of physicians and other medical personnel qualified to handle radiation emergencies and arrangements for the transportation of injured or contaminated individuals beyond the site boundary. (CASE 12(c))
d. There are no adequate plans for testing by periodic drills of emergency plans and provisions for participation in the drills by persons whose

assistance may be needed, other than employees of the Applicant. (CASE 12(d))

e. There is no provision for medical facilities in the immediate vicinity of the site, which includes Glen Rose. (CASE 12(e))

f. There is no provision for emergency planning for Glen Rose or the Dallas/Ft. Worth metroplex. (CASE 12(f) and ACORN 24)

Contention 23. Neither the Applicants nor the Staff has adequately considered the health effects of low-level radiation on the population surrounding CPSES in as much that the CPSES design does not assure that radioactive emissions will be as low as is reasonably achievable. (ACORN 25 and CASE 9)

Contention 24. A favorable cost/benefit balance cannot be made because the Applicant has failed to adequately consider:

a. The costs of safely decommissioning the facility after its useful life (ACORN 31 and CASE 6(a))

b. The costs in terms of health, as well as the economic costs of a possible accident in the on-site storage of spent fuel (CASE 7)

c. The fuel costs and supply (CASE 6(c))

d. The costs of waste storage (CASE 6(d)).

Contention 25. The requirements of the Atomic Energy Act, as amended, 10 C.F.R. 50.57(a)(4) and 10 C.F.R. 50 Appendix C have not been met in that the Applicant is not financially qualified to operate the proposed facility. (CASE 16)

EXHIBIT B

SETTLEMENT AGREEMENT BETWEEN CASE, MRS. JUANITA ELLIS AND TEXAS UTILITIES ELECTRIC COMPANY

RECITALS

This Settlement Agreement is made and entered into this 28th day of June, 1988, between Texas Utilities Electric Company, separately and acting as the Project Manager under the Joint Ownership Agreement on behalf of all the owners of CPSES (hereinafter collectively referred to as "TU Electric"), Citizens Association for Sound Energy and Mrs. Juanita Ellis (hereinafter the use of the term "CASE" shall refer to Citizens Association for Sound Energy and Mrs. Juanita Ellis in her capacity as President of CASE. Provisions of the Agreement specifying Mrs. Juanita Ellis in any capacity other than as President of CASE shall refer specifically to Mrs. Juanita Ellis):

WHEREAS, TU Electric and Citizens Association for Sound Energy ("CASE") are parties to a number of proceedings before the Nuclear Regulatory Commission in connection with the licensing of Comanche Peak Steam Electric Station Units 1 and 2 ("CPSES"), as more fully described in paragraph 1.1 of Article 1 of this Settlement Agreement ("Agreement"); and

WHEREAS, TU Electric and CASE have decided that those proceedings should be resolved in accordance with the terms of this Agreement;

THEREFORE, in consideration of these premises, the parties, intending to be legally bound, agree as follows:

OPERATIVE PROVISIONS

I. Resolution of All NRC Proceedings

1.1. TU Electric and CASE agree to execute and file with the Nuclear Regulatory Commission ("NRC") a Joint Stipulation and Joint Motion for Dismissal of NRC Proceedings, specifically Docket Nos. 50-445 OL, 50-446 OL and 50-445 CPA, in a form as set forth in Exhibits A and B attached to this Agreement [*see* pp. 104-16, *supra*], the terms of which are incorporated herein by reference for all purposes of this Agreement.

1.2. TU Electric and CASE agree to prosecute diligently, in accordance with their respective charters, such Joint Stipulation and Joint Motion for Dismissal and to provide any additional information, file any additional pleadings, make such appearances, and provide such support before the NRC and any other body as may be necessary to effectuate the dismissal of the above-referenced

NRC proceedings. In fulfilling their respective obligations under this paragraph, Mrs. Juanita Ellis or other representatives of CASE will not be required to undertake travel away from Dallas, Texas.

1.3. Upon the effective date of the Joint Stipulation, CASE and Mrs. Juanita Ellis agree that they will not contest before the NRC, any other regulatory body or any court the issuance of any operating license or any amendments to the construction permit for CPSES Units 1 and 2, including the issuance of any associated licenses or permits, except as expressly provided in the Joint Stipulation. This provision does not apply to any proceedings before the Texas Public Utilities Commission nor, notwithstanding Paragraphs 5.1 and 5.2, does it apply to any amendments to full power CPSES operating licenses. This agreement is based upon the understanding and trust by CASE that TU Electric has agreed to complete and carry through on its commitments as provided in the Joint Stipulation to ensure that the design and construction of CPSES Units 1 and 2 are accomplished correctly in a manner specified by TU Electric and approved by the NRC Staff.

II. Commitments of TU Electric

2.1. TU Electric agrees to comply with the Joint Stipulation when effective.

2.2. TU Electric agrees that William G. Counsil, Executive Vice President, Nuclear Engineering and Operations, will continue to serve as the primary point of contact for CASE within TU Electric for the period that a representative of CASE serves on the Operations Review Committee pursuant to the Joint Stipulation. TU Electric will take no action to prevent or lessen Mr. Counsil's accessibility to CASE while he is employed by TU Electric. Nor shall TU Electric terminate Mr. Counsil's employment for reasons inconsistent with this paragraph 2.2. In the event Mr. Counsil ceases to be employed by TU Electric, CASE may designate any then-current TU Electric nuclear officer[1] as the primary point of contact and may change such contact at CASE's discretion.

2.3. In recognition of CASE's concerns about workers formerly employed in connection with the construction of the CPSES, who may have employment discrimination claims against TU Electric or a contractor thereof, whether pending or anticipated, at the time of the signing of this Agreement, or who have assisted CASE in the CPSES licensing proceeding, TU Electric has also entered into good faith settlement negotiations which will resolve the disputes with the representatives of the former workers currently engaged in litigation if and when the Joint Stipulation becomes effective. Now and in the future,

[1] As used herein, nuclear officer means the Executive Vice President of Nuclear Engineering and Operations, or any officer who reports directly to him.

TU Electric agrees to make a good faith effort to investigate and resolve issues brought to CASE by CPSES workers or others.

2.4. Contingent upon the Joint Stipulation becoming effective, then upon either the issuance of a dismissal of Docket Nos. 50-445 OL, 50-446 OL and 50-445 CPA or the issuance of an operating license to operate CPSES Unit 1, whichever comes first, TU Electric will issue to the public and the news media the following statement and will file with the NRC the request[2] that it be made part of the record of the ASLB proceeding in the previously referenced OL and CPA dockets:

> TU Electric recognizes that the Citizens Association for Sound Energy (CASE) and its President, Mrs. Juanita Ellis, have made a substantial, personal, and unselfish contribution to the regulatory process which assures that Comanche Peak Steam Electric Station ("Comanche Peak") will be a safer plant. Through the untiring efforts of CASE representatives, deficiencies which existed in the early 1980's have been revealed in the design of substantial portions of the plant which no one else, including TU Electric, the Nuclear Regulatory Commission (NRC), or other third-party experts had fully recognized or discovered. As a result, Comanche Peak is a better, safer plant than before and, through the reinspection and Corrective Action Program, has a greater assurance of safety and reliable generation. We commend CASE, together with its technical advisors, Jack Doyle and Mark Walsh, and other workers, public interest organizations, and supporters for their courage and devotion to CASE's goals of finding the facts and informing the public. Because of these activities, CASE's President, Mrs. Ellis, has been appointed to the Operations Review Committee ("ORC") at Comanche Peak, an unpaid but important position which will provide CASE with the opportunity to continue to play an active part in assuring itself that Comanche Peak is as safe a nuclear facility as possible.
>
> The ORC is required by the Comanche Peak technical specifications and functions as an independent body assigned the responsibility for review of various safety related matters including nuclear power plant operations, nuclear engineering, radiological safety and quality assurance practices among others. Among its duties, the ORC will be responsible for independent review of proposed modifications to the Comanche Peak facilities or procedures, changes to the Technical Specifications and license amendments, any violations or deviations which are required to be reported to NRC and other safety related matters deemed appropriate by the ORC members. The ORC meets periodically to review and discuss various issues bearing on the safe operation of Comanche Peak and reports its findings and recommendations directly to the Executive Vice President, Nuclear Engineering and Operations.
>
> TU Electric also recognizes its own shortcomings in assuring the NRC that they fulfilled NRC Regulations. We acknowledge that nuclear expertise did not exist to meet those demands and that its nuclear management did not have full sensitivity to the regulatory environment.

---

[2] It is agreed that the parties will file within five (5) days after entry of an Order of Dismissal of said Dockets such statement as reflected in Exhibit C hereto together with any additional documents to be included in the ASLB record, providing the parties have mutually agreed in advance to the appropriateness of such additional inclusions in the record, provided, however, that all documents specifically identified in the Index of Exhibits to the Joint Stipulation shall be excepted from this provision. This Agreement will be contingent upon admission of the statement in the record of the proceedings.

CASE, Mrs. Ellis, and her colleagues played a substantial part in achieving our current level of awareness.

III. CPSES Operations Review Committee

3.1. As provided in the Joint Stipulation, CASE's designated representative, Mrs. Ellis, or its designated alternate, will serve, without salary reimbursement from TU Electric, as a member of the Operations Review Committee ("ORC"). In the event Mrs. Ellis resigns or is otherwise unable to serve, CASE may designate a representative.

3.2. TU Electric agrees that CASE's designated representative, Mrs. Ellis, or its alternate, in furtherance of his/her duties as a member of the ORC, may engage the services of one or more technical consultants[3] at TU Electric's expense. Such consultant(s) shall be subject only to the qualification requirements of CASE and not those of TU Electric. The total fees and expenses of all such technical consultants shall not exceed $150,000.00 on an annual basis, such fees to be in addition to any amounts payable pursuant to paragraphs 4.1 and 6.1. Such payment shall continue during such period of service on ORC in accordance with paragraph A.6 of the Joint Stipulation.

3.3. In addition to the fees and expenses of technical consultants set forth in paragraph 3.2, TU Electric agrees to reimburse CASE's representative, Mrs. Ellis, or its alternate for any other reasonable costs and expenses he/she may incur in furtherance of his/her duties as a member of the ORC, in accordance with normal TU Electric company policy.

IV. Reimbursement of Licensing Costs and Expenses

4.1. In recognition of the significant contribution made by CASE and the tremendous cost and expenses incurred by CASE from 1979 through 1988 in the NRC licensing proceedings involving CPSES, including the separate, simultaneous dockets in 1984 and 1985, and the dockets relating to the construction permit extension requests and appeals therefrom to the NRC and the Federal Courts, TU Electric agrees to reimburse CASE the amount of $4,500,000 for all costs, expenses, attorneys fees, consultants fees, court costs, salaries and debts incurred by CASE in the past and pay for such costs and expenses which CASE will incur in closing out its participation in the NRC licensing proceedings and establishing its oversight role.

[3] As used herein, "consultant" shall mean any individual hired by either CASE or TU Electric for the purpose of providing advice, recommendations, opinions, technical assistance, or special services, whether or not paid by salary, commission or any other form of reimbursement.

4.2. The payment specified in paragraph 4.1 will be made to CASE within thirty days of the date the Joint Stipulation becomes effective in the manner specified by CASE at that time.

4.3. Payment obligations hereunder shall not be subject to Arbitration.

V. Mutual Releases

5.1. Upon the effective date of the Joint Stipulation, TU Electric agrees to release and discharge CASE and Mrs. Juanita Ellis, their successors, assigns, officers, Board of Directors, members, consultants and attorneys from any and all claims, demands, and causes of action that TU Electric may now have or that might subsequently accrue arising out of or connected in any way with the design, construction, operation or licensing of Comanche Peak Steam Electric Station.

5.2. Upon the effective date of the Joint Stipulation, CASE and Mrs.Juanita Ellis each agree to release and discharge TU Electric, its predecessors, successors, assigns and any of its parent or sister companies, officers, directors, managers, agents, employees, contractors,[4] consultants and attorneys from any and all claims, demands, and causes of action that CASE or Juanita Ellis may now have or which might subsequently accrue arising out of or connected in any way with the design, construction, operation or licensing of Comanche Peak Steam Electric Station.

5.3. At the time of payment by TU Electric pursuant to paragraph 4.1 above, CASE shall deliver to TU Electric a General Release in substantially the form set forth in Exhibit D, attached, from Jack Doyle, Mark Walsh and any person, other than CASE or Mrs. Juanita Ellis, who is to receive reimbursement as a consultant to or an expert witness for CASE out of the amount specified in paragraph 4.1.

5.4. It is understood and agreed that the release granted in paragraphs 5.2 and 5.3 shall have no effect on any claim which is otherwise within the terms or coverage of the Price-Anderson Act, 42 U.S.C. 2210. It is further agreed that the releases granted in paragraphs 5.1, 5.2 and 5.3 shall not prevent the releasing party from asserting any defense or counterclaim with respect to claims which are the subject of such release asserted against the releasing party by anyone not a party to this Agreement or by any owner of Comanche Peak other than TU Electric.

[4] As used herein, "contractors" shall mean any company or organization hired by either CASE or TU Electric for the purpose of providing advice, recommendations, opinions, technical assistance, or special services, whether or not paid by salary, commission or any other form of reimbursement.

VI. Indemnification

6.1. Upon the effective date of the Joint Stipulation and subject to paragraphs 6.2 and 6.3 of this Agreement, TU Electric as defined in the first paragraph of the Recitals hereto, agrees to indemnify and defend CASE, and Mrs. Juanita Ellis, their successors, assigns Board of Directors, members, consultants, and attorneys from any and all claims, demands and causes of action asserted or brought against them in violation of the release set forth in Article V, paragraphs 5.1 and 5.3. Such indemnification shall include all attorney's fees that CASE, or Mrs. Juanita Ellis may incur by reason of or in consequence of any such claim, demand or cause of action, provided however, that TU Electric's total liability under this paragraph 6.1 shall not exceed $4.5 million, which amount would be in addition to the sums paid in paragraphs 3.2 and 4.1.

6.2. CASE and Mrs. Juanita Ellis shall notify TU Electric of any such claim, demand or cause of action asserted or brought against them or any one of them and TU Electric will assume and defend, at its sole cost and expense, any and all such claims, demands or causes of action. TU Electric will, however, provide to CASE copies of all pleadings and briefs filed in the case.

6.3. The notice required by paragraph 6.2 shall be provided not later than fourteen days after CASE or Mrs. Juanita Ellis receive or obtain knowledge of any such claim, demand or cause of action. Notice shall be provided as specified in paragraph 10.5.

6.4. Notwithstanding the provisions of paragraph 10.1, TU Electric may, after prior notice to CASE, disclose this Agreement or the terms of this Agreement if, in TU Electric's sole discretion, such disclosure is necessary to the defense of any such claim, demand or cause of action.

VII. Conditions of Settlement

7.1. This Agreement, the Joint Stipulation and the Joint Motion to Dismiss are null and void and of no legal effect if TU Electric, CASE and the NRC Staff fail to execute and jointly file the Joint Stipulation and Joint Motion for Dismissal.

7.2. In the event the Atomic Safety and Licensing Board ("ASLB") fails to either grant or deny the Joint Motion for Dismissal within 30 days of its filing, TU Electric may, in its sole discretion, terminate this Agreement, the Joint Stipulation and the Joint Motion for Dismissal by written notice to CASE made within 30 days after the expiration of the 30-day period following filing of the Joint Motion. If TU Electric fails to make written notice to terminate within the 30-day period, this Agreement shall remain in full force and effect and neither party shall be entitled to rescind this Agreement except as provided

in paragraph 7.3 below. In the event that TU Electric elects to so terminate, the period for deferral of actions required under the hearing schedule, as specified in the Joint Motion, shall be extended for an additional period of time equal to the number of days between the end of the 30-day period following filing of the Joint Motion and the day on which the notice of termination is made.

7.3. At any time up to 30 days after the ASLB issues an order denying the Joint Motion for Dismissal, TU Electric may, in its sole discretion, by written notice to CASE, either:

(a) make the Joint Stipulation effective as to the rights and obligations of TU Electric and CASE thereunder, subject only to the concurrence of the NRC Staff as to the applicability of Section B thereof. Upon such concurrence by the NRC Staff, the Joint Stipulation shall be deemed effective as if the ASLB had accepted the Joint Stipulation and dismissed the proceedings; or

(b) after such denial, terminate this Agreement.

This Agreement shall terminate upon the expiration of such 30-day period unless TU Electric exercises its rights under this Article.

VIII. Arbitration

8.1. Except as provided in paragraphs 4.3 and 8.3 of this Agreement, all disputes regarding the meaning or interpretation of this Agreement or of paragraphs A.5, A.6, and A.8 of the Joint Stipulation, which the parties cannot resolve amicably shall be resolved in accordance with the rules of the American Arbitration Association ("AAA") except as modified by this Agreement. Arbitration will be commenced by the service of a written notice by the party seeking arbitration setting forth the matter in dispute and requesting a ruling pursuant to this Article.

8.2. The arbitration panel will be composed of three arbitrators, one appointed by TU Electric, one appointed by CASE, and the third arbitrator appointed by the two arbitrators named by the parties. If one party fails or refuses to appoint an arbitrator within thirty days of the commencement of arbitration, the arbitration will be conducted by the arbitrator appointed by the other party. If the two arbitrators are unable to reach agreement on a third arbitrator within thirty days of their appointment, the third arbitrator will be appointed by the AAA.

8.3. The arbitration panel shall issue a written decision declaring the rights and obligations of the parties under this Agreement, and shall have authority to issue an order requiring the parties or either of them to take or refrain from taking action; provided that the arbitration panel shall have no authority whatsoever to hear or decide any dispute falling within the terms of Section B of the Joint

Stipulation attached. The decision of the arbitration panel will be final and binding on the parties.

8.4. The situs of the arbitration will be Dallas, Texas.

8.5. All costs of arbitration incurred by both parties, including but not limited to attorneys' fees, witness fees, and administrative costs, shall be borne as determined to be appropriate by the arbitration panel, pursuant to the rules of the AAA.

8.6. In resolving any dispute between the parties pursuant to this Article, the arbitration panel shall apply the substantive law of the State of Texas excluding, however, the conflict of laws provisions of the State of Texas. In addition, Rule 11 of the Federal Rules of Civil Procedure shall apply to any and all claims made pursuant to Article VIII of this Agreement.

IX. Resolutions and Legal Opinions

9.1. The parties agree to exchange copies of duly executed and approved resolutions of their respective Board of Directors in form and content set forth in Exhibits E and F attached. In addition, TU Electric shall deliver to CASE a legal opinion of the firm of Worsham, Forsythe, Sampels & Wooldridge in form and content set forth in Exhibit G attached.

X. Miscellaneous

10.1. Except for the information set forth on Exhibit H attached, which may be released to the public when the Joint Stipulation is filed, this Agreement shall be maintained in confidence by TU Electric, CASE and Mrs. Juanita Ellis and neither the Settlement Agreement nor the terms of this Agreement may be disclosed to any other person unless such further disclosure is required by law (after diligent attempt is made to prevent such disclosure) or is agreed to in writing by all parties. If any party to this Agreement is threatened or compelled by operation of law to disclose this Agreement or the terms of this Agreement, such party shall, prior to disclosure, immediately notify the other parties to this Agreement of such threatened or compelled disclosure in order that all parties may contest the disclosure. The obligation to maintain this Agreement in confidence shall survive the termination or cancellation of this Agreement. It is agreed that any public statements or press releases concerning the Agreement made by any party to the Agreement shall first be approved by the other parties hereto.

10.2. This Agreement will be binding upon and inure to the benefit of CASE, Juanita Ellis and TU Electric, their successor and assigns. This Agree-

ment will not be assignable by any of the parties hereto without the written consent of the remaining parties.

10.3. This Agreement will become effective upon its execution by TU Electric, CASE and Juanita Ellis.

10.4. This Agreement constitutes the entire Agreement between the parties and supersedes all prior agreements, representations, statements, promises, and understandings, whether oral or written, express or implied. This Agreement may only be amended or modified by a writing signed by all parties. This Settlement Agreement and the Joint Stipulation will be construed in a consistent manner, taking into consideration the purpose of this Settlement Agreement. If any of the provisions are not consistent or are contradictory, CASE and TU Electric agree that the Settlement Agreement will govern.

10.5. Any communications or notices made or given by any party in connection with this Agreement shall be in writing, to the following:

If to TU Electric:

William G. Counsil
Executive Vice President, TU Electric
Skyway Tower
400 North Olive Street, L.B. 81
Dallas, Texas 75201

If to CASE:

Mrs. Juanita Ellis
President, CASE
1426 South Polk Street
Dallas, Texas 75224

With a copy to:

Billie Pirner Garde
Government Accountability Project
Midwest Office
104 East Wisconsin Avenue — B
Appleton, Wisconsin 54911-4897

Written notices will be by certified mail, return receipt requested or hand delivered and will be deemed given on the date of mailing if mailed or delivery if hand delivered.

The undersigned warrant and represent that they have full and complete right,

power, authority and capacity to execute this Agreement on behalf of the parties to this Agreement, due to Corporate Resolutions duly authorized.

For and On Behalf of Texas
Utilities Electric Company
Separately and Acting as
Project Manager under the Joint
Ownership Agreement on behalf of
all The Owners of CPSES

By: William G. Counsil
Executive Vice President,
Generating Division

CASE (Citizens Association for
Sound Energy)

By: (Mrs.) Juanita Ellis
President

By: (Mrs.) Juanita Ellis,
Individually

EXHIBIT C

June 28, 1988

Mrs. Juanita Ellis
President, CASE
1426 South Polk Street
Dallas, Texas 752

Dear Juanita:

We have agreed that when the NRC licensing proceedings for the Comanche Peak Steam Electric Station (NRC Docket Nos. 50-445-OL, 50-446-OL and 50-445-CPA) have been dismissed and the Joint Stipulation has become effective, you will be authorized to release this letter to the public and the news media and we will file it with the NRC as part of the record of the licensing proceeding. I am duly authorized to make the statements herein on behalf of TU Electric and to sign this letter.

TU Electric recognizes that the Citizens Association for Sound Energy (CASE) and its President, Mrs. Juanita Ellis, have made a substantial, personal, and unselfish contribution to the regulatory process which assures that Comanche Peak Steam Electric Station ("Comanche Peak") will be a safer plant. Through the untiring efforts of CASE representatives, deficiencies which existed in the early 1980's have been revealed in the design of substantial portions of the plant which no one else, including TU Electric, the Nuclear Regulatory Commission (NRC), or other third-party experts had fully recognized or discovered. As a result, Comanche Peak is a better, safer plant than before, and, through the reinspection and Corrective Action Program, has a greater assurance of safety and reliable generation. We commend CASE, together with its technical advisors, Jack Doyle and Mark Walsh, and other workers, public interest organizations, and supporters for their courage and devotion to CASE's goals of finding the facts and informing the public. Because of these activities, CASE's President, Mrs. Ellis, has been appointed to the Operations Review Committee ("ORC") at Comanche Peak, an unpaid but important position which will provide CASE with the opportunity to continue to play an active part in assuring itself that Comanche Peak is as safe a nuclear facility as possible.

The ORC is required by the Comanche Peak technical specifications and functions as an independent body assigned the responsibility for review of various safety related matters including nuclear power plant operations, nuclear engineering, radiological safety and quality assurance practices among others. Among its duties, the ORC will be responsible for independent review of proposed modifications to the Comanche Peak facilities or procedures, changes

to the Technical Specifications and license amendments, any violations or deviations which are required to be reported to NRC and other safety related matters deemed appropriate by the ORC members. The ORC meets periodically to review and discuss various issues bearing on the safe operation of Comanche Peak and reports its findings and recommendations directly to the Executive Vice President, Nuclear Engineering and Operations.

TU Electric also recognizes its own shortcomings in assuring the NRC that they fulfilled NRC Regulations. We acknowledge that nuclear expertise did not exist to meet those demands and that its nuclear management did not have full sensitivity to the regulatory environment. CASE, Mrs. Ellis and her colleagues played a substantial part in achieving our current level of awareness.

Sincerely,

W.G. Counsil
Executive Vice President,
Generating Division
TU Electric

EXHIBIT D

GENERAL RELEASE

The undersigned, in consideration of the payment of cash to be made to me pursuant to a Settlement Agreement with Texas Utilities Electric Company (TU Electric) on the _ day of June, 1988, does hereby release and forever discharge TU Electric, Texas Utilities Company, Texas Municipal Power Agency, Tex-La Electric Cooperative of Texas, Inc., Brazos Electric Power Cooperative, Inc., Brown & Root, Inc., Ebasco Services, Inc., C. Thomas Brandt, and any other person, firm, or corporation who performs work for or have been associated with the Comanche Peak Steam Electric Station project ("Comanche Peak"), together with each of their respective attorneys, related or affiliated companies, successors, assigns, officers, directors, managers, agents, partners, and employees, and each of them, hereinafter collectively referred to as the Released Parties, from any and all claim or liability arising out of my employment at or involvement with Comanche Peak project or any other claims or actions of any nature whatsoever I might have arising out of any acts or omissions on the part of said Released Parties, whether known or unknown, as of the date hereof.

The undersigned understands that this General Release resolves and extinguishes, among other things, any and all claims raised in complaints filed before the Department of Labor or under Section 210 of the Energy Reorganization Act and any and all claims raised in any complaints filed in any state or federal court or administrative agency, together with any and all claims that I might have asserted or can assert in any suit, cause of action, charge of discrimination, or other claim against any and all of the Released Parties.

If I am presently a party to any legal action in any court or administrative forum, state or federal, against any one or more of the Released Parties herein, I agree to immediately cause such suit or legal proceeding to be dismissed with prejudice to my right to refile same.

I further agree that this General Release shall be binding on the undersigned, my agents, attorneys, representatives, executors, personal representatives, heirs, successors, and assigns.

I hereby acknowledge that I have read this General Release and that I fully understand the terms, nature, and effect of the General Release and have voluntarily and knowingly executed the General Release. I further acknowledge that, by the payment of the consideration herein to me, neither TU Electric nor any of the other Released Parties admits liability or responsibility to me in any

respect but rather denies same and I recognize that the sum so paid is to buy peace and avoid further litigation or the assertion of claims.

Signed this _ day of June, 1988.

_____

Witness:

_____

EXHIBIT E

CORPORATE RESOLUTION

I, Peter B. Tinkham, Secretary of Texas Utilities Electric Company, a Texas corporation, hereby certify that the resolution set forth hereunder was duly adopted at a meeting of the Board of Directors of said Company duly held on June 27, 1988, at which a quorum was present and voting, and that said resolution has not been amended or rescinded and is in full force and effect on the date hereof:

> RESOLVED that all of the actions heretofore taken and proposed to be taken by the officers of the Company with respect to the proposed Settlement Agreement between CASE, Mrs. Juanita Ellis, and the Company, (hereinafter the "Settlement Agreement"), including but not limited to, the actions of the officers in connection with negotiation and participation in discussions with the parties to the transaction be, and hereby are, in all respects approved, confirmed and ratified; and further
>
> RESOLVED that the terms and provisions of the proposed Settlement Agreement, as presented to the meeting, be, and hereby are, approved and the Chairman of the Board, or any Division President or Executive Vice President of the Company, be, and each of them hereby is, authorized and empowered to execute and deliver the Settlement Agreement in such form as he may deem necessary or advisable, his approval thereof to be conclusively evidenced by his signature thereto, and to take any and all action he may deem necessary in connection with the foregoing to enable the Company to fully and promptly perform all of its obligations with respect to the said Settlement Agreement; and further
>
> RESOLVED that said officers of the Company be and they hereby are authorized and directed on behalf of the Company to execute any and all documents and to take any and all action that they may deem necessary or desirable in order to enable the Company to carry out and effectuate the purposes of the foregoing resolution and the transaction covered thereby.

IN WITNESS WHEREOF I hereunto set my hand and the seal of said Company this 27th day of June, 1988.

Peter B. Tinkham

EXHIBIT F

RESOLUTION

I, Barbara N. Boltz, Secretary of Citizens Association for Sound Energy, a Texas Non-Profit corporation (hereinafter the "Association"), hereby certify that the resolution set forth hereunder was duly adopted at a meeting of the Board of Directors of said Association duly held on June 14, 1988, at which a quorum was present and voting, and that said resolution has not been amended or rescinded and is in full force and effect on the date hereof:

> RESOLVED that all of the actions heretofore taken and proposed to be taken by Mrs. Juanita Ellis, President of the Association, with respect to the proposed Settlement Agreement between the Association, Mrs. Juanita Ellis, and Texas Utilities Electric Company, (hereinafter the "Settlement Agreement"), including but not limited to, the actions of Mrs. Ellis in connection with negotiation and participation in discussions with the parties to the transaction be, and hereby are, in all respects approved, confirmed and ratified; and further
>
> RESOLVED that the terms and provisions of the proposed Settlement Agreement, as presented to the meeting, be, and hereby are, approved and the President of the Association, be, and hereby is, authorized and empowered to execute and deliver the Settlement Agreement in such form as she may deem necessary or advisable, her approval thereof to be conclusively evidenced by her signature thereto, and to take any and all action she may deem necessary in connection with the foregoing to enable the Association to fully and promptly perform all of its obligations with respect to the said Settlement Agreement; and further
>
> RESOLVED that Mrs. Ellis be and she hereby is authorized and directed on behalf of the Association to execute any and all documents and to take any and all action that she may deem necessary or desirable in order to enable the Association to carry out and effectuate the purposes of the foregoing resolution and the transaction covered thereby.

IN WITNESS WHEREOF I hereunto set my hand and the seal of said Association this 27th day of June, 1988.

Barbara N. Boltz, Secretary

EXHIBIT G

June 28, 1988

Mrs. Juanita Ellis
President, CASE
1426 South Polk Street
Dallas, Texas 75224

Dear Mrs. Ellis:

We have acted as counsel for Texas Utilities Electric Company, a Texas corporation (the "Company"), in connection with that certain Settlement Agreement dated June _, 1988 (the "Agreement") by and between Citizens Association for Sound Energy ("CASE"), Mrs. Juanita Ellis ("Ellis") and the Company. This opinion is delivered to you pursuant to Section 9.1 of the Agreement.

In connection with this opinion, we have reviewed copies of the Agreement and all Exhibits referenced in and attached to the Agreement. We have also examined originals or copies, certified or otherwise identified to our satisfaction, of such corporate records, certificates and other documents of the Company and made such investigations of law as we have deemed necessary or appropriate as a basis for the opinions expressed below.

Based upon the foregoing and subject to the qualifications set forth herein, we are of the opinion that:

1. The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Texas with requisite corporate power and authority to carry on its business as now conducted.

2. The Company has requisite corporate power and authority to execute, deliver and perform the Agreement acting separately and as Project Manager under the Joint Ownership Agreement between the owners of the CPSES, and to carry out its obligations thereunder. The Agreement has been duly authorized, executed and delivered by the Company, and constitutes valid and legally binding obligations of the Company enforceable against it in accordance with its respective terms. The execution, delivery and performance of the Agreement by the Company does not conflict with or result in any violation of, or constitute a default under, the Articles of Incorporation or by-laws of the Company.

We are licensed to practice law in the State of Texas. We do not purport to be experts on, or to express any opinion herein concerning, any law other than the laws of the State of Texas and the federal law of the United States.

The foregoing opinions are limited to the existing laws on the date hereof and we undertake no obligation or responsibility to update or supplement this opinion in response to subsequent changes in the law or future events or circumstances affecting the transactions contemplated herein. This opinion has been delivered solely for your benefit and may not be otherwise reproduced, filed or relied upon by any other person or entity.

Very truly yours,

WORSHAM, FORSYTHE, SAMPELS
& WOOLDRIDGE

By: Robert A. Wooldridge, A Partner

EXHIBIT H

PUBLIC STATEMENT

Upon the execution of the Settlement Agreement and the filing of the Joint Stipulation and Joint Motion for Dismissal the following statement, describing the terms and basis for the Settlement Agreement, may be released to the public and the news media together with the Joint Stipulation and Joint Motion for Dismissal without violating the provisions of Article VIII, paragraph 8.1:

Texas Utilities Electric Company ("TU Electric") and Citizens Association for Sound Energy ("CASE") announced that they, along with the Nuclear Regulatory Commission Staff, have filed a Joint Stipulation and a Joint Motion for Dismissal of the ongoing NRC licensing proceedings involving the Comanche Peak Steam Electric Station. Under the terms of the Joint Stipulation, which becomes effective in the event that the ASLB grants the Motion to Dismiss, TU Electric will continue to implement the various corrective actions already in place and CASE will continue to be actively involved in that process. In addition, Mrs. Juanita Ellis, the President of CASE has been appointed as a full member of the Operations Review Committee ("ORC") for Comanche Peak, which is a position for which TU Electric pays no salary. The ORC is required by the Comanche Peak technical specifications and plays a vital role in reviewing operational and other safety-related matters in connection with Comanche Peak.

The dismissal of the ongoing licensing proceedings is part of an overall settlement between CASE and TU Electric. In addition to the dismissal of the NRC licensing proceeding, the settlement requires TU Electric to resolve claims by workers formerly employed at Comanche Peak who have employment discrimination claims or suits against TU Electric or its contractors, and TU Electric will reimburse CASE for the expenses and debts incurred by CASE in connection with the licensing of Comanche Peak.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Glenn O. Bright
Dr. James H. Carpenter

In the Matter of **Docket No. 50-271-OLA**
(ASLBP No. 87-547-02-LA)

VERMONT YANKEE NUCLEAR POWER CORPORATION
(Vermont Yankee Nuclear Power Station) **August 3, 1988**

In ruling on a motion for a stay, pending issuance of the Staff's Environmental Assessment, of a license amendment permitting reracking of a spent fuel pool, the Licensing Board, upon issuance of such assessment, dismisses the motion as moot. To the extent the motion seeks a stay pending exploration by parties of the validity of the Environmental Assessment, the Board denies the motion as beyond its authority.

LICENSING BOARDS: DELEGATED AUTHORITY

Licensing Boards, pursuant to 10 C.F.R. § 2.718(m), possess authority to take actions not explicitly spelled out by other sections of the Rules of Practice.

RULES OF PRACTICE: JURISDICTION OF BOARDS

Licensing Boards have jurisdiction, pursuant to 10 C.F.R. § 2.717(b), to review Staff orders to a licensee which relate to any matter as to which the

Board could admit a late-filed contention. The order need not be directly related to the subject matter of an admitted contention. *Cincinnati Gas and Electric Co.* (William H. Zimmer Nuclear Station), LBP-79-24, 10 NRC 226 (1979); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), LBP-84-16, 19 NRC 857, 862-64, *aff'd*, ALAB-765, 19 NRC 645, 652 (1984).

RULES OF PRACTICE: JURISDICTION OF BOARDS

Under 10 C.F.R. § 50.58(b)(6), licensing boards lack jurisdiction to review a "no significant hazards consideration" finding of the Staff, as well as the immediate effectiveness of a license amendment issued after all steps requisite to the issuance of such an amendment have been taken by the Staff. This jurisdictional bar, however, does not insulate from adjudicatory review Staff actions that must be (but have not been) taken prior to issuance of an amendment.

NEPA: AGENCY RESPONSIBILITIES

The Staff must perform an environmental review of a license amendment prior to putting that amendment into effect. Depending upon the circumstances, the review may take the form of an Environmental Impact Statement, an Environmental Assessment, or a categorical exclusion. Nothing in the *Sholly* regulations abrogates those requirements.

NEPA: FEDERAL ACTION

Any action taken by a licensee pursuant to its own license and 10 C.F.R. § 50.59 would not involve a separate federal action and hence would not be subject to NEPA review requirements.

NEPA: SEGMENTATION

In order to qualify as an action that may properly be segmented for environmental review purposes from a larger project, the segmented portion of the action must possess some "independent utility" of its own and not merely be an adjunct of the larger project.

NEPA: DAMAGE FROM IMPROPER REVIEW

Failure of an agency to perform an environmental review in itself has been held to give rise to damage. At least in exceptional cases where there are serious and substantive deficiencies in an environmental review or, *perforce*, no

environmental review at all, traditional equitable principles do not come into play in considering relief to be granted. One such situation is where a review improperly covers only the first phase of a multiphase project.

NEPA: SEGMENTATION

The prohibition against improper segmentation of actions for NEPA review purposes does not require the initial phase to have significant environmental impacts.

MEMORANDUM AND ORDER
(Motion to Stay License Amendment 104)

This proceeding involves an application by Vermont Yankee Nuclear Power Corp. (Applicant), dated April 25, 1986, to expand the authorized capacity of the spent fuel pool of the Vermont Yankee Nuclear Power Station from 2000 fuel elements to 2870 fuel elements. As part of this application, the Applicant described two facility modifications that were necessary: replacement of the spent fuel storage racks with new racks with a closer spacing of the fuel elements, and the shortening of the two cooling water return sparger lines.[1]

License Amendment 104 to the Vermont Yankee operating license, issued by the Staff on May 20, 1988, and effective upon issuance, by its terms permits the Applicant to install the new racks and to shorten the sparger lines. It also permits the new racks to be used, although not for more than the 2000 assemblies currently authorized by the license. Thus, as set forth in the letter transmitting Amendment 104 to the Applicant, the amendment was in "partial response" to the April 25, 1986 application, as later supplemented.[2]

On June 13, 1988, the Commonwealth of Massachusetts (Massachusetts) and the New England Coalition on Nuclear Pollution (NECNP) (Movants) filed a Joint Motion requesting a stay of the effectiveness of License Amendment 104. On June 24, 1988, the State of Vermont filed a response in support of the Joint Motion, indicating it joined in sponsoring the motion. At a prehearing conference on June 28, 1988, we held oral argument on certain aspects of the Joint Motion.[3] On July 7 and 12, 1988, respectively, the Applicant and the NRC

[1] Application, dated April 25, 1986, at 4.

[2] Letter, dated May 20, 1988, from Vernon L. Rooney, Project Manager, NRC, to R.W. Capstick, Licensing Engineer, Vermont Yankee Nuclear Power Corp.

[3] We had identified certain matters to be discussed in our Memorandum (Questions for Parties at Prehearing Conference), dated June 20, 1988 (unpublished). At that conference, we also denied requests of the Movants for temporary, emergency relief. *See* Second Prehearing Conference Order (Rulings on Temporary Stay Order and on Schedules), LBP-88-18, 28 NRC 43 (1988).

Staff filed responses in opposition to the Joint Motion.[4] On July 15, 1988, the Movants filed a Joint Reply to the responses of the Applicant and Staff.[5] On July 28, 1988, the Applicant filed a response to the Joint Reply.[6]

The Joint Motion is premised on the failure of the Staff, prior to issuing the amendment, to have produced an Environmental Assessment (EA) or other environmental review document governing the entire spent fuel pool expansion application. For reasons set forth below, we find License Amendment 104 to have been improperly issued by the NRC Staff and, indeed, to have been void. However, based on the issuance by the Staff on July 25, 1988, of its EA, covering the entire spent fuel pool expansion application, we also find the validity of the amendment to have been reinstated and the Joint Motion in large measure to be moot. We are dismissing most of it on that basis. Beyond that, we have no authority to grant at this time the further injunctive relief sought by the Movants, extending beyond the release date of the EA. We are denying those aspects of the Joint Motion on jurisdictional grounds.

A. Background

In our Prehearing Conference Order of May 26, 1987, LBP-87-17, 25 NRC 838, we admitted three contentions — one safety contention, dealing with the fuel pool cooling system; and two environmental contentions, one of which dealt with the evaluation of alternatives to the course of action proposed in this proceeding. Upon review of that Order, the Appeal Board permitted only the safety contention to remain in the proceeding but reversed our admission of the other two environmental contentions. ALAB-869, 26 NRC 13 (1987).

Of particular pertinence to the Joint Motion, the Appeal Board rejected Contention 3, dealing with alternatives, on the ground that it was premature and that any contention dealing with alternatives in a license amendment proceeding of this type had to await the issuance by the NRC Staff of an EA or other environmental review document. (In its July 21, 1987 ruling, the Appeal Board noted that an EA was expected "soon." 26 NRC at 34 n.32. Almost a year later, at the time of the filing of the Joint Motion, the EA had not yet been issued; indeed, it was only released a few days ago.)

Accompanying Amendment 104 was a Safety Evaluation Report (SER) concerning only the reracking, together with the modification of the sparger lines (which was to be carried out as a necessary condition for the reracking).

---

[4] On June 23, 1988, we granted the Applicant's unopposed request for an extension of time to respond, and we provided the Staff a similar extension of its time for response.

[5] On July 12, 1988, we granted the unopposed request of Massachusetts and NECNP to file a reply.

[6] The Applicant simultaneously filed a motion for leave to file that response. We *grant* that motion and are considering the response in this ruling.

Included in the SER was a finding that the reracking and related activities (alone) presented "no significant hazards consideration." This determination covered only the reracking and related activities and did not extend to the entire application, as to which the Staff had previously made a proposed "no significant hazards consideration" finding.[7] Also included in the SER was a determination, likewise limited to the reracking and related activities, that an EA was not required since those activities (standing alone) qualified as a categorical exclusion from environmental review pursuant to 10 C.F.R. § 51.22(c)(9).

The Joint Motion seeks an order staying the effectiveness of License Amendment 104, on the ground that the Staff, in issuing the amendment, had failed to perform the requisite environmental review. According to the Movants, the activities authorized by the amendment prejudice their ability to litigate a contention on alternatives, which cannot be considered prior to issuance of the Staff's environmental review document. The motion goes on to seek an order for "the Applicant to cease all work, if any, on the installation of the new racks in the spent fuel pool pending the preparation and issuance of an environmental impact statement or assessment addressing the use of the increased capacity provided by the racks of new design" (Joint Motion at 11). At the June 28, 1988 prehearing conference, the Movants clarified that they wanted the stay to extend not only until issuance of the Staff's EA or other environmental review document (an event that has now taken place) but also until the Movants had an opportunity to examine its adequacy (Tr. 271).

In essence, the Joint Motion claims that there is no "independent utility" to the reracking, that there accordingly was an improper segmentation of the environmental review of the spent fuel pool expansion application, and that an environmental review of the entire expansion application must be performed prior to the grant by the Staff of any significant portion of the application, such as the reracking and related activities approved by License Amendment 104. Absent such review of the entire application, the amendment is assertedly void and its effectiveness accordingly must be stayed.

The Applicant and Staff oppose the Joint Motion on a variety of grounds. Primarily, they assert that we lack jurisdiction to grant it. They also point to certain procedural deficiencies in the motion. Finally, they assert that on the merits the motion should be denied.

The EA issued by the Staff on July 25, 1988, of course moots much of the requested relief. We turn here to each of the points raised by the Applicant or Staff to the extent necessary to resolve the request for further relief which remains before us.

---

[7] *See* 51 Fed. Reg. 22,226, 22,245 (June 18, 1986).

B. Jurisdiction

1. The only jurisdictional authority cited by the Joint Motion is 10 C.F.R. § 2.718(m), which grants us authority to "[t]ake any other action consistent with the [Atomic Energy] Act, this chapter, and sections 551-558 of title 5 of the United States Code." The Applicant takes the position that § 2.718(m) is not a grant of jurisdiction but relates to the powers possessed by a board once it has jurisdiction. The Staff asserts only that the section does not provide authority to issue injunctions against the immediate effectiveness of an amendment covered by a "no significant hazards consideration" finding.

It is clear that § 2.718(m) provides us authority, in appropriate circumstances, to take actions not explicitly spelled out by other sections of the Rules of Practice. Injunctive relief may be one of the actions we could take by virtue of that section. *Cf. Kansas Gas and Electric Co.* (Wolf Creek Nuclear Generating Station, Unit 1), ALAB-321, 3 NRC 293 (1976), *aff'd*, CLI-77-1, 5 NRC 1 (1977) (authority to issue "declaratory order"). It is not that clear, however, whether the section could provide a jurisdictional base for consideration of a particular course of action or whether subject matter jurisdiction would first have to be founded on some other provision. That in turn might depend upon the degree to which a particular action might bear upon or be disruptive of the resolution of other issues in the proceeding.

Fortunately, we need not here resolve these questions. Our jurisdictional base for considering the instant motion is clearly founded on another provision, 10 C.F.R. § 2.717(b). We turn now to that section.

2. The provision upon which our jurisdiction is based, § 2.717(b), reads as follows:

> (b) The Director of Nuclear Reactor Regulation or Director of Nuclear Material Safety and Safeguards, as appropriate, may issue an order and take any otherwise proper administrative action with respect to a licensee who is a party to a pending proceeding. Any order related to the subject matter of the pending proceeding may be modified by the presiding officer as appropriate for the purpose of the proceeding.

Although the major portion of its opposition to the Joint Motion was premised on our alleged lack of jurisdiction, the Applicant failed even to refer to this section, much less discuss its applicability or nonapplicability to the instant motion. This failure occurred notwithstanding our having referred to the applicability of § 2.717(b) during the oral argument at the recent prehearing conference (Tr. 251, 304).[8]

---

[8] The negative inferences that we might draw from the Applicant's failure in these circumstances to discuss this section are obvious. However, we are not relying on any such inferences. In that connection, we note that the Movants also have not mentioned this section as a basis for our jurisdiction, either in the Joint Motion or their

(Continued)

For its part, the Staff asserts that § 2.717(b) is not applicable as a jurisdictional foundation because the license amendment does not relate to a currently admitted contention in the case. Based on applicable precedents, however, we conclude that the order of the Director of Nuclear Reactor Regulation (such as License Amendment 104) need only relate to a matter that could be admitted as a late-filed contention, if one were proffered. We regard the motion itself as the proffer of a late-filed contention.

The most comprehensive examination of the meaning and scope of § 2.717(b) was undertaken by the Licensing Board in *Cincinnati Gas and Electric Co.* (William H. Zimmer Nuclear Station), LBP-79-24, 10 NRC 226 (1979). There, in an operating license proceeding governed by 10 C.F.R. Part 50, two intervenors sought an order delaying the delivery of unirradiated fuel to the site. The NRC had issued a materials license pursuant to 10 C.F.R. Part 70 permitting such shipments. The applicants opposed granting of the motion on both jurisdictional grounds and on the merits; the Staff urged denial on the merits but took the position that the Board had jurisdiction to grant the requested relief. The Board denied relief on the merits but held that it had jurisdiction to consider the question, as urged by the Staff. In particular, that Board rejected a claim by the applicants that the Staff order being reviewed had to be "directly pertinent" to a contention in the proceeding. *Zimmer*, 10 NRC at 229-30.

In *Zimmer*, there had been no contention that directly raised any question concerning the shipment of unirradiated fuel. There assertedly was some connection with a contention dealing with the lack of training of the populace in communities through which "radioactive materials" would be transported — about as close a connection as the modification of the spargers in the Vermont Yankee fuel pool has to the adequacy of the fuel pool cooling system which is the subject of Contention 1 in this proceeding.

The Board in *Zimmer* accepted the analysis of the scope of § 2.717(b) offered by the Staff. It portrayed three types of situations: (1) an activity so closely related to the subject matter of a proceeding that *any* Staff order may normally not be issued (or if issued must be stayed pending resolution of the contested issue); (2) at the other extreme, a particular subject so far removed from a pending proceeding that its consideration is inappropriate — i.e., consideration of an antitrust question in a hearing on public health and safety and the environment, such antitrust question being beyond the subject matter jurisdiction of a board; and (3) matters with respect to which independent Staff action is appropriate but which bear enough relationship to the subject of a

---

reply. The Applicant asserts that the Movants have the burden of showing that we have jurisdiction. Initially, as a matter of pleading, we are aware of no such requirement. If a jurisdictional question is raised — as it has been here — the burden may then shift to the Movants to remove any doubts about jurisdiction. Given the obvious applicability of § 2.717(b), however, we would be remiss in not relying on it, irrespective of its not being cited by the Movants.

pending proceeding to make review by the Licensing Board in that proceeding appropriate. The third situation was found to be present in *Zimmer*, and we find it to be applicable here and to undergird our jurisdiction to consider the Joint Motion.

The jurisdictional analysis by the Licensing Board in *Zimmer* apparently never received appeal board review. Another Licensing Board, however, subsequently reached a similar conclusion, relying in part on the jurisdictional precedent of *Zimmer*. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), LBP-84-16, 19 NRC 857, 862-64 (1984). In reviewing and affirming that determination, the Appeal Board cited the jurisdictional holding in *Zimmer* (LBP-79-24) approvingly, noting that the Commission had never interceded to terminate that Board's action. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-765, 19 NRC 645, 652 (1984).[9]

The Staff has not set forth any reason for its change of position on the applicability of § 2.717(b) between *Zimmer* and this case. There seem to be no intervening regulatory or decisional changes that would limit the applicability of § 2.717(b) to matters directly bearing on an already admitted contention — at least, no party has advised us of such changes. Unless other matters raised by the Applicant or Staff suggest that we are deprived of jurisdiction for some other reason, we opine that our jurisdiction to consider the Joint Motion properly rests on § 2.717(b). We turn now to the other jurisdictional arguments advanced by the Applicant and/or Staff.

3. In addition to its position with respect to § 2.718(m), which we have described above, the Applicant advances three arguments as to why we lack jurisdiction to consider the Joint Motion. The first is that our authority is limited to resolving issues raised by the amendment application before us and that the reracking and related activities authorized by Amendment 104 are not within the scope of the license amendment application, which assertedly is limited to a proposed change in the number of fuel assemblies that may be stored in the fuel pool at any one time. On the other hand, the Joint Motion (¶ 23) asserts that the installation of new racks is "inextricably related to the proposed increase in the authorized storage capacity of the spent fuel pool and does not have any utility without authorization to increase the capacity of the pool." The Staff response does not address this particular argument.

We agree with the Joint Motion on this point. Although our jurisdiction is limited by the scope of the amendment application before us, the reracking and related facility modifications are specifically described by the amendment application as being integral to that application and hence are encompassed

[9] *See also Nuclear Fuel Services, Inc.* (Western New York Nuclear Service Center), LBP-82-36, 15 NRC 1075, 1082 n.14, *aff'd*, ALAB-679, 16 NRC 121 (1982).

within the scope thereof.[10] Indeed, Amendment 104 recites that it grants that application in part. Whether or not the Applicant might have taken the actions authorized by Amendment 104 without the benefit of that amendment, as it claims, it chose not to do so. It refrained from any reracking activities until Amendment 104 was issued (Tr. 233-34). That being so, we find the activities authorized by Amendment 104 to be part and parcel of the application that is subject to our review and hence within our jurisdiction to consider.

4. The second jurisdictional argument advanced by the Applicant factually parallels that presented by the Staff with regard to § 2.717(b) — i.e., that we have jurisdiction to consider only admitted contentions and that Amendment 104 bears no relationship to the one contention remaining in this proceeding. In its response to the Movants' reply, the Applicant cites authority indicating that a board's jurisdiction to *resolve* certain questions is limited to admitted contentions. That does not constitute a bar to considering matters advanced by a party within the subject-matter jurisdiction of the Board. Moreover, the Applicant concedes that we have authority to consider late-filed contentions, although it does not regard the Joint Motion as presenting such a contention.

We have already rejected the Staff's claim, and the Applicant has presented no authority of its own (and we are aware of none) that would lead us to accept its position in this regard. As we have observed, the relationship of Amendment 104 to the admitted contention is as close as the relationship of many matters considered under § 2.717(b) to the admitted contentions in cases in which the use of that section has been sanctioned. Accordingly, the asserted lack of a direct relationship between Amendment 104 and the pending safety contention presents no jurisdictional bar to our considering and acting upon the Joint Motion.

5. The most serious of the three jurisdictional arguments advanced by the Applicant (as well as by the Staff) is that we are deprived of jurisdiction to act on the Joint Motion by virtue of the so-called *Sholly* regulations, 10 C.F.R. §§ 2.105, 50.58, 50.91, and 50.92. These regulations permit the Staff, in conjunction with a request for an operating license amendment, to make a "no significant hazards consideration" finding; when it does so, a license amendment may go into effect prior to the completion of any hearings on that amendment. Under 10 C.F.R. § 50.58(b)(6), the Staff's "no significant hazards consideration" finding is not subject to review by licensing boards:

[10] The case cited by the Applicant, *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-674, 15 NRC 1101 (1982), stands for the proposition that an operating-license licensing board has no authority to suspend activities authorized by a construction permit. We have no quarrel with that proposition, although it is inapplicable to the motion before us (over which we have jurisdiction pursuant to § 2.717(b)). The *Midland* situation involved no order of the Director of Nuclear Reactor Regulation that would bring § 2.717(b) into play; moreover, it involved consideration of matters that the operating-license board in any event could not have considered.

(6) No petition or other request for review of or hearing on the staff's significant hazards consideration determination will be entertained by the Commission. The staff's determination is final, subject only to the Commission's discretion, on its own initiative, to review the determination.

The Applicant (and Staff as well) seek to envelope the entire procedure followed with respect to Amendment 104 into the jurisdictional bar contained in § 50.58(b)(6). They attempt to create an umbrella under which any aspect of a license amendment covered by a "no significant hazards consideration" finding, including Amendment 104, can be challenged, if at all, only through an initial decision in a proceeding such as this. The Movants, however, would confine the jurisdictional bar of that section only to the "no significant hazards consideration" finding standing alone; they claim that the NEPA finding that must precede any license amendment is separate and apart from the "no significant hazards consideration" finding and may be reviewed separately. They limit their NEPA claims to situations where the NEPA finding is either missing or (as they claim here) on its face defective (Tr. 274). In that situation, the issuance of the license amendment is said to be void. They concede that other types of NEPA claims — such as to the sufficiency of the discussion of a particular subject in an EA — would be subject to after-the-fact consideration under the generally applicable *Sholly* rules (Tr. 275).

In support of its claim of a jurisdictional bar, the Applicant cites abstracts from the Statement of Considerations for the *Sholly* rules which suggest that the Commission was interested in avoiding delay with respect to amendments that are essentially routine in nature. We have no quarrel with that general proposition. But no place does the Applicant discuss the interrelationship of the requirements of NEPA to an amendment like License Amendment 104 for which a "no significant hazards condition" finding has been made.

We agree with the Staff that the jurisdictional bar of § 50.58(b)(6) extends not only to the "no significant hazards consideration" finding itself but also to the immediate effectiveness of an amendment issued after all steps requisite to the issuance of such an amendment have been taken by the Staff. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-86-12, 24 NRC 1 (1986). But the jurisdictional bar cannot be properly read to insulate from adjudicatory review Staff actions that must be (but have not been) taken prior to the issuance of an amendment. Particularly is this so with respect to NEPA requirements. Those requirements cannot be ignored with impunity and insulated from any review by virtue of a procedural finding based solely on safety (not NEPA) considerations. Where the Staff fails to undertake a mandatory NEPA review requisite to grant of a license amendment, the amendment may be nullified prior to any final ruling on the public health and safety aspects of the amendment.

It is clear to us that the Staff must perform an environmental review of a license amendment prior to putting that amendment into effect. 10 C.F.R. § 51.25. Depending upon the circumstances of a particular amendment, the review may take the form of an Environmental Impact Statement (EIS) pursuant to 10 C.F.R. § 51.20, an EA pursuant to 10 C.F.R. § 51.21, or a categorical exclusion pursuant to 10 C.F.R. § 51.22. Nothing in the *Sholly* regulations abrogates those requirements.

Moreover, in issuing its *Sholly* rules, the Commission made it clear that NEPA requirements would continue to be followed. For example, the Statement of Considerations states:

> Before NRC issues an amendment, a State and the public can have a say about any amendment request that involves an environmental impact. The procedures . . . have been designed so that at the time of NRC's proposed determination (1) the State within which the facility is located is consulted, (2) the public can comment on the determination, and (3) an interested party can request a hearing.

51 Fed. Reg. 7744, 7755 (Mar. 6, 1986).

Applying the *Sholly* rules to Amendment 104, once the Staff has made a determination, following public comment, that at least purports to respond to the requirements of Part 51, any challenge entertained by us to the Staff's performance would, by virtue of the *Sholly* rules, be litigable only after the license amendment went into effect. However, to the extent the Staff had neglected to perform one or more of the duties mandated by the *Sholly* rules as a precondition of license amendment issuance, including duties emanating from the requirements of Part 51, the amendment would be void (rather than voidable) and within our authority to review prior to our final decision in this proceeding.

Here, no public notice of the proposed issuance of Amendment 104, and no proposed "no significant hazards condition" determination for that amendment, appear to have been published. The only proposed "no significant hazards condition" determination of which we are aware in this proceeding is that covering the entire amendment to increase the capacity of the spent fuel pool (*see* note 7, *supra*). Thus, states and the public were never afforded the opportunity to provide comments comparable to the complaints set forth in the Joint Motion, to the effect that the proposed Amendment 104 represented improper segmentation of the environmental review, or that there was no independent utility to reracking and associated activities standing alone. Furthermore, the SER that issued for Amendment 104 does not even purport to represent an environmental review or assessment of the action for which the proposed determination was published. In these circumstances, we have jurisdiction at this time to review, at the request of the Movants, whether, given the apparent failure of the Staff to have followed

both *Sholly* and NEPA requirements, Amendment 104 was improperly issued and hence is void.

C. Procedural Question

We have disposed of a number of procedural questions raised by the parties during the course of our resolution of various jurisdictional questions. The Applicant additionally asserts that the requested stay of License Amendment 104 would be a "futility" since it could accomplish the reracking and related activities by virtue of 10 C.F.R. § 50.59, which permits a licensee to make certain changes in the facility without Staff approval, reporting the changes to the Staff on an after-the-fact basis. The Movants assert that the reracking and related activities are not among the classes of changes authorized by § 50.59. The Staff acknowledged that reracking has been undertaken pursuant to § 50.59, although it did not elaborate on the particular circumstances in which that approach had been used, or whether those circumstances were comparable to the present case.[11] Further, the Staff advised us at oral argument that last Summer it had requested the Applicant not to engage in reracking pending review by the Staff.[12]

We reject the argument that our granting of the Joint Motion would be a futile act. The short answer is that the Applicant in fact took action only following the issuance of License Amendment 104. We are unwilling to presume that the Staff engaged in a useless act in issuing the amendment.

Furthermore, there are good arguments both in favor of and opposing use of § 50.59 for reracking under varying circumstances. We decline to decide that question, for lack of an adequate record to determine whether the Applicant acted pursuant to that section or to License Amendment 104.

We note, however, that any action taken by the Applicant pursuant to its own license and § 50.59 would not involve a separate federal action and hence would not be subject to NEPA; the substantive foundation giving rise to the Joint Motion would not be present. We would also lack jurisdiction pursuant to § 2.717(b), inasmuch as there would be no order of the Director of Nuclear Reactor Regulation to review. Thus, in terms of the Joint Motion, there would be no substantive or jurisdictional basis for us to stay any action taken pursuant to § 50.59.

---

[11] Tr. 248-50. *But cf.* Tr. 257, 284.

[12] Tr. 283-84. *See also* letter from Steven A. Varga, NRR, to Mr. Warren P. Murphy, of the Applicant, dated July 15, 1987. Copies of this letter were served on all parties but not on this Board. We obtained a copy through search of NRC's Nuclear Document System (NUDOC). The letter presents the Staff's position but makes no attempt to present any legal analysis of activities that may or may not be undertaken under the authority of § 50.59.

In its initial response (at 4), the Applicant advises that it was requested by the Staff in early 1988 to defer the reracking and related activities, but we have not been able to locate any documentation of such request. The Applicant did not commence rack installation until after the issuance of License Amendment 104 (Tr. 233-34).

D. Ruling on the Merits

In issuing Amendment 104, the Staff determined that the reracking and related actions, standing alone, qualified for a categorical exclusion pursuant to 10 C.F.R. § 51.22(c)(9). If it were proper to consider the reracking and related actions, standing alone, for environmental review purposes, there would be little question that the Staff had made a proper determination, at least to the extent that the immediate effectiveness of the amendment under the *Sholly* rules would come into play.

The Joint Motion claims, however, that there is no "independent utility" to the proposed reracking, standing alone; and that, although the new racks could be employed in lieu of the old, the only reason for installing the new racks at this time was a step toward the implementation of the spent fuel pool expansion application. That being so, they allege that there has been improper segmentation of the NEPA review of the expansion application and, in effect, no environmental review that even purports to satisfy applicable NEPA requirements. As a result, they claim Amendment 104 to be illegally issued and in effect void.

In order to qualify as an action that may properly be segmented for environmental review purposes from the entire action, the segmented portion of the action must possess some "independent utility" of its own and not merely be an adjunct of a larger project. *Kerr-McGee Chemical Corp.* (West Chicago Rare Earths Facility), LBP-84-42, 20 NRC 1296, 1314 (1984); *Tennessee Valley Authority* (Browns Ferry Nuclear Plant, Units 1, 2, and 3), ALAB-664, 15 NRC 1, 7-10 (1982); *Duke Power Co.* (Amendment to Materials License SNM-1773 — Transportation of Spent Fuel from Oconee Nuclear Station for Storage at McGuire Nuclear Station), ALAB-651, 14 NRC 307, 311-15 (1981). To assist us in determining whether the reracking and related activities, standing alone, had any "independent utility," we posed a question to that effect to the parties, for response at the June 28, 1988 prehearing conference. Memorandum (Questions for Parties at Prehearing Conference), dated June 20, 1988 (unpublished).

All parties responded. The Applicant provided many reasons why going ahead with the reracking was advantageous to it from a business standpoint, and it claimed certain environmental advantages, all on the assumption that the expansion in capacity of the spent fuel pool would be eventually approved. It also argued that the new racks were as usable as the old ones, even though an expansion in capacity were not approved. But it did not even assert that there was an "independent utility" to the reracking apart from its usefulness in terms of the proposed expansion in capacity.

Indeed, in its initial response to the Joint Motion, the Applicant did not even deal with the alleged NEPA violation. Its entire argument on the merits went

to whether the stay standards have been satisfied.[13] Those standards, however, are not even properly applicable to the Joint Motion. In the first place, as the Staff points out, the stay standards spelled out in 10 C.F.R. § 2.788 are only applicable to proposed stays of orders issued by adjudicatory bodies such as this Board. They are not applicable to a Board's consideration of a Staff order such as is involved here.[14]

Secondly, however, and more important, the Joint Motion's request for injunctive relief or for a stay is an inaccurate characterization of the course of action which follows from a review of NEPA conformance. It appears to us that what the Joint Motion is really seeking is a review of the environmental aspects of a Staff action and, assuming error in the action, an invalidation of the action itself.[15] Once the license amendment is found to be invalid, the necessary course of action is to undo the improper Staff action and to prevent the Applicant from undertaking further activities on the basis of the invalid amendment. (As we held earlier, we lack jurisdiction to order the Applicant to cease taking actions that it could take under authority other than the improperly issued license amendment.)

Finally, it is important to note that the Staff's failure to perform an environmental review (such as occurred here) in itself has been held to give rise to damage to interested persons such as the Movants. *California v. Bergland*, 483 F. Supp. 465, 498-99 (1980). Once a substantial NEPA violation is shown, traditional equitable principles do not come into play in considering relief to be granted. *Id.; Lathan v. Volpe*, 455 F.2d 1111, 1116 (9th Cir. 1971), *relying on United States v. City and County of San Francisco*, 310 U.S. 16, 30-31 (1940). This standard applies at least in "exceptional cases" (such as this one) where there are serious and substantive deficiencies in an environmental review or, *perforce*, no environmental review at all. *Essex County Preservation Ass'n v. Campbell*, 536 F.2d 956, 962-63 (1st Cir. 1976). One such situation is where a review improperly covers only the first phase of a multiphase project. *Atchison, Topeka and Santa Fe Railway Co. v. Callaway*, 382 F. Supp. 610, 620-22 (D.D.C. 1974).[16]

---

[13] Applicant's Response at 15-25 (page 18 is blank). In its response to the Joint Reply, the Applicant does claim that the segmentation cases require a significant impact for the initial segment. *See* p. 159, *infra*, for a discussion of this claim.

[14] Contrary to the Applicant's claim (Response to Joint Reply at 4-5) our authority to grant stay orders is not necessarily confined to circumstances spelled out in § 2.788. *See* our discussion of 10 C.F.R. § 2.718(m), *supra*, p. 150.

[15] The Movants, in their Joint Reply (at 3 n.4) acknowledge this to be the case.

[16] The cases cited by the Applicant (Response to Joint Reply at 5-6) hold only that equitable principles may be applicable where minor defects in an EIS have been demonstrated — not the situation here.

The Applicant also attempts to prove that the Movants have not demonstrated likelihood of success on the merits by creating three hypothetical straw persons (or legal scenarios) and then knocking them down, one by one (Applicant's Response at 17-19 (page 18 blank)). It seems rather obvious that the Movants are not attempting to succeed on the merits by bringing about any of the three scenarios described by the Applicant.

The Staff does argue that Amendment 104 does not infringe any interest of the Movants, but its rationale is that the amendment does not relate to any admitted contention.[17] We have already rejected the claim that an admitted contention is necessary for us to consider the Joint Motion; and, were it not rendered moot by issuance of the EA, we also would have elected to treat the Joint Motion as a late-filed contention (subject, of course, to a balancing of the factors set forth in 10 C.F.R. § 2.714(a).)

The Staff also re-asserts that it determined that the reracking and related actions alone had an insignificant environmental impact. And the Applicant would limit application of the segmentation cases to situations where the initial phase itself has significant impacts.[18] The trouble with segmentation, however, is that it permits an agency to shave off insignificant aspects of an action that in totality may be significant, thereby undermining the purpose of NEPA to identify environmental actions that in their totality may be significant. Until the Staff prepared its EA, there had been no determination by the Staff as to whether the entire expansion application involves significant environmental impacts. Moreover, given such effects as the occupational radiation exposure identified in the SER for Amendment 104 (at 12-14), it is clear that the environmental impacts, while perhaps insignificant, are not *de minimis*. Given the improper segmentation which, we find, attended the environmental review of Amendment 104, that amendment lacked a requisite Staff determination and could have no force or effect, at least until the Staff prepared and released its environmental review document.

In short, until the Staff issued its EA, it had not even purported to perform an environmental review of the application before us. It had improperly fractionalized from that application a project that it deems to have an insignificant environmental impact. Until resurrected by issuance of the EA, that action was invalid, and the license amendment resulting therefrom was void.

E. Relief

As we held earlier, we are jurisdictionally precluded from enjoining the Applicant from continuing the reracking and related activities to the extent they may be permitted under authority other than License Amendment 104. We have determined that License Amendment 104, at the time of its issuance, was void for lack of a proper NEPA review. But because the deficiency in License Amendment 104 was caused by an error by the Staff and not by any planned activity of the Applicant (insofar as we are aware), the deficiency could be and was cured by the issuance by the Staff of its EA, which purported to cover the

[17] Staff Response at 8-10.
[18] Response to Joint Reply at 7.

entire spent fuel pool capacity expansion. As far as is reflected by the record before us, the Staff has now performed all actions necessary for the issuance of Amendment 104. No stay of activities authorized by Amendment 104 is thus called for at this time.

We also are declining (for lack of jurisdiction, pursuant to the *Sholly* rules) to grant the additional stay requested orally by the Movants (Tr. 271), to give them a chance to explore the validity of the Staff's EA. Assertions by the Movants with respect to the validity of the EA can, of course, be entertained by us (under applicable standards, including those governing late-filed contentions) but are subject to the *Sholly* rules — i.e., the amendment may remain in effect pending any litigation of its propriety. Any proposed contentions concerning the validity of the EA would be considered under the terms spelled out in our May 26, 1987 Prehearing Conference Order, LBP-87-17, *supra*, 25 NRC at 862.

F. Order

For the foregoing reasons, it is, this 3d day of August 1988, ORDERED:

1. The Joint Motion under consideration is *dismissed* as moot (to the extent it seeks to stay the effectiveness of License Amendment 104). To the extent it seeks additional relief at this time, it is *denied* for lack of authority.
2. This Order becomes effective upon issuance.
3. Proposed late-filed contentions arising from the EA may be submitted on the schedule set forth in LBP-87-17, *supra*, 25 NRC at 862 — i.e., by August 15, 1988, within 14 days of service of the EA (taking into account weekends and mailing time).

THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Glenn O. Bright
ADMINISTRATIVE JUDGE

Dr. James H. Carpenter
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 3d day of August 1988.

Cite as 28 NRC 161 (1988) LBP-88-20

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Sheldon J. Wolfe, Chairman
Emmeth A. Luebke
Jerry Harbour

In the Matter of

Docket Nos. 50-443-OL-1
50-444-OL-1
(ASLBP No. 88-558-01-OLR)
(Onsite Emergency Planning and Safety Issues)

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, *et al.*
(Seabrook Station, Units 1 and 2)

August 8, 1988

In an Order of June 29, 1988 (unpublished), the Commission directed the Licensing Board to determine whether the remanded coaxial cable issue need be resolved before low-power operation. The Licensing Board renews its authorization to operate Seabrook Unit 1 up to 5% of rated power because the remanded coaxial cable contention (as changed in part by the Applicants' shift in position reflected in the "Suggestion of Mootness" filed on May 19, 1988) is not relevant to low-power operations inasmuch as the safety concerns raised therein would not adversely impact upon the public health and safety if the facility were to be authorized to operate only up to 5% of rated power. However, the Licensing Board cannot give effect to this renewed authorization until such time as the Commission via rulemaking may remove the public notification issue as an obstacle to low power and until such time as the Staff provides to the Commission, should the Commission so desire, its evaluation of Applicants' memorandum of July 22, 1988. Thus, the Licensing Board does not authorize

the Director of NRR, when making the findings required by 10 C.F.R. § 50.57(a), to issue the low-power license.

REGULATIONS: INTERPRETATION

The showing of relevancy is required by 10 C.F.R. § 50.57(c) because it is not every contention that need be heard or decided prior to the authorization of a low-power license. ALAB-892, 27 NRC 485, 490 (1988).

MEMORANDUM AND ORDER
(Re Low-Power Authorization)

I. BACKGROUND[1]

As of June 29, 1988, on three occasions,[2] the Appeal Board had remanded NECNP Contention I.B.2,[3] the coaxial cable issue, to this Board. On May 19, 1988, Applicants filed a "Suggestion of Mootness," which was revised on May 27. Applicants' "Suggestion," supported by three affidavits, stated that (1) 126 nonsafety-related RG-58 coaxial cables, grouped into five categories, had been identified as having been installed at the Seabrook Station; (2) only twelve of the nonsafety-related RG-58 cables, which were routed at least partially through a harsh environment within the nuclear island, were required to meet the environmental qualification set forth in 10 C.F.R. § 50.49; (3) environmentally qualified RG-59 coaxial cable was an acceptable substitute for the twelve RG-58 cables located in a harsh environment within the nuclear island; and that (4) for the twelve RG-58 coaxial cable applications, the RG-58 coaxial cable was being replaced by RG-59 coaxial cable. Applicants requested that the Board enter an order finding that the issue regarding the environmental qualification of RG-58 coaxial cable was moot.

---

[1] We have set out the background in a rather lengthy, detailed manner in order to make it clear that two discrete matters are pending before us. The first matter involves the coaxial cable environmental qualification issue, the thrust of which was changed in part by the Applicants' shift in position advanced in their "Suggestion of Mootness" filed on May 19, 1988. The merits of this first matter, pursuant to our Order of June 23, 1988 (unpublished), will be resolved pursuant to summary disposition proceedings and/or after a hearing, and *is not* the direct subject of this issuance. The second matter, which *is* the subject of this issuance pursuant to the Commission's Order of June 29, 1988 (unpublished), involves only the question of whether the remanded coaxial cable issue (which was changed in part by the Applicants' shift in position on May 19, 1988) need be resolved before low-power operations.

[2] ALAB-875, 26 NRC 251 (1987); ALAB-882, 27 NRC 1 (1988); ALAB-891, 27 NRC 341 (1988).

[3] As pointed out in ALAB-875 at 270, as litigated, the contention focused upon whether the RG-58 coaxial cable was environmentally qualified.

On May 23, 1988, the Board requested that NECNP and the Staff file comments. In a response dated June 2, 1988, the Staff stated that, in the absence of source material being provided by the Applicants, it was unable to confirm or deny the accuracy of the representations in the "Suggestion of Mootness" that (1) 126 RG-58 cables had been installed; (2) the particular category groupings were appropriate — i.e., that 19 of the 126 installed RG-58 coaxial cables were spares, that 76 of the 126 installed RG-58 cables were located in mild environments, and that 10 of the RG-58 cables routed with other nonsafety-related cables outside the nuclear island would not be exposed to a harsh environment; and that (3) 9 of the 126 installed RG-58 cables were routed in mild environments within the nuclear island and routed with nonsafety-related cables outside the nuclear island. Finally, while agreeing that, since the environmental qualification of RG-59 coaxial cable had already been established, the substitution of twelve RG-59 cables for the twelve RG-58 cables would satisfy the environmental requirements of 10 C.F.R. § 50.49, the Staff stated that it remained to be considered whether the RG-59 coaxial cable is a "technically acceptable replacement" for the RG-58 cable. The Staff requested that we should deny Applicants' motion for an order dismissing remanded NECNP Contention 1.B.2 as moot and, in effect, requested that, after reopening the record, we should invoke summary disposition procedures and that, if we determined that there were outstanding, unresolved genuine issues of material fact, we should schedule a hearing to resolve those issues.

On June 9, 1988, NECNP filed a response, supported by an affidavit. NECNP opposed the "Suggestion" since it was in effect a motion for summary disposition which was inappropriate since the parties had not had discovery on the "entirely new set of facts" presented by the Applicants. Citing the discussion in its expert's attached affidavit, NECNP asserted *inter alia* that the Applicants' three affidavits failed to establish *inter alia* that (1) Applicants have identified all uses and locations of RG-58 cable, (2) Applicants know what qualification requirements the RG-58 cable must meet, and that (3) the RG-59 cable is an adequate substitute. While NECNP's three assertions tracked those of the Staff, it disagreed with the Staff in arguing that a hearing, rather than summary disposition procedures, should be ordered and in arguing that the environmental qualification of RG-59 cable has not been "established."

Leave having been granted in an Order of June 10, Applicants filed a reply on June 17, 1988. Therein, while not conceding that such additional information was necessary, Applicants attached an affidavit of Richard Bergeron (hereafter cited as Bergeron Affidavit of June 16) which they maintained met the Staff's statements that the affidavits of Applicants' three experts had failed to supply sufficient information to substantiate certain claims. Further, Applicants argued *inter alia* that the sole issue remanded to this Board and within its jurisdiction was whether the RG-58 cable was environmentally qualified, and

that that issue had been mooted by Applicants' agreement to remove all RG-58 cables presently required to meet the environmental qualification requirements of § 50.49. Finally, it argued that the environmental qualification of RG-59 cable had already been established.

During the course of a transcribed telephone conference of June 23, 1988 (Tr. 1159-86), the Board heard oral arguments of the parties. NECNP continued to oppose the "Suggestion" (Tr. 1162-65). The Staff stated that, after its review of the Bergeron Affidavit of June 16 attached to Applicants' reply of June 17, it deemed at least as of the time of the conference call that the record contained all the information necessary for the Board, pursuant to summary disposition procedures, to issue a determination favorable to the Applicants (Tr. 1165-66). The Board rejected Applicants' Suggestion of Mootness (Tr. 1177). Among other reasons for its rejection, the Board stated that:

> In shifting their position from initially asserting before us and before the Appeal Board that all RG-58 cables had to be and were environmentally qualified but in now arguing that only 12 RG-58 cables had to be environmentally qualified, and that 12 environmentally qualified RG-59 cables would be substituted, applicants cannot now be heard to argue that the issue of environmental qualification of RG-58 cable is now entirely mooted.
>
> And further in so shifting their position, applicants we find and conclude must prove that the RG-59 cable is a technically acceptable replacement for the RG-58 coaxial cable.

(Tr. 1178-79.)

The Board also ruled that it would not permit litigation upon NECNP's argument that the RG-59 cable is not environmentally qualified (Tr. 1179). The Board further ruled that (1) discovery should be initiated immediately and be completed by August 15, 1988; (2) by no later than August 22, the parties will advise whether each intends to file a motion for summary disposition; and that (3) any motions for summary disposition should be served by express mail on or before September 12, and that any opposing or supporting answers should be served by express mail (Tr. 1181).

Thereafter, in an Order of June 29, 1988 (unpublished), the Commission directed this Board to determine whether the remanded coaxial cable issue need be resolved before low-power operation. This Board's Order of July 1, 1988 (unpublished), directed that Applicants and NECNP should file responsive briefs by July 22 and that the Staff should file by July 27, 1988. NECNP filed its brief and attachment on July 21, Applicants filed a memorandum and attachments on July 22, and the Staff filed its response and attachment on July 27.

II. DISCUSSION

A. Applicants' Memorandum

Applicants' memorandum of July 22, supported by the attached affidavits of five experts and documentation, argues in substance that the remanded coaxial cable issue (which was changed in part by the shift in position reflected in the "Suggestion of Mootness" filed on May 19, 1988) is not relevant to low-power operations because the safety concerns raised therein would not adversely impact upon the public health and safety if Seabrook, Unit 1, were to be authorized to operate only up to 5% of rated power. First, Applicants assert that, even if it be assumed for the sake of argument that the twelve RG-59 coaxial cables are not technically acceptable as substitutes for the twelve RG-58 cables, it is not necessary that they function in order to accomplish a safe shutdown of the reactor. Relying upon the affidavits of their experts, at pages 3 and 4 of the memorandum, Applicants assert as follows:

> there are two systems which contain the instrumentation necessary to provide for the automatic actions necessary for accident mitigation (The Reactor Trip System (RTS) and the Engineered Safety Features Actuation System (ESFAS)); in addition, Category I Accident Monitoring Instrumentation (AMI) is the instrumentation necessary to achieve the required manual operator actions required to safely shut down the plant. (Beuchel Aff., ¶¶ 6-9) The RTS, ESFAS and Category I AMI will hereinafter be referred to as the "Safe Shutdown Instrumentation" or "SSI." Assuming the availability of the SSI, then, in the event of the occurrence of the bounding design basis LOCA or Steam Generator Tube Rupture event during low-power operation, no off-site dose requiring off-site protective actions would result (Littlefield Aff., *passim*). And indeed, the off-site doses which would result to the public would be extremely small percentages of those set forth in 10 CFR 100. (Littlefield Aff., ¶¶ 6, 17)
>
> None of the 126 coaxial cables at issue herein, including the 12 RG-59 cables, are connected to any of the devices included within the SSI. (Beuchel Aff., ¶ 10)

Second, Applicants assert that, even if it be assumed that, through oversight or improper classification, any RG-58 cables were in fact located in a harsh environment, and even assuming that they failed and caused the failure of all safety-related cable routed in the same raceway, the Safe Shutdown Instrumentation would still be available. Relying upon the affidavits of one of their experts, at pages 5-6 of the memorandum, Applicants assert as follows:

> Analysis has shown, that such an event would not compromise the SSI because: (1) some of the instruments are simply not required during low power operation; (2) some of the instruments have no input from the raceways of interest; and (3) with respect to all other instruments within the SSI, walkdowns have been performed to verify that the raceways of interest either (a) are in a mild environment, or (b) do not contain RG-58 cable in fact. In connection with the latter, it was also physically verified that, for those cables in a mild

environment, active RG-58 cable does not cross the boundary from an area which could be subjected to a harsh environment into those areas. (Beuchel Aff., ¶¶ 12-15)

Finally, as noted earlier, the design basis accident doses to the public are small percentages of the doses set forth in 10 CFR 100 and, therefore, the safety concerns raised do not adversely impact on the public health and safety.

Finally, Applicants assert that there are other factors that militate against the need to resolve the coaxial cable issue before operation at low power. Relying upon certain affidavits of their experts, Applicants assert as follows:

In the first place, the cables involved are all relatively new. Further, at the 5% testing levels, the resulting aging and accident environmental factors are much less severe than during full power operation. (Bergeron Aff., ¶¶ 4-6). . . .

Finally, the largest current which any of the cables will see is 400 milliamps. (Glowacky Aff., ¶ 7) Tests were conducted with new unaged RG-58 cable and new unaged LOCA tested RG-58 cable to ascertain whether shorting to shield of these cables, while carrying currents of one amp and ten amps, would result in degradation of adjacent cables which had been bundled around them to simulate the conditions of an RG-58 cable located in the middle of a cable tray. (Jamison Aff., ¶¶ 3-5) The results of these tests show that a failure cannot generate sufficient heat to cause damage or degradation to adjacent cables. (*Id.*, ¶¶ 6-9)

Based upon our review of the memorandum, and in light of our discussions of NECNP's and the Staff's submissions *infra*, we conclude that Applicants have shown that the remanded coaxial cable issue is not relevant to low-power operations inasmuch as the safety concerns raised therein would not adversely impact upon the public health and safety if Seabrook, Unit 1, were to be authorized to operate only up to 5% of rated power.

B. NECNP's Brief

NECNP's brief of July 21, 1988, deserves no more than passing mention. Therein, NECNP states that it "continues to press the legal arguments made in its brief of January 4, 1988 before the Licensing Board and reiterated in its [attached] brief of April 7, 1988 before the Appeal Board," and adopts and incorporates them by reference. Since these are admittedly the self-same legal arguments previously advanced by NECNP in arguing that authorizing a low-power license should not be considered prior to a determination on the merits of two remanded contentions (NECNP Contention I.V was concerned with inservice inspection of steam generator tubes, and NECNP Contention IV addressed the accumulation of aquatic organisms and other foreign matter in cooling systems), we reject them again for the same reasons as set forth in LBP-88-6, 27 NRC 245 (1988). Indeed, in affirming our decision, the Appeal Board rendered a definitive appellate ruling that, should NECNP raise the same legal arguments

with respect to the recently remanded issue of the environmental qualification of certain coaxial cable, such arguments would be deemed to be without merit. ALAB-892, 27 NRC 485, 489 (1988). Other than conclusionally arguing at page 2 of its brief that, *if* a pending contention relates to the safe operation of a nuclear power plant, it is necessarily "relevant" to the operation of the plant, whether it is at low power or full power, NECNP does not comply with § 50.57(c) in failing to show that the coaxial cable issue is relevant to the requested license — i.e., it has failed to show that the safety concerns alleged in the contention would adversely impact upon public health and safety if the plant were to be authorized to operate only up to 5% of rated power. This showing of relevancy is required by § 50.57(c) because it is not every contention that need be heard or decided prior to the authorization of a low-power license. ALAB-892, *supra*, 27 NRC at 490.

C. The Staff's Response

In the introduction to its response of July 27, 1988, the Staff states that it "is not now in a position to state unequivocally that remanded NECNP Contention 1.B.2 is relevant to low power operations" because, on the one hand, the environmental qualification requirements of 10 C.F.R. § 50.49 are as a general matter applicable to low-power operations but, on the other hand, Applicants' memorandum of July 22 and attachments took the position that the coaxial cable issue was not relevant to low-power operations because the safety concerns raised thereon would not adversely impact upon the public health and safety if the facility were to be authorized to operate up to 5% of rated power. The Staff asserts that because of the shortness of time, it had not reviewed or evaluated Applicants' memorandum of July 22. It states, however, that it is unnecessary to comprehensively review and evaluate Applicants' memorandum because, *if* the Board were to find that the remanded coaxial cable issue is relevant, the Board, as required by 10 C.F.R. § 50.57(a), could make the reasonable assurance findings required before reauthorizing low-power operations based upon the existing record and upon the attached affidavit of its expert, Mr. Harold Walker (Staff Response at 1-2).

The Staff, relying upon the Walker affidavit, proceeds to amplify its position. Staff states first that the requirements of § 50.49 apply to low-power (as well as to full-power) operation because, were an accident to occur at low power, there is a potential for failure of safety-related and nonsafety-related electrical equipment (as discussed in § 50.49(b)) if subjected to a harsh environment. Thus, the Staff considers that the remanded coaxial cable contention is relevant to low-power operations. However, in light of information received from the Applicants in 1986, and, as a result of its review of Applicants' Environmental Qualification File No. 113-19-01, it concluded that RG-58 coaxial cable is

environmentally qualified by similarity to tested RG-59 cable in accordance with 10 C.F.R. § 50.49(f)(2). Second, Staff states that, apparently after the conference call of June 23, 1988, (a) it reviewed its records which revealed that 126 RG-58 cables had been installed; (b) based upon its review of Applicants' reply and attachments of June 17, it accepted the methodology by which Applicants assigned each RG-58 cable to one of the five category groupings; (c) it agrees with Mr. Bergeron's affidavit of June 16, 1988, that the nineteen RG-58 cables used as spares need not be environmentally qualified because they are not "important to safety," that the seventy-six RG-58 cables located in mild environments are not subject to the requirements of § 50.49, that the nine RG-58 cables in mild environments within the nuclear island and routed with other nonsafety-related cables outside the nuclear island are not required to be environmentally qualified in accordance with § 50.49, and that the ten RG-58 cables routed with other nonsafety-related cables outside the nuclear island are not required to be qualified, and that (d) after reviewing the Kotowski affidavit attached to Applicants' Suggestion of Mootness of May 19, 1988, it believes that Applicants' evaluation is adequate in determining that RG-59 cable is a functionally acceptable replacement for RG-58 cable in a harsh environment.

However, even if we were to accept the Staff's premise that the remanded coaxial cable contention is relevant to low-power operations, we disagree with and reject the Staff's position that, based upon the existing record and upon the attached Walker affidavit, we then could and should make the reasonable assurance findings required in § 50.57(a) before reauthorizing low-power operations. We are baffled by the Staff's position. It ignores the ruling in ALAB-875, 26 NRC 251 (1987)[4] that the Applicants had not demonstrated that the test of the RG-59 cable proved that the RG-58 cable was acceptable. This ruling constitutes the law of the case. Further, in requesting that we accept as having been established the factual allegations set forth in Applicants' Suggestion of Mootness of May 19, 1988, and in their reply of June 17, it ignores our transcribed ruling of June 23, 1988, wherein we directed the initiation of discovery and the subsequent resolution of these factual matters pursuant to summary disposition procedures.[5]

III. ORDER

Subject to two conditions, we renew our authorization to operate Seabrook, Unit 1, up to 5% of rated power. We so renew our authorization because the

[4] *See also* ALAB-891, 27 NRC 341, 350-51 (1988).

[5] Obviously, if we determine that there are any unresolved, outstanding genuine issues of material fact, we will then schedule a hearing.

remanded coaxial cable issue is not relevant to low-power operations inasmuch as the safety concerns raised therein would not adversely impact upon the public health and safety if the Seabrook facility were to be authorized to operate only up to 5% of rated power. However, we cannot give effect to our renewed authorization until such time as the Commission via rulemaking may remove the public notification issue as an obstacle to low power. Further, in light of the fact that the Staff has not reviewed or evaluated the Applicants' position, presented in their memorandum of July 22, 1988 (and deemed it unnecessary to do so), that the coaxial cable issue is not relevant to low-power operation, and despite our conclusion that Applicants have made the necessary showing that the remanded coaxial cable issue is not relevant to low-power operations, the Staff shall provide to the Commission, should the Commission so desire, its evaluation of the Applicants' July 22, 1988 position prior to issuance of the low-power license. In light of these conditions, we do not give effect to our renewed authorization, and thus do not authorize the Director of NRR, when making the findings required by 10 C.F.R. § 50.57(a), to issue the low-power license.

THE ATOMIC SAFETY AND
LICENSING BOARD

Sheldon J. Wolfe, Chairman
ADMINISTRATIVE JUDGE

Jerry Harbour
ADMINISTRATIVE JUDGE

Emmeth A. Luebke
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 8th day of August 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ivan W. Smith, Chairman
Gustave A. Linenberger, Jr.
Dr. Jerry Harbour

In the Matter of

Docket Nos. 50-443-OL
50-444-OL
(ASLBP No. 82-471-02-OL)
(Offsite Emergency Planning)

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, *et al.*
(Seabrook Station, Units 1 and 2)

August 26, 1988

MEMORANDUM AND ORDER
(Denying Applicants' Motion for Referral)

BACKGROUND

Pending before the Board is Applicants' August 5, 1988 motion to refer to the Appeal Board our rulings on the admissibility of Contentions 1, 3, 4, and 6 of the Massachusetts Attorney General. *See* Memorandum and Order — Part I (Ruling on Contentions on the Seabrook Plan for Massachusetts Communities), July 22, 1988 (unpublished), at 1-27.

The Attorney General's first six contentions were in the nature of threshold and legal statements seeking to establish a broad framework upon which the

Massachusetts Attorney General can litigate allegations that the Seabrook Plan for the Massachusetts Communities (SPMC) would not be followed by local governments or the Commonwealth in the event of a radiological emergency at Seabrook. The background of the dispute between the Commonwealth and the Seabrook Applicants, as it relates to the SPMC, is set out in the Preliminary Statement of the Board's July 22 Memorandum and Order. There we noted that in 1986 the Commonwealth of Massachusetts ceased its cooperation with Applicants in the preparation of the Seabrook radiological emergency plan on the stated ground that meaningful radiological emergency planning for Seabrook is impossible. Subsequently the Applicants attempted to satisfy the emergency planning regulations by submitting a plan formulated without the cooperation of state and local governments.

In essence the Attorney General alleges that the plan will not be followed by the governments because: (1) the plan is not good enough to be followed because of plan inadequacies and the features of the Seabrook site; (2) no plan would be adequate given the nature of the site; (3) in any event, the state and local officials would respond to an emergency *ad hoc*; and (4) the SPMC is particularly defective because it contemplates an unlawful delegation of Commonwealth police powers to Applicants' emergency offsite response organization.

In ruling on the relevant Attorney General contentions the Board applied the two presumptions of the recently amended emergency planning rule: (1) the conclusive presumption that the state and local officials will exercise their best efforts to protect their citizens in the event of a radiological emergency at Seabrook, and (2) where the utility has submitted its own adequate plan with measures compensating for the nonparticipation of the state and local governments, the presumption that the governments will follow the utility plan. *E.g.*, July 22 Memorandum and Order at 9, *citing* 10 C.F.R. § 50.47(c)(1)(iii).

At the heart of Applicants' discontent with our rulings is our interpretation of the provision of the rule that the second presumption "may be rebutted by, for example, a good faith and timely proffer of an adequate and feasible state and/or local radiological emergency plan that would in fact be relied upon in a radiological emergency." 10 C.F.R. § 50.47(c)(1)(iii). In response to most of the Attorney General's threshold legal contentions, Applicants argued that the *only* way the follow-the-utility-plan presumption can be rebutted is for the governments to make a timely proffer of their own plan. Applicants' April 26 Response to Contentions at 4, 11, 14, 20, and 24.

In support of this position the Applicants rely heavily, almost entirely, upon a Licensing Board holding in *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-88-9, 27 NRC 355, 367-68, 369-70 (1988), where the *Shoreham* Board stated:

> The effect of the new rule then is to place a responsibility on state and local governments to produce, in good faith, some adequate and feasible response plan that they will rely on in the event of an emergency or it will be assumed in the circumstances of this case that the LILCO plan will be utilized by Intervenors here. In that event, the LILCO plan will be evaluated for adequacy alone.
>
> * * *
>
> Intervenors . . . *can no longer raise the specter of a lack of legal authority as a response nor can simple protestations that they will not use LILCO's plan suffice.* The Intervenors are required to come forward with positive statements of their plans and must specify the resources that are available for a projected response and the time factors that are involved in any emergency activities proposed. [Emphasis added.]

This Board concluded that the two rulings flow from different considerations because the respective proceedings are at different stages. In rejecting Applicants' arguments, we stated:

> It is true that the *Shoreham* Board ruled that, in the circumstances of that case, the effect of the new rule was to place upon the government intervenors the responsibility to produce some plan that they will follow or suffer the presumption that they will follow the LILCO plan. *Id.* (Slip op. at 21). But the *Shoreham* proceeding is in a different stage than this one. There is already a very large record upon which the LILCO plan for Shoreham was found adequate but for state and local government non-participation. Legal impediments to the LILCO plan were resolved. We read the *Shoreham* Board's opinion in LBP-88-9 to be carefully limited to the context of that proceeding, and to simply reject any bald, stonewalling assertion that the only response by the governments to an emergency at *Shoreham* would be *ad hoc*. Further, the *Shoreham* Board was emphasizing that aspect of the new rule that *requires* a recognition that *some* "best effort" response by local officials will be made to protect their citizens, and that without other rational responses set forth by the governments, the response will be either to follow the LILCO plan or some other plan. It is too early in this proceeding to determine whether the *Shoreham* rationale will apply.

July 22 Memorandum and Order at 22-23 n.2.

As we explained at the prehearing conference, in the absence of an evidentiary record, and being unfamiliar with the SPMC, we could not categorically rule out other proffered rebuttals to the presumption if they were to be advanced in well-pleaded contentions. Our purpose in giving effect to the "for example" aspect of the rule was to establish legal criteria in advance of our actual consideration of the hundreds of contentions awaiting our attention. As it turned out, the only proffered rebuttal to the presumption accepted by the Board was the Attorney General's legal-authority contention, No. 6.

Now Applicants would have us refer, pursuant to 10 C.F.R. § 2.730(f), our rulings that the Commission has not foreclosed the possibility that the presumption might be rebutted in some other way, and that the legal-authority issue is a permissible rebuttal to the presumption. Motion at 2, *citing* Memorandum and Order at 22, 27. Again, Applicants rely almost entirely on the *Shoreham*

opinion, *supra*, for their legal authority that the "for example" clause of the rule is "nugatory." *E.g.*, Tr. 14,308 (Dignan).

STANDARDS FOR REFERRING BOARD RULINGS

Interlocutory appeals are disfavored in NRC practice, but licensing boards may refer their rulings to the appeal board where a "prompt decision is necessary to prevent detriment to the public interest or unusual delay or expense . . . ." 10 C.F.R. § 2.730(f). *See also, e.g., Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-734, 18 NRC 11, 15 (1983).

However, in deciding whether to accept a referral under § 2.730(f), appeal boards "apply essentially the same test as is utilized in acting upon directed certification requests filed under Section 2.718(i)." *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-741, 18 NRC 371, 375 n.6 (1983), *citing Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 464 (1982), *vacated in part on other grounds*, CLI-83-19, 17 NRC 1041 (1983), and the cases cited therein.

The standards for accepting interlocutory review under a directed certification are firmly established in NRC practice. The review is granted sparingly and may be taken only under the most compelling circumstances. *Seabrook*, ALAB-737, *supra; Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 2 and 3), ALAB-742, 18 NRC 380, 383 & n.7 (1983). Appeal boards will undertake interlocutory review,

> 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, could not be alleviated by a later appeal or (2) affect[s] the basic structure of the proceeding in a pervasive or unusual manner.

Seabrook, supra, citing Public Service Co. of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977).

Applicants call our attention to the *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 456-57 (1981), where the Commission directed licensing boards to refer or certify promptly significant legal or policy questions on which Commission guidance is needed. Boards are invited to anticipate such crucial issues to avoid delay.

DISCUSSION

With the foregoing broad principles in mind, we turn to the specifics of Applicants' motion to determine whether there is an adequate fit.

Is a prompt appellate decision necessary to prevent detriment to the public interest? No argument is made that there is a direct public interest in a referral, nor can we identify any special public interest considerations. Applicants argue that the public interest would be served in that a referral would allow the Commission to decide which of the two Licensing Boards' interpretations of the relevant portions of the rule it wishes to affirm before the record closes. But, assuming, contrary to our holding, that there is a conflict between this Board's rulings and those of the *Shoreham* Board, that is not an unusual state of affairs in NRC proceedings, and a conflict does not in itself raise questions of public interest. Nor is a conflict between licensing board rulings a separate basis for interlocutory review. *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-371, 5 NRC 409 (1977); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478, 484-85 (1975).

Is a prompt appellate decision necessary to prevent unusual delay or expense? No. The delay or expense that might be incurred by Applicants by litigating an issue that otherwise need not be litigated is not unusual and is not the type of delay or expense requiring referral of licensing board rulings. This is a typical reason why interlocutory reviews are not favored in NRC proceedings. *North Anna*, ALAB-741, *passim, supra, citing, e.g., Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-675, 15 NRC 1105, 1113-14 (1982); and *Seabrook*, ALAB-737, *supra*, 18 NRC at 176 n.12. The Board recognizes that the effect upon Applicants of cumulative delay in the proceeding could be unusual compared to earlier NRC licensing proceedings. Even so, in this instance, litigating the legal-authority issue does not portend much delay. In fact, Applicants have indicated that they intend to address the matter by summary disposition.

Is the party adversely affected by the ruling threatened with immediate and serious irreparable impact which could not be alleviated by a later appeal? No to each aspect of the question. Indeed, we cannot discern, without speculation, why Applicants see themselves to be adversely affected by the rulings.

The legal-authority contention is written on a clean slate. It stands independently of the similar issue in *Shoreham*. Assuming, as we now must, that the contention is factually correct, and that the SPMC depends upon a delegation of police authority, which delegation cannot, for genuine legal reasons, materialize in an actual radiological emergency, then certainly the contention is factually relevant and material to the effectiveness of the SPMC. How would Applicants have us manage the issue? So far we have not had the benefit of Applicants' reasoned analysis of this point. For that reason alone the motion is deficient. As we noted in the order ruling on contentions, after all the evidence is in, the ruling may not be controlling. The assigning of burdens and the identification of

presumptions and rebuttals are now useful primarily for organizational purposes. Memorandum and Order — Part I at 20-21.

Does the ruling affect the basic structure of the proceeding in a pervasive or unusual manner? No. The ruling did not in itself even admit or reject a contention. The effect of the ruling was to allocate the burden of proceeding with the evidence. Applicants have never explained why the legal-authority contention is not factually relevant to the SPMC. Most of all, they have failed to explain the basis for their dissatisfaction with the Board's reasoning that, logically, there is no presumption that a plan that cannot be followed will be followed, that, logically, well-pleaded allegations rationally seeking to rebut the presumption appropriately support a litigable issue. They have simply relied on their sparse reference to the *Shoreham* ruling.

ORDER

Applicants' Motion for Referral is *denied.* The Alternative Cross Motion for Referral by the Massachusetts Attorney General and New England Coalition on Nuclear Pollution is *denied as moot.*

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Ivan W. Smith, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland
August 26, 1988

Cite as 28 NRC 176 (1988) LBP-88-22

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judge:

Peter B. Bloch, Presiding Officer

In the Matter of **Docket No. 55-60402**
(ASLBP No. 87-552-03-SP)

DAVID W. HELD
(Senior Reactor Operator License for Beaver Valley Power Station, Unit 1) **August 25, 1988**

This case was remanded by the Commission for a decision concerning whether or not Applicant had passed the simulator portion of his examination to be a licensed senior reactor operator. After the Staff of the Nuclear Regulatory Commission withdrew its objections to Applicant's statement of claim, the presiding officer determined that Applicant had passed his examination.

MEMORANDUM AND FINAL ORDER

This case was remanded to me by Order of the Commission in CLI-88-5, 28 NRC 73 (1988) "on the specific issue of whether Mr. Held should have been found to have passed or failed the simulator examination." *Id.* at 74. *Compare Alfred J. Morabito* (Senior Operator License for Beaver Valley Power Station, Unit 1), CLI-88-4, 28 NRC 5 (1988). (A candidate was found to have passed the required examination for a senior reactor operator (SRO) but to have taken employment outside the company's nuclear group before an SRO license was issued to him. It was determined that he could not be issued an SRO license under 10 C.F.R. Part 55 because the regulation requires that there be a current

need for his services, and his change in employment meant that there was no such need.)

The Staff of the Nuclear Regulatory Commission (Staff), by motion filed August 24, 1988, has withdrawn its response to the Specification of Claims filed by Mr. David W. Held on October 3, 1987. Consequently, at Staff's urging, I have determined that the claims of Mr. Held are sustained and I find that David Held passed the simulator portion of his examination for senior reactor operator. Since the Staff had previously determined that he had passed the other portions of his examination, it follows that he has passed all the examination requirements to be licensed as a senior reactor operator for Unit 1 of the Beaver Valley Nuclear Power Station.[1]

Consequently, pursuant to Staff's suggestion,

> IT IS HEREBY ORDERED that the Director of NRR is authorized to issue a senior reactor operator (SRO) license to Mr. David Held for Unit 1 of the Beaver Valley Nuclear Power Station, upon a finding by the Director that Mr. Held has met all other applicable requirements in 10 C.F.R. Part 55.
>
> Furthermore, the Staff is directed to convey to Duquesne Light Company, promptly, my request that it submit in writing to the Director of NRR any clarification that it considers appropriate about whether it has a current or anticipated need to use Mr. David Held as an SRO on Beaver Valley Unit 1.

Peter B. Bloch
PRESIDING OFFICER

Bethesda, Maryland

[1] I note that Staff's filing cites the passage of time, Mr. Held's success in the Beaver Valley Unit 2 SRO examination and his successful performance as an SRO at Beaver Valley Unit 2. My decision, however, rests on Staff's failure to provide a clear explanation to me about its reasons for failing Mr. Held on the simulator examination. There are no adequate grounds for the Staff's determination that Mr. Held failed the simulator portion of his exam, in light of Mr. Held's extensive, well-presented Specification of Claim.

Cite as 28 NRC 178 (1988) LBP-88-23

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chair
Glenn O. Bright
Dr. Oscar H. Paris

In the Matter of

Docket No. 50-320-OLA
(ASLBP No. 87-554-04-OLA)
(Disposal of Accident-Generated Water)

GENERAL PUBLIC UTILITIES NUCLEAR CORPORATION, *et al.*
(Three Mile Island Nuclear Station, Unit 2)

August 25, 1988

Summary disposition is granted in response to Licensee's motion, with the exception of a few specific issues related to how to dispose of radioactively contaminated water generated as the result of the Three Mile Island accident. The two principal alternatives are whether the water should be stored on site, permitting some decay of tritium and other radioactive products, or whether it should be evaporated (with appropriate burial of the solidified solid waste drawn from the bottom of the evaporator). The principal subissues are: (1) the amount of tritium now present in each of the separately stored portions of the accident-generated water, and (2) the seriousness of the health effects of the release of tritium through evaporation.

TECHNICAL ISSUES DISCUSSED

Tritium, biological effects of;

Tritium, measurement of the presence of;
Measurement of contents of radioactively contaminated water;
Transuranics generated by a nuclear power reactor accident;
Evaporator to remove radioactive contents of accident-generated water, engineering considerations of.

RULES OF PRACTICE: NEPA AND ALARA

The considerations in an environmental impact statement evaluating different alternatives for disposal of radioactively contaminated water are very similar to the same considerations under the Commission's regulations requiring that exposures to radioactivity be as low as reasonably achievable.

RULES OF PRACTICE: SUMMARY DISPOSITION

Genuine issues of fact must be material to pending contentions in order to give rise to litigable issues.

RULES OF PRACTICE: SUMMARY DISPOSITION (NEPA)

It is up to the intervenor to show that there is a genuine issue of material fact concerning whether there is a particular alternative way of disposing of accident-generated water that is obviously superior to licensee's preferred alternative for disposal.

MEMORANDUM AND ORDER
(Rulings on Motions for Summary Disposition)

I. INTRODUCTION

The issue before us is almost a decade old. It originated during the famous Three Mile Island (Unit 2) accident in 1979. As a result of the accident, the reactor building basement was covered with about 260,000 gallons of accident-generated water (AGW). NUREG-0683, Supp. 2, at 2.1, § 2.1 and Table 2.1. Since the accident, additional water has accumulated. *Ibid.; see, e.g., id.* at 2.3, Table 2.2. Water not present at the time of the accident but which has been used for cleanup following the accident is classified as AGW because it has become contaminated. The final volume of AGW at the end of defueling is expected to be approximately 2.3 million gallons. *Id.* at 2.3 (Table 2.2, footnote (c)).

Several alternative methods for disposing of the AGW have been considered. *See, e.g., id.* at v-vii, including Table S.1. After considering the summary disposition papers before us, we have concluded that the principal remaining genuine issue of fact, for which there shall be a hearing, is whether the AGW should be evaporated (and the solidified evaporator bottoms properly buried), as proposed by General Public Utilities (GPU or Licensee), or whether it should be stored in tanks on site (the "no-action alternative"), perhaps for 30 years, to allow most of the tritium to decay.

We note that the Licensee differs with the NRC Staff (Staff) about the cost of these two alternatives and that the record does not contain detailed information on the cost of onsite storage for 30 years.[1] We are not sure why more consideration was not given the no-action alternative, but a possibility is that the Staff failed to give it adequate consideration because it believed that Commission policy prohibited it. NUREG-0683, Supp. 2, at 3.34, § 3.5.1.4. Our reading of the Commission policy differs. The key language in the Commission's policy statement is:

> [T]he licensee should accelerate the pace of the cleanup to complete expeditiously all decontamination activities *consistent with ensuring protection of public health and safety and the environment.* [Emphasis added.]

(Statement of Policy; Programmatic Environmental Impact Statement of the Cleanup of Three Mile Island Unit 2, U.S. Nuclear Regulatory Commission, 46 Fed. Reg. 24,764 (May 1, 1981). We do not interpret this language as restricting the search, under NEPA and ALARA policies, for the best way to treat the AGW, whether that entails leaving it on site or disposing of it. We also note the following genuine issues of fact in the record, to be discussed further below: (1) the amount of tritium now present in each of the separately stored portions of the AGW, and (2) the seriousness of the health effects of the release of tritium through evaporation.

II. BACKGROUND OF UNDISPUTED FACTS

After the 1979 accident at Three Mile Island Unit 2, in March 1981, the NRC Staff issued the Final Programmatic Environmental Impact Statement (PEIS) on the TMI-2 cleanup. In the PEIS the Staff addressed, based on the available information, the impacts of future disposal of the AGW. The NRC Commission in an April 27, 1981 Policy Statement (46 Fed. Reg. 24,764) accompanying the

[1] The Staff estimate of costs appears to include up to $1 million for replacement of tanks, apparently during the 150-year storage period assumed by Staff to allow tritium to decay to background level. Thirty-year storage costs appear not to have been considered by Staff.

issuance of the PEIS, stated that any future proposal for disposition of the AGW shall be referred to the Commission for approval.

On July 31, 1986, the Licensee proposed a plan to evaporate the AGW by forced heating at the TMI site over a period of about 2 1/2 years. On December 29, 1986, the NRC Staff issued for comment an updated Draft Supplement No. 2 to the PEIS on this issue. The draft supplement assessed the environmental consequences of the Licensee's proposed disposal method as well as a number of alternatives. Following a 90-day public comment period, the Staff prepared the Final Supplement No. 2 which included consideration of the public comments.

In a letter of February 25, 1987, as revised on April 13, 1987, the Licensee requested an amendment to its operating license for Unit 2, including associated changes in Appendix A Technical Specifications. The amendment would delete the current prohibition on disposal of AGW imposed by Technical Specifications 1.17, 3.9.13, and 3/4.9.13.

In June 1987, the Staff issued Supplement No. 2 to the "Programmatic Environmental Impact Statement related to decontamination and disposal of radioactive wastes resulting from March 28, 1979, accident at Three Mile Island Nuclear Station, Unit 2" (NUREG-0683).

On July 31, 1987, the Commission published a notice of this proposed amendment and afforded an opportunity for a prior hearing. (52 Fed. Reg. 28,626). Petitions for hearing were filed by Three Mile Island Alert, Inc., and Susquehanna Valley Alliance, and by the Commonwealth of Pennsylvania. Ultimately, in the Memorandum and Order of January 5, 1988 (unpublished), this Licensing Board admitted as a party SVA/TMIA (Joint Intervenors or JI), admitted the Commonwealth as an interested state, and admitted seven JI contentions, in whole or in part, as issues in controversy.

Licensee filed summary disposition motions addressing all of the contentions, as follows: Contentions 4b (in part), 4c, and 4d on May 9, 1988; Contentions 1, 2, 3 and 8, 4b (in part) and 6, and 5d. On June 20, JI filed a response opposing each of these motions, and, on June 23, the NRC Staff filed a response in support of each of these motions.

III. REGULATIONS AND CASE LAW ABOUT SUMMARY DISPOSITION

Section 2.749(a) of 10 C.F.R. provides that once a motion for summary disposition has been filed, the opposing party, with or without affidavits, may file an answer. Paragraph (a) says that:

> There shall be annexed to any answer opposing the motion a separate, short and concise statement of the material facts as to which it is contended that there exists a genuine issue to be heard. 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. . . .

Section 2.749(b) says that:

Affidavits shall set forth such facts as would be admissible in evidence and shall show affirmatively that the affiant is competent to testify to the matters stated therein. . . . When a motion for summary decision is made and supported as provided in this section, a party opposing the motion may not rest upon the mere allegations or denials of his answer; his answer by affidavits or as otherwise provided in this section must set forth specific facts showing that there is a genuine issue of fact. If no such answer is filed, the decision sought, if appropriate, shall be rendered.

Section 2.749(d) says that:

The presiding officer shall render the decision sought if the filings in the proceeding, depositions, answers to interrogatories, and admissions on file, together with the statements of the parties and the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law. . . .

The summary disposition procedure should be utilized on issues where there is no genuine issue of material fact to be heard so that evidentiary hearing time is not wasted on such issues. *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 457 (1981); *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 1), ALAB-696, 16 NRC 1245, 1263 (1982); *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 550 (1980). It is the movant, not the opposing party, that has the burden of showing the absence of a genuine issue as to any material fact. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753 (1977). Since the moving party has the burden to show initially the absence of a genuine issue concerning any material fact, where the evidentiary matter in support of the motion does not establish the absence of a genuine issue, summary judgment must be denied even if no opposing evidentiary matter is presented. *Adickes v. Kress & Co.*, 398 U.S. 144, 159 (1970). However, if the motion for summary disposition is properly supported, the opposition may not rest upon "mere allegations or denials"; rather, the answer "must set forth specific facts showing that there is a genuine issue of fact." *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 453 (1980).

IV. RULINGS ON CONTENTIONS

A. JI Contention 1

JI Contention 1 is:

> Neither the Licensee nor the Nuclear Regulatory Commission has shown that the disposal of the accident-generated water by an evaporator method complies with the A.L.A.R.A. principle (as low as reasonably achievable). Other methods of water disposal discussed in the Environmental Impact Statement (EIS) (NUREG-0683 Supplement #2, June 1987) would not release *all* the tritium and a quantity of radionuclides into the environment as the evaporation method would.

For the most part, JI's Response to Licensee's motion for summary disposition consists of legal argument that Licensee must comply with ALARA principles. JI Response at 1-6. With this assertion, we agree. Significantly, Licensee also agrees, stating:

> Not totally unlike NEPA, the ALARA standard itself under 10 C.F.R. § 20.1 reflects a flexible general principle based upon an array of factors. It does not provide an absolutely rigid mandate that releases be kept to the lowest possible extent, but only as low as is reasonably achievable. This flexibility is clearly indicated by the language used in 10 C.F.R. § 20.1 — that a licensee "should . . . make every *reasonable* effort" to maintain releases as low as is reasonably achievable. Moreover, a determination of what is as low as reasonably achievable depends on consideration of the "state of technology" and of "economic," "societal," and "socioeconomic" factors.

Licensee's Motion (Contentions 1, 2, 3, and 8), May 16, 1988, at 13.

However, Licensee's statement of material facts asserts that "none of the alternatives examined is obviously superior to Licensee's proposal when all relevant facts are considered." Statement of Material Facts (Contentions 1, 2, 3, and 8), May 16, 1988, at 4. In the accompanying affidavit, Licensee's experts — based on an extensive review of options in the earlier pages of the affidavit — state that "it is clear that based on environmental impacts, transportation requirements, costs, and licensing feasibility, GPUN's proposal to evaporate the AGW is superior to the other options." Joint Affidavit (Contentions 1, 2, 3, and 8) at 60.

As we have seen, the applicability of ALARA was admitted by the parties. Licensee has reviewed various alternatives, and Licensee has concluded, based on a consideration of alternatives, that it had selected the preferable alternative. Under the applicable legal standards, it was up to JI to show that there was a genuine issue of material fact concerning whether some alternative is *obviously superior* to the evaporation alternative that Licensee selected. For the issue to be material, it must create some doubt concerning the ultimate conclusion that there is an obviously superior alternative. *Public Service Co. of New Hampshire*

(Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 526 (1977), *aff'd sub nom. New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 95 (1st Cir. 1978), *citing Monroe County Conservation Society, Inc. v. Volpe*, 472 F.2d 693, 697-98 (2d Cir. 1972) (which we apply by analogy to ALARA as well as to NEPA).

As we review some of the statements made by Joint Intervenors, we find that a few constitute statements of fact. However, we find that all the paragraphs of subhead "A" are arguments concerning applicable law and therefore do not state genuine issues of fact. "B.1" also argues the law concerning ALARA and does not state a genuine issue of fact.

In B.1.a, JI state that "technology offers a variety of alternatives to dispose of the water." That is true but does not raise a genuine issue of fact, as both Licensee and Staff have considered many alternatives. Similarly, B.1.a relies on Dr. K.Z. Morgan's statement in his affidavit that the evaporation system could be modified "to greatly reduce the radiation hazards at a relatively low cost." However, Dr. Morgan's affidavit concerns a proposal in his Exhibit B, which was filed as a comment on the draft PEIS, Supplement 2. Staff and Licensee have already considered and disposed of his proposals — requiring that JI show in what way the Licensee's statement of material facts and supporting affidavits, which rely on the Staff resolution, are inadequate. Because JI have not shown the nature of the error allegedly made by Staff and Licensee, there is no genuine issue of material fact here.

In B.1.b, JI assert that "[t]he radiation dose and the risks associated with other alternatives are less than those associated with the evaporation method . . . ." To the extent that this assertion refers to the no-action alternative, we declare, *below*, that this is a genuine issue of fact. However, this general reference to a table is too vague for us to ascertain any other genuine issue of fact to be litigated here.

In B.1.c, JI allege that the socioeconomic and psychological impact of the evaporation proposal have not been fully considered. A portion of this statement of facts deals with "Post-Defueling Monitored Storage (PDMS)," which is an independent program fully explained in NUREG-0683, Supp. No. 3, but that is not relevant here. The remainder of the remarks, concerning socioeconomic and psychological effects, were fully addressed in PEIS Supp. No. 2 at 7.26 and 7.27. However, they were not required to be addressed because they concern the psychological effects of a perceived risk and therefore do not have a reasonably close relationship to the proposed action. *Pane v. NRC*, 460 U.S. 766 (1983).

In conclusion, we do not find any genuine issues of fact raised by JI's filing concerning Contention 1. Should JI have any specific arguments concerning ALARA that are applicable to genuine issues admitted below, they may raise those arguments and present relevant evidence at the hearing.

B. JI Contention 2

In our January 5, 1988 "Memorandum and Order (Memorializing Special Prehearing Conference; Ruling on Contentions; Scheduling)," we admitted as an issue in controversy only that part of Contention 2 which claims that Staff's assessment fails to provide an adequate risk/benefit analysis of the no-action alternative to the forced evaporation proposal. As admitted, Contention 2 states as follows:

> The EIS fails to comply with the requirements of the National Environmental Policy Act (42 USCS 4332, n.29). The NRC failed to conduct conclusive risk/benefit analysis of the "No Action Alternative."

The following supporting documents were submitted with "Licensee's Motion for Summary Disposition on Alternatives (Contentions 1, 2, 3, and 8)":

1. "Licensee's Memorandum of Law in Support of Motions for Summary Disposition," dated May 9, 1988;
2. "Licensee's Statement of Material Facts as to Which There Is No Genuine Issue to Be Heard (Contentions 1, 2, 3, and 8)";
3. "Joint Affidavit of Dr. Gary G. Baker, David R. Buchanan, James J. Byrne, Thomas A. Grace, James E. Tarpinian, Charles S. Urland, Jr., and William W. Weaver (Contentions 1, 2, 3, and 8)" (Joint Affidavit) with statements setting forth the professional qualifications of the foregoing affiants.

Dr. Baker is an environmental microbiologist and is GPU's Manager of Environmental Controls at Three Mile Island. Mr. Buchanan is an engineer and is GPU's Manager of Recovery Engineering for TMI-2. Mr. Byrne is also an engineer and is GPU's Manager of TMI-2 Licensing and Senior Engineer responsible for coordinating specific TMI-2 recovery activities. Mr. Grace is an environmental engineer and is GPU's Licensing Engineer, Environmental, for TMI Units 1 and 2. Mr. Tarpinian is a health physicist presently employed by Bechtel National, Inc., who serves as Manager of Radiological Engineering for GPU Nuclear's Radiological Controls Department at TMI-2. Mr. Urland is an environmental pollution control engineer employed by Grover Engineering, Inc., and assigned as Staff Radwaste Engineer for GPU Nuclear at TMI-2. Mr. Weaver is a nuclear engineer serving as an onsite consultant and Member of the Emergency Response Team at TMI who is developing a PRA for Unit 2. We are satisfied that these experts are qualified to attest to the matters contained in their joint affidavit, which in each instance identified the expert responsible for specific testimony.

The no-action alternative to forced evaporation of the AGW involves onsite storage in tanks for an indefinite period of time. NUREG-0683, Supp. 2, at 3.32. With respect to this contention, Licensee's statement of material facts sets

forth the following facts as to which it asserts that there are no issues to be heard:[2]

> 11. The radiological consequences of disposing of the AGW after 30 years of monitored storage in tanks would be essentially the same as disposal now because the critical organ and isotope are strontium dose to the bone.[3]
>
> 12. Construction of tanks alone for the 30-year storage would cost $1 million to $1.5 million. Ultimate disposal costs would be added to this.
>
> 13. In the interim, the risks of an accidental release are present.

According to the Joint Affidavit, the "apparent benefit" of the no-action alternative is that it would provide time for the radionuclides in the AGW to decay. Over the postulated 30-year storage period, the strontium and cesium curie content would decrease approximately by a factor of 2 and the tritium content would decrease by a factor of approximately 6. The affiants do not believe that this decrease in tritium would have a significant effect on the dose assessment because they say the critical isotope and organ are strontium dose to the bone. They say given the curie content of strontium, a decrease by a factor of 2 will not reduce the dose to any significant degree. Iodine-129, which is included as present at the lower limit of detection and which causes the dose assessment to include a thyroid critical organ dose from I-129, has a half-life of 16 million years and cannot be eliminated by 30 years of storage. Joint Affidavit at 43.

Onsite storage of the AGW presents the continued risk of an uncontrolled release as a result of damage to one or more tanks due to tank failure because of aging or external events such as an airplane crash, tornado, flood, or seismic event. The probability of an uncontrolled release over a 30-year storage period has been estimated to be approximately 3.75%. An average release would result in the maximally exposed individual receiving 7 millirems via the inhalation pathway and 10 millirems via liquid release pathways. *Id.* at 44. The dose to a worker for recovery from the spill would be 36 millirems internal whole-body dose from tritium and 0.2 millirem external whole-body dose, primarily from Cs-137. *Id.* at 44-45.

The NRC Staff in its June 23, 1988 response to Licensee's motion for summary disposition (Staff Response) supported the motion with respect to all

---

[2] Licensee dealt with Contentions 1, 2, 3, and 8 in a single motion and single statement of material facts. Here we shall deal with each of these contentions individually. In citing Licensee's statements of material facts we shall retain the numbering used by the Licensee.

[3] According to the "NRC Staff Response in Support of the Licensee's Motion for Summary Disposition" (Staff Response), the JI stated in response to an interrogatory that they expected that the water would remain on site until Unit 1 is decommissioned and for as long as Unit 2 remains in Post-Defueling Monitored Storage. On the basis of this answer the Licensee assumed a storage period of 30 years in its motion for summary disposition of Contention 2. Staff Response at 6.

the contentions, including Contention 2. In support of its response, the Staff appended the "Affidavit of Linda Munson," whose qualifications are discussed in our treatment of Contention 5d. With respect to Contention 2, Staff maintains that it "fairly assessed" the no-action alternative in the PEIS by providing an analysis of the change in radioisotopes over a long term, the financial cost of construction of additional tanks for water storage, the impact of an accidental tank rupture, and the impact of ultimate disposal of water. Staff Response at 11-12. Staff, in the PEIS discussion of the no-action alternative, explained that tritium is the only isotope in the AGW that would be significantly reduced during a prolonged period of storage. To reduce the tritium level in the AGW to the level approved by EPA for drinking water, however, would require 150 years of radioactive decay. *Id.* at 11; NUREG-0683, Supp. 2, at 3.32.

Nevertheless, Staff states that except for a small commitment of financial resources and a very small land commitment, the environmental impact of the no-action alternative would occur only at the time of ultimate water disposal or in the event of a tank failure. NUREG-0683, Supp. 2, at 3.33. Further, construction of tanks and continuing surveillance of the tanks are not expected to contribute significantly to additional occupational radiation exposure, nor are there significant exposure pathways to the public unless there is an accident. Only a small additional land commitment at TMI is anticipated for new tank construction. Staff estimates that construction of new tanks, monitoring and surveillance of the stored AGW, and tank replacement would cost a total of $0.1 million to $1.3 million. *Ibid.*

The only credible accident identified for this alternative is tank rupture, which in the worst case would result in discharge of the entire contents of a tank in a short period of time. *Ibid.* Staff estimated that the 50-year dose to the maximally exposed individual in the event of an accidental spill from an 11,000-gallon storage tank would be 0.015 millirem to the bone and 0.002 millirem to the total body. The collective 50-year dose commitment to the affected population would be 0.7 person-rem to the bone and 0.015 person-rem total body. *Id.* at 3.8-3.9. For comparison, Staff estimated that dose commitment to the maximally exposed individual as a result of forced evaporation would be less than 4 millirems to the thyroid, 0.8 millirem to the bone, and 0.7 millirem to the total body. The collective 50-year dose commitment to the population from forced evaporation is estimated to be less than 6 person-rem to the thyroid, 0.2 person-rem to the bone, and 3 person-rem to the total body. *Id.* at 3.7. Thus the dose commitment resulting from an accidental discharge from a tank would be very small, representing a small fraction of the radiation dose that would result from forced evaporation.

Finally, Staff states that the no-action alternative would be inconsistent with the Commission's policy that the cleanup, including removal of radioactive waste from the TMI site, be carried out safely and expeditiously. Staff sees

no overriding benefit associated with storing disposable radioactive waste on site and therefore supports safe and expeditious removal. *Ibid.* As the Joint Affidavit points out, the PEIS states that "this alternative is inconsistent with the Commission's policy that the cleanup, including the removal of radioactive waste from the site, be carried out safely and expeditiously." NUREG-0683, Supp. 2, at 3.34.

Joint Intervenors in "SVA/TMIA's Response to Licensee's Motion for Summary Disposition on Contentions 1, 2, 3, 4, 5d, 6, and 8" (JI Response) began their discussion of Contention 2 by reciting the full statement of the contention as originally submitted. In its January 5, 1988 "Memorandum and Order (Memorializing Special Prehearing Conference; Ruling on Contentions; Scheduling)" (January 5 Order), however, the Board admitted only that portion of the contention stated, *supra,* at the beginning of this discussion of Contention 2. We declined to admit those portions of the contention alleging that the PEIS had failed to show that adverse impacts of evaporation are outweighed by the benefits and alleging that the benefits of disposal by evaporation can only be analyzed after evaluation of Licensee's plans for post-defueling monitored storage. January 5 Order at 9-10.

The JI Response to Licensee's motion for summary disposition of Contention 2 is supported by an affidavit of Louis J. Kosarek, dated June 9, 1988. Unfortunately, Mr. Kosarek's affidavit was not accompanied by any biographical information on the basis of which we could determine his qualifications. We have some very brief and sketchy biographical information about Mr. Kosarek in JI's answers to interrogatories about their witnesses, which shows that he has B.A. and M.A. degrees and gives his job titles; the information, however, does not indicate his major field(s) of study nor the subject matter of his work. Although we are unable to accept his qualifications as sufficient to support the admissibility of his testimony, we will consider his substantive arguments to determine whether they affect the adequacy of the record.

The JI Response sets forth the following statements which are alleged to be material facts as to which there are genuine issues to be heard with respect to Contention 2:[4]

> 1. The NRC is required by NEPA to provide a detailed and informative analysis of all alternatives. NEPA states than an EIS must "provide a detailed thoughtful analysis from adequate data so that a reviewing body can decide on an objective basis." Pilgrim, Supra, ALAB
>
> 2. The NRC is required by NEPA in the consideration of alternatives to "go beyond mere assertions and indicate basis of conclusions regarding alternatives."

[4] Statements 1, 2, and 3 are legal arguments rather than statements of material fact. Therefore we shall not consider them.

3. The NRC is required by NEPA to "identify costs associated with appropriate actions so as not to prematurely close options which have less detrimental effect."

4. Table 5.1,[5] NUREG-0683, Supplement #2, attempts to present a table of comparison of the various alternatives for the disposal of the water. The table however, prevents a careful comparison of the alternatives in light of the following facts:

a) Whereas all the other alternatives are provided a definite figure for long term committed space, the committed space for the no-action alternative is labelled "small". This provides inadequate information upon which to base a decision about the various alternatives.

b) In the column "elapsed time for completion" the time period allotted for each alternative provides a very wide range. The same column for the "no-action alternative" states "0". Again it is difficult to make a comparison in order to make an informed decision about the alternatives.

5. The "no-action alternative" has always referred to the interim monitored storage of the water. (NUREG-0683, Supplement #2) The period of storage has not been specified. The NRC has assumed that at some time in the future the water would be disposed of in some way. Strictly speaking then this is not the "no action alternative". However, since the NRC believes this to be the "no action alternative", it would have been more conclusive to analyze the dose from radiation exposure and the risks involved at different times in the future, taking into account the possibilities of more advanced technologies and the existence of low level waste sites closer to TMI in Pennsylvania.

6. The NRC does not provide a detailed analysis of the location of the tanks which would store the water during the storage period.

7. The NRC did not provide an analysis of radiation exposure to either the workers or the public. They did not provide a basis for their findings that worker and public exposure would be zero. (Table 5.2, NUREG-0683, Supp. 2) The text reads that both occupational and public exposure are not expected to be significant. This is very ambiguous and provides further examples of the NRC's lack of detailed information in evaluating alternatives. (NUREG-0683, Supplement #2, p. 3.33, 3.5.1.2)

8. The NRC did not provide adequate detail of the monitoring which would be carried out during the storage of the AGW. (NUREG-0683, Supplement #2, Section 3.5)

9. The NRC dismissed the "no action alternative" because it is against NRC policy to leave waste on site. However, in light of the shortage of space for low level waste in this country, the NRC has made arrangements for utilities to store waste on-site. (Generic Letter 811-83, November 10, 1981)

10. All alternatives for disposal of the water have either regulatory obstacles or strong governmental and public feelings against them (evaporation and releasing the water into the Susquehanna). Therefore, it is not logical for the "no-action alternative" to be dismissed by the NRC.

[5] "SVA/TMIA's Response to Licensee's Motion for Summary Disposition . . ." at 7 cites Table 5.2 of NUREG-0683, Supp. 2, at this point. The quotations from the table, however, make it clear that the JI should have cited Table 5.1.

11. The NRC is required by NEPA to mitigate adverse impacts of a proposed project. The "no-action alternative" mitigates the adverse impacts of the evaporation of the AGW. (NEPA 42 USCS, 4321-4347)

12. The benefits derived from the "no-action alternative" must be seen in light of the costs and risks of taking action. As will be shown throughout SVA/TMIA's response to Licensee's request for summary disposition, the costs and risks of taking action have been underestimated. (Affidavits A, B, C, D, E) In light of the inadequacy of the data, the NRC's consideration of the "no action alternative" cannot be considered conclusive.

13. The NRC failed to give adequate discussion and evaluation to Boron as recommended by EPA. Presently the Licensee does not have a permit which limits the amount of boron to be released into the river. In light of the possible adverse effects on crops caused by use of the water from the Susquehanna for irrigation, and the possible adverse effects from drinking the borated water from the Susquehanna River the State of Pennsylvania could conceivably restrict the release of boron to levels not achievable by the Licensee. This fact may limit the Licensee's options for disposal alternatives and heightens the need for full consideration of the "no-action alternative".

Studies showing the adverse effects of boron include:

a) "Uptake and Distribution of Boron in Rats: Interaction with Ethanol and Hexobarbital in the Brain", Magour, S. *et al.* Environ. Contam. & Toxicology 11: 521-525.

b) "Boron Deficiency and Toxicity Symptoms for Several Crops as related to Tissue Boron Levels", Gupta, U.C. Journal of Plant Nutrition 6(5): 387-395 (1983).

c) "Boron Toxicity and Deficiency: A Review", Gupta, U.C. *et al.* Canadian Journal of Soil Science, August 1985, Vol. 65, #3.

In statement 12 the JI cite not only the affidavit of Mr. Kosarek but also the affidavit of Dr. Huver and comments of Dr. Morgan. Neither Dr. Huver's affidavit nor Dr. Morgan's comments address Contention 2, however. Mr. Kosarek's affidavit does not explicitly address Contention 2. It does discuss the alternative means of disposing of the AGW which were considered in NUREG-0732, issued in September of 1980. One of these alternatives was holding the AGW in tanks for about 60 years. Exhibit C, Kosarek Affidavit at 2-3.

As we have indicated, *supra*, Staff considers the alternative proposed in Contention 2 to be inconsistent with Commission policy. NUREG-0683, at 3.34, § 3.5.1.4. The Commission's policy with regard to the cleanup of TMI-2 was set forth in "Statement of Policy; Programmatic Environmental Impact Statement of the Cleanup of Three Mile Island Unit 2." 46 Fed. Reg. 24,764 (May 1, 1981). There the Commission said "the Commission believes that the licensee should accelerate the pace of the cleanup to complete expeditiously all decontamination activities *consistent with ensuring protection of public health and safety and the environment*" (emphasis added). According to the Staff, forced evaporation would release most of the tritium to the atmosphere and concentrate the remaining radioactivity in the evaporator bottoms. NUREG-

0683, Supp. 2, at 3.3, § 3.1.1. We therefore find that it is not clear that the radiological consequences of disposing of the AGW after 30 years would be essentially the same as disposal now, assertedly because the "critical organ and isotope" are strontium dose to bone. There would be only one-sixth as much tritium released to the atmosphere 30 years from now, and there would be one-half as much strontium. If evaporation were the method of disposal at that time, the strontium would not be released but would be concentrated in the evaporator bottoms. Therefore, in light of the available alternatives and their effect on radiation levels, there is a genuine issue of fact concerning whether the radioisotope of critical concern is strontium or tritium.

According to the Staff, the no-action alternative would require a small commitment of financial resources ($0.1 million to $1.3 million,[6] in contrast to Licensee's claim of $1 million to $1.5 million) and a very small land commitment. *Id.* at 3.33. In addition, construction of tanks and continuing surveillance of the tanks are not expected to contribute significantly to additional occupational radiation exposure, nor are there significant exposure pathways to the public other than accidental tank rupture. *Id.* at 3.33-3.34. As JI point out, the 30 years of storage may permit new technology to develop or new storage sites to open, further reducing costs. JI Response at 8.

Conclusion

We are not convinced, at this stage of the proceeding, that forced evaporation meets the Commission's policy of providing expeditious decontamination "consistent with ensuring protection of public health and safety and the environment." Indeed, there is a genuine issue of fact concerning whether the no-action alternative may be obviously superior to forced evaporation. Therefore we conclude that the portion of Contention 2 relating to the no-action alternative must be litigated. Licensee's motion for summary disposition of Contention 2, to that extent, is denied.

C. JI Contention 3

JI Contention 3 is:

> The EIS fails to comply with the requirements of the National Environmental Policy Act. The EIS has not demonstrated that the benefits of the evaporation process will exceed the costs and risks to the public. The benefits are unclear whereas the risks include the following:

[6] Staff estimates the cost of construction of new tanks to be $0.1 million, while cost of tank replacement could be as much as $1.0 million. Staff considered a storage period of up to 140 years, however, so presumably this high figure is based on a storage period of that length. NUREG-0683, Supp. 2, at 3.33, Table 3.14. Tank replacement costs should be much less for a storage period of 30 years.

a. The release of radioactivity into the air, where it can enter the food chain, water, humans, and the entire ecosystem;

b. As much as 88,000 cubic feet of solidified radioactive waste will be created. This waste must be trucked to a low-level waste disposal site.

January 5 Order at 10-12.

The supporting documents submitted with "Licensee's Motion for Summary Disposition on Alternatives (Contentions 1, 2, 3, and 8)" which were listed in our discussion of Contention 2 are also applicable to Contention 3.

Licensee's statement of material facts as to which it asserts that there are no issues to be heard sets forth the following statements which appear to be applicable to Contention 3:

2. Radiological releases from the evaporation method would be well within the limits set by the NRC in the TMI-2 Technical Specification and in Appendix I to 10 C.F.R. Part 50.

3. Licensee estimates that the average radiological exposure to a member of the 50-mile radius population from the evaporation proposal will be 0.008 mrem to the total body, while the annual background dose is about 300 mrem.

6. In order to dispose of the evaporator bottom waste, a burial volume of approximately 4,425 ft^3 is required, and 8 truck shipments (with a practically zero probability of a traffic accident or fatality) would be necessary.

15. While the evaporation option does not result in the lowest doses to the public, the doses to the public from all of these options are so low as to be insignificant.

According to the Licensee's affiants the highest average annual doses to the maximally exposed hypothetical offsite individual are 2.7 millirems to the bone and 1.25 millirems total body. These dose levels are only 20% of the annual limit of 15 millirems and 25% of the annual limit of 5 millirems, respectively, given in 10 C.F.R. Part 50, Appendix I, for exposure from airborne releases. Joint Affidavit at 13. To estimate the population dose, Licensee's affiants considered the affected population to be the population surrounding TMI-2 out to a distance of 50 miles, 2.2 million people. The dose pathways included inhalation; consumption of milk, meat, and vegetables; plume exposure; and direct dose from ground deposition. Estimated doses were 25 person-rem to the bone and 18 person-rem total body. Licensee considers these insignificant compared to the background radiation dose of approximately 300 millirems received each year by a member of the public.[7] *Id.* at 14.

[7] Staff's affiant Ms. Munson attested that whereas NUREG-0683, Supp. 2, used a background radiation dose of 87 millirems per year (mrem/yr), recent evaluations of background radiation tended to be in the 300-mrem/yr range. Munson Affidavit at 4.

Licensee estimates that the evaporator bottom waste from the evaporation option will weigh approximately 165 tons. When packed for shipment this waste will fill approximately 590 55-gallon drums at 560 pounds per drum. These drums, at 7.5 cubic feet each, represent a burial volume of approximately 4425 cubic feet. Based on truck capacity, the total estimated transportation requirement is eight truck shipments. *Id.* at 15-16. Assuming the shipments travel along the least-risk route (in terms of population density) from TMI to Hanford, Washington, the estimated incident-free population dose from the eight shipments would be 6.9 person-rem, and the estimated dose to the driver per shipment is 95 millirems. *Id.* at 17.

In addition the reprocessing of 31% of the AGW will produce approximately forty liners which will require twenty to forty shipments for disposal and require a disposal volume of 6200 cubic feet. The expected dose to each driver would average approximately 15 millirems per shipment, and the incident-free dose to the general population is 4.8 person-rem.

The NRC Staff points out that the purpose of the National Environmental Policy Act is to ensure that agencies of the United States give *appropriate* consideration to environmental values in decisionmaking along with economic and technical considerations. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 528 (1977), *aff'd sub nom. New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir. 1978). In *Seabrook* the Commission adopted the test of "obvious superiority" in assessing alternatives, on the grounds that the cost/benefit analysis is inherently imprecise, and while the proposed action will have been intensively studied by the applicant, the NRC Staff, and the intervenors, the alternatives will not have undergone a comparable study; consequently more adverse information will have been developed concerning the proposal than any alternative. *Id.* at 528-29; Staff Response at 10-11. The litmus test concerning an adequate consideration of alternatives which the courts apply is whether the environmental consequences of each reasonable alternative have been accorded a "hard look." *Boston Edison Co.* (Pilgrim Nuclear Generating Station, Unit 2), ALAB-479, 7 NRC 774, 779 (1978), *citing Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976). Thus, for example, one must determine whether the alternative of no action was given a "hard look" and whether no action is "obviously superior" to the proposed evaporation. Staff Response at 10-11.

In discussing the no-action alternative, Staff explained that because the AGW contains relatively long-lived radioisotopes such as cesium, strontium, and carbon, the environmental impacts from disposal after long-term storage on site would not differ significantly from those impacts identified for near-term disposal options. Tritium is the only isotope that would be significantly reduced during a prolonged storage period. In addition to providing an analysis of the change in radioisotopes over a long term, Staff analyzed the financial

cost of construction of additional tanks to store the AGW, the impact of an accidental tank rupture, and the impact of ultimately disposing of the water. This is, according to the Staff, an example of the "hard look" Staff gave to the alternatives to evaporation, as a result of which the PEIS meets the requirements of NEPA. *Id.* at 11-12.

Staff argues that the assertion in Contention 3 that the benefits of evaporation have not been shown to *exceed* the risks to the public is without legal basis and mischaracterizes NEPA. NEPA requires an assessment of environmental impacts and a *balancing* of environmental costs with the benefit of the action including technical and economic factors. It does not require a showing that the benefit to the public of the proposed action *exceeds* the environmental cost. As stated in the PEIS, there is little difference in the environmental impact of near-term evaporation or long-term storage with ultimate disposal of the AGW. In addition the environmental impact from evaporation will be minimal. *Id.* at 12-13.

The JI Response sets forth the following statements which are alleged to be material facts as to which there are no genuine issues to hear with respect to Contention 3:[8]

> 1. NEPA states that "EIS is to provide decision maker with detailed and careful analysis of relative environmental merits and demerits of proposed action." Britt v USA Army Corps of Engineers 1985 CA 2 NY 769 F 2d 84.
>
> 2. NEPA places obligation on the NRC to provide the public with "information; on environmental impact of proposed project as well as encourage public participation in development of that information." Trout Unlimited v Morton 1974 CA 9 Idaho F 2d 1276.
>
> 3. In order to understand the benefits of an action the public must be provided with:
>
> a) a clear statement of the merits of the action
> b) a clear statement of the demerits of the action.
>
> These provisions are recognized by NEPA as stated above.
>
> 4. The NRC has not provided a clear statement of the costs and risks of the evaporation of the AGW. The reasons are as follows:
>
> (i) The efficiency of the evaporator to decontaminate the water to acceptable environmental levels and compliance with the Licensee's Technical Specifications is dependent on a decontamination factor of 1000. (NRC Responses to Interrogatories, 2-22-88, Interrogatory 22) (Preliminary System Description 2.16.88, P18 Table 3-2).
>
> (ii) The NRC has not provided an independent and objective characterization of the AGW. The NRC analyzed a 4 liter sample drawn from one of the 25 locations for the storage of the AGW. The tank from which the sample was drawn contains one fifth of the total inventory of water. (Letter D.J. Collins to W. Travers, 7-21-88).

[8] Statements 1, 2, and 3 are legal arguments rather than statements of genuine issues of material fact which must be heard. Therefore we shall not consider them.

(iii) The NRC responded in Interrogatory 2,2.22.88 that the sample procedure followed the procedures outlined in 4212-CHM-3011.05, Revision 0, 5.23.84. The NRC did not indicate that sampling procedures were in accordance with ASTM Method 3370, which is a national standard stipulating procedures for testing nuclear materials.

(iv) The radioisotope most abundant in the water is tritium. However, in procuring and preparing their sample the NRC did not follow procedures outlined in Procedures 4212-CHM-3013,81-P 5.0, 6.1.7. These are more recent procedures (10.27.87) for the "Determination of Tritium by Liquid Scintillation Counting" (document provided in Discovery). The difficulties in acquiring an accurate assessment of tritium concentration are outlined in the document referred to in (iv) and also in "A Radiation Monitoring System for Nuclear Power Plants" Appendix F (A study undertaken by Dr. Ruth Patrick and associates and funded by the Public Health Fund and referenced)

(v) Document 4212-CHM-3013,81-P 5.0,6.1.7 also outlines the amount of sample required for an accurate count of tritium. The sample analyzed by RESL for NRC was 10 ml, an amount far in excess of that recommended. (RESL Sample Record Sheet, Serial #14266B)

(vi) The analysis of the PWST 2 sample by RESL for the NRC shows major differences with the results of analysis of the same sample undertaken by the Licensee. These differences are heightened by the fact that the AGW amounts to 2.3 million gallons.

	Licensee analysis µCi/ml	RESL analysis µCi/ml
Co-60	2.8 E-7	3.2 E-7
Cs-137	7.0 E-6	8.0 E-6
Sr-90	5.8 E-5	2.55 E-5

(vii) The analysis of the PWST sample by RESL and the Licensee did not detect C-14. However, this radioisotope was detected by the Westinghouse analysis. (Harner Affidavit P. 4) C-14 was found at a concentration of 3.0 E-4. This should be compared with NUREG-0683, Supplement #2, Table 2.2 where the average concentration is 1.0 E-4. C-14 was also found in samples of the reactor coolant (TPO/RMI-122 "Reactor Coolant System Sample Results, P. 63)

(viii) The NRC assumes that the average concentrations of radionuclides as shown in Table 2.2, NUREG-0683, Supplement #2 can be reasonably considered a maximum. (Response to Interrogatory 12,2.22.88) This is an inaccurate assumption. It is upon this assumption that the NRC bases its dose calculations to the public.

(ix) The Epicor/SDS processing systems do not provide a uniform concentration of each radionuclide for each storage location. This is shown clearly "SDS Processing Batch Data" and "Epicor Processing Summaries" provided in Discovery. Furthermore the Epicor/SDS systems do not have an infinite decontamination factor.

> Mr. Hofstetter: That basically sodium borate tends to minimize the infinite DF of that, (Epicor), that you might get if you were processing out of demineralized water. (Transcript Citizens Advisory Panel for the Decontamination of Unit 2. 2.26.87)

(x) The NRC's assumption that the average concentration of radionuclides shown in Table 2.2, NUREG-0683, Supplement #2 is inaccurate. For example, while the average

concentration of Tritium in the Table 2.2 is 1.3 E-1, the concentration of tritium in the storage location, PWST 2, as of 11-07-86 is 2.1 μCi/mL.[9] (Technical Specification for Processed Water Disposal 12.2.86. P. 43(7.3)

(xi) The total inventory of radionuclides in the AGW has continued to change since submittal of the GPU Proposal. The passage of time does not mean a reduction in the source term for the AGW. (Reactor Coolant Sample Results TPO/TMI-122 P. 31 which shows the source term for AGW on 3.7.86 (date sample drawn for GPU Proposal, Table 2-3) and on days following this sample procurement

> Although the radionuclide concentration in Table 2-3 accurately depicts the total radioactivity in the AGW the specific source location for this inventory at a particular point in time is dependent on plant operations and does not alter the actual source term. (Licensee Response to Interrogatories, 3.30.88 #10)

Since the Epicor/SDS do not provide uniform concentrations of radionuclides in each source, this is not an accurate statement. Furthermore, as will be shown in discussion of Contention 4 and 6, the efficiency of these two processing systems is not guaranteed as the chemistry of the water changes.

(xii) The changing source term of the AGW is particularly relevant to tritium. The data upon which the NRC relied to calculate the source term of tritium was PEIS, March 1981, RESL sample analysis of a 4 liter sample and data from the Licensee. (NRC Interrogatory Response 13, 2.22.88) The source term data upon which the Licensee relied to make calculations for tritium include PEIS, 1981, EGG-PBS-6798 (3161 and 4231 Curies respectively) (Licensee's Response to Interrogatory 27, 2.19.88) GPU Proposal July 1986, P. 10) They also used sample analysis. (Harner Affidavit, Contention 5d) Nevertheless, a document provided as a reference to NUREG-0683, Supplement 3, shows that the core inventory of tritium at the time of the accident was 8,794 curies. (TPO/TMI-043 Rev. 6, 1986 "Radioactive Waste Management Summary Review") Since tritium is both a fission product and an activation production and because the fuel rods ruptured during the accident releasing the tritium, and because such a large percentage of the tritium is created in the coolant, the source term for tritium in the AGW has not been conclusively addressed. (Wash 1250, Wash. DC U.S.A.E.C. (1968)

(xiii) The source terms of the AGW is even more relevant in light of the fact that the water going into the evaporator in Batch Cycle would deviate even more from the concentrations listed in Table 2.2 NUREG-0683. (System Description P. 21) (Licensee Response, Interrogatory 18, 3.30.88) All of the above demonstrate that the NRC has based dose calculations on inadequate data. This is supported by the accompanying affidavits.

5. EPA letter at A.51, NUREG-0683, Supplement #2 recommended that the NRC revise Appendix B so that a lay person might readily understand how the calculations for

[9] By letter to the Board dated July 20, 1988, counsel for GPU Nuclear advised that while the 2.1 μCi/ml value reported here by JI was obtained from a GPU Nuclear document provided during discovery, that value has been determined to be a typographical error. In an affidavit accompanying GPU's letter, affiant Harner attested that the actual data for the sample show a tritium concentration of 0.23 μCi/ml. In a July 28, 1988 "SVA/TMIA Response to Licensee's Notification of Typographical Error in Bid Procurement Document" the JI challenge the proposed change in concentration of tritium, on the grounds that an entry of 2.1 μCi/ml which should have read 0.23 E-1 μCi/ml is not a believable "typographical error." They argue that this issue should be litigated at the Adjudicatory Hearing. We agree that a sufficient explanation for the "typographical error" has not been advanced by GPU and that an issue of this nature should not be decided at the summary disposition stage of the proceeding.

dose were made. Such an understanding is essential in evaluating the merits and demerits of any action which serves to impact an individual. The NRC did not revise Appendix B (now C) in the final draft.

6. The volume of radioactive waste created by the evaporation method is unclear. If the evaporator is used to decontaminate the water, the amount of waste created by that method needs to be compared with that created by the Epicor/SDS. This amount needs to be specified. (Licensee Response to Interrogatory #18, 3.30.88)

7.[10] There is no basis provided for Classification of the waste from the evaporator. The evaporator bottoms will contain those radionuclides and other chemicals not released through the vaporizer. The NRC did not include all radioisotopes in the characterization of the water. Examples are:

Actinium-227
Americium-242
Californium-249, 250, 252
Curium-243, 244, 245, 246
Neptunium-237
Protactinium-231
Plutonium-242
Thorium-228, 230
Uranium-232

8. The NRC failed to calculate the cumulative risk of the evaporation proposal and other environmental sources of risk for the public within a 50 mile radius of the TMI site. (Response to Interrogatory 8, 2.22.88) This is required by NEPA. This information would assist in an informed decision by the public on the evaporation proposal.

9. The NRC did not undertake its own analysis of the microorganisms in the AGW. (NRC Response to Interrogatory 7, 2.22.88) This response indicates that water boiling at 212°F would kill the microorganisms. However, the evaporator will operate at a temperature of 131°F. (System Description 2.16.88) A quantity of the microorganisms will be contained in the water droplets to be released to the environment. (NRC Response to Interrogatory 7(e) 2.22.88) Their release must be evaluated because of possible pathogen problems and the presence of those materials which would result from virus organisms. Furthermore, because of the ability to plug columns, they may affect the efficiency of Epicor/SDS and the evaporator. (NRC Response to Interrogatory 7(g) 2.22.88)

10. The NRC assumed that the dose from the transuranics would be delivered by the lower level of detectability (all of which are not included — see #7) NUREG-0683, Supplement #2 P. 2.4: 2.2) Since the transuranics are in 25 storage locations it is incorrect to assume that the total inventory of the transuranics is at the lower level of detectability.

11. The NRC Assumes that there are biological mechanisms that can repair damage caused by radiation at low doses. (NUREG-0683, Supplement #2 P. 5.4: 5.2). This is not a fact but rather an opinion shared by some and not all. The public in making their determination of the benefits and risks must be made aware of the difference of opinion surrounding this issue. Especially when one considers the paucity of data on people who

[10] In JI's Response on p. 15, this statement was numbered 6, following statement 6 on p. 14. Statement 7 was labeled "Deleted." We have assigned the number 7 to the Statement numbered 6 on p. 15 of JI's Response.

have experienced prolonged impact from sources of low levels of radiation. The American Physical Society states,

> Among the harmful biological impacts that may occur as a result of even low level exposures are neoplastic (carcinogenic) and hereditary (mutagenic) effects. (Review of Modern Physics, Vol. 57(3), Part 2, 7/85)

12. The NRC misled the public by making the AGW seem innocuous. Their calculations of the dose to the public by drinking the water had many flaws. (NUREG-0683, Supplement #2 P. 2.4)

13. In calculating the dose to the public from evaporation, the NRC ignored the more recent findings about dose and risk derived from data on the victims of Hiroshima and Nagasaki. They used models which tend to underestimate the risk to the public. (Affidavit of Dr. K.Z. Morgan, Exhibit A)

14. The safety of the evaporator for the workers has not been analyzed. (NRC Response to Interrogatory 33, 2.22.88) The dose to the population of a leakage of one of the storage tanks, which is considered to be bounding for any accidents involving the workers, appears to be inadequate in light of the fact that evaporators are prone to hose ruptures and pump failure. (A discussion of evaporators and their deficiencies is found in NUREG-0591)

JI's Response advances a number of statements of material facts which raise genuine issues to be heard. To begin with, Statements 4 (ii), (iii), (iv), (vi), (vii), (viii), (x), (xii), and (xiii) cite material facts that suggest that there is a basis for the allegation that the NRC may not have accurately characterized the AGW with respect to radioisotope content. Therefore its assumption that dose calculations can be based on the average concentrations of radionuclides given in Table 2.2 of NUREG-0683, Supp. 2, may be invalid. The facts that we consider relevant genuine issues are the following: Statement (ii) that the NRC analyzed a single 4-liter sample drawn from only one of 25 locations of the storage of the AGW, which is an inadequate sampling of the AGW;[11] Statements (ii) and (iii) that the NRC sampling procedure followed procedures outlined in 4212-CHM-3011.05, Rev. 0 (5/23/84), whereas updated procedures for sampling tritium, in particular, are set forth in 4212-CHM-3013, 81-P 5.0, 6.1.7 (10/27/87); Statements (vi) and (vii) that the analyses of the PWST 2 samples by the RESL for the NRC and by Licensee gave differing results for Co-60, Cs-137, and Sr-90, and neither detected C-14 whereas an analysis by Westinghouse found C-14 at a concentration of 3.0 E-4, greater than the average concentration listed in Table 2.2 of NUREG-0683, Supp. 2 by a factor of 3; Statement (viii) declares that the NRC assumes that the concentrations of radionuclides as shown in Table 2.2, NUREG-0683, Supplement #2 can reasonably be considered a maximum and upon this assumption based its dose

[11] Indeed, in NUREG-0683, Supp. 2, at p. A.22 there is a table taken from a 1986 GPU Report which lists 25 sources of waste water in storage at TMI with the total radioactivity in each. The concentration of tritium in the different sources was highly variable.

calculations to the public, but JI contend this assumption is invalid on the basis of facts set forth, *infra*, in other statements; Statement (x) and n.3 which indicate that the average tritium concentration presented in Table 2.2 of NUREG-0683, Supp. 2, is 0.13 microcuries per milliliter (µCi/ml), whereas the actual data show a tritium concentration of 0.23 µCi/ml; Statement (xii) indicating that the NRC relied on an RESL sample analysis which gave 3161 Curies while Licensee relied on data from PEIS, 1981, EGG-PBS-6798 to get 4231 Curies, whereas TPO/TMI-043 Rev. 6 (1986) shows that the cover inventory of tritium at the time of the accident was 8794 Curies, which together show that no conclusion can be drawn with respect to the tritium source term; Statement (xiii) that the NRC has based its dose calculations on inadequate data because of the foregoing facts plus the fact that water going into the evaporator in Batch Cycle will deviate from the concentrations listed in Table 2.2 of NUREG-0683, Supp. 2.

Therefore there is a genuine issue of fact that the PEIS has not adequately demonstrated the comparative costs and risks of evaporation of the AGW because the NRC's assumptions with regard to the concentrations of radionuclides in the AGW may be invalid. The facts presented in Statements 4 (ii), (iii), (iv), (vi), (vii), (viii), (x), (xii), and (xiii) may be litigated.

We do not find that Statements 4 (i), (v), (ix), and (xi) warrant being litigated. Statement 4 (i) challenges nothing. Statement 4 (v) alleges that sample of water analyzed by RESL was larger than that recommended by 4212-CHM-3013,81-P 5.0,6.1.7, which seems to us to err on the conservative side. Statement 4 (ix) alleges that the Epicor/SDA processing systems do not have an infinite decontamination factor (which is certainly not surprising) but fails to indicate the significance of this fact. Statement 4 (xi) alleges that the passage of time does not mean a reduction in the source term for the AGW, and quotes Licensee's response to an interrogatory in which Licensee acknowledges that the inventory at a specific source location depends on operations (as AGW is moved from one storage site to another, etc.) but does not alter the actual source term. No significant litigable issue is raised by this statement.

Statement 7 alleges that there is no basis for characterizing the bottom wastes from the evaporator, which will contain those radionuclides and chemicals not released through the vaporizer, because the NRC did not include all of the radioisotopes present in the AGW in its characterization of the water. Examples of radioisotopes which were omitted are:

Actinium-227
Americium-242
Californium-249, 250, 252
Curium-243, 244, 245, 246
Neptunium-237
Protactinium-231
Plutonium-242

Thorium-228, 230
Uranium-232.

Licensee's affiant Harner, however, attested that in addition to having Westinghouse perform an analysis AGW on samples taken under strict procedural controls in 1985, GPUN undertook a review of radionuclides potentially present in the water and developed a list of radionuclides that might be present. This list included radionuclides that comprised greater than 0.1% of the core transuranic inventory. GPUN used the actual measured activities for detected radionuclides or, for radionuclides that might be present but had not been detected, GPUN used the lower level of detectability. Harner also attested that the transuranics not listed, which include most of those above (the Westinghouse analysis detected curium-243/244), were not determined to be in the water because they are not produced by a reactor to an appreciable extent. We find, therefore, that Statement 7 fails to raise a genuine issue of fact.

Statement 9 indicates that the NRC did not undertake its own analysis of the microorganisms in the AGW and, in its response to an interrogatory regarding this matter, stated that water boiling at 212°F would kill the microorganisms. JI point out, however, that according to the System Description of the evaporator, it will operate at a temperature of 131°F. JI allege that their release must be evaluated because of possible pathogenic organisms that might be present in the AGW. Moreover, because they could plug columns, the microorganisms could affect the efficiency of the Epicor/SDS and the evaporator. The evaluation of microorganisms in the AGW is a genuine issue which must be heard.

Statement 10 says that the NRC assumed that the dose from transuranics in the AGW would result from the lower level of detectability and suggests that because the transuranics are in twenty-five storage locations, it is incorrect to assume that the total inventory of transuranics is at the lower level of detectability. As we found in our consideration, *supra*, of Statement 7, affiant Harner attested that GPUN, in developing a list of radionuclides in the AGW, used the measured activities for detected transuranics and the lower level of detectability for the other transuranics that might be present but were not detected. Thus Licensee has adequately accounted for transuranics in the AGW and it is of no consequence that Staff assumed all transuranics to be at the lower level of detectability. Thus Statement 10 does not raise a genuine issue of fact.

Finally, Statement 13 alleges that in calculating the dose to the public from evaporation of the AGW, the NRC used outdated models that underestimate the risk to the public and ignored the recent findings on dose and risk resulting from the reanalysis of the data on the victims of Hiroshima and Nagasaki. This matter is a genuine and important issue that must be heard.

The remaining statements of material fact with respect to Contention 3 fail to raise genuine issues to be heard. Those include Statements 1, 2, 3, those parts of 4 already listed, 5, 6, 8, 10, 11, 12, and 14. Statement 5 alleges that EPA

recommended that the NRC edit Appendix B to NUREG-0683, Supp. 2, but the NRC did not do so; the fact that the NRC did not take the EPA's advice in this regard does not raise a litigable issue. Statement 6 alleges that the volume of waste from evaporation is unclear, and states that the amount of waste created by evaporation "needs to be compared with that created by the Epicor/SDS system." In fact, that waste from the evaporator bottoms is estimated to have a volume of 4425 cubic feet. Munson Affidavit at 5-6. JI provide no reason as to why the evaporator waste needs to be compared to the Epicor/SDA waste. Statement 8 alleges that the NRC failed to calculate the cumulative risk of the evaporation proposal and other environmental sources of risk to the public within a 50-mile radius of the TMI site. In fact, the collective 50-year dose commitment to the people within a 50-mile radius is estimated in NUREG-0683, Supp. 2, at 3.7, § 3.1.1.2. JI failed to specify the "other environmental sources of risk" that they think Staff should have taken into account; hence we find no genuine issue has been raised by Statement 8. Statement 10 faults the Staff for assuming that transuranics in the AGW were present at lower levels of detectability. Licensee, however, listed all transuranics that might be in the AGW, using Westinghouse's measured levels of those detected and the lower level of detectability for those not detected. Statement 11 alleges that the NRC Staff "assumes that there are biological mechanisms that can repair damage caused by radiation at low doses." In the section of NUREG-0683, Supp. 2, cited by the JI, the Staff says that "there *may* be biological mechanisms that can repair damage caused by radiation at low doses and/or dose rates" (emphasis added). Clearly Staff did not assume that such mechanisms exist and acknowledged the uncertainty about the matter. Thus we find that Statement 11 fails to raise a genuine issue to be litigated. Statement 12 alleges that the Staff misled the public by making the AGW seem innocuous and that Staff's calculations of the dose to the public from drinking water had many flaws. JI fail to specify what any of the alleged flaws might be, however. Therefore we find that Statement 12 fails to raise a genuine issue of fact. Statement 14 alleges that the Staff has not analyzed the safety of the evaporator for the workers and criticizes Staff's assumption that leakage of AGW from a storage tank would be a bounding accident for the workers because of the possibility that a hose might rupture or a pump fail on the evaporator. However, either of these two events would be unlikely to release as much AGW as would be released by a tank rupture. Consequently we find that no genuine issue has been raised by Statement 14.

Licensee's motion for summary disposition is granted with respect to the matters contained in Statements 1, 2, 3, parts of 4 listed above, 5, 6, 8, 11, 12, and 14 and is denied with respect to the matters dealt with in the other statements as indicated above.

D. Contention 4

Contention 4 is as follows:

b) Sufficient evidence has not been provided to ensure that the evaporator can filter out transuranics, other radionuclides as well as chemicals to protect the public health and safety.

c) the monitoring and safety systems have not been shown to provide the safeguards needed to protect the public health and safety.

d) It has not been demonstrated that the evaporator influent can be varied from processing 3 gallons per minute to 20 gallons per minute without jeopardizing the public health and safety.

In support of its Motion for Summary Disposition the Licensee presented the Affidavit of David R. Buchanan, Manager, Recovery Engineering, Three Mile Island. We find that he is qualified to testify on the matters discussed in his affidavit.

The Staff submitted no material facts as to which there is no issue to be heard, but supported the Licensee's Statement of Material Facts by the Affidavit of Linda F. Munson, formerly a Senior Research Scientist with Battelle Pacific Northwest Laboratories and presently President, Evergreen Innovations, Richland, Washington. We find Ms. Munson to be qualified to testify on the matters contained in her affidavit.

The Licensee's statement of material facts as to which there is no genuine issue to be heard based on the Buchanan Affidavit is as follows:

1. The AGW disposal system proposed includes a dual closed-cycle evaporator system and an electric-powered vaporizer designed to raise the evaporator distillate temperature and to release the resultant steam to the atmosphere via a flash tank and exhaust stack.

2. The main evaporator is a vapor recompression type unit with the designed flexibility to be configured as a spraying film or climbing film evaporator.

3. Prior to processing in the disposal system, the AGW will be and/or will have been pretreated by other systems to whatever extent is necessary to be at or below the levels of radionuclide concentrations identified as influent criteria for the evaporator disposal system.

4. The carry-over fraction for this disposal system is expected to be 0.1% or less (a decontamination factor of at least 1,000), based upon routine performance experience with typical and similar evaporator systems.

5. Conductivity monitors will be provided at the main evaporator feed, the evaporator effluent (distillate) and the vaporizer influent.

6. Five sample point stations will be provided for the extraction of process fluids for radiochemical analysis.

7. The vaporizer section of the system, which releases the vaporizer distillate into the atmosphere, will be monitored and controlled by a gamma radiation detector, with

predetermined set points based on insuring the TMI-2 Technical Specification instantaneous release limit will not be exceeded.

8. Measurement of Cs-137 by the in-line radiation detector provides a bounding determination of compliance with Technical Specification limits. Therefore, it is not necessary to measure tritium and strontium at the release.

9. Tritium and the beta-emitting isotopes will be determined by sampling and radio-analytical methods.

10. The in-line radiation detector will sound an audible alarm and terminate atmospheric release if its setpoint is reached.

11. The instrumentation and safety systems, along with the process control plan, will assure that radiological releases do not exceed those estimated by the NRC Staff in PEIS Supp. No. 2.

12. The disposal system is designed to operate at an evaporator feed rate of 5 gallons per minute, and by design that feed rate cannot be exceeded.

Joint Intervenors (JI) submitted seven[12] statements supporting their argument that there are material facts in Contention 4 that should be litigated. We discuss them, *seriatim*, below.

1. Those issues identified in "Contention 3" P 10-17 concerning the inadequacy of the data related to the characterization of the water are also relevant to this response for Contention 4 because the chemistry of the water may affect the efficiency of the evaporator.

The Contention 3 issues are discussed in the Board's consideration of Contention 3. Our decisions on those statements will not be repeated here.

2. A decontamination factor of 1000 has been assumed by the NRC and the Licensee. This factor is based on the premise that this water resembles the water for which a decontamination factor of 1000 might be expected. However, this water has a different characterization because of the addition of certain chemicals, notably Triton X. This detergent would affect the efficiency of the evaporator to decontaminate the water.

(Licensee's Response Interrogatory S 52 2.19.88)
(Licensee's Response Interrogatory 6,3.30.88)
(Affidavit, Louis Kosarek, Exhibit C)

3. If the decontamination factor of 1000 is not achieved the effluent from the vaporizer may exceed the Maximum Permissible Concentration for releases into the air. The health of the public will be jeopardized.

The two Licensee discovery responses state that Triton-X was added to the AGW. The Kosarek Affidavit contained remarks about the effect of Triton-X on

[12] Those statements submitted by JI which pertain to the chemical effects of the AGW on the evaporator system are discussed in Contention 4b in part and 6.

the operation of the evaporator system. However, he presents little information on the effects of detergent concentration on the evaporator, and we therefore are left principally with the fact that there are 350 gallons of Triton-X in the system.[13]

JI's concern in ¶¶2 and 3 is the statement that the DF of the evaporator is expected to be 1000, that because of the effect of the Triton-X it will fall below that, and that the public health will therefore be jeopardized. However, the vaporizer will not be operated at all until after it has been determined by physical analysis that the influent to the vaporizer meets the appropriate criteria so that release to the atmosphere will be acceptable. Buchanan Affidavit, ¶21, at 8. We therefore find that no litigable issue exists here.

> 4. The evaporation has no effect on the concentration of tritium in the effluent. If the water contains a concentration of 2.1 µCi/ml (Technical Specifications for Processed Water Disposal P43 (7.3) the Licensee will exceed its permissible continuous release rates which is 570 Ci/sec (release limit of 3 gal/min. (GPU Proposal 1986 P.41)

The thrust of Statement 4 hinges upon the concentration of Tritium in the influent to the evaporator. The value of 2.1 µCi/ml cited by JI would exceed the permissible limits of release of gaseous effluents for TMI-2.

Licensee's letter to the Board, dated July 20, 1988, transmitted an affidavit of Kerry L. Harner, dated July 19, 1988, which explains that the value in JI's statement was a typographical error, and that a review of the actual analysis showed that it should have been 2.3 E-1, which is within allowable limits. On August 10, 1988, the Board received "SVA/TMIA Response to Licensee's Notification of Typographical Error in Bid Procurement Document" dated July 28, 1988. In this document JI challenges Licensee's statement on a number of bases. We have looked at all the analysis numbers that have been provided to us, and it does appear that the higher value is an anomaly. However, it is our view that we do not have sufficient evidence in the record to rule for or against either party at the summary disposition stage of the proceeding. We therefore admit JI's Statement 4 insofar as the true value of the Tritium concentration in Processed Water Storage Tank #2 is concerned.

> 5a. The Licensee states that the allowable gaseous rate was calculated assuming that only tritium would be released as a vapor. (Licensee's Response Interrogatory 2/3.30.88)
>
> Radionuclides which may also escape include I-129 (Nureg 0683, Supplement #2 P 3.9, (3.1.2)

[13] We note that the average amount of Triton-X (350 gallons) in the total AGW to be treated (2.3 million gallons) is 0.00015 of the total, a very dilute solution.

Cs^{137} and Cs^{134} may also escape in the vapor as they are both soluble in water and somewhat volatile.

K-85 which was present in the water, but not listed as a characteristic of the water by either the NRC or GPU, could escape as a gas.

Carbon 14 could escape as a gas.

The Licensee claims that there is evidence at PWRs that

> None of the Carbon 14 released was associated with CO_2.

(Licensee response Interrogatory 14,3.30.88)

This is contradicted by the following observation,

> Carbon 14 is not measured routinely in the sampling and analysis programs of most nuclear power plants in the United States, but several independent measurement projects have made estimates of the activities released annually. . . . the conclusion of that research (Kunz 1985) is that both PWRs and BWRs release in gaseous effluents approximately 10 Curies of Carbon 14 per 1000 MWe-yr of routine operation.
>
> Appendix A,P A-47 "A Radiation Monitoring System for Nuclear Power Plants" (funded by the Public Health Fund and undertaken by Dr. Ruth Patrick and Assoc.)

JI's response is difficult for us to follow. In any event, we will separate the somewhat lengthy statement into manageable parts in our discussions.

In JI's first statement, the observation is made that the Licensee calculated the allowable release rate of gases considering only tritium. That is true. Licensee considered other radionuclides that would be released as particulates, which are calculated differently. Licensee's Discovery Response 2 at 2-4, 3/30/88. We find no litigable matter here, nor does JI explicitly propose one.

JI's second statement observes that I-129 may also escape in the vaporizer effluent. However, assuming this to be true, the amount of I-129 in the AGW is below the detectable limit, which leads us to believe that it will have no significant impact on health and safety or the environment. *See* NUREG-0683, Supp. No. 2, Table 2.2, at 2.3. We find no litigable matter here.

JI's next two sentences concern the possible escape of Cs-137, Cs-134, and K-85. No authority was cited for these statements, and the Board cannot adequately evaluate these unsupported statements. We therefore find no basis for litigation here.[14]

JI's final statement concerns the release of C-14 in the form of CO_2. In support of their statement they quote a part from a document that is purported to be a study funded by an organization called the "Public Health Fund" and performed by a Dr. Ruth Patrick and Associates. We have not been given enough

[14] We do note, however, that Licensee has taken notice of the presence of Cs-137 and Cs-134 in the influent to the vaporizer. Harner Affidavit, ¶¶ 22, 33, at 8, 12.

information to be able to determine whether this is an acceptable reference. The quoted research "Kunz 1985" is not known to us, and we have no knowledge of where or if it was published. However, assuming, for the purpose of argument, that there is some technical backing of the Kunz gaseous release figure of 10 curies of Carbon-14 per 1000 megawatt-years of operation, we note that the TMI-2 system was only at high power for approximately 3 calendar months, with numerous shutdowns because of operational difficulties. Any CO_2 in the offgas releases was vented continuously during this period of time, which would leave only a small amount in the system at the time of shutdown. Furthermore, we accept Licensee's uncontradicted assertion that the concentration of Carbon-14 in the storage tanks would not be significantly greater than the naturally occurring Carbon-14 in the atmosphere, since the tanks are vented to the atmosphere. Licensee's Answers to SVIA/TMIA's Second Set of Interrogatories, Int. 14 at 13, 3/30/88. We find no fact herein to litigate.

6. If more than one gas is released by evaporation, then the MPC for tritium as listed in 10 C.F.R 20, App B, Table ii, Column 1 (2×10^{-7}) and used in calculations by the Licensee must be different. (10 C.F.R. 20 App B, footnotes.)

This is a true statement. However, the only gas expected to be released in any significant quantity is tritium. Licensee's Discovery Response 2 at 2-4, 3/30/88. We have no reason to disagree with the Licensee's calculation methods, and find no material fact that needs to be litigated in JI's statement.

14. The vaporizer section of the system will be monitored and controlled by a gamma radiation detector. More than 50% of the releases from the vaporizer are beta emitters. Cs-137 is a gamma emitter. It will be used for calibrations and alarm set-point determination (Buchanan Affidavit). This type of monitoring assumes a constant relationship between Cs-137 and Sr-90 or H-3. This assumption may be inaccurate for the AGW. The Licensee had been found to maintain a policy to systematically falsify critical safety data and destroy documents for months leading to the 1979 accident. (2/84) The Licensee has more recently been found to mismanage waste (10-23-87) (3-11-88). These facts put more emphasis on not just the ability of the monitoring and safety systems to work, but also the ability of the Licensee to perform its work properly.

Before any batch of AGW is processed in the evaporator it will be subjected to radiochemical analysis, which will establish the Tritium level and the Cs-137 to Sr-90 ratio. From this, the Sr-90 activity level of the influent to the vaporizer can be inferred by measuring only the gamma radiation level from Cs-137. Thus, all three of the principal radioactive components is known. Further measures are made by the conductivity monitor, to protect against unexpected deviation in the composition of the influent. Harner Affidavit, ¶¶ 37, 39, at 13, 14. *See*

Harner Affidavit, ¶40, at 14, 15. We find no material fact herein that should be litigated.[15]

16. It is well documented in Appendix A and F, "A Radiation Monitoring System for Nuclear Power Plants" that monitoring of radionuclides is an extremely difficult task and one which is fraught with errors.[16] In Harner Affidavit for Contention 5d, it is stated that

> The nuclear process involved in a reactor produces predictable fission products, activation products, and transuranics, and the rates of decay, and decay products are also known. Thus the isotopic inventory can be calculated; and radionuclide constituents of any significance and their relative abundance can be determined. (p.5)

This is not entirely accurate in light of the fact that a variety of models may be used in calculations, and the calculations are only as good as the input of data. Furthermore, the accident at TMI created a scenario not experienced before and during which the fission products and activation products were distributed throughout Unit 2 by way of the atmosphere and the water. This is well documented in the research of the accident. (This discussion is relevant to Contentions 3 & 5)

The Harner statement is true, insofar as the fission process is concerned. Measurements are, of course, subject to error depending upon the accuracy of the input data. The context in which the Harner statement was made was that of being able to determine if any gross errors would be made in their proposed radiochemical analyses to determine the evaporator and vaporizer influents. The results of the calculations, radiochemical analysis of the contents of four storage tanks by Westinghouse and identical samples from the processed water storage tank by GPUN and RESL Laboratories agreed within acceptable limits. Harner Affidavit (Contention 5d), ¶¶4-12, at 3-9. We therefore agree that there is a reasonable expectation that the radiochemical analysis proposed by GPUN will be adequate for the purpose intended. We find no issue of material fact in JI's statement.

Conclusion

The Board finds no merit in JI's responses to Licensee's Motion for Summary Disposition of Contention 4b in part, 4c, and 4d, except Statement 4, as described herein. The Motion is therefore granted in part and denied in part.

---

[15] The Board's jurisdiction is to determine whether the proposed system can work to ensure that there is no undue risk to the health and safety of the public. As to the question of whether the system *will* be operated in such manner as to achieve this goal, we must depend upon the Licensee and its employees. The License to operate is not at issue.

[16] We reiterate our objections to the use of this citation. *See* JI's ¶5a, *supra*.

E. JI Contention 5d

JI Contention 5d is:

> [Licensee and the NRC Staff] have underestimated the effects of tritium and alpha emitting radionuclides on human beings. The alpha emitters such as plutonium 238 and other transuranic elements which are present in the water were virtually ignored in the 1987 EIS. They were not examined for their chemical and biological characteristics in spite of their well-known toxicity.

The following supporting documents were submitted with "Licensee's Motion for Summary Disposition of Contention 5d":

1. "Licensee's Memorandum of Law in Support of Motions for Summary Disposition," dated May 9, 1988;
2. "Licensee's Statement of Material Facts as to Which There Is No Genuine Issue to Be Heard (Contention 5d)";
3. "Affidavit of Kerry L. Harner (Contention 5d)," the TMI-2 Radiological Chemistry Manager, and his professional qualifications;
4. "Affidavit of Dr. Gary G. Baker (Contention 5d)," GPU's Manager of Environmental Controls, and his professional qualifications; and
5. "Affidavit of Dr. Hans Behling (Contention 5d)," GPU's Manager of Radiological Health at Three Mile Island, and his professional qualifications.

We are satisfied that Mr. Harner, Dr. Baker, and Dr. Behling are qualified to attest to the matters in their respective affidavits. Licensee's Statement of Material Facts, based on the three affidavits, sets forth the following facts as to which it asserts that there are no genuine issues to be heard:

> 1. Both Licensee and the NRC (through the U.S. Department of Energy's Radiological and Environmental Sciences Laboratory) have analyzed processed accident generated water to determine its radionuclide constituents, including alpha emitters such as transuranics.
>
> 2. Licensee has also performed a technical evaluation of accident generated water and, using the ORIGEN Code, has calculated the radionuclides (including tritium and alpha emitters such as transuranics) of any significance potentially present in the water.
>
> 3. There are transuranics on the Periodic Table other than those identified as present in the accident generated water, since not every transuranic is produced by a reactor to an appreciable extent.
>
> 4. Licensee has calculated individual and population doses due to evaporation using the Meteorological Information and Dose Assessment System (MIDAS), a code which has been approved by the NRC and which is based on methodology in the NRC's Regulatory Guides 1.109 and 1.111.
>
> 5. Licensee calculates that the dose to the maximally exposed individual from evaporation is 2.0 mrem to the total body and 3.6 mrem to the bone; and of these doses, 1.4 mrem

to the total body is attributable to tritium, and essentially all of the 3.6 mrem to the bone is attributable to Sr-90.

6. Licensee has assessed the contribution of uraniums and transuranics identified as potentially present in evaporator effluent and has determined that none contribute even as much as 1% of the dose attributable to strontium.

7. The NRC has independently calculated doses to the maximally exposed individual and to the population from evaporation, and has assumed for purposes of these calculations that uraniums and transuranics are present at the lower limit of detection.

8. The NRC calculates that the maximally exposed individual will receive 0.7 mrem to the total body; 0.8 mrem to the bone, and 4 mrem to the thyroid.

9. Tritium has been extensively studied, is the subject of the National Council on Radiation Protection and Measurements (NCRP) Report No. 62 and NCRP Report No. 63, and is addressed in the 1980 Report of the National Academy of Science's Committee on the Biological Effects of Ionizing Radiation (BEIR III).

10. Based on many studies of tritium, the NCRP has stated that:

> ". . . it is reasonably conservative to assume, for the purpose of practical hazards considerations, that there is no significant transmutation effect for tritium incorporated in DNA, and that one may estimate hazards solely on the basis of absorbed beta dose. . . . There is, at present no reason to consider the RBE for chromosome aberration production by beta rays from incorporated tritium to be different from one." (NCRP Report No. 63)

11. Applying the conservative risk estimators from the BEIR III Report to the population dose calculated by Licensee and to the population dose calculated by the NRC, the risk from evaporation of a single fatal cancer among the 2.2 million people residing within 50 miles of TMI ranges from 0.0003 to 0.005.

12. The risk of a genetic effect or fetal injury is considerably smaller.

13. The contribution to risk from transuranics, due either to chemical toxicity or to radiotoxicity, is inconsequential.

14. Thus, tritium and alpha emitters such as transuranics have been fully evaluated in connection with the proposed evaporation of accident generated water.

The NRC Staff in its June 23, 1988 response to Licensee's motion for summary disposition (Staff Response) supported the motion with respect to all the contentions, including Contention 5d. In support of its response, the Staff appended the "Affidavit of Linda Munson," President of Evergreen Innovations, Inc., and consultant in health physics and radioactive waste management to the Electric Power Research Institute (EPRI). Prior to January 1988, Ms. Munson was Senior Research Scientist, Project Manager, and Associate Section Manager of the Dosimetry Technology Section of Battelle, Pacific Northwest Laboratories. While in that position she managed a project to assist the NRC in its regulation of the cleanup of TMI-2. She was also project manager and an author of the Draft and Final Supplements Nos. 1 and 2 to the PEIS governing cleanup of

the TMI-2 reactor. We are satisfied that Ms. Munson is qualified to attest to the matters set forth in her affidavit.

Staff points out that Table 2.2 in NUREG-0638, Supp. 2, lists three uranium isotopes and six transuranics; the transuranics were conservatively assumed to be present in the AGW, even though their concentrations were below detectable levels. The health effect for the general population from evaporation of the AGW was calculated by Staff to be a 4 in 10,000 chance of a single fatal cancer and 2 chances in 1000 of a single genetic disorder. Munson Affidavit, ¶¶ 38, 39; NUREG-0683, Supp. 2, at 5.6. Staff states that its estimates are substantiated by a study of the effect of the tritium releases performed by the National Council on Radiation Protection and Measurements (NCRP). Staff Response at 15; NUREG-0683, Supp. 2, at A.13-A.23. The NCRP estimated in that report that the release of tritium to the atmosphere will result in a lifetime cancer plus severe genetic risk to the most highly exposed hypothetical individual of approximately 1 chance in 10 million. NUREG-0683, Supp. 2, at A.20. The report contains a caveat with respect to its risk estimates, however, by stating that the risk values reflect current estimates of the International Commission on Radiological Protection (ICRP) published in 1977; the risk values do not account for potential changes that may result from the reevaluation of the Japanese atomic bomb survivor data, nor do they account for the fact that the quality factor of 1 for tritium beta radiation is under review.[17] *Ibid.*

Thus the NRC Staff disagrees with the Licensee and the NCRP. Staff estimates a higher probability of a genetic defect than a fatal cancer, whereas Licensee states in Material Fact No. 12 that the risk of a genetic effect is "considerably smaller" than the risk of a fatal cancer; and according to Licensee's Material Fact No. 10, NRCP Report No. 63 states that "one may estimate hazards solely on the basis of absorbed beta dose . . . . There is, at present no reason to consider the RBE for chromosome aberration production by beta rays from incorporated tritium to be different from one."

The Joint Intervenors filed a response (JI Response) to Licensee's motion for summary disposition of Contention 5d which was supported by two sets of comments by Dr. K.Z. Morgan, currently a health physics consultant and former director of the Health Physics Division at Oak Ridge National Laboratory.[18] Prior

[17] The quality factor is the value by which the absorbed dose is multiplied to take into account the relative biological effectiveness (RBE) of a given form of radiation. Differences in RBE for various forms of radiation are determined largely by the linear energy transfer (LET) value of the radiation. LET refers to the rate at which energy is deposited in the tissue by the radiation.

[18] JI refer to Dr. Morgan's comments as "affidavits," when in fact they are not affidavits because they have not been duly notarized. In a telephone conference on August 15, 1988, the parties agreed to waive the affidavit requirement for Dr. Morgan. Exhibit B containing Dr. Morgan's comments, dated March 19, 1987, was directed toward the draft PEIS Supp. No. 2 (NUREG-0683). The Staff, in the final NUREG-0683, Supp. 2, considered and discussed Dr. Morgan's comments in §§7.1.11, 7.2.14, 7.2.15, 7.3.3.3, and 7.5.15. Therefore, we have no basis or reason to consider his comments on the draft of NUREG-0683, Supp. 2. Exhibit A does contain a response to criticism directed toward Dr. Morgan's comments on the draft PEIS plus updated comments on the proposal to evaporate the AGW; therefore, Exhibit A will be considered by us.

to that position, Dr. Morgan was employed by the University of Chicago where he collaborated with others in developing and establishing the new science and profession of health physics. He has also served as professor of physics at a number of other institutions of higher learning and has conducted research on, among other things, dosimetry of alpha and neutron irradiation, plutonium distribution in bone, and carcinogenesis of X-, gamma, and neutron radiation. Finally, for 20 years he was Chairman of the ICRP. In addition to the affidavits of Dr. Morgan, the JI Response was supported by an affidavit of Dr. Charles V. Huver, Research Director of Environmental Concerns, Twin Cities, and Adjunct Professor at the Graduate Center of Saint Mary's College, Minneapolis, Minnesota. Dr. Huver has also taught and conducted research, primarily in the field of aquatic biology, at a number of universities; he has also published several papers and testified before a congressional hearing on the biological effects of radioactive effluents, particularly tritium. Finally, an affidavit of Louis Kosarek was submitted in support of the JI Response, but as we noted in our discussion of Contention 2, we lack sufficient information about his qualifications.[19] We are satisfied that Dr. Morgan and Dr. Huver are qualified to attest to the matters contained in their affidavits. With regard to affiant Kosarek, we shall proceed here as we did in considering Contention 2; namely, we shall consider his substantive arguments to determine whether they raise issues that we need to consider for an adequate record.

JI's response with regard to Contention 5d sets forth the following statements of material facts as to which they allege there are genuine issues to be heard:[20]

> 1. Those issues raised in responses for "Contention 3" are pertinent to the issues raised in this issue, since the dose from either Tritium or transuranics is dependent on the characteristics of the AGW, and vapor from the evaporating process. The efficiency of the evaporator, addressed under "Contention 4" is also pertinent to this issue.
>
> 2. It should be noted that this contention refers to the NRC's deficient discussion of the effects of tritium and the alpha emitters, and their assumptions about the lack of effect on the population. Therefore, the Licensee's attempt to provide more information on tritium and the alpha emitters does not alleviate the NRC from their responsibilities to the public.
>
> 3. In determining the exposure and dose to a member of the population, it is stated that,

[19] On the second unnumbered page of the JI Response, a list of affiants is set forth and includes, in addition to those already mentioned here, Dr. Richard Piccioni. A note states that JI had not received Dr. Piccioni's affidavit but expected it to arrive within the next few days, at which time, accordingly to JI, the affidavit would promptly be mailed to all parties. By letter to the Board, dated July 7, 1988, however, the JI advised that the Piccioni affidavit would not be submitted.

[20] Statements No. 1, 2, and 15, below, are merely arguments rather than statements of genuine issues of material facts which must be heard. Therefore we shall not consider them.

> The chemical and physical forms of the aerosols and isotopes would determine the biological uptake and excretion rates and so influence the effective time of exposure for various bodily organs (Reviews of Modern Physics, Vol. 57, Number 3, Part 11, July 1985) Report to APS

The NRC did not determine the physical and chemical form of the radionuclides in the AGW, with the exception of tritium. (NRC Response Interrogatory 4, 4.4.88)

4. In its discussion of tritium in NUREG-0683, Supplement #2, the NRC ignored some of the data provided in NCRP #62. Some examples are as follows:

a) The NRC discussion of tritium assumes that the effects of tritium are well known and understood (Behling Affidavit expresses same). The NCRP report however states,

> There have been many studies of the metabolism of tritium in animals and humans with somewhat less attention given to radiation effects.

5. NCRP report also states that following uptake of tritium

> Within minutes it can be found in varying concentrations in the various organs, fluids and tissues of the body.

6. The rate of elimination from the body is dependent on where the tritium is incorporated. If it is incorporated in organically bound pools it will be retained in the body longer. The NRC recognized this but failed throughout the NUREG-0638 to relate it to the release of tritium upon the population around TMI which would occur as a result of the evaporation of the AGW.

7. As recognized by NCRP #62, the amount of tritium incorporated into the DNA is most important. NCRP quotes two studies which report the labelling of DNA by tritium. In one study all DNA were labelled with tritium in various amounts. In another study by Mewissen and Rust, it was found that incorporation into RNA was five-fold greater than in DNA. The NRC neglected this vital information in its determination of the effects of tritium. (Affidavit Dr. C.W. Huver, Exhibit D)

8. There is evidence of the concentration of tritium in vegetation. (Affidavit Dr. C.W. Huver, Exhibit D)

9. Assessment of the Relative Biological Effectiveness of tritium is difficult. Dose calculations vary greatly with the use of different values. In view of NCRP's statement which documents the difficulties in assessing the RBE it is prudent to err on the side of caution in determining the dose to the population exposed to tritium. (Affidavit Dr. K.Z. Morgan, Exhibit A) NCRP #62 states that the difficulties are confounded by the following:

a) the metabolic and physiologic processes controlling the distribution and therefore the dose due to tritium are poorly known (*this is especially important in extended exposure situations*) (emphasis added);

b) tritium incorporation into organic molecules and structures as well as the differential distribution of tritiated water result in inhomogeneous dose distributions;

c) dose estimates are based on secondary measurements;

d) disruption of tissue structures by the initial dose fraction of a total dose delivered over an extended period of time will result in a non-homogeneous dose distribution;

e) the reproductivity of low dose experiments relative to high dose experiments is low;

In its evaluation of dose from tritium the NRC does not evaluate this information and as a result virtually ignores the effects of tritium;

10. NCRP #62 states that available data support the general conclusion that slow uptake is logically associated with long retention. This information is particularly relevant to assessing the dose from tritium incurred over a two year period by evaporation. The NRC did not utilize this information in its discussion or calculations in NUREG-0683, Supp. 2;

11. It has been found that tritium releases to the environment have some ecological and biological consequences when evaluated in terms of food chain effects (Affidavit, Dr. C.W. Huver, Exhibit D);

13.[21] The NRC did not take into account the already existing impact from the dose delivered to that part of the population which also receives a dose from the tritium in their drinking water, such as those who live in the City of Lancaster (NRC Response to Interrogatory 8,2.22.88);

14. In considering the effects of transuranics on the dose delivered to the population, the NRC assumed that these transuranics were present at the lower levels of detectability. Having made this assumption, the NRC continued to ignore the effects of any amount of transuranics by not providing information on the chemical and radiological characteristics of these alpha emitters. In light of their extreme toxicity, more consideration was warranted (NUREG-0683, Supp. 2, Section 2.2);

15. By virtually ignoring the effects of tritium and the transuranics, the EIS does not provide adequate data to the public for making an informed decision about the disposal of the AGW.

Tritium

In Exhibit A, Dr. Morgan stated that the only criticism that he had seen of his March 19, 1987 report on the Draft PEIS criticized his report because his calculations of dose were based on values of body uptake, distribution, retention, and energy distribution given in ICRP-2 (1959) rather than data given in ICRP-30 (1981). He stated that while it was true that the earlier report led to higher estimates for some radionuclides, such as Sr-90, it had little effect for H-3. The reason Dr. Morgan used ICRP-2, he said, was because he believes the data in it are (1) more representative of the average person in the community and (2) the data in ICRP-30 were selected by current members of the ICRP who have a conflict of interest because of their association in the nuclear industry. He points out that that early data made use of information from children and females as well as from males, whereas the ICRP-30 data apply more strongly to the adult working male. Exhibit A at 1-2. In addition, he states that whereas today the ICRP sets the $Q = 20$ for alpha and neutron radiation but has dropped the Q for

[21] There was no Statement No. 12 in the JI Response.

low-energy beta to 1.0 from the $Q = 1.8$ used in ICRP-2. Dr. Morgan argues further that "[s]ome of us had gathered biological data indicating the value of Q should be no lower than five . . ." and went on to state that he had physical data indicating the stopping power dE/dx of low-energy betas was similar to that of alpha radiation. *Id.* at 2-3.

Dr. Morgan also pointed out that tritiated thymidine in the DNA can create a problem in two ways when the hydrogen atom gives off a beta particle. First, the recoil energy could break or rearrange chromosomes in the cell nucleus, and second, when the hydrogen atom gives off a beta particle it is transmuted to a helium atom. He believes that these events could occur in the human ovum or sperm cell prior to or shortly after meiosis. *Id.* at 3. He also states that ^3H_2O, which is how tritium will be released in the steam and water droplets released during evaporation, is considered to be 100 times more hazardous than $^3H_2$. *Id.* at 4.

Dr. Morgan also believes that the cancer risk estimate of 10^{-4} cancer deaths per person-rem (cd/pr) is too low and argues that it should be not less than 10^{-3} cd/pr. Further, he points out that the lower value is based on early data from survivors of the atomic bombings of Hiroshima and Nagasaki, but the publication in 1987 of the reassessment of the Japanese data led the ICRP to state that the cancer risk estimate would need to be increased by a factor of 2.8. According to Morgan, the ICRP also predicted that risk estimates of cancer induction would be increased by the change from the use of an absolute risk model to a relative risk model and by the change in the shape of the dose response curve. *Ibid.*

Dr. Huver, a biologist, argues in his affidavit that most of the literature on the biological hazards of tritium were omitted and ignored in PEIS Supplement No. 2. (Huver Affidavit at 1.) He cites and discusses numerous publications demonstrating biological uptake of and damage by tritium.

Application of tritiated water to a corn plot resulted in 1.1% of the applied tritium being present in the corn crop at harvest. Corn ears that had not been formed at the time of tritium application showed tritium levels of 500 picocuries per gram which correlated closely with the concentration of tritium in the soil water. *Id.* at 3. When vegetation is exposed to tritium vapor or liquid, rapidly growing herbaceous crops produced greater tritium fixation than that found in mature forest vegetation. Tritiated water spray on a cow pasture resulted in uptake of tritium in forage vegetation and transfer through the food chain to cow's milk. When cows ate tritium-contaminated forage, they developed higher levels of organically bound tritium in milk than they did when they drank tritiated water. According to Dr. Huver, these types of results led Korand, Martin, and Anspaugh of the Lawrence Radiation Laboratory to conclude in a 1971 report "that tritium releases to the environment, even those of short-lived nature, have

some ecological and biological consequence when evaluated in terms of human food chain effects." *Id.* at 3-4.

With respect to genetic mutation and chromosomal damage caused by tritium incorporated into DNA molecules, Dr. Huver cites several scientific papers. For instance, he cites one paper in which it was shown that beta radiation having an energy similar to tritium was about 2.5 times as effective in producing chromosome breaks as gamma radiation. On the basis of the assumption that chromosome breakage is one of the main causes of cell lethality, Dr. Huver suggests that beta radiation would be about 2.5 times as lethal per unit dose as gamma radiation. *Id.* at 4. Further, because it has been proposed that chromosome breakage is produced mainly by densely ionizing electrons as they near the end of their tracks, Dr. Huver argues that the 5.7 keV beta radiation from tritium should be about three times more likely than X- or gamma radiation to produce chromosome breaks per unit dose, because the secondary electrons yielded by X- and gamma rays have energies of about 20 keV. He claims that there are data that are in fairly good agreement with this hypothesis. *Id.* at 4-5. Licensee's Affiant Dr. Behling, on the other hand, cites a study that he says shows tritium incorporated into DNA is not noticeably more detrimental than an equivalent dose of external exposure from gamma or X-rays. Behling Affidavit at 19.

Experimental work on the internal toxicity of tritium in mice has shown tritium beta radiation to be about 1.7 times as effective as gamma radiation in causing mortality. Also, tritium beta radiation has been shown to be more effective than gamma radiation in producing thymic and splenic atrophy in the mouse. Moreover, tritium beta radiation has been demonstrated to be more effective than gamma radiation in causing bone marrow damage in rats. Huver Affidavit at 5. Tritium can also increase tumor formation in mice. When a 1-μCi/g[22] dose of tritiated thymidine was injected into mice, significantly more of these animals died from tumors than did the controls. Further, a single injection of tritiated water (0.27 millicurie tritium per gram) caused an ovarian tumor incidence in exposed offspring fivefold over controls. *Ibid.*

The rapidly proliferating germ-line cells in mouse testes have been demonstrated to have a high radiosensitivity to tritium. The incorporation of tritiated thymidine from doses as low as 1 μCi/g had produced damage to spermatogonia and spermatocytes when examined 4 days after injection. Female mice when exposed from conception to relatively low levels of tritiated water (0.085 μCi/ml) produced significantly less primary oocytes as compared to untreated offspring. *Id.* at 5-6.

[22] In Dr. Huver's affidavit this dose symbol was written "c/gm". This notation has no meaning for us, but we assume that it should be written "μCi/g."

Human leukocytes have been chronically exposed to tritiated water and tritiated thymidine using a wide range of tritium doses. At higher dose levels the frequency of chromatid breaks increased linearly with dose, while at lower dose levels the frequency of breaks was significantly higher than would be predicted by a downward extrapolation of the linear model, according to Dr. Huver. *Id.* at 6. According to Licensee's affiant Dr. Behling, on the other hand, a study of the induction of chromosomal aberrations in leukocytes *in vitro* following exposure to tritiated thymidine revealed no correlation between the site of labelling and the site of breakage. Behling Affidavit at 18-19.

The incorporation of tritiated compounds into DNA causes an increase in mutation rate. Tritiated nucleosides administered to the fruit fly, *Drosophila melanogaster*, have induced sex-linked lethal mutations. Tritiated thymidine administered to adult mice has resulted in a 30% reduction in the reproductive rate of their offspring. When tritiated thymidine was injected into the testes of male mice, dominant lethal mutations were produced in the sperm which resulted in an increase in abortions. Huver Affidavit at 7; Behling Affidavit at 18.

Dr. Huver believes that the most serious type of biological damage that has been demonstrated for tritium is that of genetic mutations. Huver Affidavit at 6. Dr. Behling, on the other hand, believes that the distribution of tritium within the nucleus "seems to be relatively unimportant." Behling Affidavit at 19. Recall that the NRC Staff estimated a higher probability of a genetic defect than a fatal cancer from exposure to tritium, whereas the Licensee concluded that the risk of a genetic defect from tritium exposure was considerably smaller than the risk of a fatal cancer. Thus Licensee is in disagreement with both the Staff and the JI.

In conclusion, there are genuine issues of material fact concerning the health and genetic effects of tritium. The motion for summary disposition is denied with respect to this part of Contention 5d.

Transuranics

The thrust of Contention 5d with regard to transuranics focuses on the treatment given them by the Staff in NUREG-0683, Supp. 2. The JI claim that the transuranics in the AGW were virtually ignored in the PEIS Supplement No. 2. Staff's affiant Ms. Munson and Licensee's affiants Dr. Behling, Dr. Baker, and Mr. Harner all addressed the allegation about transuranics. Neither JI's affiant Dr. Morgan in Exhibit A, nor Dr. Huver in his affidavit, on the other hand, addressed the allegation that transuranics had been virtually ignored.

Ms. Munson points out that Table 2.2 of NUREG-0683, Supp. 2, lists three uranium isotopes and six transuranics. Munson Affidavit at 16. Indeed, NUREG-0683, Supp. 2, lists the principal contaminants that were identified as

contributors to potential environmental impacts estimated in the supplement. The environmental impact of the other radionuclides in the AGW, which includes uranium and the transuranics, was determined to be insignificant (less than 1%) relative to the principal radionuclides. *Id.*; NUREG-0683, Supp. 2, at 2.4. Based on the Lower Limits of Detection (LLDs) of the water volumes analyzed, Dr. Baker estimated that no more than about 7 microcuries of transuranics can be present, consisting of no more than 5.7 microcuries of plutonium-241 and no more than 1.3 microcuries of other transuranics. Baker Affidavit at 17-18.

Dr. Behling attested that the chemistry of plutonium and other transuranic elements has been extensively researched. The two aspects of their chemistry that are relevant to consideration of their health effects resulting from the proposed evaporation of the AGW are their degree of solubility and the particle size in which they may exist. Behling Affidavit at 55. Plutonium and other transuranics exhibit multiple oxidation states, and the oxidation state affects their solubility. Transuranic oxides formed at high temperatures are very insoluble in water, whereas oxides formed at low temperatures are relatively soluble in water. *Id.* at 56; Baker Affidavit at 18. Moreover, transuranic oxides formed at temperatures above 350°C are known to form molecular aggregates resulting in particles having diameters that range in size from nanometers to micrometers. It can be assumed that the plutonium and other transuranics present in the AGW were produced at high temperatures during the operational period of the TMI-2 reactor. Consequently they should occur in the AGW as insoluble microparticulates. Behling Affidavit at 56.

The transuranic elements under consideration here are all alpha emitters. It is generally assumed that the quality factor for alpha radiation is twenty (20) when the reference radiation is 200 keV X-radiation. *Id.* at 57-58. According to NCRP Report No. 46, a plutonium-239 alpha particle has a total range in tissue of 40 micrometers. Consequently it would not penetrate the exterior surface layer of skin. Therefore, for any alpha-emitting nuclide to be of concern it must be internal to the body. Thus transuranics must be either ingested in contaminated food or water or they must be directly inhaled. *Id.* at 59-60. AGW in the Processed Water Storage Tank (PWST) #2, which had been processed by SDS and EPICOR II, was sampled in early 1987. The sample was split so that it could be analyzed independently by GPUN and for the NRC by DOE's Radiological and Environmental Science Laboratory (RESL) at Idaho Falls. Harner Affidavit at 2, 8. GPUN's alpha spectroscopy analytical technique was unable to detect the transuranics because of their low concentrations. *Id.* at 5; Baker Affidavit at 13. Therefore GPUN conservatively assumed that the expected uraniums and transuranics were present at their LLDs. Harner Affidavit at 5; Baker Affidavit at 13. RESL, on the other hand, had the capability to detect uraniums and transuranics in the processed water; for each uranium and transuranic detected

by RESL, the concentration was well below the LLD levels conservatively established by GPUN. Harner Affidavit at 9.

With regard to their chemical toxicity, at the levels at which transuranics will be released by evaporation of the processed AGW, the chemical toxicity will be negligible. Behling Affidavit at 70-71; Munson Affidavit at 18.

As we found in the case of Contention 3, transuranics not detected and not expected to be present in the AGW are those that are not produced to an appreciable extent by reactors. The affidavits of Licensee's and Staff's experts make it clear that there is no genuine issue to be heard with respect to the allegations about the inadequate assessment of transuranics in the AGW.

Conclusions

Licensee's Motion for Summary Disposition of Contention 5d is granted to the extent that the contention alleges that the effects of alpha-emitting transuranic elements on human beings have been underestimated or ignored. To the extent that Contention 5d alleges that the effects of tritium on human beings have been underestimated, however, Licensee's Motion is denied.

F. Contentions 4b in Part and 6

> 4b. Sufficient evidence has not been provided to ensure that the evaporator can filter out transuranics, other radionuclides as well as chemicals to protect the public health and safety.[23]
>
> 6. An amendment to the license is premature because this water is presently covering the melted fuel, which melted at 5,100 degrees Fahrenheit, and will be used in decontamination activities with the potential for the addition of more chemicals. The licensee has added more chemicals since the submittal of its proposal in July, 1986. The effects of these chemicals on the capabilities of the EPICOR II, SDS and evaporator systems must be evaluated.

In support of its Motion for Summary Disposition, the Licensee presented the affidavits of Dr. Gary G. Baker, Manager of Environmental Controls–Three Mile Island; David R. Buchanan, Manager, Recovery Engineering–Three Mile Island; and Kerry L. Harner, Radiological Chemistry Manager–Three Mile Island. In view of their training and background we are satisfied that they are qualified to testify on the matters contained in their affidavits.

---

[23] This motion addresses the portion of Contention 4b that concerns the removal of chemicals. The removal of transuranics and other radionuclides is addressed in a separate motion which also includes 4c and 4d. Staff also presented its arguments on the ability of the evaporator to function properly with chemicals in the AGW in this particular motion in order to avoid repetition between its motions on Contention 4b and Contention 6. The Board chose to follow the staff's presentation. The Intervenors have submitted separate responses to both 4b (chemical and radionuclide removal) and 6. We accordingly discuss those Intervenor nonredundant responses in 4b concerning chemical removal herein.

The Staff did not submit a statement of material facts as to which there is no issue to be heard, but supported the Licensee's Statement of Material Facts by an affidavit of Linda F. Munson, formerly a Senior Research Scientist with Battelle Pacific Northwest Laboratories and presently President, Evergreen Innovations, Richland, Washington. We find that Ms. Munson is qualified to attest to those matters contained in her affidavit.

The Licensee's statement of material facts as to which there is no genuine issue to be heard, based on the above affidavits, is as follows:

1. The use of chemicals at TMI-2 is controlled by the TMI-2 "Chemical Control Procedure" and implementing procedures.

2. These procedures require that before a new chemical substance may be used at TMI-2 for a particular use, an engineering evaluation must be performed, and one of the particular factors that must be considered is the protection of ion exchange media used in the Submerged Demineralizer System (SDS) and EPICOR II.

3. Pursuant to these procedures, chemicals introduced into accident generated water have been evaluated for their effects on the SDS and EPICOR II systems, and the introduction of substances that could impair the SDS and EPICOR II systems has been minimal.

4. The compatibility of the accident generated water chemistry with the EPICOR II and SDS systems is also demonstrated by the observed performance of these systems, which are frequently operated, continually monitored, and consistently achieve a substantial decontamination notwithstanding the chemical constituents of the accident generated water.

5. The accident generated water processing systems at TMI-2 remove chemical as well as radiochemical constituents from the water, with the result that levels of chemicals other than boron and sodium in processed water are low.

6. Certain batches of accident generated water will be used for future cleanup activities, which could increase the level of chemicals in such batches, but reprocessing to the extent necessary will reduce chemical constituents to desired levels. Licensee periodically performs chemical analyses to keep track of the water chemistry of accident generated sources.

7. Evaporator and vaporizer influent criteria have been established for radionuclides, boron, and sodium, and vaporization of distillate will not be permitted until it has been determined analytically that the constituents of the distillate are below the established concentrations.

8. If a batch of accident generated water needs further processing to satisfy the influent criteria, it can be reprocessed until the influent criteria are achieved.

9. The evaporator itself is being designed to be compatible with the water chemistry of the accident generated water.

10. The evaporator design includes features that negate potential adverse effects of chemicals on evaporator performance.

11. If a chemical constituent in the evaporator influent did reduce the efficiency of the evaporator to a significant extent, monitors on the evaporation system would trigger an alarm;

and if radioactivity release limits were exceeded, the radiation monitor on the evaporator would terminate the evaporation process.

12. The evaporator will reduce by over 1,000 the levels of chemicals released to the environment.

13. The deposition of chemical substances, principally sodium borate, attributable to evaporation will be orders of magnitude below the levels of salt deposition that have been determined to be innocuous, and therefore the chemical constituents in evaporator effluent will have no significant impact on the environment.

In its response to the motion for summary disposition, Joint Intervenors (JI) submitted seven[24] statements in support of Contention 6 and eight in support of those parts of Contention 4 that are relevant to the effects of chemicals in the processing of the AGW. The statements taken from Contention 4 are identified by (4) after the number assigned by JI. JI's statements, and our discussion thereof, are as follows:

1. The Licensee states that

the use of chemicals at TMI-2 is strictly controlled by the TMI-2 "Chemical Controls Procedure" (Harner Affadavit [sic])

Nevertheless, vendor product 1192 was added to the system in 12.8.86 (Licensee Response Interrogatory 5,3.30.88)

Vendor Product 1192 was shown in tests to reduce ion removal efficiency of the resins. Their effect on the evaporator has not been demonstrated. (NRC Response Interrogatory 13(b),2.22.88)

Joint Intervenors' statements are true, but irrelevant. The total amount of vendor (Betz) 1192 added to the system was 0.75 gallon, and that was in a test conducted under the Chemical Controls Procedure. It did indeed have a slight effect on the ion exchange system, and thus was never used in the decontamination process. Harner Affidavit, ¶ 13, at 7. We therefore find that this statement does not raise an issue of material fact that must be resolved at a hearing.

2. 350 gallons of Triton-X were added to the AGW. This is a detergent and as such changes the characterization of the water. It affects the efficiency of the evaporator. This has received no evaluation by NRC. (Affidavit Louis Kosarek, Exhibit C).

Licensee is aware of the potential problem. The use of Triton-X has been kept below levels where it might be expected to present a foaming problem, and has not been used since 1985. Harner Affidavit, ¶ 16, at 8; Buchanan Affidavit,

[24] There are two #6s in JI's list. We treat them separately.

¶ 12e, at 8. Excessive foaming would be readily detected, and it is expected that, if necessary, the use of antifoaming agents would be effective. Harner Affidavit, ¶ 16, at 8; Buchanan Affidavit, ¶ 13, at 9. Thus, JI's statement does not raise a genuine issue of material fact to be heard.

3. The NRC states that additional chemicals will be added. Evaluation is needed.

> After defueling some additional decontamination of the reactor coolant system would probably be required before the completion of clean-up. Decontamination of the reactor coolant system is expected to involve additional mechanical decontamination techniques as well.
>
> Nureg 0683, Supplement #3 Draft Supplement Dealing with Post Defueling Monitored Storage Subsequent Clean-up. P 2.16, (2.1.3)

Actually, the NRC statement quoted is that future decontamination efforts *may* involve some chemical decontamination. Regardless of this, Licensee states without contradiction that the influent to the evaporator will conform to the standards that have been set forth, as it will be pretreated either with the ion exchange system or by batch cycle operations in the evaporator to the extent necessary. *See* Buchanan Affidavit, ¶ 7, at 4; Harner Affidavit, ¶¶ 21-26, at 5-9. JI's statement does not raise a genuine issue of material fact that must be heard.

4. Licensee states that

> The effects of the substances have been evaluated and *for the most part* have no significant effect on the ion exchangers (emphasis added)
>
> Licensee's Request for Summary Disposition of Contentions 4b in part and 6. P.5

Licensee further states,

> Very limited amounts of a few substances that could adversely affect ion exchange media have been introduced into batches of accident generated water but they were subsequently removed by processing. Id. 10-19[25]

However, Licensee contradicts this by stating,

> This processing removes not only radionuclides but chemical constituents as well with the result that levels of chemicals other than boron and sodium in processed water are low. Id. 6

Obviously then all the chemicals are not removed from the AGW, and their effect on the processing systems has relevancy to these proceedings.

The above statement ignores important facts contained in the motion. The EPICOR and SDS systems will not totally remove some contaminants in

[25] This citation should be *Id.* at 5. The *Id.* 10-19 apparently refers to Harner's Affidavit.

the AGW. They will, however, remove contaminants to levels that meet the standards set forth for the evaporator influent. Buchanan Affidavit, ¶¶ 5, 7, 9, at 3-4, 6. Because these further material statements are not controverted, there is no genuine issue of material fact to be litigated.

5. See #8, P.20 of this response.

8.(4) NRC's response to Interrogatory 20,2.22.88 concerning chemicals in the AGW and their presence in the evaporator does not inspire confidence about the likelihood that they may vaporize. Factual basis should be provided showing that chemicals will not be released to the environment in any appreciable amounts to jeopardize the public health and safety. NRC states,

> From my current knowledge of the chemicals that are likely to reach the evaporator, I do not believe that any contaminant which would reach the evaporator would vaporize into the environment with the possible exception of trace amounts of ammonia and other amines.

JI failed to complete the statement made by the Staff. It should have added, "formed by the hydrogen peroxide oxidation of protein molecules. The quantity of these compounds will be small and they are not generally considered pollutants at the possible concentration." NRC's Response to Interrogatory 20, dated 2/22/88. This is important additional information to which JI have not responded. Similiarly, it has been stated that other chemicals found in the evaporator influent are in trace amounts, except for sodium and boron. In addition, there is no trace constituent in the processed AGW that is a hazardous or toxic waste. Baker Affidavit, ¶ 4, at 2-3. We therefore find no genuine issue concerning the release of any of these chemicals posing a hazard to public health and safety.

The statement does not present a genuine issue of material fact that must be heard.

6. In Buchanan affidavit P. 8 it states that foaming agents may be added to the AGW. This is additional chemical pollutants which need to be evaluated.

This is a misstatement. The Buchanan Affidavit states that, if unexpected foaming should occur, an *antifoaming* agent could be added to the AGW. It is not expected that this will be necessary, as the level of phosphates and organic materials is low. Buchanan Affidavit, ¶ 12e, at 8. The Board believes that under the present circumstances JI's statement fails to respond completely to the Buchanan Affidavit. The statement does not raise a genuine issue of material fact.

6.[sic] In Buchanan Affadavit P. 13, recognition is made that there may be a chemical contaminant which might affect the efficiency of the evaporator. The discussion goes on

to say how it will be detected. However, the discussion does not provide solutions to the problem.

Again, we find JI's statement to ignore important facts. We have been told that the composition of the AGW is well known through the Chemical Controls Procedures and that if, *however, it is assumed* hypothetically, some chemical constituent in the AGW lessened the efficiency of the ion exchange system, at worst it could only require repeated processing before the water would meet the evaporator influent standards. Buchanan Affidavit, ¶ 9, at 6. The statement does not raise a genuine issue of material fact.

7(4). NUREG/CR-2206 (11,6,81,P F-9) states that

> Possible explosion conditions due to unstable organics (e.g amines) or combustible gases e.g hydrogen must be covered. (in reference to evaporators)

NRC's Response to Interrogatory 20, 2.22.88 indicates that amines are present in the AGW and would vaporize into the environment. This issue needs to be evaluated.

JI's statement is not relevant to the contention. Neither combustion nor explosion in the evaporator would affect its decontamination factor. (*See* JI Statement 9(4) herein). We find no material fact to be in issue here.

9(4). The decontamination factor of an evaporator is affected by the chemistry of the water which can affect the following factors a) salting, b) scaling, c) fouling b) entrainment c) splashover d) foaming e) volatilization of solute.

The NRC has failed to evaluate these in light of the characterization of the AGW.

(Affidavit Louis Kosarek, Exhibit C)
(Nureg 0683 Supplement #2, 3.1.1)

Mr. Kosarek fails to acknowledge that the Licensee states that it has considered essentially all the effects of chemicals present in the AGW (Buchanan Affidavit, ¶ 11, at 7) and has set forth the means to be used to control them. *Id.*, ¶ 12b-f, at 7-9.[26] It should be noted that JI do not assert that the Licensee's evaluations were faulty. The Staff has reviewed the Licensee's affidavits and agrees that Licensee's proposal should avoid potential operational difficulties. Munson Affidavit, ¶ 27, at 13. Under these circumstances, we find that the Staff has adequately evaluated the factors that affect the efficiency and thus the decontamination factor of the evaporator.

[26] Scaling was the only one of the factors presented by JI but not discussed by the Licensee. However, scaling affects only the heat transfer efficiency of the evaporator and thus would have much the same effect as foaming.

10(4). The corrosive effects of this water upon the evaporator and the impact this might have upon the efficiency of the evaporator to operate has not been undertaken by the NRC. This is recommended by Nureg CR 2206 (11.6.81)

This statement ignores Licensee's assertion that it has taken special care that the evaporator material will be compatible with the chemicals in the AGW. The evaporator influent will also be neutralized by pH adjustment and thus will not be corrosive. Buchanan Affidavit, ¶ 10, at 7; ¶ 12a, at 8.

The Staff has reviewed the Licensee's Affidavit, and agrees that there should be no problem in construction of the evaporator. Munson Affidavit, ¶ 27, at 13. The Board finds the Staff has adequately evaluated this matter, and thus there is no genuine issue of material fact to be tried.

10(4).[sic] The NRC declined to respond when asked to identify tests performed to show the efficiency of moisture separators and vapor superheaters which would be used on evaporators to ensure that liquid droplets and dissolved components are not discharged with the vapor. (NRC Response Interrogatory 31.(ii) 2.22.88

This information is needed to determine the effectiveness of evaporators. A non response leaves JI to wonder if no such information is available.

The party that submitted the discovery request may, within 10 days after the date of the response, move the Board to compel the party (who has failed to respond) to respond. In this instance, we have reviewed the cited interrogatory. The Staff did not "decline" to respond. It made no objection to answering the interrogatory, so we think it is fair to conclude that the failure to respond was due to oversight. In any case, it was JI's responsibility to file such motion to compel. No genuine issue of material fact has been raised. However, the Board will request the Staff and/or Licensee to provide such information in writing before the hearing.

11(4). NRC and the Licensee have assumed that an evaporator is suitable for disposal of the AGW even though Nureg CR 2206 P.F-2 states

> Evaporation is most suitable for processing liquid waste which has a high total solids concentration and which requires a high degree of decontamination from its radionuclide content. The volumes of such wastes are normally low in comparison to those of lower activity wastes from nuclear power plants. (Nureg CR 2206 P.F-2)

We find that JI's statement is irrelevant. Its contention concerns the effects of chemicals on the operation of the evaporator, not whether the evaporator is suitable or "most suitable" for the intended result.

12(4). The NRC's experience with evaporators and a vaporizer is limited. (NRC Response to Interrogatory 21, 2-22-88)

13(4). Licon Inc., installer of the evaporator has had little experience with evaporators. (Licensee Response Interrogatory 16, 3.30.88) See 2-19-88/

These statements are not relevant to the admitted contention. The plain statements of Contentions 4b in part and 6 merely allege that the effect of chemicals in the AGW on the SDS, EPICOR II, and evaporator systems must be evaluated. The experience or nonexperience of the NRC and/or Licon, Inc., has no bearing on those effects.

15(4). The NRC has assumed that the maximum evaporator influent will be 20 gallons/minute. (NRC Response to Interrogatory 22,2.22.88)

However, the Licensee assumes a maximum feed-rate of 5 gallons/minute. S 17, p.15 2-19-88. Variations in the feed rate will affect the Licensee's ability to comply with its Technical Specifications related to permissible release rates for gases and particulates. The Technical Specifications are a means to protect the public health and safety.

Licensees' final decision was that the evaporator would have a design feed rate of a maximum of 5 gallons per minute (gpm). The technical specifications will be based on this rate. JI apparently misunderstood Licensee's response to their discovery request. By design, the evaporator cannot process a feed rate greater than 5 gpm. There is no intention, during normal operation, to vary the 5-gpm rate. Licensee will, at times, shut the unit down for maintenance, malfunction, etc., as with any machine. We find that the JI statement presents no genuine issue of material fact to be litigated. Licensee's Response to SVA/TMIA Interrogatories, S 17, at 15, 2/19/88.

Conclusion

The Board finds no merit in JI's responses to Licensee's Motion for Summary Disposition of Contentions 4b in Part and 6. Since Licensee's Motion contains grounds for summary disposition, the Motion is granted.

G. JI Contention 8

JI Contention 8 is:

The PEIS fails to give reasonable consideration to two disposal methods, viz., closed cycle evaporation with solidification and shipment to a low level waste site of the bottoms and condensate, and storage of the water in tanks within the containment building.

January 5 Order at 19.

The supporting documents submitted with "Licensee's Motion for Summary Disposition on Alternatives (Contentions 1, 2, 3, and 8)" which were listed in our discussion of Contention 2 are also applicable to Contention 8.

Licensee's statement of material facts as to which it asserts that there are no issues to be heard sets forth the following statements which are applicable to Contention 8:

> 7. The suggested alternative of on-site solidification of the AGW in cement, with off-site burial would require 467,000 ft^3 of burial volume (58% of the Nation's "unusual volume" allocation for 1986 through 1992), 1,200 shipments from TMI to Hanford (with an expected 4.9 traffic accidents and 0.2 fatalities), and would cost $40.7 million (roughly 10 times the cost of the evaporation option).
>
> 9. The alternative of distillation (closed cycle evaporation) of the AGW followed by on-site solidification and burial of the captured distillate is not feasible because of space limitations at TMI and the site's location within the 100-year flood plain, and would cost about $3 million more than Licensee's proposal.
>
> 10. If the captured and solidified distillate (from Fact No. 9) is taken off-site for burial, the alternative has the same disadvantages stated above in Fact No. 7 for solidification of the AGW in cement and off-site burial.
>
> 14. Permanent in-containment storage of the AGW would result in an occupational dose estimated at 4,070 to 5,106 person-rem (compared to 23 person-rem for the evaporation proposal), would require exemptions to NRC's site suitability regulations under Part 61, and would exceed, in the long term, the cost of Licensee's proposal.

According to Licensee's affiants the disposal system for the closed cycle evaporation and solidification would consist of (1) a closed-cycle evaporator system, (2) an evaporator bottoms processing and packaging system, and (3) a distillate disposal system. The evaporator used in this option would be similar to the one described in the System Description and would consist of dual evaporators. The main evaporator would distill the AGW by changing it into steam and separating the entrained solids from the rising vapors. The vapors would be condensed into cleaner water, the distillate, and collected in the distillate tank. Joint Affidavit at 30-31.

The evaporator bottoms would be packaged for disposal consistent with commercial low-level waste transportation and disposal regulations. The waste would be packaged into 55-gallon containers, each of which would hold 560 pounds of evaporator bottoms. As many as 389 Class A drums and 292 Class B high-integrity containers (HICs) would be generated, with a total packaged volume estimated to be 5200 cubic feet. The Class A drums would be shipped to a low-level waste disposal facility in a standard van truck. The activity of the Class B HICs, however, is such that they would exceed low specific activity (LSA) criteria. Therefore the Class B HICs would have to be shipped to the low-level waste facility in Class B shipping casks. It is estimated that six truck

shipments would be required to dispose of the Class A drums and thirty-seven cask shipments would be required to dispose of the Class B HICs. *Id.* at 31.

In order to solidify the distillate, a system for producing a grout mixture would have to be constructed. The grouting system would be trailer-mounted and located near the Interim Solid Waste Staging Facility (ISWSF). Evaporator distillate would be transferred to a grouting system feed tank located within the system trailer. Cement would be fed from storage silos and mixed with the water within a screw mixer. For onsite storage, the distillate would be mixed with the ground and placed in an engineered pit that is located within a dike to the north and northeast of the ISWSF. *Id.* at 31-32.

A pit approximately 260 feet × 190 feet × 15 feet deep with a cement slab about 10 feet deep would be required. A 2-foot-thick layer of compacted clay and a 36-mil Hypalon liner would be installed to provide groundwater protection. Monitoring wells would be installed for groundwater monitoring, with at least one well up-gradient of the groundwater flow paths, and the other would be down-gradient. Leachate collection laterals would be placed on the synthetic liner in the bottom of the pit and covered with gravel. The collected leachate would be held in a sump located at the landfill site. The leachate would be monitored and pumped to the industrial waste treatment system. *Id.* at 32.

The solidification and onsite disposal of the distillate would cause the release of radioactive material to the environment. Tritium would be released to the atmosphere in the form of water vapor because of the heat of hydration during the mixing and curing in the solidification process. Prior to closure of the landfill, small quantities of radioactive material may be released to the river due to release of leachate. *Id.* at 33.

To estimate the continuous tritium release rate to the atmosphere, the Licensee's affiants made the following assumptions:

- the average tritium concentration in the AGW is 0.12 μCi/cc;
- a release fraction of 50% for tritium;
- a continuous release rate of 10 GPM; and
- a solidification process rate of 10 GPM (631 cc/sec).

The foregoing assumptions yield a tritium release rate of 38 μCi/sec. This is approximately 7% of the allowable continuous tritium release rate limit permitted by the TMI-2 Environmental Technical Specifications when averaged over any calendar quarter. *Id.* at 10, 33.

Two release pathways exist for the solidification and burial on site scenario: atmospheric release of half of the tritium during curing of the slab, and river release of a fraction of the particulate activity through leaching into rainwater in contact with the slab. *Id.* at 33-34. One percent of the activity in the slab was

conservatively assumed to be leached from the concrete mass each year during the contact time prior to closure and isolation of the landfill. *Id.* at 34.

Three pathways to humans were considered from the liquid release: drinking water, consumption of fish caught near the plant discharge, and direct radiation exposure from shoreline sediments. The maximally exposed individual was assumed to obtain drinking water from downstream of the plant, to eat fish from downstream of the plant, and to spend recreational time on the shoreline downstream of the plant. Based on this methodology, the maximally exposed individual from solidification prior to closure of the landfill was estimated to receive about 0.7 millirem total body from the atmospheric tritium and 0.3 millirem to the bone from dissolved particulates released to the river as leachate. *Ibid.*

The airborne population dose was estimated to be 7.5 person-rem total body. Liquid population doses were evaluated by including the entire population that might use Susquehanna River water for drinking purposes, including Chester County and the City of Baltimore. This includes about 6 million people, and the liquid pathways population dose to them was estimated to be about 4 person-rem. *Ibid.*

Integrating the liquid pathway dose for a 50-year exposure, accounting for the decreasing source because of decay and leaching loss, would yield a dose commitment to the maximally exposed individual of about 7.2 millirems to the bone and about 100 person-rem to the bone total population dose. *Id.* at 35.

In addition the dose to an intruder who somehow was exposed to the slab after decommissioning of the TMI site was estimated. For this scenario, it was assumed that the island had become a park, that individuals had caused the isolation of the landfill to fail, and that they would spend 2000 hours per year above the slab in some hypothetical occupational capacity. In estimating the dose to such individuals, an account was taken for 30 years of decay and leaching prior to intruder contact. The maximally exposed individual, assuming a 50-year exposure to the slab, would receive about 14 millirem. *Ibid.* Because the actual number of people who could be exposed in this manner to the slab is quite small, the population dose is expected to be less than 1 person-rem. *Id.* at 35-36.

The occupational dose from the solidification process has been estimated to be approximately 15 person-rem. This estimate was based on approximately 16,000 person-hours for the solidification and transfer of the grout and 5 person-rem from the processing of the water. This dose is a very small percentage of the total exposure of the work force estimated in the original PEIS (2000 to 8000 person-rem). *Id.* at 36.

In addition, an occupational dose will result from the packaging and shipment of the Class A drums and Class B HICs. The worker dose was estimated to be 570 millirems for each driver, and the incident-free population dose from the

shipments was estimated to be 5.2 person-rem. Based on the assumption of six truck shipments and thirty-seven cask shipments, the expected number of traffic accidents and fatalities for these shipments is 0.175 and 0.007, respectively. *Ibid.*

There are regulatory and practical obstacles to burial of solidified distillate on site. To begin with, there is no suitable space within the nuclear station's diked area for a large waste disposal site. Outside of the diked area most of the available land is on the 100-year floodplain. Pennsylvania law prohibits the licensing of a landfill on a floodplain. In addition, Pennsylvania's current policy is to limit issuance of landfill disposal permits to only those that are absolutely necessary. *Id.* at 37.

An alternative to burial on site would be solidification of the evaporation distillate into large blocks for disposal at a low-level waste burial ground. *Id.* at 38-39. In developing this scenario, Licensee's affiants assumed that the evaporator distillate would be solidified into 8 foot × 8 foot × 3 foot cement blocks. The average activity of each block would be 2.14 E-1 curies. To make the blocks, a temporary batch mixing plant similar to that already described would be required. The solidification of 2.3 million gallons of distillate would yield 2400 blocks, having a disposal volume of 460,000 cubic feet. If the blocks were shipped to the low-level waste disposal site at Hanford, Washington, a total of 1200 shipments would be required. In addition, there would be 5200 cubic feet of evaporator bottoms to be disposed of in the manner already described. *Id.* at 39.

The dose to the maximally exposed individual off site from the release of tritium during the curing of the blocks was estimated to be 0.7 millirem, and the population dose was estimated to be 7.5 person-rem to total body. The transportation of the blocks under this option would result in an incident-free general population dose of 9.1 E-2 person-rem, and the incident-free general population dose from the transportation of the bottoms was estimated to be 5.2 person-rem. *Id.* at 40.

The expected number of accidents and fatalities from transportation of the blocks was estimated to be 4.9 and 0.2, respectively. The accident and fatality estimates for the transportation of the bottoms are 0.175 and 0.007, respectively. The release of radionuclides resulting from an accident would yield a dose of 6.3 E-6 person-rem expected from the shipments of the blocks and 0.304 person-rem from the shipments of the bottoms. *Id.* at 41.

Occupational dose during the evaporation process of this option is expected to be 9 person-rem. Production and handling the blocks was estimated to taken 20,000 person-hours and produce a dose of 24 person-rem. Processing and packaging of the evaporator bottoms was estimated to take 3500 person-hours and produce a dose of 9 person-rem. *Id.* at 40.

Finally, Licensee estimated that the construction of the batch mixing plant, solidification operations, shipment, and disposal of the blocks, and shipment and disposal of the bottoms would cost a total of $41.9 million. *Id.* at 41-42.

With regard to the alternative of storing the AGW within the TMI-2 containment building, Licensee's affiants attest that to store the 2.3 million gallons of water, 307,500 cubic feet of storage space is required. This volume of space does not exist in the containment building. *Id.* at 45. However, 2 million gallons could be stored in the containment building and the remaining 300,000 gallons could be stored in the Refueling Canal. *Id.* at 46.

The most intensive labor effort involved in this option would be fabrication of the storage tanks. To keep radiation as low as reasonably achievable, the tanks should be fabricated outside the reactor building. The prefabricated component parts of the tanks would be limited in size to 20 feet in diameter and 50 feet in length due to the dimensional limitations of the equipment hatch through which the components must be passed into the building. *Id.* at 46-47.

Licensee estimates that the construction of tanks inside the containment building would require 130,000 person-hours. The current dose ratios in the reactor building are typically 50-75 person-rem/hour at the 305-foot elevation and 40-50 person-rem/hour at the 347-foot elevation. Assuming that the work in the reactor building is divided between these two locations, Licensee estimates that the total dose received during the construction of the tanks would range from 4070 to 5106 person-rem. *Id.* at 48-49.

If the AGW is stored on site for an indefinite period of time as a means of disposal, the TMI site would require either a license under 10 C.F.R. § 61.3 or an exemption under 10 C.F.R. § 61.6 for waste disposal. Among the technical requirements for land disposal facilities are that the site (1) not be located on a 100-year floodplain (10 C.F.R. § 61.50(a)(5)) and (2) have sufficient depth to the water table so that groundwater intrusion will not occur (10 C.F.R. § 61.50(a)(7)). Further, liquid waste must be either solidified or packed in sufficient absorbent material to absorb twice its volume (10 C.F.R. § 61.56(a)(2)). The TMI site does not meet the two siting criteria because TMI is in a 100-year floodplain, so that the disposal site would have to be within the diked area of the island, and the groundwater level is only about 20 feet below ground level. In addition, bulk storage in tanks would not meet the absorbency criteria of 10 C.F.R. § 61.56(a)(2). Therefore, Licensee considers it doubtful that a license or exemption could be obtained to store AGW indefinitely at TMI. *Id.* at 53.

The NRC Staff states in its June 23, 1988 response to Licensee's motion for summary disposition that the closed-cycle evaporation with solidification of the distillate is given a "hard look" in NUREG-0683, Supp. 2, at 3.15-3.18. Staff Response at 13. The sections of NUREG-0683 on those pages, however, deal with closed-cycle evaporation followed by river discharge of the distillate rather than solidification of the distillate. NUREG-0683, Supp. 2, at 3.15, § 3.1.3.

Solidification is discussed in NUREG-0683, Supp. 2, at 3.21-3.26, but with the water being reprocessed by the SDS and/or the EPICOR II system prior to solidification rather than being evaporated and distilled. *Id.* at 3.21, § 3.3.1.1. Distillation and solidification of the distillate is discussed briefly in the PEIS in § 3.6.4, but is rejected on the grounds that while the environmental impact of solidification following either closed-cycle evaporation or SDS/EPICOR reprocessing would not be significantly different, evaporation would cost $6.2 to $12 million whereas SDS/EPICOR reprocessing would cost only $2.3 million. Staff acknowledges, however, that evaporation is a more effective means of particulate removal than reprocessing by the SDS/EPICOR system. *Id.* at 3.35-3.36. Staff's estimates of radiation doses from evaporation and release of the distillate to the river and from solidification following reprocessing the AGW with the SDS/EPICOR system cannot be compared with Licensee's estimates of doses from closed-cycle evaporation followed by solidification, because of radiation dose resulting from release of distillate to the river and because the SDS/EPICOR system does not remove the same amount of radionuclides from the AGW as does the evaporation process. Finally, the Staff has not addressed the alternative of storing the water in tanks in the containment building in either NUREG-0683, Supp. 2, or in its response to Licensee's motion for summary disposition.

In the JI Response the Intervenors state that "[a]ll those material facts raised in 'Contention 2' concerning the NRC's treatment of the 'no-action alternative' will apply to this Contention since the NRC treats these two alternative in one section in NUREG-0683 [Supp. 2] 3.5 P.3.32 and in Table 5.1. P.5.2." JI Response at 29. Our reading of those pages of NUREG-0683, Supp. 2, however, does not lead us to believe that the Staff was addressing the alternative of storing the AGW in tanks within the containment building. Rather, Staff is addressing only the no-action alternative, which involves storing the AGW in tanks on the site located outside the TMI-2 reactor building. Therefore, we do not consider the statements of material facts raised by JI in Contention 2 to be applicable to Contention 8, except for the legal conclusions advanced by Statements 1, 2, and 3, which address NEPA's general position with regard to consideration of alternatives.

With regard to Contention 8's claim that the PEIS fails to give "reasonable consideration" to closed-cycle evaporation, followed by solidification of the distillate and evaporator bottoms, and shipment of the solidified waste to a low-level waste site, the Staff did consider this alternative but rejected it on the grounds that reprocessing the AGW in the SDS/EPICOR system before solidification would cost much less than evaporating it and solidifying the distillate, while the environmental impact of the two procedures would not differ significantly. NUREG-0683 at 3.35-3.36, § 3.6.4. We find that this constitutes reasonable consideration of the closed-cycle evaporation with solidification

alternative. In addition, JI did not challenge Licensee's Statement of Material Facts No. 7, which states that offsite burial of the solidified waste would require 467,000 cubic feet of burial volume, which is 58% of the Nation's "unusual volume" allocation for 1986 through 1992. That fact, plus the financial cost of closed-cycle evaporation followed by solidification, make it clear that JI have not raised a genuine issue of fact that this is an "obviously superior" alternative.

With regard to storing the water indefinitely in tanks within the TMI-2 containment building, the JI have not challenged Licensee's Statement No. 14, which indicates that constructing plants within the contaminated containment building would result in an occupational dose estimated to be between 4070 and 5106 person-rem. This extremely high occupational dose clearly outweighs any advantages associated with storing the AGW in tanks within the TMI-2 containment. While it appears to be true that the Staff did not consider this alternative, the occupational dose that the alternative entails clearly makes it an obviously inferior alternative, and therefore there is no genuine issue of material fact to litigate.

Conclusion

We conclude that the JI have failed to raise a genuine issue of material fact with respect to Contention 8. Therefore Licensee's motion is granted with regard to Contention 8, and the contention is dismissed.

V. ORDER

For all the foregoing reasons and based on consideration of the entire record in this matter, it is, this 25th day of August 1988, ORDERED:

Contentions 1, 3 in part, 4b in part, 4c, 4d, 6, and 8 fail to raise genuine issues of material fact. Therefore, with respect to them, Licensee's motion for summary disposition is granted.

Contentions 2, 3 in part, 4b in part, and 5d raise genuine issues of material fact and therefore shall be litigated to the extent indicated in the accompanying memorandum. Under Contention 3, JI's statements of material fact 1, 2, 3, 4 (i), (v), (ix), and (xi), 5, 6, 7, 8, 10, 11, 12, and 14 fail to raise genuine issues and therefore will not be litigated.

Statements 4 (ii), (iii), (iv), (vii), (viii), (x), (xii), and (xiii) do raise genuine issues and will be litigated. Under Contention 4b, JI's statement of material fact 4 will be litigated. The remaining statements do not raise genuine issues and will not be litigated.

The Staff is hereby requested to respond to SVA/TMIA Interrogatory 31(ii) 2.22.88 concerning efficiency of demisters prior to the hearing scheduled for October 31, 1988.

The primary issue to be heard is whether the no-action alternative is obviously superior to the forced-evaporation proposal because the latter method will release all of the tritium in the AGW to the atmosphere without any prior period of natural radioactive decay.

Related subissues to be heard are: whether the tritium content of the AGW has been accurately determined; whether tritium is of more critical concern with respect to our determination than strontium-90; and whether the risk to the public health from tritium released by forced evaporation is greater than Licensee and Staff have acknowledged.

The Licensing Board, or its Chair, is prepared to facilitate settlement of the proceeding pursuant to 10 C.F.R. § 2.759.

This is an interim decision of the Licensing Board and is not subject to appeal.

THE ATOMIC SAFETY AND
LICENSING BOARD

Peter B. Bloch, Chair
ADMINISTRATIVE JUDGE

Glenn O. Bright
ADMINISTRATIVE JUDGE

Dr. Oscar H. Paris
ADMINISTRATIVE JUDGE

Bethesda, Maryland

Cite as 28 NRC 235 (1988) DD-88-12

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF SPECIAL PROJECTS

James G. Partlow, Director

In the Matter of **Docket Nos. 50-327**
50-328

TENNESSEE VALLEY AUTHORITY
(Sequoyah Nuclear Plant, Units 1 and 2) **August 3, 1988**

The Director of the Office of Special Projects denies a petition filed by Albert K. Bates on behalf of The Natural Rights Center and certain named individuals (Petitioners) which sought issuance of an immediate emergency order suspending full-power operation of the Sequoyah Nuclear Plant pending completion of remedial action. The Petitioners asserted that TVA had failed to meet the requirements of Regulatory Guides 1.9 and 1.108 for emergency diesel generators (EDGs) and that the capacity and performance testing of the EDG system were inadequate to ensure protection of the public health and safety. In denying the petition, the Director found that the Petitioners had failed to provide any new information which had not been addressed in the Staff's prior review of the Sequoyah EDGs or which would shed doubt upon the conclusions of the NRC Staff that the capacity margins and performance testing of the EDGs were adequate to provide reasonable assurance that the public health and safety will be protected.

REGULATORY GUIDES: APPLICATION

Failure to comply with a Regulatory Guide does not indicate that the system involved does not meet the applicable NRC requirements contained in a regulation. If a licensee can demonstrate compliance with a Regulatory Guide, it has demonstrated compliance with the NRC's requirements in that area. However, a licensee may seek to demonstrate compliance with the requirements by means other than those set forth in a Regulatory Guide, if it so chooses.

REGULATORY GUIDES: APPLICATION

The inclusion of a commitment to conform to a specified Regulatory Guide in a Final Safety Analysis Report (FSAR) is no different than a commitment to conform to a specified industry standard or to a methodology or limit spelled out explicitly in the text of the FSAR.

TECHNICAL ISSUES DISCUSSED

Capacity of Emergency Diesel Generators;
Performance Testing of Emergency Diesel Generators;
Regulatory Guide 1.108;
Regulatory Guide 1.9.

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

INTRODUCTION

On March 24, 1988, Albert K. Bates, on behalf of The Natural Rights Center and certain named individuals (Petitioners), filed a request with the Commission seeking issuance of an immediate emergency order suspending full-power operation of the Sequoyah Nuclear Plant pending completion of remedial action. The basis for Petitioners' request is the claimed failure of TVA to meet the requirements of Regulatory Guides 1.9 and 1.108 for emergency diesel generators (EDGs). Specifically, the Petitioners claim that the capacity and performance testing of the EDG system are inadequate to ensure protection of public health and safety. To support this claim, the Petitioners rely on letters to the Commission from Mr. Dallas R. Hicks, dated February 25 and March 10, 1988, identifying purported deficiencies in the Sequoyah EDGs, and on a report to the Staff from NRC's own independent consultant, Dr. Alexander Kusko of Failure Analysis Associates, dated March 8, 1988.

By letter dated March 28, 1988, the Petitioners were informed that their request for relief had been referred to the Director, Office of Special Projects. In that letter, the Petitioners were also informed that their request raised no new issues not already considered by the NRC Staff and that, therefore, their request for emergency relief was denied.[1] It was further stated in that letter that the

[1] Petitioners filed an appeal of the denial of their request for emergency relief in the U.S. Court of Appeals for the Sixth Circuit on March 30, 1988. On May 16, 1988, the Court of Appeals ruled that the denial of emergency relief was not a final agency action under *Honicker v. NRC*, 590 F.2d 1209 (D.C. Cir. 1978), *cert. denied*, 441 U.S. 906 (1979). *See* slip op. at 4-5.

remainder of the response to their request, i.e., an examination of the technical adequacy of the EDGs, would be treated as a petition for enforcement action under 10 C.F.R. § 2.206 and that appropriate action on the petition would be taken in a reasonable time. Notice of receipt of the petition has been published in the *Federal Register*, 53 Fed. Reg. 22,396 (June 15, 1988).

By letter dated May 18, 1988, Mr. Bates submitted additional questions. Mr. Bates requested that the issues raised by these questions be considered in my response to the March 24th petition.

The Staff has completed its evaluation of the concerns raised by the petition and the additional questions raised in the May 18th letter. In the course of that evaluation, the NRC Staff considered the materials filed by both the Tennessee Valley Authority (TVA) and the Petitioners in the U.S. Court of Appeals during the Petitioners' challenge of the denial of their request for emergency relief. Specifically, the Staff reviewed TVA's technical submissions and Mr. Hicks' letter dated April 6, 1988, responding to those submissions.[2] For the reasons stated below, the Petitioners' request for an order suspending full-power operation of the Sequoyah facility is denied. The enclosure to this Decision contains the questions raised in the May 18th letter and the NRC responses to these concerns.

BACKGROUND

In August 1985, as a result of a number of identified deficiencies in environmental qualification of electric equipment, design change control, and construction practice, TVA elected to shut down Sequoyah Units 1 and 2 until these deficiencies were corrected. In September 1985, the NRC issued a letter in accordance with 10 C.F.R. § 50.54(f), identifying a number of issues that the NRC Staff required TVA to resolve prior to restart. Among these issues was the Sequoyah design control process. One specific area affected by the allegedly inadequate design control process related to the EDGs. In 1985, both TVA and the NRC had received allegations of various EDG inadequacies including overloading, poor reliability, missing records and calculations, inadequate testing, and deficiencies in maintenance. As a result, beginning in 1986, TVA, as part of its Nuclear Performance Plan, undertook a major effort to address these issues. Starting in late 1986, the NRC Staff reviewed these efforts in detail during its inspections of TVA's electrical calculation program and design base-

[2] By letter dated June 21, 1988, Douglas R. Nichols, Assistant General Counsel, TVA, requested that the NRC Staff consider documents filed by TVA before the Sixth Circuit in reaching its final determination on the petition. In this regard, Mr. Nichols specifically cited several affidavits which he claimed should furnish an ample factual basis for denying the petition. The Staff has considered these documents in arriving at its determination regarding the petition.

line verification program. The Staff completed its review in March 1988 and, in May 1988, issued a favorable evaluation as part of the Sequoyah Nuclear Performance Plan Safety Evaluation Report, NUREG-1232, Vol. 2 (SER), at 2-23 through 2-28.

DISCUSSION

The Petitioners assert that the Sequoyah EDGs are inadequate to perform their required safety functions. They claim that the EDGs have inadequate capacity and received inadequate performance testing, and that these inadequacies are a consequence of TVA's failure to meet the requirements of Regulatory Guides 1.9 and 1.108. Petitioners state that the failure of this system to meet federal requirements is set out in greater detail in a "Consultant's Report" by Dr. Kusko and in letters to the Commissioners from Mr. Dallas Hicks, dated February 25 and March 10, 1988.[3] The petition itself does not provide specifics as to the nature of Petitioners' technical concerns or the alleged deficiencies. Nonetheless, I have tried to summarize the technical issues underlying the general concerns in the documents referenced by the Petitioners and to respond to each individually.

Capacity

Petitioners first assert that the Sequoyah diesel generator capacity[4] is inadequate. As stated above, Petitioners have referenced both an NRC consultant's report dated March 8, 1988, by Dr. Kusko, and letters by Mr. Hicks dated February 25 and March 10, 1988, to support their assertions. However, Dr. Kusko's March 8th letter is a preliminary and partial report of his work and should be read in conjunction with his March 25 and March 28, 1988 letters. Dr. Kusko's March 8th letter does not discuss capacity since Dr. Kusko was retained by the NRC principally to examine voltage performance. Discussion of voltage performance is included with performance testing, below. In his March 25, 1988 letter, Dr. Kusko finds that the capacity ratings are appropriate and the loads are within those ratings. The only statement critical of EDG performance in the March 8th letter concerns circuit contactor performance. On March 10, 1988, TVA submitted a revised analysis of circuit contactor pickup and dropout, which resolved Dr. Kusko's concerns.[5] The NRC's review of this analysis is

[3] Mr. Hicks is a former TVA engineer who was employed by TVA from March 23, 1979, to May 8, 1984.

[4] We interpret the Petitioners' use of the term capacity margin to mean the load-carrying capability of the EDGs, which is commonly referred to as capacity in technical literature.

[5] Circuit contactors used for connecting electric power to small loads require that the source voltage must not drop below an acceptable minimum value across these contactors, in order to ensure their proper function. There was a concern that during large-load starting, the system voltage could drop below that minimum and cause contactor misoperation.

documented in the SER at pages 2-23 through 2-28. I therefore conclude that Dr. Kusko's March 8, 1988 letter, read in conjunction with his later letters and the NRC Staff's safety evaluation, does not raise a safety issue requiring any further action by NRC.

With regard to Mr. Hicks' letters, I understand the specific technical issues raised in those documents regarding capacity to be as follows:

a. TVA's Condition Adverse to Quality Report (CAQR), dated October 1986 (CAQR-SQN-EEB8629R3), identified a condition in the EDG postaccident loading sequence that exceeded the capacity of the EDGs.
b. Manufacturer's data sheets show an EDG capacity of 4000-kilowatt continuous rating which, Mr. Hicks claims, is exceeded at Sequoyah and is in violation of Regulatory Guide 1.9.

With regard to the first issue, TVA discussed the overload problem with the NRC in August 1986 and formally reported the problem in Licensee Event Report (LER) 87-52 in July 1987. Simply stated, the EDGs are limited in how much load they can assume instantaneously for the 5 or so seconds while the load is being started. This limit is called the transient load limit which is not addressed in the Regulatory Guides or the related industry standards. Morrison-Knudson (M-K), the EDG manufacturer, has reported to TVA that, for Sequoyah, two separate transient load limits apply. According to M-K, the EDGs have, under most circumstances, a transient load capability of 4951 kilowatts. However, during the first 3 minutes of operation, the EDG superchargers are not fully effective and the EDGs are limited to a transient load limit of 4482 kilowatts. The loads cited by Mr. Hicks, which were transient starting loads (as high as 4925 kilowatts) that occurred during the first 30 seconds of EDG operation, exceeded 4482 kilowatts and were, therefore, deemed unacceptable by TVA and so reported to the NRC in the LER. Thus, at the time Mr. Hicks was employed at TVA, his charges were valid. However, after Mr. Hicks left TVA's employment, TVA resolved this issue by modifying the EDG load sequencing so that these higher loads occurred after the first 3 minutes of operation when the transient load limit was 4951 kilowatts. The NRC Staff reviewed the identified transient load limits and the acceptability of the EDG load sequence modification and found the EDGs acceptable. The Staff documented this finding in the SER at pages 2-23 through 2-28. The petition presents no new information or concerns that change the NRC Staff's conclusion that TVA has adequately and acceptably addressed the issue raised in CAQR-SQN-EEB8629 that was referred to by Mr. Hicks. Therefore, I conclude that the CAQR data cited by Mr. Hicks do not now represent a safety concern.

The second capacity issue raised by Mr. Hicks is that the loading of the EDGs exceeds the 4000-kilowatt continuous rating which he asserts to be the only capacity of the machines. Based on this assertion, the Petitioners apparently

conclude that EDG capacity is inadequate. The capacity of an EDG is limited by the capacity of the diesel engine or the generator, whichever is lower. Therefore, in determining the adequacy of the Sequoyah EDGs, the NRC examined capacity of both the engine and the generator.

On August 11, 1987, TVA filed a request for amendment of Sequoyah's Technical Specifications for diesel generators. This request sought NRC approval for testing and operation of the Sequoyah diesel generators at a 4400-kilowatt (increased from 4000 kilowatts) capacity for continuous operation of 2000 hours and a 4840-kilowatt (increased from 4400 kilowatts) capacity for emergency operation of 2 hours. In its request, TVA noted that according to the manufacturer's detailed specifications, the diesel engine standing alone had a continuous rating of 4400 kilowatts and an emergency rating of 4840 kilowatts. However, the emergency rating is only 4482 kilowatts for the first 3 minutes of operation of the diesel engine while the supercharger is coming up to full capacity. TVA also provided the generator specifications which cited ratings of 5000-kVA continuous and 5500-kVA emergency rating.

As is standard in the industry, the manufacturer assumed an operating power factor of 0.8 for the loads. At this power factor, the generator kVA limit translated to kilowatt limits of 4000-kilowatt continuous and 4400-kilowatt emergency (kW = power factor × kVA). A power factor of 0.8 is applied for establishing conservative margins in EDGs, when load characteristics are not fully determined during plant construction. However, when installation is completed, an accurate determination can be made of the load power factor, which generally results in higher values, as evidenced in the Sequoyah case. TVA, in its request, noted that the actual power factor of the loads at Sequoyah was 0.88 and, therefore, the EDGs could operate at power levels well above the 4000 and 4400 kilowatts while remaining within both the engine and generator limits. Therefore, TVA requested an amendment of EDG continuous and emergency limits to 4400 kilowatts and 4840 kilowatts so long as the 5000-kVA and 5500-kVA generator limits and the 3-minute engine limitation were simultaneously met.

The NRC reviewed the technical basis for TVA's request and approved the EDG limits in an amendment dated January 7, 1988. The NRC Staff also reviewed TVA's calculations of the actual loading of the Sequoyah EDGs and concluded that the loadings of the EDGs were within the limits on capacity as stated in Regulatory Guide 1.9 (position C.2). This analysis is summarized in the SER at page 2-25. The petition, Mr. Hicks' letters, and Mr. Bates' questions provide no new data or issues that were not considered in the NRC Staff's original review nor any basis to change the Staff's conclusion. Therefore, I conclude that the Sequoyah EDGs are operating within appropriate and conservative capacity limits with adequate margins and are not overloaded.

Performance Testing

The second general area of concern expressed in the petition is the alleged nonconformance with Regulatory Guides 1.9 and 1.108 in performance testing of the EDG system. As set out in his letters, Mr. Hicks' concerns[6] regarding performance testing can be summarized as follows:

a. The Sequoyah EDGs have never received the preoperational testing called for in Regulatory Guide 1.108.
b. The testing that has been conducted demonstrates nonconformance with Regulatory Guide 1.9.
c. The testing that has been conducted does not completely duplicate the postaccident design loads.

This section will address each of these three issues. Initially, with regard to the Petitioners' first two concerns, it is important to note that failure to comply with a Regulatory Guide does not indicate that the system involved does not meet the applicable NRC requirements contained in a regulation. If a licensee can demonstrate compliance with a Regulatory Guide, it has demonstrated compliance with the NRC's requirements in that area. However, a licensee may seek to demonstrate compliance with the requirements by means other than those set forth in a Regulatory Guide, if it so chooses. *See, e.g., Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), CLI-74-40, 8 AEC 809, 811 (1974); *Porter County Chapter of the Izaak Walton League of America, Inc. v. AEC*, 533 F.2d 1011, 1016 (7th Cir. 1976), *cert. denied.*, 429 U.S. 945 (1976).

With respect to Petitioners' first concern, Regulatory Guide 1.108 was not issued until several years after the Sequoyah application was filed and, therefore, was not addressed in the FSAR. However, the Sequoyah Technical Specifications, which were approved by NRC, require periodic testing essentially identical to the testing delineated in Regulatory Guide 1.108 which includes both extended full-power testing and load sequence testing for the Sequoyah EDGs. This testing was completed at Sequoyah between April and November 1987. The one substantive difference between the Sequoyah EDG test program and Regulatory Guide 1.108, involving the use of full design loads for testing, is discussed below in response to Concern 3, Design Load Testing. The NRC reviewed the results of the tests and concluded that they were conducted in compliance with Regulatory Guide 1.108, notwithstanding that one substantive difference. However, as will be explained below, that difference does not impact

[6] Mr. Hicks claims in his letter to the Commission dated February 25, 1988: "In withholding information, the senior NRC Staff management misrepresented to the Commission the degree and seriousness of the results of the TVA diesel generator testing failures." This claim is unjustified because the Staff became aware of allegations of test failures on January 13, 1988, when TVA gave the Staff preliminary notification of the test results and informed the Commission on January 20, 1988, that Staff members were to be dispatched to the site on January 21, 1988, for a complete briefing by TVA on the diesel generator test results.

the Staff's finding that Sequoyah can be operated safely. Therefore, I have concluded that the EDG testing at Sequoyah was acceptable.

The Petitioners' second concern is that, based on test data, the Sequoyah EDGs do not meet the quantitative limits of Regulatory Guide 1.9, ¶ C.4. A thorough review of the test data by the NRC Staff has identified only two areas where the limits are not met.

By way of background, as part of its original application for an operating license filed in December 1973, TVA committed to conform to Safety Guide 9 in its Final Safety Analysis Report (FSAR). This safety guide was subsequently retitled Regulatory Guide 1.9, Revision 0. The fact that Regulatory Guide 1.9 (Safety Guide 9) is cited in the Sequoyah FSAR does not change its status. The FSAR is a formal description of the facility, its design basis, limits of operation and safety analyses (*see* 10 C.F.R. § 50.34(b)). The inclusion of a commitment to conform to a specified Regulatory Guide is no different than a commitment to conform to a specified industry standard or to a methodology or limit spelled out explicitly in the text of the FSAR. In this case, the NRC reviewed TVA's deviations from its commitment to Regulatory Guide 1.9 and found them acceptable.[7]

The first deviation from Regulatory Guide 1.9 is that at the very beginning of the loading sequence, when the EDG circuit breaker closes at time zero, the EDG has not yet reached 95% of rated frequency as specified in the Regulatory Guide. A careful review by the NRC Staff of the test data and the control logic of the EDG circuit breaker leads to the conclusion that this deviation is a consequence of the breaker control logic scheme used whereby the breaker closes on to the power bus earlier than required and consequently the frequency has not reached its expected value. This review is documented in the SER at page 2-27. However, the EDG frequency continues to increase at a constant rate even as the time zero loads are applied and reaches the allowable range within 1 second. The NRC concluded in the SER that this deviation was of no safety significance.

The second deviation is that the test data show that after certain load steps, at least one of the EDGs did not recover to ± 10% of rated voltage within 60% of each load sequence time interval.[8] Because of the deviation in voltage recovery, the Staff required TVA to provide detailed additional analyses

[7] Section 50.59(a)(1) of 10 C.F.R. provides that changes to the facility or procedures as described in the FSAR may be made without prior NRC approval where such changes do not involve an unreviewed safety question, as defined in § 50.59(a)(2), or a change in technical specifications. Initially, the determination as to whether a proposed change requires prior NRC approval under § 50.59 rests with the licensee. However, such a determination is reviewable by the NRC and, if inappropriate, can be the basis for enforcement action.

[8] The interval is stated as 40% in Safety Guide 9 but this was relaxed by the NRC Staff in Revision 2 of the Guide to 60%. Revision 2 of the Regulatory Guide also included the following qualification: "A greater percentage of the time interval may be used if it can be justified by analysis. However, the load sequence time interval should include sufficient margin for the accuracy and repeatability of the load-sequence timer."

addressing the effects of the voltage deviation on the performance of all safety-related equipment powered by the EDGs. Also, TVA provided detailed analyses of sequence-timer errors and their effect on performance. Based on these analyses, the NRC Staff's review (documented in the SER at pages 2-20 and 2-27) determined that the deviation was not safety significant and was acceptable for restart.

The third concern expressed by Mr. Hicks is that the Sequoyah EDGs have not been tested through the loading sequence at full design loads as specified in Regulatory Guide 1.108, Regulatory Position C.2.a(2).[9] As stated above, Regulatory Guide 1.108 was not in effect at the time Sequoyah was designed. Sequoyah, like most plants of the same vintage, was not built with full-flow bypasses on all safety-related pumps. Full-flow bypass capability is necessary to completely simulate postaccident design loads, because pumps draw less power at low bypass flows than at design conditions. Therefore, Sequoyah, like other plants of the same era, cannot conduct full design load tests. Instead, Sequoyah, like those other plants, uses standard calculational methods reviewed by the NRC to predict full-load voltage drops during sequencing. TVA's original calculations showed that Sequoyah would meet the design load voltage and frequency drop specifications of Regulatory Guide 1.9, Regulatory Position C.4 (not less than 75% voltage and 95% frequency).

In late 1987, TVA sequence-tested the EDGs. Although the results were within the limits stated in Regulatory Guide 1.9, including the 75% voltage limit, the voltage drop was substantially worse than was predicted by TVA's original calculation. Therefore, the NRC Staff directed TVA to undertake the following analyses: (1) determine why voltage drop was worse than calculated, (2) develop more sophisticated calculational methods for predicting more accurately both the test results and the expected voltage drops at design loads, and (3) determine the margins remaining between predicted postaccident voltage drops and the minimum voltages required to operate the various safety-related equipment powered by the EDGs. TVA submitted these analyses to the NRC by letter dated February 29, 1988. The analyses demonstrate that the predicted voltage drop due to the additional loading on the EDGs will not impair the performance of safety-related equipment. The NRC Staff reviewed the TVA analyses and concluded that all safety-related EDG loads would function as designed. The NRC review is documented in the SER at pages 2-23 through 2-28. Based upon this review, I have concluded that TVA has adequately demonstrated that the EDGs are acceptable for safe plant operation and that testing of the Sequoyah EDGs at full design loads is not required in this case.

[9] Regulatory Guide 1.108, C.2.a(2) states that the licensee must demonstrate that voltage and frequency remain within required limits. These limits are set out in Regulatory Guide 1.9.

On the advice of its own consultant, TVA has stated that it will undertake an engineering effort to upgrade the performance of the EDGs over the next 2 years. Although not required, this effort is desirable to restore the margins believed to have existed when the units were designed. However, I have concluded, for the reasons stated above, that these enhancements, though prudent and desirable in the long term, are not necessary to ensure protection of the public health and safety during the period of operation until they are completed.

CONCLUSION

For the reasons discussed above, I conclude that the capacity margins and performance testing of the Sequoyah EDGs are adequate to provide reasonable assurance that the public health and safety will be protected. I find no new issues raised by the petition or the documents that Petitioners reference that were not addressed in the Staff's prior review of the Sequoyah EDGs, or any new information provided that would shed doubt upon the conclusions of the NRC Staff. Therefore, the Petitioners' request 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

James G. Partlow, Director
Office of Special Projects

Dated at Rockville, Maryland,
this 3d day of August 1988.

ENCLOSURE

RESPONSE TO LETTER FROM A. BATES DATED MAY 18, 1988

Question 1

Load Shedding Activities by Reactor Operators: What is the effect of requiring manual load shedding on the EDG power train by the reactor operators during accident conditions? Would operators in actual likelihood divert attention to dropping additional EDG loads if they were in a TMI-like condition (e.g.,

uncovered and degraded core, inability to stabilize)? What potential for human error is introduced by requiring operators to shed EDG loads manually?

Answer

Load shedding of nonessential loads will be required after the plant has reached steady-state load conditions. (*See* SER at 2-25 to 2-26.) As required by the TVA Administrative Instruction (AI-2), Revision 30, dated March 7, 1988, plant operators responsible for effecting the load shedding are not the same operators responsible for monitoring and controlling the course of a postulated core uncovery event. Furthermore, this shedding will not be required until approximately 2 hours following the initial load application on the Emergency Diesel Generators. In the Staff's technical judgment, at the time of such load shedding, the plant should be fully stabilized and manual actions for shedding diesel loads will not cause an undue burden on the operators. In the Staff's judgment, the potential for human error is minimized by operator training on plant-specific Emergency Operating Procedures (*see* NRC Inspection Reports 50-327/87-61 and 50-328/87-61, dated February 1, 1988, and TVA Abnormal Operating Instruction AOI-35) and human-machine interaction considerations of the Control Room Design (*see* Safety Evaluation for the Detailed Control Room Design Review transmitted by letter to S.A. White (August 27, 1987)).

Question 2

What is the actual effect of diminished frequency across the power train? What are the error boundaries on frequency levels calculated in the EDG power train during the first 3 minutes of emergency startup? What might be the effect of timer drift and other factors on this calculation? If the diminished frequency acknowledged by Kusko, Marinos, and the preliminary SER were to have a duration of greater than the 1 second now predicted, what might be the effect on the power train? What might be the effect of the loss of one or more major components due to failure under frequency variance conditions? What would be the effect of the loss of one or more components on the rest of the power train, on containment integrity, on reactor cooling and on control systems?

Answer

Severe reduction in system frequency (in excess of several seconds) during sustained overload conditions in a power system can have undesirable effects on equipment performance when system voltage remains above nominal values. However, small variations in frequency during loading and an expected pro-

portional decrease in system voltage would contribute to maintain appropriate loading on the EDGs and maintain equipment potential overcurrent conditions well within equipment overcurrent protection requirements. Therefore, since only a sustained severe reduction in system frequency can have a potential effect in equipment performance, error boundaries on frequency levels are not critical for the Sequoyah EDGs and no equipment failure can be postulated as a result of the frequency variations experienced.

Timer drifts affecting load sequencing have been conservatively accounted for in the TVA calculations transmitted to the NRC Staff for review (*see* Letter from R. Gridley, TVA, to NRC, dated February 29, 1988). TVA's calculations have demonstrated timer drifts will have no adverse effect on the EDG and equipment performance.

Question 3

If the loss of offsite power coincided with a core-degraded condition already in progress and the air in containment was heavily admixed with unrecombined hydrogen, what could be the consequence of delaying the CSP [Containment Spray Pump] and CSP fan from 30 seconds to 3 minutes? What would be the effect of the CSP delay if the loss of offsite power coincided with a containment fire in progress? What other worst-case scenarios might mitigate against resequencing of CSP startup or other EDG loads?

Answer

The NRC Staff has determined that, during a postulated degraded-core condition, there are provisions for limiting hydrogen concentration in the containment below unacceptable levels. (*See* SER, NUREG-0011, Supp. No. 6, at 22-10 to 22-14.) Hydrogen igniters are installed for burning the hydrogen generated during the event and maintain concentrations well below risk levels. In fact, igniter action is not required for at least an hour following containment spray actuation, and containment spray performance is not relied upon for hydrogen mixing. (*See id.* at 22-19 to 22-20.) Therefore, we conclude that containment spray actuation delay from 30 seconds to 3 minutes has no effect on the hydrogen concentration in containment. The containment recirculation fans' actuation times have not been altered from those determined in the plant design basis during initial plant licensing.

Further, in the event of loss of offsite power coincident with a containment fire, the containment spray system is not required for suppressing the fire. Independent fire suppression systems are provided in the containment for the suppression of fires.

The Staff has not identified any unacceptable credible accident scenarios that might be generated from the delay of containment spray actuation from 30 seconds to 3 minutes.

Question 4

Is it considered good practice in nuclear systems to exceed manufacturers' recommendations regarding voltage and frequency margins because of inherent conservatisms in manufacturers' recommendations or because of inherent conservatisms in other aspects of plant design and safety margins?

Answer

During the design stage, it is not a good practice to exceed manufacturers' recommendations in any equipment performance characteristics. However, it is not an uncommon practice to take credit for conservatisms provided in equipment design when uncertainties in equipment performance requirements are resolved in operating plants. In the case of the Sequoyah Nuclear Plant, TVA, through equipment performance testing and analyses, has demonstrated the capability of equipment to perform its intended function with adequate margin. This performance capability and margin will be periodically demonstrated through the life of the plant by testing, as documented, in the plant technical specifications.

Question 5

Does the determination by NRC that TVA will be allowed to operate the EDG system at above 110% of rated voltage for short duration and outside rated frequency for short duration require an amendment to the operating license because the grant of the license was based upon an application that stated broader margins for both voltage and frequency? If so, when will the license amendment be proposed?

Answer

An amendment to the license is not required to allow TVA to operate the EDG system at above 110% of rated voltage for short duration and outside the rated frequency for short duration. As indicated in the enclosed Director's Decision, the Regulatory Guide limits (including the 110% limit of rated voltage) are not mandatory. A licensee may utilize alternative methods to demonstrate compliance with performance requirements. TVA has demonstrated through testing and analyses that the performance of equipment will not be impaired

as a result of minor deviations in voltage and frequency for short duration in isolated loading sequence steps, and therefore did not involve an unreviewed safety question.

Question 6

When will TVA be required to meet the EDG testing requirements imposed by the January 1988 license amendment?

Answer

TVA has completed the testing requirements imposed by the January 1988 license amendment on increased loading of the diesel generators. The Staff review of the increased loading is identified in the Staff SER on page 2-26, NUREG-1232, Vol. 2, and further discussed in Mr. Marinos' affidavits. This testing was completed by TVA prior to NRC approval of the amendment request.

Question 7

The correction of the EDG systems to bring them back into line with the original license requirements has been deferred until the first scheduled refueling of Unit 1. The safe operation of Unit 2's EDG system is dependent upon calculations based on Unit 2 operating alone, without Unit 1. TVA now estimates Unit 1 will be restarted in 6 months. What additional EDG system modifications will be required prior to bringing Unit 1 to power? What EDG testing will be required of all four diesel generators, working together, prior to restart of Unit 1?

Answer

TVA is required to submit a revised load analysis of the EDGs for Staff review prior to restart of Unit 1 at Sequoyah. This submittal has not yet been received by the Staff. Upon review of the pending submittal, if it is determined that significant loading and load sequencing modifications have been instituted, additional analyses and/or testing may be required to ascertain the functional integrity of the EDGs and the performance capability of the equipment powered by these units.

Question 8

Mr. Marinos indicated in his affidavit to the Court of Appeals that generators 1A, 1B, 2A, and 2B are all wired together in order to share and equalize the emergency loads. What is the effect of this wiring on the frequency and likelihood of common-mode failures? Where does TVA's fifth generator fit into this configuration; can it replace any of the four generators, instantly, as needed, or would additional time be required to wire it into the system?

Answer

Mr. Marinos in his affidavits to the Court of Appeals has made no statement that generators 1A, 1B, 2A, and 2B are all wired together in order to share and equalize the emergency loads. The generators are not wired together, there is complete train redundancy, and the Staff has not identified any common-mode failures that can affect redundant trains. There are two redundant trains of power supply and each train has two dedicated diesel generators.

TVA has not requested credit for use of a fifth diesel generator and the Staff does not require its presence to meet regulatory requirements. The NRC has determined that the fifth diesel generator is not connected to any safety-related power train at Sequoyah and will remain disconnected until a regulatory review is completed, if TVA requests credit for this standby unit.

Question 9

What might be the effect of extreme heat (ambient external temperatures in excess of 105°F) on the EDG capacity and load sequencing margins, and on the ability to operate at greater than or equal to 100% of rated voltage for 2 hours?

Answer

The Sequoyah EDG maximum load capacity is based on a design-basis external ambient temperature of 97°F and an EDG room temperature of 104°F when the unit is running. This temperature is maintained by two exhaust fans, one of which starts automatically when the EDG starts and the other of which has delay start in the event the first fails to start. In the event that the design-basis external temperature is exceeded, TVA is required to maintain the EDG room temperature at 104°F or bring the plant to a safe shutdown mode, as required by plant technical specifications.

Additionally, the NRC has determined that there is no potential single failure in the temperature control systems that can disable both redundant power trains and there is no credible scenario in which the EDGs would be operated at or

above 110% rated voltage for a sustained period of time, beyond that short duration discussed in response to your Question 5.

Question 10

To what voltage and frequency standard will the EDG system at Sequoyah be held after TVA's first scheduled refueling of Unit 1? Will it return to the standard imposed by the original license (industry standard; Regulatory Guide 1.9) or will be held to a lesser standard as modified by the load reduction measures or other variances introduced at Sequoyah subsequent to 1985?

Answer

TVA will meet all the provisions of Regulatory Guide 1.9 when both nuclear units at Sequoyah are in operation with two minor, temporary exceptions. As indicated in the enclosed Director's Decision, these exceptions are: (1) maximum voltage overshoot at one step of the load sequence exceeds the 110% limit and (2) the system frequency is slightly lower than required. As indicated in the Decision, these deviations do not raise a safety concern. However, the long-term corrective action program committed to by TVA in its March 3, 1988 submittal is expected to return the voltage and frequency parameters within the limits described in Regulatory Guide 1.9.

Cite as 28 NRC 251 (1988) DD-88-13

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)

August 14, 1988

The Director of Nuclear Reactor Regulation denies a petition filed by Energy Probe and Western Reserve Alliance (Petitioners) requesting the immediate suspension of the operating license for the Perry Nuclear Power Plant of the Cleveland Electric Illuminating Co., *et al.*, because of alleged safety deficiencies in the area of pipe clamps and design control and quality assurance/quality control at the General Electric facility in San Jose, California. The petition was denied based largely upon NRC inspections of the areas of concern identified.

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

INTRODUCTION

On January 9, 1987, Energy Probe and the Western Reserve Alliance (Petitioners) filed with the Commissioners of the U.S. Nuclear Regulatory Commission (NRC) a petition requesting the immediate suspension of the operating license for the Perry Nuclear Power Plant of the Cleveland Electric Illuminating Company, *et al.*[1] (Licensees), because of alleged safety deficiencies, particularly

[1] Cleveland Electric Illuminating Company is authorized to act as agent for Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company, and the Toledo Edison Company and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

in the area of pipe clamps. The petition also requests that an independent design review be conducted to evaluate the design of pipe clamps used at Perry because of the alleged deficiencies with regard to these components. The petition further requests that a special independent inspection team be assembled to review the allegations raised in the petition including alleged programmatic deficiencies in design control and quality assurance/quality control at the Generic Electric (GE) facility in San Jose, California, which could potentially affect GE components supplied to all power plants including the Perry facility. The petition alleges that these latter concerns had been brought to the attention of the NRC by the Government Accountability Project (GAP) in its letters of October 5, 1985, and October 24, 1986. The petition seeks immediate removal from the Perry plant of any defective or inappropriate GE components described in those letters.

The petition further alleges impropriety on the part of the NRC and the Licensees specifically with regard to the consideration given by the NRC to an earlier petition submitted by Western Reserve Alliance pursuant to 10 C.F.R. § 2.206 involving the Perry facility. That decision discussed the seismic adequacy of the Perry facility in light of the January 31, 1986 earthquake near the facility. The Director's Decision in that matter, DD-86-4, was issued on March 18, 1986.[2] The January 9, 1987 petition alleges fraud in the preparation of that Director's Decision and refers to an investigation by the Office of Investigations that documents this fraud. The petition requests withdrawal of that Director's Decision because of fraud in its issuance.

On March 5, 1987, the Acting Director of the Office of Nuclear Reactor Regulation acknowledged receipt of the petition. He informed the Petitioners that the petition would be treated under § 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 on March 11, 1987, in the *Federal Register* (52 Fed. Reg. 7504). The Acting Director further informed the Petitioners that the petition provided an insufficient basis to take immediate action as requested in the petition, specifically, shutdown of the Perry facility.

The Acting Director also addressed the Petitioners' allegations regarding documented fraud in the preparation of an earlier Director's Decision. Being unaware of any investigation that called into question the earlier Director's Decision, the Acting Director declined to withdraw that Decision on the basis of information contained in the petition.

A Petitioner (Western Reserve Alliance) responded to the Acting Director's March 5, 1987 letter by letter dated April 1, 1987. The Petitioner amended the January 9, 1987 petition by correcting a reference to the NRC office the Petitioner believed held documentation of alleged fraudulent investigations by

[2] 23 NRC 211.

NRC inspectors, that is, the Office of the Inspector and Auditor (OIA), rather than the Office of Investigations (OI) as stated in the original petition.

The NRC Staff has completed its review of each of the Petitioners' specific concerns noted above. My formal decision in this matter follows.

DISCUSSION

A. Pipe Clamp Concerns

The Petitioners allege deficiencies in the design, manufacture, and installation of pipe clamps furnished by Western Piping & Engineering Company (WPE) for ASME Code Class 1 and safety-related piping systems at the Perry plant. Specifically, the petition alleges violations of the design and fabrication criteria for the pipe clamps specified in subsection NF of ASME Code § III which is required by 10 C.F.R. Part 50. The ASME Code states that the design of the pipe clamps must be certified by a professional engineer cognizant in his discipline. The Petitioners allege that, in the case of the WPE pipe clamps, the engineer who certified the design was not a licensed engineer in California, the state in which he was practicing, nor was he licensed in the discipline that covered pipe clamp design (mechanical engineering) since the engineer was a licensed structural engineer.

The Petitioners further argue that critical parts of the pipe clamps are in violation of the ASME Code because they were improperly exempted by the manufacturer from the code requirements for design, materials, and fabrication. These parts are the clamp shoe (the part between the pipe and load bar), load nut washers, and jam nuts. The Petitioners also argue that the installation instructions to ensure compliance with the clamp preload (torque) requirements are in error, causing an installed preload that is double that intended. Therefore, the resulting load, which is significantly greater than the design load, could result in unanalyzed stresses in the pipe wall unaccounted for in the design which, in turn, could lead to pipe burst.

On September 30, 1986, the NRC issued IE Inspection Report No. 99900302/86-01 summarizing an inspection conducted by the NRC on August 11-12, 1986, of the WPE facility in San Francisco, California. The purpose of the inspection was to examine WPE records related to allegations concerning the qualifications of personnel performing certification activities for pipe clamps and materials supplied by WPE. Areas examined during the inspection included quality assurance and engineering records related to the above allegations. The inspection consisted of an examination of representative records, interviews with personnel, and observations by the inspector.

During the inspection, the inspector determined that the engineer certifying pipe clamps manufactured by WPE was not a Registered Professional Engineer

in the State of California. However, the engineer in question was properly registered as a Professional Engineer in the states of Pennsylvania and New York, which satisfies the ASME Code requirement for registration in at least one state of the United States or province of Canada. In addition, the NRC Staff considers that a licensed structural engineer is qualified to make the certifications required by the ASME Code and that the certifying discipline is not limited to mechanical engineering.

Further, as discussed in the inspection report, no instances were found where the clamps failed to meet the requirements of the ASME Code for certification, manufacturing, and testing specified on the purchase orders reviewed for certain U.S. nuclear power plants. In addition, no failures to meet the requirements of the ASME Code were found in representative records for similar pipe clamps supplied by WPE to customers procuring clamps for unspecified U.S. facilities and for foreign nuclear plants. No items of nonconformance with purchase specifications were identified.

With regard to Petitioners' allegations that critical parts of the pipe clamp were in violation of the ASME Code, Petitioners have provided no specific facts as a basis for this allegation as required by 10 C.F.R. § 2.206(a). As stated above, the qualifications of the WPE Professional Engineer to provide certifications were found adequate by the NRC Staff. This engineer has certified that the pipe clamps in question meet the ASME Code requirements for design, fabrication, and materials.

As further stated above, no instances were found during the NRC inspection at WPE where pipe clamps failed to meet the requirement of the ASME Code specified on the purchase specifications for certification, manufacture, and testing. No items of nonconformance with purchase specifications were identified. An earlier inspection of the WPE facility by the NRC in May 1982 documented in Inspection Report No. 99900302/82-01 dated July 28, 1982, failed to identify any deficiencies or nonconformances with respect to control of fabrication processes at WPE. Given these acceptable inspection findings and the lack of any factual basis in Petitioners' allegations, the Staff has no basis to conclude that the pipe clamps in question were improperly exempted from code requirements for design, material certification, or fabrication as alleged by the Petitioners.

The Petitioners also allege that installation instructions for the pipe clamps in question are in error. The clamps in question are sometimes called stiff pipe clamps to differentiate them from conventional pipe clamps, which have been used for many years in high-pressure piping applications. As reported in Board Notification 82-105A (Reference 1.b of the Petition), the NRC Staff had then concluded that these relatively new clamps could result in localized piping stresses significantly higher than the stresses from conventional pipe clamps. Piping designers who were accustomed to neglecting these localized stresses

because they were low-magnitude stresses might also neglect the higher stresses associated with those new clamps. For this reason, the NRC Staff issued IE Information Notice No. 83-80 to all licensees of nuclear power facilities on November 23, 1983, calling attention to this possibility to ensure that increased stresses associated with stiff pipe clamps were properly considered in the design. Subsequently, the NRC Staff requested that the Licensees provide specific information on the use of stiff pipe clamps at Perry Nuclear Power Plant, Units 1 and 2, by letters dated March 19, 1984, February 19, 1985, and April 24, 1985.

The Licensees responded to those requests by letters dated October 1, 1984, March 18, 1985, and June 14, 1985, respectively. The NRC Staff has reviewed the information submitted by the Licensees and determined that no further action is required because the Licensees have adequately addressed the concerns described in IE Information Notice No. 83-80 in the use of stiff pipe clamps at the Perry facility. These include the preload effect on pipe stresses. On the basis of the Staff's review of this issue, the information on pipe clamp deficiencies proffered in the petition is not sufficient to warrant suspension of operation of the Perry facility or an independent design review to address the allegations of pipe clamp deficiencies at that facility.

B. QA/QC Concerns at the GE San Jose Facility

The Petitioners allege concerns that there are potentially serious programmatic deficiencies in the design control and quality assurance/quality control (QA/QC) at the GE facility in San Jose, California. Petitioners refer to a letter from the Government Accountability Project (GAP) to the NRC of October 5, 1985, as the main basis for their allegations. In its 1985 letter, GAP alleged that programmatic deficiencies had been identified by a former GE employee. After concluding that GE was not being responsive to the issues raised, a GAP consultant conducted a review and analysis of information that had been provided to GAP. The GAP letter also alleged possible violations by GE of the Commission's reporting requirements in 10 C.F.R. Part 21. GAP made documents concerning these allegations available for NRC review in February 1986. In March 1986, NRC obtained copies of the documents referred to, including a copy of the report prepared by the GAP consultant.

After obtaining the records from GAP, the NRC conducted interviews with the former employee by telephone and in person in San Jose in April 1986. The NRC then began a series of inspections at the GE San Jose facility which are discussed in greater detail below. Results of the inspections and status of the allegations review were periodically discussed with GAP by the NRC. The allegations encompassed a variety of concerns including independent design verification, training, adequacy of procedures, and deferred verification.

The nature of QA/QC deficiencies identified in the allegations relates to the degree of documentation associated with the followup of previously identified deficiencies. As stated and characterized by the former GE employee, he is not aware of any hardware issues and his concern is primarily related to the alleged breakdown in GE's documentation.

The NRC addressed the allegations presented by the former GE employee and GAP's consultant by conducting numerous inspections at the San Jose facility to review and follow up the items identified in the GAP consultant's review of the former GE employee's work record. Specifically, inspections were conducted in July 1986, April 1987, August 1987, November 1987, and February 1988. The results of these inspections are documented in NRC Inspection Report Nos. 99900403/86-01, 87-01, 87-03, 87-06, and 88-01, respectively. The inspections consisted of an examination of procedures and representative records, interviews with personnel, and observations by the NRC inspectors. At the conclusion of the inspections, there were no unresolved items remaining. During the course of the inspections, several items of nonconformance were identified. These generally involved failure to provide or maintain adequate documentation as required by quality assurance procedures, including failure to process Deferred Verification Status Change Notices, inability to retrieve an Engineering Work Authorization, failure to document delays in completion of Corrective Action Reports, and other minor nonconformances. Inspection Report No. 99900403/88-01, provides a detailed description of the NRC Staff's resolution of all items identified in the GAP letters of October 5, 1985, and October 24, 1986. These NRC inspection efforts failed to identify any substantive safety concerns with GE equipment and failed to identify any noncompliance with the reporting provisions of 10 C.F.R. Part 21.

In addition to the specific attention the NRC has given to QA/QC concerns at the GE San Jose facility, Appendix B to 10 C.F.R. Part 50 requires that licensees and applicants for a license or construction permit be responsible for the establishment and implementation of a separate quality assurance program applicable to their components. The specific requirements of the quality assurance program are described in Appendix B and include such things as (1) control of purchased material, equipment, and services to ensure conformance with procurement documents; (2) identification and control of materials, parts, and components by heat number, part number, or other appropriate means to prevent the use of incorrect or defective material or components; and (3) conduct of planned and periodic audits as necessary to verify compliance with all aspects of the quality assurance program. Followup actions, including reaudit of deficient areas, are to be taken when indicated.

The Licensees have a quality assurance program in effect at the Perry Nuclear Power Plant. During its review of the application for an operating license for the Perry facility, the NRC Staff reviewed the program and found it acceptable.

The Staff's review is documented in NUREG-0887, "Safety Evaluation Report related to the operation of Perry Nuclear Power Plant Units 1 and 2," dated May 1982, and Supplements 1, 3, 4, and 7 to that report dated August 1982, April 1983, February 1984, and November 1985, respectively.

The Licensees' quality assurance program requires that implementing procedures and instructions encompass detailed controls for (1) translating codes, standards, regulatory requirements, technical specifications, and engineering and process requirements into drawings, specifications, procedures, and instructions; (2) developing, reviewing, and approving procurement documents, including changes; (3) prescribing all quality-related activities by documented instructions, procedures, drawings, and specifications; (4) issuing and distributing approved documents; (5) purchasing items and services; (6) identifying materials, parts, and components; (7) performing special processes; (8) inspecting and testing materials, equipment, processes, or services; (9) calibrating and maintaining measuring and test equipment; (10) handling, storing, and shipping items; (11) identifying the inspection, test, and operating status of items; (12) identifying and correcting or disposing of nonconforming items; (13) correcting conditions adverse to quality; (14) preparing and maintaining quality assurance records; and (15) auditing activities that affect quality.

The Licensees' procurement and administration quality section (1) reviews and approves procurement documents; (2) maintains a program for approval, audit, and surveillance of suppliers; (3) performs receipt inspections; and (4) provides nondestructive examination service and administrative support for the department.

In accordance with the NRC Staff–approved quality assurance program and methodology, the Licensees have performed periodic audits at the GE San Jose facility to verify that the requirements of Appendix B to 10 C.F.R. Part 50 have been met with regard to components provided by GE. Although required to perform these audits at 3-year intervals, the Licensees have been performing them far more frequently, at approximately 1-year intervals. No significant deficiencies were noted with respect to QA/QC for the Perry Nuclear Power Plant, providing assurance that GE components for the Perry facility are adequate.

In addition, it should be recognized that hardware provided to the Perry facility by GE that can affect safe operation and shutdown of the facility has had to undergo required preoperational testing and periodic surveillance testing providing additional assurance that this equipment will function properly.

Based on the Licensees' quality assurance program in effect at the Perry facility, the Staff's review and acceptance of that program, both the Licensees' and the NRC Staff's findings resulting from audits and inspections conducted at the GE San Jose facility, and the acceptable results from testing GE components, the Petitioners' requests, insofar as they relate to a removal of defective or

inappropriate GE components from the Perry nuclear plants as identified in GAP letters of October 5, 1985, and October 24, 1986, and establishment of a special independent inspection team, are denied.

C. Alleged Fraudulent Activity by NRC Investigators

The Petitioners allege that the NRC is in possession of documented evidence within either the Office of Investigations or the Office of Inspector and Auditor concluding that reports issued by the Licensees and the NRC concerning Western Reserve Alliance's February 4, 1986 petition pursuant to § 2.206 were created in a fraudulent manner and that these reports were used as a basis for denial of that petition. The Petitioners request, on the basis of these allegations, that the Director's Decision denying that petition be withdrawn. As stated in the Director's March 5, 1987 letter acknowledging receipt of the January 9, 1987 petition, the Director was unaware of *any* investigation (emphasis added) that called into question an earlier Director's Decision. However, in response to the petition, the Petitioners' allegations were referred to the Office of Inspector and Auditor (OIA) for appropriate action. OIA undertook an investigation of this matter. My office has been informed that the investigation has been completed, and no evidence of NRC fraudulent activity or wrongdoing as alleged by the Petitioners has been substantiated.

CONCLUSION

None of the concerns identified by Petitioners raise substantial health and safety issues which would warrant the initiation of show-cause proceedings. The specific relief requested by the Petitioners, such as license suspension, an independent design review of pipe clamps, and a special independent inspection team to review the allegations in the petition, is not warranted by the information presented in the petition. Accordingly, Petitioners' requests are denied.

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

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 14th day of August 1988.

Cite as 28 NRC 260 (1988) DD-88-14

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of **Docket No. 50-482**

KANSAS GAS AND ELECTRIC COMPANY, *et al.*
(Wolf Creek Generating Station, Unit 1) **August 22, 1988**

The Director of the Office of Nuclear Reactor Regulation denies a Petition filed by the Government Accountability Project on behalf of the Nuclear Awareness Network (Petitioners), who requested the Nuclear Regulatory Commission (NRC) to take action concerning the Wolf Creek Generating Station (Wolf Creek). Petitioners requested the NRC to take possession of the files of Kansas Gas and Electric's (KG&E) Quality First (Q1) organization at Wolf Creek to review the allegations documented in those files, to review the Wolf Creek quality assurance (QA) program in light of the information in the files, to explain how the NRC earlier dealt with this information, and to investigate the actions of a former Wolf Creek site QA manager affecting the Q1 program. As bases for these requests, Petitioners alleged that neither the NRC nor KG&E adequately resolved the issues documented in the Q1 files, alleged that KG&E and the NRC ignored over 700 safety-significant concerns, and alleged that NRC failed to assure the Commission and the public that the allegations documented in the files were adequately resolved. Based on evaluations of previous inspections and investigations involving the Q1 program, the Director determined that the NRC had previously reviewed and satisfactorily resolved all the technical issues documented in the Q1 files and, accordingly, denied Petitioners' request.

NUCLEAR REGULATORY COMMISSION: HEALTH AND SAFETY RESPONSIBILITIES

Where a licensee has initiated a voluntary program to resolve employee allegations and the NRC has inspected all the files generated by such program and resolved 100% of the technical issues raised in those files, the NRC need not take possession of the files to review them, even though the program contained documentation or procedural deficiencies unrelated to resolution of the safety aspects of any allegation.

NUCLEAR REGULATORY COMMISSION: HEALTH AND SAFETY RESPONSIBILITIES

Where a petitioner alleges that the NRC has ignored certain facts making decisions affecting regulated activities and requests the NRC to explain why it ignored those facts, the NRC may explain how it considered and analyzed the matter to which the facts pertain to adequately answer the petitioner.

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

I. INTRODUCTION

By Petition dated May 15, 1985, and an amendment thereto dated May 31, 1985 (hereafter referred to as the Petition), submitted to the Commission pursuant to 10 C.F.R. § 2.206, Ms. Billie Pirner Garde of the Government Accountability Project (GAP), on behalf of the Nuclear Awareness Network (NAN) (hereafter referred to as the Petitioners), contends that the Nuclear Regulatory Commission (NRC or Commission) Staff failed to address serious safety allegations to ensure that the Wolf Creek facility could operate above 5% power without endangering the health and safety of the public. Specifically, the Petitioners allege that: (1) because the NRC Staff had not taken possession of and pursued the allegations provided through the Kansas Gas and Electric Company (KG&E) Quality First (Q1) Program, neither the company nor NRC resolved those allegations; (2) the Licensees and the NRC Staff ignored or "buried" over 700 safety-significant concerns received from over 240 individuals; and (3) the NRC Staff failed to assure the Commission and the public that the allegations in these files were adequately resolved.

The Petitioners requested that NRC:

(1) require the Staff to take possession of the Q1 files and provide to the Commission and the public the analysis of why the alleged significant safety-related deficiencies identified for the past year (Note: refers

to year preceding May 15, 1985) by members of the workforce do not pose a danger to the public health and safety;

(2) conduct an inquiry on the ramifications of the collective safety significance and/or adequacy on (sic) the quality assurance program in the light of the information contained in the Quality First files;

(3) require an explanation from both NRR and Region IV as to why they allegedly allowed the allegations to be exempt from the regulatory analysis for determination of safety significance; and

(4) request that the Office of Investigations (OI) conduct an investigation into the alleged compromising of the Quality First program by William Rudolph, site Quality Assurance (QA) manager.

By letter dated June 12, 1985, the then-Director of the Office of Nuclear Reactor Regulation (NRR), acknowledged receipt of your Petition and informed you of his conclusion that the matters identified in your Petition did not require any immediate action to protect the health and safety of the public. On the basis of that conclusion, in part, the Director issued a full-power license for Wolf Creek Generating Station on June 4, 1985. He further stated that appropriate action would be taken on your Petition.

I have now completed my evaluation of the Petition. For the reasons set forth in the discussion below, the Petitioners' requests for action are denied.

II. BACKGROUND

In early 1984, KG&E initiated the Q1 program at the Wolf Creek Generating Station to establish "the necessary administrative and investigative measures to ensure that all quality concerns related to safe plant operations, quality of work, compliance with requirements or management are appropriately evaluated, investigated, dispositioned, verified, and documented."* While the NRC does not require its licensees to have such programs, it does encourage its licensees to implement them. The program, available to all site employees, affords them an opportunity to report concerns personally to Q1 investigators or anonymously by a telephone "hotline."

Information about the program and instructions for reporting concerns are posted at the site and made available to site employees. In addition, employees are interviewed by Q1 personnel when they terminate their employment at Wolf Creek and asked if they have any quality concerns to report for Q1 investigation. As of the end of May 1985, the Q1 program had received a total of 752 concerns from 271 individuals.

*KG&E's Quality Concern Reporting System, Procedure No. III.29, Revision 0, dated February 24, 1984.

On June 3, 1985, the NRC held a public meeting to discuss and decide whether a full-power license should be issued for the Wolf Creek Generating Station. Immediately prior to that meeting, the Commission had held a closed meeting with the Staff and the Office of Investigations (OI) to discuss the significance of investigations then pending on Wolf Creek and the Staff's efforts regarding review of the Q1 program. With the exception of several pages, the transcripts of the closed meeting have now been publicly released.

Following the Staff's discussion of the relevant licensing issues and KG&E's presentation at the public meeting, the Commission voted unanimously to authorize the Director of the Office of Nuclear Reactor Regulation to issue a full-power license for Wolf Creek; as noted above, that license was subsequently issued on June 4, 1985.

III. DISCUSSION

The requests of the Petitioners are treated *seriatim* below:

A. "Require the Staff to take possession of the Q1 files and provide to the Commission and the public the analysis of why the significant safety-related deficiencies identified for the past year by members of the workforce do not pose a danger to the public health and safety."*

The NRC Staff carried out a continuing evaluation of the Q1 program's effectiveness since its inception in early 1984 through mid-1985 to ensure that safety-significant quality concerns had been evaluated and resolved by the Licensees. This evaluation included reviews of both the programmatic aspects of the Q1 program and the content and resolution of the individual concerns contained in the Q1 files. Because the NRC does not require, but encourages, programs of this nature, the NRC has not prescribed any specific regulatory requirements to govern such employee concern programs, and therefore has not delineated any specific inspection criteria by which to evaluate such programs. The NRC has its own program to evaluate allegations that it receives relative to construction or quality deficiencies important to safety at nuclear power stations and has developed appropriate procedures to evaluate such allegations. Accordingly, the NRC Staff used this general guidance for reviewing allegations submitted to the NRC to evaluate the Q1 program. The NRC also reviewed the Q1 program to ensure that KG&E reported verified safety-significant deficiencies. Between September 25, 1984, and May 31, 1985, six reviews involving the KG&E Q1 program were carried out by NRC regional

*Note: This would be the 1-year period preceding May 1985, the date of the Petition.

and headquarters personnel. These publicly available reports* are summarized below.

The first five reviews thoroughly examined programmatic aspects of the KG&E Q1 program as well as closed case files, including files involving possible wrongdoing issues, exit interview files, and files containing drug-related issues. While the reviews found that several programmatic aspects of KG&E's Q1 program were deficient, as explained below, the NRC did not identify any violations of, or deviations from NRC requirements, nor did the NRC find any indications that the Q1 program failed to properly assess and resolve any significant safety concerns.

From May 27, 1985, through May 31, 1985, a 16-member NRC Staff team performed a final, special review of the Q1 files. The NRC inspection team consisted of the Wolf Creek resident inspectors and representatives of the Office of Nuclear Reactor Regulation (NRR), Region IV's Division of Reactor Safety and Projects, Region IV's Office of Investigations, and the Office of Inspection and Enforcement at NRC Headquarters. The inspection team reviewed all Q1 files (271 case files containing a total of 752 concerns) in depth to determine whether KG&E had properly dealt with the concerns brought to the Q1 organization by employees of KG&E and its contractors. This review consisted of 679 onsite inspector-hours. Although Region IV had previously reviewed approximately 40% of the 271 case files, the special inspection team included these files in its review to provide total continuity and another level of review. Sixty-one percent (61%) of the total number of reported concerns comprised technical safety concerns.

The review revealed that KG&E and Q1 had properly classified, followed up in depth, and appropriately corrected each of the technical concerns. The team concluded, however, that KG&E Q1 failed to provide appropriate trending to management and did not require enough feedback and other information from other KG&E organizations to support closure of thirty-four concerns related to harassment and intimidation, drug, and falsification issues. Nevertheless, the NRC team obtained information and interviewed personnel outside the Q1 organization which enabled the team to conclude that these thirty-four concerns were not a restraint to full-power operation. Furthermore, despite the programmatic deficiencies noted above, the team also concluded that KG&E's Q1 program did reach proper resolution on technical issues in a responsible manner and that an appropriate level of management integrity was evidenced by such proper resolution, management involvement in the program, and the program's independence. Overall, the team concluded, after a careful review

*See NRC Inspection Reports: 50-482/84-37, September 25-27, 1984; 50-482/84-48, October 9–November 2, 1984; 50-482/84-52, November 13–December 13, 1984; 50-482/84-58, December 17-28, 1984, and January 7-18, 1985; 50-482/85-09, January 21–February 15, 1985; and 50-482/85-28, May 27-31, 1985.

of all files and concerns, that there were no issues that would be a restraint to full-power operation of the Wolf Creek Generating Station.

B. "Conduct an inquiry on the ramifications of the collective safety significance and/or adequacy on (sic) the quality assurance program in the light of the information contained in the Quality First files"

The Petitioners claim that there are statements and supporting information from over 240 individuals who have expressed over 700 safety-significant concerns. They also state that it is their understanding that the Licensees have ignored or "buried" the serious concerns of these individuals. The Petitioners further allege that the NRC has also ignored these concerns, and they assert that it is clear to them that neither the company nor the NRC is going to resolve those problems.

As summarized previously, the NRC Staff extensively reviewed the process and content of the Q1 program used by KG&E to identify, track, and correct quality concerns at the Wolf Creek Generating Station. Despite critical comments provided by the Staff to KG&E on certain programmatic elements, the results of this continuing review indicate that the Q1 program has been effective in investigating and resolving the safety concerns identified by KG&E employees and employees of firms under contract to KG&E during the construction of Wolf Creek.

The Region IV followup and ongoing review of the Q1 files did not show any indication that the Licensees had attempted to ignore or "bury" the technical concerns of any individuals. The multidisciplinary NRC team found that KG&E investigated, resolved, and corrected, as appropriate, all technical safety concerns that were reported by employees. The responsible KG&E organizational element proposed corrective actions, and Q1 program personnel reviewed those corrective actions to ensure that the quality concerns had been properly addressed. KG&E's Q1 program, in concert with other KG&E and its contractor's programs, suitably resolved every technical safety issue that it examined, including all the technical issues the Petition raises.

On the basis of the Staff's review of 100% of the quality concerns provided to the Q1 program and the assessment of KG&E's resolution of the safety aspects of these concerns, there is no evidence to support the allegation that either the Licensees or the NRC Staff ignored or "buried" any safety concern. The information in the Q1 files, to which full access has been afforded NRC since the inception of the program, showed that no safety-significant technical issue remained unresolved and raised no substantive questions regarding the overall adequacy of the QA program. Therefore, further evaluation of the safety significance of these concerns is not warranted.

C. "Require an explanation from both NRR and Region IV as to why they allegedly allowed the allegations to be exempt from the regulatory analysis for determination of safety significance"

The Petitioners also contend that the NRC Staff failed to assure the Commission and the public that the allegations contained in the Q1 files were adequately resolved and that the Staff inaccurately presented a picture to the Commission of a plant without serious safety deficiencies in that the Staff reported to the Commission that there were only nine allegations under review of the plant.

The NRC Staff discussed the results of its review of the Q1 program case files with the Commission during the June 3, 1985 public meeting on issuance of a full-power license to KG&E for the Wolf Creek Generating Station. The NRC Staff presentation clearly and definitively identified the number of concerns handled by the Q1 program, the extent of the Licensees' investigation of those concerns, and the results of the Staff's investigation of all of the case files and concerns in the Q1 program. The Staff did state that nine issues required some supplemental work which was done by the Staff. The issues were satisfactorily settled. (The transcript of that meeting is a public document available in the Commission's Public Document Room.) The Staff concluded that there were no technical issues that would cause them to recommend against issuing a full-power license. The Staff also indicated in the public record that, although there were some issues identified by the Office of Investigations (OI) that related to the investigative methodology of the Q1 investigators, the NRC Staff had inspected the technical and safety aspects of the issues about which OI had expressed concern and found no evidence weighing against full-power licensing. In short, the Staff had in fact already analyzed the technical allegations in the Q1 files for safety significance.

D. "Request that the Office of Investigations (OI) conduct an investigation into the alleged compromising of the Quality First program by William Rudolph, site Quality Assurance (QA) manager"

The Petitioners indicated that they have provided information to OI on the Q1 program and have requested that OI open an inquiry into allegations of deliberate mishandling of the Q1 program. In addition, the Petitioners, by an amendment to their May 15, 1985 petition, dated May 31, 1985, stated their concern that the briefing the Commission was to receive from the NRC Staff regarding issuance of a full-power license for Wolf Creek would not be thorough and complete, and they identified specific issues that were included in Q1 files that they had provided to OI.

During July 1985, OI performed three investigations* of specific Q1 cases which were examples of types of cases for which NRC had provided critical programmatic comments previously to KG&E. These investigations confirmed the existence of programmatic weaknesses that had been identified earlier. Moreover, beginning in June 1986, OI carried out an investigation into whether KG&E's management used the Q1 program in such a way as to suppress employee concerns from being fully investigated and/or having appropriate corrective action implemented so that employee concerns would not interfere with the issuance of the Wolf Creek Generating Station operating license. The OI investigation focused on the Q1 program of late August through December 1984. Early in this period, the Q1 program reported to Mr. William Rudolph as QA Manager. The reporting responsibility for this program was subsequently transferred to the Vice President, Quality, and then to the Group Vice President, Technical Services. These changes in reporting responsibilities minimized the potential for conflicts of interest in the processing of allegations. Further, the investigation included interviews with twenty-one then-current and former Q1 employees, along with the KG&E Chief of Security and the KG&E Vice President, Nuclear. On the basis of these interviews, certain Q1 case files were selected for review. Two NRC inspectors, experienced in the inspection of nuclear power plants, assisted the OI investigators in the technical reviews of the selected Q1 case files.

OI completed its investigation in November 1987 and concluded that a substantial number of concerns that merited a thorough investigation were given only superficial attention, were inadequately investigated, and their documented closures were accepted by Q1 management. Despite the number of shortcomings identified in the Q1 program by this investigation, OI concluded that the evidence did not establish wrongdoing on the part of KG&E management.

Quality First Observations (QFOs) are issues that are discovered during a Q1 investigation that are outside of the original scope of review. They are referred to the responsible KG&E organization for investigation and correction. With regard to the QFOs for which Mr. Rudolph was responsible, the NRC Staff reported in Inspection Report 50-482/85-09 that as of February 15, 1985, eleven QFOs had been initiated as a result of Q1 investigation of concerns and forwarded to the responsible organizations for action and closure, and that Q1 had received responses from the responsible organization for all of them. However, OI recommended that NRC not place great reliance on the Q1 investigative program as it existed in late 1984. (As noted earlier, that NRC Staff was well aware of the limitations of the Q1 investigative program regarding certain types of wrongdoing issues and conducted its reviews of the technical

*OI Case Numbers 4-85-011, 4-85-012, and 4-85-013.

significance of these issues accordingly.) The NRC Staff transmitted a synopsis of the investigation to KG&E by letter on November 24, 1987, and also released the synopsis to the Public Document Room at that time.

As described in Part III.A, above, the NRC carried out independent inspections regarding the adequacy of the handling of each technical safety concern by the Q1 program and concluded that each concern was properly resolved and that there were no issues that would be a restraint to full-power operation of the Wolf Creek Generating Station. The NRC Staff will continue to independently review and investigate allegations provided directly to the NRC related to the Wolf Creek Generating Station, irrespective of whether they are contained in the Q1 program files.

On the basis of the Staff's inspection results that were discussed with the Commission during the June 3, 1985 public meeting to consider issuance of the Wolf Creek Generating Station full-power license, I conclude that the briefing given to the Commission was complete and thorough and no additional review of the Q1 files, as requested by the Petitioners, is necessary. On the basis of the NRC Staff's investigation of the Q1 Program and its implementation, I further conclude that there is no reason to conduct any further investigation into Mr. Rudolph's activities in the Q1 Program.

IV. CONCLUSION

The institution of proceedings pursuant to 10 C.F.R. § 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); *Washington Public Power Supply* System (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 924 (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 on the NRC Staff's inspections relating to the concerns raised in the Petition and its subsequent evaluation of those inspections, I conclude that no substantial health and safety issues have been raised by the Petitioners. Accordingly, the Petitioners' requests for action pursuant to § 2.206 are denied as described in this Decision. As

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

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 22d day of August 1988.

Cite as 28 NRC 271 (1988) CLI-88-7

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman
Thomas M. Roberts
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)

September 22, 1988

The Commission has under consideration whether to waive the financial qualification rule, but decides that low-power operation may not begin at Seabrook until Applicants have shown reasonable assurance that adequate funds will be available for decommissioning in the event that low-power operations have occurred at Seabrook and a full-power license is not granted. The Commission requests that within 30 days Applicants provide it with adequate documentation of their plan and appropriate commitments under that plan to provide such reasonable assurance. The Commission also provides a schedule and scope for filing any motions to reopen and admit late-filed contentions based on the filing. The Commission itself will decide that reasonable assurance has been provided or what necessary steps remain.

FINANCIAL QUALIFICATIONS REVIEW AND DECOMMISSIONING COSTS

The Commission agrees that "all consideration of decommissioning funding should be eliminated from financial qualification review and instead be considered under the . . . decommissioning regulations." ALAB-895, 28 NRC 7, 25 n.66 (1988).

DECOMMISSIONING COSTS

In the decommissioning rulemaking the Commission determined that public health and safety could best be protected by promulgating a rule requiring reasonable assurance that at the time of termination of operations adequate funds are available so that decommissioning can be carried out in a safe and timely manner. This reasoning, when applied to the unique and unusual circumstances of this case, requires that before low-power operations may be authorized Applicants provide reasonable assurance that adequate funds will be available so that, in the event a full-power license is not granted for Seabrook Unit 1, safe decommissioning will be reasonably assured.

ORDER

The Commission has under consideration the views of the parties on the certified petition for waiver of certain aspects of its financial qualification rules. *See* Memorandum and Order, ALAB-895, 28 NRC 7 (1988). The Commission intends to address the rule waiver issue directly in a subsequent memorandum and order.

While the matter has been pending, the Commission's decommissioning rule became effective on July 27, 1988. *See* 53 Fed. Reg. 24,018 (June 27, 1988). The potential effect of that rule on aspects of the relief sought by Petitioners was noted by the Atomic Safety and Licensing Appeal Board in ALAB-895. The Appeal Board held that "all consideration of decommissioning funding should be eliminated from financial qualification review and instead be considered under the . . . decommissioning regulations." 28 NRC at 25 n.66.

We agree with the Appeal Board in this regard.[1] Moreover, since the funds required to decommission safely after low-power operation has occurred would

[1] As a strict matter, this means that financial qualifications or assurance of funding for decommissioning after low-power operation has occurred falls outside of the scope of the rule sought to be waived in the petition for waiver certified to us by the Appeal Board. However, the matter is before us on review of ALAB-895 and, of course, we also may take up the issue *sua sponte*.

appear to be substantially more than the funds required to conduct low-power testing and training safely, we have given initial consideration to this issue.

In the decommissioning rulemaking the Commission determined that public health and safety could best be protected by promulgating a rule requiring reasonable assurance that, at the time of termination of operations, adequate funds are available so that decommissioning can be carried out in a safe and timely manner and that lack of funds does not result in delays that may cause potential health and safety problems. 53 Fed. Reg. at 24,037.

We believe that this reasoning, when applied to the unique and unusual circumstances of this case, requires that before low power may be authorized, Applicants provide reasonable assurance that adequate funds will be available so that safe decommissioning will be reasonably assured in the event that low-power operation has occurred and a full-power license is not granted for Seabrook Unit 1.

Applicants have not yet provided such assurance. Thus, the first step in resolution of this question of assurance of adequate funding for decommissioning is to request Applicants to provide the basis on which a finding of the necessary reasonable assurance, as stated above, might be made. We request that within 30 days of the date of this Order Applicants provide us adequate documentation of their plan and appropriate commitments under that plan to provide reasonable assurance that adequate funding for decommissioning will be available in the event that a full-power license is not granted for Seabrook Unit 1.

The procedural posture of this case reflects that the record is closed for the consideration of new issues, and litigation on this issue may only be pursued if a motion to reopen is granted and at least one late-filed contention is admitted. The Commission intends to resolve any such motion on an expedited basis. Thus, within ten (10) days after service of Applicants' filing the parties must file, with the Commission, any motions and late-filed contentions based on Applicants' plan to fund the decommissioning of the plant in the event that a full-power license is not granted. All oppositions to any such motion must be filed within ten (10) days of service of the motion. All filing and service shall be by personal delivery or express mail. After receipt and consideration of the parties' filings, the Commission itself will either decide that the requisite reasonable assurance

has been provided or will direct what additional steps are necessary to permit a determination that the requisite reasonable assurance has been demonstrated.

It is so ORDERED.

For the Commission[2]

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 22d day of September 1988.

[2]Chairman Zech was not present for the affirmation of this Order, which he would have approved had he been present.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Christine N. Kohl, Chairman
Alan S. Rosenthal
Dr. W. Reed Johnson

In the Matter of **Docket No. 50-322-OL-5**
(EP Exercise)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **September 20, 1988**

Although it finds the applicant's appeal from a Licensing Board's partial initial decision on the scope of an exercise of the offsite emergency plan for the Shoreham facility, LBP-87-32, 26 NRC 479 (1986), technically moot, the Appeal Board issues an opinion, essentially advisory in nature, that affirms the Licensing Board's ultimate conclusion.

OPERATING LICENSE: EMERGENCY PREPAREDNESS

The Commission's regulations require, prior to issuance of an operating license for a nuclear power plant, a finding of "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." 10 C.F.R. § 50.47(a)(1) (1988). To determine if such reasonable assurance exists, these regulations require, inter alia, periodic exercises to evaluate major portions of emergency response capabilities. 10 C.F.R. § 50.47(b)(14). *See also* 10 C.F.R. Part 50, Appendix E, § IV.F.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

Any hearing on the results of an emergency response exercise is restricted to the issue whether "the exercise revealed any deficiencies which preclude a finding of reasonable assurance that protective measures can and will be taken, i.e., fundamental flaws in the plan." CLI-86-11, 23 NRC 577, 581 (1986). As to such hearing, the usual threshold for the admission of contentions — a pleading requirement that the bases of each contention be set forth with reasonable specificity — remains unchanged. *Ibid. See* 10 C.F.R. § 2.714(b).

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

The obligation of the Commission to give consideration to an offsite emergency plan applies to one prepared by a utility without governmental cooperation. In addition, with respect to such a plan, the Commission assumes that in an actual emergency, state and local governments would make a "best effort" response, relying on the utility plan. CLI-86-13, 24 NRC 22, 29, 31 (1986).

APPEAL BOARDS: ADVISORY OPINIONS

There is no jurisdictional limitation or other insuperable barrier to the Appeal Board's rendition of an advisory opinion on issues that have been indisputably mooted by events occurring subsequent to a licensing board decision. *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 54 (1978), *remanded on other grounds sub nom. Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979). Where an issue is of "demonstrable recurring importance," an opinion that is essentially advisory in nature is warranted. ALAB-743, 18 NRC 387, 390 n.4 (1983).

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

10 C.F.R. Part 50, Appendix E, § IV.F.1, requires a full participation emergency preparedness exercise sometime during the two-year period preceding full-power (i.e., operation above five percent of rated power) licensing.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

An implicit assumption in the criterion for an admissible exercise contention is that the exercise itself must be comprehensive enough to permit a meaningful test and evaluation of the emergency plan to ascertain if that plan is fundamentally flawed. An intervenor must therefore be allowed to challenge the scope of an exercise as too limited.

RULES OF PRACTICE: CONTENTIONS

Assuming that the general subject of a regulatory requirement is not otherwise expressly foreclosed from challenge, an intervenor (through the appropriate procedural vehicle) can always raise issues concerning compliance with such regulatory requirement.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

"Reasonable assurance" is the ultimate finding the Commission must make in connection with the overall emergency preparedness of a facility. 10 C.F.R. § 50.47(a).

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

The reasonable assurance criterion embodies the basic notion that pervades all of the Commission's emergency planning requirements: the fundamentals of the emergency plan are important, not the details or minor, ad hoc problems. *See generally Union of Concerned Scientists v. NRC*, 735 F.2d 1437, 1448 (D.C. Cir. 1984), *cert. denied*, 469 U.S. 1132 (1985); *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-86-24, 24 NRC 769, 775 n.8, 777 & n.10 (1986), *aff'd sub nom. Eddleman v. NRC*, 825 F.2d 46 (4th Cir. 1987). *See also* 52 Fed. Reg. 16,823, 16,824 (1987).

REGULATIONS: INTERPRETATION

As is the case with statutory construction, interpretation of any regulation must begin with the language and structure of the provision itself. 1A Sutherland, Statutory Construction § 31.06 (4th ed. 1984); *Lewis v. United States*, 445 U.S. 55, 60 (1980). Further, the entirety of the provision must be given effect. 2A Sutherland, Statutory Construction § 46.06 (4th ed. 1984). Although admin-

istrative history and other available guidance may be consulted for background information and the resolution of ambiguities in a regulation's language, its interpretation may not conflict with the plain meaning of the wording used in that regulation. *Abourezk v. Reagan*, 785 F.2d 1043, 1053 (D.C. Cir. 1986), *aff'd*, 108 S. Ct. 252 (1987); *GUARD v. NRC*, 753 F.2d 1144, 1146 (D.C. Cir. 1985).

REGULATIONS: INTERPRETATION

A footnote in a regulation is entitled to legal effect equal to that to which it would be entitled if it were in the text.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

Among other things, a full participation exercise must test the major observable portions of the onsite and offsite emergency plans and mobilize sufficient numbers of state, local, and licensee/applicant personnel and other resources so as to permit verification of their integrated capability to respond to the particular accident scenario being tested.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

NUREG-0654 is the principal guidance document for NRC staff and Federal Emergency Management Agency (FEMA) review of emergency plans.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

NUREG-0654 and similar documents are akin to "regulatory guides." That is, they provide guidance for the staff's review, but set neither minimum nor maximum regulatory requirements. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 709-10 (1985), *aff'd in part and review otherwise declined*, CLI-86-5, 23 NRC 125 (1986); *Consumers Power Co.* (Big Rock Point Nuclear Plant), ALAB-725, 17 NRC 562, 568 n.10 (1983).

REGULATORY GUIDES: INTERPRETATION

Where guidance documents conflict or are inconsistent with a regulation, the latter must prevail. On the other hand, guidance consistent with the regulations

and at least implicitly endorsed by the Commission is entitled to correspondingly special weight. *See, e.g., Limerick*, 22 NRC at 711 & n.40.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

FEMA findings on questions of adequacy and implementation capability are considered presumptively valid in NRC licensing proceedings, but such presumptions may be rebutted. 10 C.F.R. § 50.47(a)(2).

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

The adequacy of the scope of a pre-license emergency exercise must be judged against the NRC's regulatory requirements, not the customary practice of FEMA in designing and conducting such exercises.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

The general focus of the NRC's emergency planning requirements is on whether there is reasonable assurance that adequate protective measures can and will be taken in the event of an emergency — i.e., whether there is an absence of any fundamental flaws in the emergency plans.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

Public alert and notification is a major element of emergency planning. *See* 10 C.F.R. § 50.47(b)(5), (6). Section IV.F of Appendix E makes clear that exercises shall test the public notification system.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

The language in 10 C.F.R. Part 50, Appendix E, § IV.F.1 stating that a full participation exercise should "test[] as much of the licensee, State and local emergency plans as is reasonably achievable without mandatory public participation" means that emergency exercises should not involve actual participation by the general public, or so-called "live tests and drills."

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

Where an applicant claims that it was not possible to test an element of an emergency plan that would otherwise be required to be included in a full participation pre-license exercise, the Licensing Board should analyze that claim pursuant to 10 C.F.R. Part 50, Appendix E, § IV.F.6, and 10 C.F.R § 50.47(c)(1) (1988).

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

The potential evacuation of schools within the emergency planning zone (EPZ) is a major element of offsite emergency planning. *See* 10 C.F.R. § 50.47(b)(10). A sufficient number of school and related personnel must therefore participate in a full participation exercise so as to permit verification of their integrated capability to respond to the accident scenario. 10 C.F.R. Part 50, Appendix E, § IV.F.1 n.4.

RULES OF PRACTICE: BURDEN OF PROOF

Satisfaction of the burden of proof regarding a factual matter is not just a formality. It goes to the heart of the legal process and requires evidence — not speculation, regardless of how well-founded such speculation might appear to be.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

A pre-license full participation exercise must include participation by each state within the ingestion exposure pathway emergency planning zone. 10 C.F.R. Part 50, Appendix E, § IV.F.1. *See* 10 C.F.R. § 50.47(c)(2).

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

The extent of each ingestion exposure pathway state's participation in a pre-license emergency exercise is not detailed in 10 C.F.R. Part 50, Appendix E, § IV.F.1. Although the participation of such state will necessarily be limited by the particular accident scenario tested in the exercise, that scenario must be broad enough to meet all regulatory requirements for a pre-license exercise.

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

An applicant for an operating license is ultimately responsible for analyzing the Commission's regulations and determining its obligations thereunder.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

The participation of special facilities (hospitals, nursing homes, etc.) is a major observable portion of the offsite emergency plan and, thus, the Commission's regulations require contact during a full participation pre-license exercise with a sufficient number of such facilities so as to verify their integrated capability to respond to an accident.

APPEARANCES

Donald P. Irwin, Richmond, Virginia (with whom **Lee B. Zeugin**, Richmond, Virginia, was on the brief), for applicant Long Island Lighting Company.

Lawrence Coe Lanpher, Washington, D.C. (with whom **E. Thomas Boyle**, Hauppauge, New York, **Susan M. Casey**, Washington, D.C., **Richard J. Zahnleuter**, Albany, New York, and **Stephen B. Latham**, Riverhead, New York, were on the brief), for the intervenors Suffolk County, the State of New York, and the Town of Southampton.

Edwin J. Reis (**George E. Johnson** and **Lisa B. Clark** were on the brief) for the Nuclear Regulatory Commission staff.

DECISION

Applicant Long Island Lighting Company (LILCO) has appealed a December 1987 partial initial decision in which the Licensing Board concluded that the scope of the February 13, 1986, exercise of the offsite emergency plan for the Shoreham Nuclear Power Station was insufficient to comply with the NRC's emergency planning requirements. *See* LBP-87-32, 26 NRC 479. The NRC staff supports LILCO's appeal, and the intervenors Suffolk County, the State of New York, and the Town of Southampton (hereinafter, "the Governments") oppose it. As explained below, we affirm the Licensing Board's ultimate conclusion that the exercise did not satisfy certain regulatory requirements.

I.

The Commission's regulations require, prior to issuance of an operating license for a nuclear power plant, a finding of "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." 10 C.F.R. § 50.47(a)(1) (1988). To determine if such reasonable assurance exists, section 50.47(b) of these regulations describes 16 standards that an acceptable emergency plan must satisfy. Pertinent to the instant appeal is section 50.47(b)(14), requiring "[p]eriodic exercises . . . to evaluate major portions of emergency response capabilities . . . ." Appendix E to 10 C.F.R. Part 50 elaborates on this requirement. As part of the training portion of an emergency plan, Appendix E, § IV.F, requires generally that emergency preparedness exercises

> test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communications networks, test the public notification system, and ensure that emergency organization personnel are familiar with their duties.

Section IV.F goes on to specify, to a limited extent, the requirements and timing of both onsite and offsite exercises, beginning two years before license issuance and continuing throughout the life of the plant. Of particular relevance here is paragraph 1 of section IV.F:

> 1. A full participation exercise[4] 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 [emergency planning zone] and each State within the ingestion exposure pathway EPZ. . . .

[4] "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.

At one time, Commission regulations essentially precluded consideration of the results of emergency exercises in licensing proceedings. *See* 10 C.F.R. § 50.47(a)(2) (1983). In *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), *cert. denied*, 469 U.S. 1132 (1985) (hereinafter, "*UCS*"), however, the court struck down that rule, concluding that it denied intervenors their right under section 189(a)(1) of the Atomic Energy Act of 1954, as

amended, 42 U.S.C. § 2239(a)(1), to a hearing on an issue considered material to licensing. The Commission thereafter amended its rules accordingly, and intervenors may now litigate the results of "pre-license," or initial, emergency exercises. *See* 50 Fed. Reg. 19,323 (1985).

On February 13, 1986, the Federal Emergency Management Agency (FEMA) conducted a pre-license emergency preparedness exercise at Shoreham pursuant to the NRC's request and in conjunction with that of LILCO. Because the State of New York and local governments oppose LILCO's license application, there was no governmental offsite emergency response plan for FEMA to test, as is usually contemplated in such an exercise. Instead, FEMA evaluated an exercise based on LILCO's own offsite plan, as implemented by the Local Emergency Response Organization (LERO) — i.e., 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 private firms.[1]

After the February 1986 exercise, the Governments sought the Commission's advice on how to proceed with the litigation of contentions concerning the exercise. The Commission responded in CLI-86-11, 23 NRC 577 (1986). Taking note of the court's *UCS* decision, the Commission stated that any hearing would be restricted to the issue whether "the exercise revealed any deficiencies which preclude a finding of reasonable assurance that protective measures can and will be taken, i.e., fundamental flaws in the plan." *Id.* at 581. The Commission also confirmed, however, that the usual threshold for the admission of contentions — a pleading requirement that the bases of each contention be set forth with reasonable specificity — was to remain unchanged. *Ibid. See* 10 C.F.R. § 2.714(b).

The Governments subsequently tendered, and the Licensing Board admitted, numerous contentions alleging "fundamental flaws" in the emergency plan as revealed by the exercise. *See* Prehearing Conference Order (October 3, 1986) (unpublished), *as modified*, LBP-86-38A, 24 NRC 819 (1986). Pertinent here are contentions EX-15 and EX-16, which challenge the scope of the exercise itself for its failure to test certain assertedly major portions of the emergency plan, thereby demonstrating further fundamental flaws in the plan and precluding the

[1] Various aspects of the LILCO offsite plan and the utility's authority to implement it have been litigated before the Licensing Board, Appeal Board, Commission, and state and federal courts since 1983. A number of issues remain unresolved, and at present litigation before the Licensing Board continues. Pertinent to the February 1986 exercise is the Commission's ruling in CLI-86-13, 24 NRC 22, 29 (1986), that it is obliged to give consideration to an offsite emergency plan prepared by a utility without governmental cooperation. In addition, the Commission assumes that in an actual emergency, state and local governments would make a "best effort" response, relying on the LILCO plan. Whether such response would be adequate to meet the Commission's "reasonable assurance" standard remains to be determined in the pending litigation before the Licensing Board. *Id.* at 31. (The Commission codified this view in its emergency planning regulations. *See* 10 C.F.R. § 50.47(c)(1); 10 C.F.R. Part 50, Appendix E, § IV.F.6 (1988). The court recently upheld these regulations in *Massachusetts v. NRC*, 856 F.2d 378 (1st Cir. 1988).)

ultimate reasonable assurance finding.[2] The Board held hearings on these issues in May and June of 1987 and issued its decision the following December.

By the time LILCO's instant appeal from that decision was fully briefed, the two-year window for the pre-license exercise required by 10 C.F.R. Part 50, Appendix E, § IV.F.1 (*see supra* p. 282), was already closed. In any event, the existence of other unresolved emergency planning issues has thus far prevented the issuance of a full-power operating license for Shoreham.[3] Hence, another emergency preparedness exercise was conducted this past June.[4] In this circumstance (and in the absence of an exemption from the Commission's requirement that an initial exercise be conducted in the two years preceding issuance of a license), the February 1986 exercise is apparently without significance vis-a-vis license issuance, and LILCO's appeal from the Board decision finding that exercise deficient is technically moot. In an unpublished order issued June 27, 1988, we therefore solicited the parties' views on whether LILCO's appeal should be dismissed and the Licensing Board's partial initial decision vacated. In a rare instance of agreement, LILCO, the Governments, and the NRC staff each urged us not to dismiss the appeal and to resolve the legal issues at hand.

There is no jurisdictional limitation or other "insuperable barrier to our rendition of an advisory opinion on issues which have been indisputably mooted by events occurring subsequent to licensing board decision." *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 54 (1978), *remanded on other grounds sub nom. Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979). Where an issue is of "demonstrable recurring importance," an opinion that is essentially advisory in nature is warranted. ALAB-743, 18 NRC 387, 390 n.4 (1983). We believe that LILCO's appeal presents just such a circumstance.

As noted above, the regulation here at issue, 10 C.F.R. Part 50, Appendix E, § IV.F.1, requires a full participation emergency preparedness exercise sometime during the two-year period preceding full-power (i.e., operation above five percent of rated power) licensing. Another such exercise has already been conducted, and FEMA's evaluation was issued recently. The history of this proceeding suggests that litigation concerning that exercise would not be unexpected. And, as this proceeding has also demonstrated, the exercise evaluation and the subsequent litigation of issues arising from the exercise is a time-consuming

---

[2] Contentions EX-15 and EX-16 are too lengthy and convoluted to reprint here verbatim. *See* Suffolk County, State of New York, and Town of Southampton Memorandum Transmitting Exercise Contentions (August 1, 1986), Attachment at 16-31 (hereinafter, "Governments' Contentions"). The Board disposed of the remaining "exercise" contentions in LBP-88-2, 27 NRC 85 (1988); LILCO's appeal from that initial decision is pending.

[3] In addition, LILCO has recently negotiated an agreement to sell the Shoreham facility to the State of New York, which would then decommission the facility. The agreement, however, has not yet been approved by the state legislature, and, thus, Shoreham's future remains in doubt.

[4] In an unpublished memorandum issued May 25, 1988, we disclosed our tentative conclusions on this appeal so that they could be taken into account, as appropriate, in the June exercise.

process.[5] Therefore, given that the matters raised by LILCO's appeal from LBP-87-32 involve primarily issues of law and require the first-time interpretation of certain Commission regulations that will likely be invoked again in the near future (in this case or that involving the Seabrook facility), we agree with the parties that there is value in addressing those matters now, in the hope of obviating or at least expediting their relitigation.

II.

A. LILCO first argues that the Licensing Board erred in admitting contentions EX-15 and EX-16 for litigation. In its view, these contentions — addressed to the scope of the February 1986 emergency exercise — exceed the limits of the issues required to be litigated by the court's *UCS* decision and, more important, those authorized to be litigated by the Commission in CLI-86-11. As LILCO reads those decisions, only the results of an exercise may be challenged in a hearing and, then, solely to determine if those results demonstrate a fundamental flaw in the plan itself; the design or scope of the exercise may not be litigated to determine if the exercise was fundamentally flawed. LILCO also contends that litigation of the exercise scope is contrary to the Memorandum of Understanding (MOU) between FEMA and the NRC concerning their respective roles in emergency planning (*see* 50 Fed. Reg. 15,485 (1985)), as well as certain technical guidance documents of both agencies. According to LILCO, FEMA is responsible for the design and content of emergency exercises. By attacking the scope of the FEMA-designed exercise conducted at Shoreham in February 1986, contentions EX-15 and EX-16 fail to accord FEMA's judgment the substantial deference and presumption of validity to which it is entitled. Moreover, the contentions do not even claim that the exercise varied significantly from the many others FEMA has conducted. Thus, as LILCO sees it, the Licensing Board should never have permitted the litigation of any issue challenging the scope of the FEMA-designed exercise.

We disagree. To be sure, the Commission confined the issues subject to litigation in this proceeding to consideration of whether the results of the exercise revealed any fundamental flaws in the emergency plan. CLI-86-11, 23 NRC at 581. At the time the Licensing Board admitted contentions EX-15 and EX-16, FEMA (supported by LILCO) sought our interlocutory review of the

[5] In his dissent in *UCS*, Judge MacKinnon expressed concern that litigation relating to pre-license exercises — especially including court review — would lead to substantial delays and costs. 735 F.2d at 1455 & n.6. At the time of the *UCS* decision, Commission regulations required the pre-license exercise to be conducted just one year before license issuance. In 1987, the Commission expanded this period to two years (*see* 52 Fed. Reg. 16,823 (1987)) — which was barely adequate in this case to permit completion of the first level of administrative hearing. Judge MacKinnon's prediction that litigation of pre-license exercises would consume a substantial amount of time has thus proven truer than he could have imagined.

Board's ruling, arguing (as LILCO does now) that CLI-86-11 forecloses any consideration of the scope of the exercise, as determined by FEMA. In ALAB-861, 25 NRC 129 (1987), we denied FEMA's request because it did not meet either of our standards for intermediate appellate review. In so ruling, however, we explicitly rejected FEMA's interpretation of the Commission's directive as to what issues could be litigated:

> Such a reading of CLI-86-11 would effectively confer upon FEMA and the NRC staff, which jointly decide the elements to be tested, the unreviewable authority to determine that their sampling of observable elements of the LILCO plan was sufficient to satisfy Commission regulations. While FEMA's professional judgment as to what elements should be tested at the pre-license stage is entitled to substantial deference, the Commission's regulations plainly accord interested parties an opportunity to rebut FEMA's views on questions concerning the "adequacy and implementation capability" of the plan. *See* 10 C.F.R. 50.47(a)(2). And the determination of whether the LILCO plan, including the exercise, satisfies the Commission's regulatory requirements rests squarely and exclusively in the hands of the Commission.

Id. at 139 n.38.

In resurrecting FEMA's failed argument, LILCO provides us no cause to depart from our earlier reasoning and conclusion. Indeed, the necessary, albeit implicit, assumption in the Commission's CLI-86-11 criterion for an admissible exercise contention is that the exercise itself must be comprehensive enough to permit a meaningful test and evaluation of the emergency plan to ascertain if *that plan* is fundamentally flawed.[6] An intervenor must therefore be allowed to challenge the scope of an exercise as too limited. To hold otherwise would allow the unreviewable scope of the exercise to dictate the outcome of the exercise evaluation: i.e., an unduly limited exercise of only a plan's strong points would obviously reveal no fundamental flaws in the plan and, conversely, an unduly limited exercise of solely a plan's weakest areas would doom the outcome of the evaluation to failure.

Further, the Commission's regulations themselves provide the predicate for challenging the scope of a pre-license emergency exercise. Section IV.F.1 of Appendix E to 10 C.F.R. Part 50 describes the proper scope of a full participation pre-license exercise and, as such, it imposes regulatory requirements. Assuming that the general subject of such requirements is not otherwise expressly foreclosed from challenge, an intervenor (through the appropriate procedural vehicle) can always raise issues concerning compliance with regulatory requirements. Here, given that the assessment of an emergency exercise is material to a licensing decision and therefore may be litigated (*see UCS*, 735 F.2d at 1442, 1445-46), the Governments cannot be denied the opportunity

[6]The FEMA/NRC MOU also recognizes the need for the exercise scenario to be broad enough in scope. *See* 50 Fed. Reg. at 15,487 ("failure of a licensee to develop a scenario [to be tested in the exercise] that adequately addresses both onsite and offsite considerations may result in NRC taking enforcement actions").

to challenge LILCO's compliance with any of the Commission's regulations concerning emergency exercises, including that addressed to the scope of the exercise. The Licensing Board thus did not err in admitting contentions EX-15 and EX-16.

B. The heart of LILCO's appeal is directed to the Licensing Board's interpretation and application of the primary regulation involved here, section IV.F.1 of Appendix E to 10 C.F.R. Part 50. The Board began its discussion by noting that, under the terms of the regulation itself, an initial, or pre-license, exercise must meet certain requirements that subsequent biennial, or post-license, exercises need not. It contrasts paragraphs 1 and 3 of section IV.F, pertaining to pre-license and post-license exercises, respectively. Paragraph 1 requires a "full participation" exercise by applicant, state, and local personnel (or, as in this case, LERO personnel substituting for the governmental authorities) and a test of as much of the emergency plan as is reasonably achievable without mandatory public participation, while paragraph 3 permits "partial participation" and makes no reference to what might be "reasonably achievable" without mandatory public participation. LBP-87-32, 26 NRC at 484-85.

Because the Commission's requirements for emergency exercises have been amended several times since 1980, however, the Board also considered the parties' arguments based on the administrative history of the regulation at issue. LILCO and the staff essentially argued that the Commission meant to impose no additional or special requirements for pre-license exercises. The intervening Governments, on the other hand, argued that such initial exercises must be more comprehensive because there is no "track record" of the emergency preparedness for the particular, not yet licensed site. *Id.* at 485-88. Concluding that a 1984 amendment to the rule made "substantive changes in the required scope of initial and biennial exercises," and citing the "clear language" of section IV.F.1, the Board agreed with the Governments' reading of the regulation. *Id.* at 488.[7] The Board thus reiterated its conclusion that pre-license exercises must be broader in scope than post-license exercises. The Board also stated that it was

> unnecessary . . . to consider the parties' positions regarding the interpretation of the definition of full participation found in footnote 4 of that paragraph [section IV.F.1]. Because the initial exercise must be more comprehensive than the biennial exercises, *a fortiori* an exercise that meets that requirement will qualify as a full-participation exercise.

Id. at 488-89.

[7] The Board also determined that certain FEMA and NRC guidance documents were of "no value in understanding the additional requirements for initial full-participation exercises." LBP-87-32, 26 NRC at 488 n.11.

LILCO presses several complaints about the Licensing Board's analysis and conclusion. First, in LILCO's view, the Board interpreted section IV.F.1 in isolation and without reference to the ultimate "reasonable assurance" standard of 10 C.F.R. § 50.47(a) and all pertinent regulatory history. Second, the Board violated the basic tenets of statutory construction by failing to construe all parts of the regulation at issue, specifically footnote 4. Third, the Board erred in concluding that the 1984 amendment to the exercise regulation added special, substantive requirements for pre-license exercises. Fourth, the Board failed to give adequate consideration to NRC and FEMA guidance documents and appropriate deference to those agencies' expertise and experience in conducting emergency exercises.

We agree with LILCO to the extent that the Licensing Board's analysis of the regulation here at issue does not fully comport with basic principles of statutory construction.[8] Our application of those principles, however, does not lead us to the same ultimate conclusions reached by LILCO concerning the interpretation of section IV.F.1.

As is the case with statutory construction, interpretation of any regulation must begin with the language and structure of the provision itself. 1A Sutherland, Statutory Construction § 31.06 (4th ed. 1984); *Lewis v. United States*, 445 U.S. 55, 60 (1980). Further, the entirety of the provision must be given effect. 2A Sutherland, Statutory Construction § 46.06 (4th ed. 1984). Although administrative history and other available guidance may be consulted for background information and the resolution of ambiguities in a regulation's language, its interpretation may not conflict with the plain meaning of the wording used in that regulation. *Abourezk v. Reagan*, 785 F.2d 1043, 1053 (D.C. Cir. 1986), *aff'd*, 108 S. Ct. 252 (1987); *GUARD v. NRC*, 753 F.2d 1144, 1146 (D.C. Cir. 1985).

The regulation involved here, section IV.F.1 of 10 C.F.R. Part 50, Appendix E, states that "full participation" is required for the initial emergency exercise to be conducted during the two-year period preceding license issuance. The regulation immediately calls attention to the definition of full participation found in footnote 4 — which is as much a part of the regulation and entitled to equal legal effect as if it were in the text.[9] Among other things, a full participation

[8] We do not follow, however, LILCO's complaint that the Board somehow failed to give adequate attention to the reasonable assurance standard of 10 C.F.R. § 50.47(a). As LILCO acknowledges, "reasonable assurance" is the ultimate finding the Commission must make in connection with the overall emergency preparedness of a facility. But this standard is of limited use in attempting to determine if a given exercise satisfies the more specific (and thus controlling) requirements of another provision in the regulations. The reasonable assurance criterion, however, is of general significance in that it embodies the basic notion that pervades all of the Commission's emergency planning requirements: the fundamentals of the emergency plan are important, not the details or minor, ad hoc problems. *See generally UCS*, 735 F.2d at 1448; *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-86-24, 24 NRC 769, 775 n.8, 777 & n.10 (1986), *aff'd sub nom. Eddleman v. NRC*, 825 F.2d 46 (4th Cir. 1987). *See also* 52 Fed. Reg. at 16,824.

[9] Thus, insofar as the Licensing Board found it unnecessary to consider footnote 4 (*see* LBP-87-32, 26 NRC at 488-89), the Board erred.

exercise must test "the major observable portions" of the onsite and offsite emergency plans and mobilize "sufficient numbers" of state, local, and licensee/applicant personnel and other resources so as to permit verification of their "integrated capability" to respond to the particular accident scenario being tested.[10] A further gloss on the meaning of full participation is added in the text: such an exercise should test "as much of the licensee [applicant], State and local emergency plans as is reasonably achievable without mandatory public participation."

The principal ambiguity in this provision — especially insofar as the scope of a pre-license exercise is concerned — lies in determining what the major observable portions of the plans are. The planning standards in section 50.47, of course, are the original source of this language, inasmuch as they require exercises "to evaluate major portions of emergency response capabilities." 10 C.F.R. § 50.47(b)(14). The administrative history of section IV.F.1 in Appendix E, however, is of modest assistance. The 1980 version of the rule used the terminology "full-scale exercise" but did not define it. *See* 10 C.F.R. Part 50, Appendix E, § IV.F.1 (1981); 45 Fed. Reg. 55,402, 55,405, 55,407, 55,408 (1980). In 1984, "full-scale" became "full participation" and footnote 4, with its reference to the "major observable portions of the plans," appeared for the first time, but without explanation. *See* 10 C.F.R. Part 50, Appendix E, § IV.F.1 (1985); 49 Fed. Reg. 27,733 (1984).[11] The source of the particular language in footnote 4, however, appears to be a 1982 petition for rulemaking filed by the National Emergency Management Association (NEMA), a group of directors of state emergency services programs. *See* 48 Fed. Reg. 33,307 (1983); 47 Fed. Reg. 29,252 (1982). NEMA's petition suggested a definition of "full participation" that would include a "test [of] *all* major elements of the integrated plans." 47 Fed. Reg. at 29,252 n.2 (emphasis added). Two years later and without elaboration, the Commission essentially adopted and expanded NEMA's full participation language to its existing form in footnote 4. 49 Fed. Reg. at 27,736. In response to the issue of whether there were adequate procedures to determine if "major elements" are performed satisfactorily during an exercise, however, the Commission concurred in the need for uniform evaluation procedures and mentioned with seeming approval a FEMA document titled "Procedural Policy on Radiological Emergency Preparedness Plan Reviews, Exercise Observations and Evaluations,

[10] This focus on the major portions of the plans is another indication of the Commission's concern with the fundamentals of planning, rather than the details that can be dealt with more easily, should problems develop. *See supra* note 8.

[11] The lack of explanation about footnote 4 is understandable because the primary focus of the 1984 rulemaking was not the content or scope of emergency exercises. Rather, the main purpose of the amendment was to change the frequency of participation by state and local governments in emergency preparedness exercises for operating plants from once a year to once every two years. *See* 49 Fed. Reg. 27,733-36. *Compare* LBP-87-32, 26 NRC at 488.

and Interim Findings" (August 5, 1983) (hereinafter, "FEMA Objectives").[12] *Id.* at 27,734.

LILCO contends that the FEMA Objectives include all the major observable elements of an offsite emergency plan, and that therefore one should rely on that document in interpreting section IV.F.1. But more significant to its case here, LILCO claims that, pursuant to other NRC and FEMA guidance documents, testing of these major observable elements may be accomplished in several exercises over a six-year period and need not all be included in the initial, pre-license exercise. Specifically, LILCO relies on NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980) (hereinafter, "NUREG-0654"), and FEMA Guidance Memorandum PR-1, "Policy on NUREG-0654/FEMA-REP-1 and 44 CFR 350 Periodic Requirements" (October 4, 1985) (hereinafter, "FEMA PR-1").[13] NUREG-0654 is the principal guidance document for NRC staff and FEMA review of emergency plans. As pertinent to LILCO's argument, it provides that the accident scenarios tested in emergency exercises "should be varied from year to year such that all major elements of the plans and preparedness organizations are tested within a five-year period." NUREG-0654 at 71 (Planning Standard N.1.b).[14] FEMA PR-1 states that the exercise scenario should be varied so that the major elements of the plans are tested within a six-year period, beginning with the first exercise. It also notes that the major elements are incorporated in the FEMA Objectives. FEMA PR-1 at 2. LILCO complains that the Licensing Board failed to give adequate consideration to these documents.

As we have often stressed, NUREG-0654 and similar documents are akin to "regulatory guides." That is, they provide guidance for the staff's review, but set neither minimum nor maximum regulatory requirements. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 709-10 (1985), *aff'd in part and review otherwise declined,* CLI-86-5, 23 NRC 125 (1986); *Consumers Power Co.* (Big Rock Point Nuclear Plant), ALAB-725, 17 NRC 562, 568 n.10 (1983). Where such guidance documents conflict or are inconsistent with a regulation, the latter of course must prevail. On the other hand, guidance consistent with the regulations and at least implicitly endorsed by the Commission is entitled to correspondingly special weight. *See, e.g., Limerick,* 22 NRC at 711 & n.40.

---

[12] LILCO introduced this document into evidence in this proceeding as Attachment F to its Exhibit 12.

[13] FEMA PR-1 is Attachment E to LILCO's Exhibit 12.

[14] To take account of emergency planning rule changes since 1980 when NUREG-0654 was issued, NRC and FEMA have issued just this month Supplement 1 to that document. It provides that accident scenarios be varied from exercise to exercise so that all major elements of the plans are tested within a *six*-year period. NUREG-0654, Supp. 1 (September 1988) at 24 (Planning Standard N.1.b).

In the Statement of Considerations for the 1984 amendments to the emergency planning rules, the Commission specifically referred to the FEMA Objectives in connection with the evaluation of the major elements of the exercise. *See supra* pp. 289-90. Given the dearth of other guidance that would aid our interpretation and the lack of obvious conflict with the regulation itself, we agree with LILCO that the FEMA Objectives can provide an appropriate measure for determining whether an exercise meets the regulation's "major observable portions of the plans" criterion for full participation.[15]

We cannot agree, however, that, insofar as the initial, pre-license exercise is concerned, the major elements of the emergency plan can be tested in the aggregate over a six-year period, beginning with the pre-license exercise and extending to one or more post-license exercises.[16] To the extent that NUREG-0654 and FEMA PR-1 suggest such an interpretation, those guidance documents conflict with the language and structure of the regulation and thus may not be relied upon. As the Licensing Board found, section IV.F of Appendix E, on its face, draws a distinction between the initial exercise required before licensing and the periodic, post-license exercises required for an operating plant. Section IV.F.1 refers only to the requirement for a full participation exercise in the two years before licensing, whereas IV.F.3 permits both full and partial participation exercises, explicitly staggered over several years.[17] Thus, NUREG-0654 and FEMA PR-1 provide guidance essentially consistent with the post-license exercise requirements of section IV.F.3, but are at odds with the unequivocal command of section IV.F.1 for a pre-license full participation exercise — i.e., all "the major observable portions" of the onsite and offsite emergency plans must be tested before a license is issued. Accordingly, the Licensing Board gave appropriate weight to those guidance documents. *See* LBP-87-32, 26 NRC at 488 n.11.

Lastly, we are unpersuaded by LILCO's argument that the Licensing Board failed to give due deference to the FEMA/NRC Memorandum of Understanding and the views of the FEMA and NRC staff witnesses, especially concerning

---

[15] Interestingly, under FEMA's *regulations*, a "full participation" exercise tests "the observable portions" of the plans, rather than the *major* observable portions. 44 C.F.R. § 350.2(j) (1987).

[16] We need not, and thus do not, express any opinion on whether section IV.F.1 permits the testing of the major observable portions of the plans in more than one pre-license exercise conducted during the two-year period preceding license issuance.

[17] To support its view that the Commission has never intended higher standards for initial exercises than for subsequent ones, LILCO cites the preamble to a proposed 1981 rule change. *See* 46 Fed. Reg. 61,135 (1981). This citation, however, does not help LILCO's case. For one thing, the purpose of the statement was to justify the Commission's decision to exclude issues concerning pre-license exercise results from litigation in licensing proceedings, by showing their parity with post-license exercise results (which obviously are not litigated). But the court in *UCS* struck down that rule. Moreover, the rules in question have undergone a number of changes since the referenced 1981 statement, and, as noted above, section IV.F on its face treats pre- and post-license exercises differently. In any event, the primary concern here is what the rules currently require for an initial, pre-license exercise — irrespective of whether those requirements are more or less extensive than those once required before licensing, or more or less extensive relative to the requirements of post-license exercises.

FEMA's customary practice in designing emergency exercises. There is no dispute that, under the MOU, FEMA has the lead responsibility for assessing offsite emergency planning and preparedness. 50 Fed. Reg. at 15,486. But as for emergency exercises, in particular, the MOU provides for cooperation between the NRC and FEMA on determining exercise requirements and evaluating results. It also explicitly recognizes the NRC's right to take enforcement action if a licensee does not develop an accident scenario for an exercise that adequately addresses both onsite and offsite considerations. *See supra* note 6. FEMA findings on questions of adequacy and implementation capability are considered presumptively valid in NRC licensing proceedings, but such presumptions may be rebutted. 10 C.F.R. § 50.47(a)(2). FEMA has considerable experience in designing and assessing exercises; most of this experience, however, has been gained in connection with the more numerous post-license, biennial exercises. *See* 52 Fed. Reg. at 16,824 (*supra* note 5). *See also* Tr. 7232, 7544 (FEMA's Region II office had no prior experience in conducting pre-license exercises). Thus, the fact that the February 1986 Shoreham exercise was designed according to standard FEMA practice and was as comprehensive as other exercises FEMA has conducted may be of interest, but it is not dispositive of the question whether the exercise complies with NRC pre-license exercise regulations. *See* Tr. 7501-02, 7624 (FEMA did not purport to determine if the exercise satisfied NRC regulatory requirements). As the Licensing Board observed when it first admitted contentions EX-15 and EX-16,

> [t]he correct requirement is that the emergency preparedness exercise meet the regulation standard of 10 CFR 50.47 and App. E. Whether the exercise *per se* is not materially different from other FEMA-approved scenarios at other nuclear plants is irrelevant. It is the regulatory standard that must be met.

Prehearing Conference Order at 7.

In summary, the adequacy of the scope of a pre-license emergency exercise must be judged against the NRC's regulatory requirements, not the customary practice of FEMA in designing and conducting such exercises. The general focus of the NRC's emergency planning requirements is on whether there is reasonable assurance that adequate protective measures can and will be taken in the event of an emergency — i.e., whether there is an absence of any fundamental flaws in the emergency plans. Particularly pertinent among those requirements insofar as emergency exercises are concerned is 10 C.F.R. Part 50, Appendix E, § IV.F.1, the entirety of which (including footnote 4) must be given effect. That provision requires a pre-license exercise to be "full participation." This means that all "the major observable portions of the onsite and offsite emergency plans" must be tested in that pre-license exercise; the FEMA Objectives can serve as guidance in determining what the major observable elements are. In

addition, a pre-license exercise includes the mobilization of state, local, and licensee personnel "in sufficient numbers" to verify their "integrated capability" to assess and to respond to the particular accident scenario being tested.

III.

Given the framework for analysis discussed above, we now turn to the four omissions from the February 1986 exercise, which, according to the Licensing Board, demonstrate a lack of compliance with the requirements for a full participation exercise specified in section IV.F.1 of Appendix E.

A. During the exercise, sirens to alert the public to an emergency were not sounded, no emergency broadcast system (EBS) message was aired,[18] and LERO made no contacts with the then-designated EBS station, WALK Radio. The intervening Governments alleged that the failure to include these elements unduly limited the scope of the exercise, precluding a finding of reasonable assurance.

The Licensing Board concluded that sounding of the sirens and broadcast of an EBS message were "not reasonably achievable," and that it would not consider these omissions in determining whether the requirements of section IV.F.1 were met. LBP-87-32, 26 NRC at 491. In so concluding, the Board took note of a New York state court decision suggesting that such activities undertaken by LERO might constitute an unlawful exercise of the state's police power. In addition, the month before the exercise, the Suffolk County legislature passed a law imposing civil and criminal penalties on anyone participating in an exercise activity that could affect the general public. That law was enjoined three days before the exercise — too late, however, to incorporate a test of the alert and notification system into the exercise. *Id.* at 490-91. The Board thus stated that, "[g]iven 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 [sounding of sirens and broadcast of the EBS message] were not carried out at the Exercise." *Id.* at 491. But as for the lack of contact with WALK Radio, the Board found nothing in the record to show whether the County prevented its inclusion in the exercise. *Ibid.* The Board stated that "accurate communication of the text of EBS messages to the radio station which is to broadcast them is of paramount importance" and is not simply a "mechanical activity." It therefore

[18] Eleven EBS messages, however, were simulated during the exercise. *See* LILCO's Testimony on Contentions EX 38 (ENC Operations) and EX 39 (Rumor Control) (March 13, 1987), Attachment B. (This evidence pertains more directly to issues involved in the Licensing Board's subsequent other initial decision on the February 1986 exercise, LBP-88-2, *supra* note 2. It was to have been bound into the hearing transcript at Tr. 3206-07 but inexplicably was not. *See also* Tr. 3304-25 (motion to strike certain testimony denied).)

determined that "testing of communications with WALK Radio was reasonably achievable and should have been included in the Exercise." *Id.* at 492.

LILCO argues that the Board failed to explain how it could be reasonably achievable for WALK Radio to have received an EBS message but not reasonably achievable for it to have transmitted a test message to the public. In LILCO's view, the County ordinance effectively precluded both. LILCO also asserts that, in any event, contact with the EBS station is not material to the exercise, as it involves only the ability of radio station personnel to answer a telephone call from LERO, verify a code provided by the caller, and record the caller's EBS message.

Public alert and notification is unquestionably a major element of emergency planning. *See* 10 C.F.R. § 50.47(b)(5), (6). Section IV.F of Appendix E makes clear that "[e]xercises shall . . . test the public notification system," and FEMA includes this as an exercise objective. *See* FEMA Objectives, No. 13. The EBS message is an integral component of the public notification system, and ordinarily should be tested in a full participation exercise. But once the Licensing Board determined that the broadcast of an EBS message was not possible during the February 1986 exercise, it logically follows that no useful purpose would have been served by LERO's making contact with the radio station that would have nothing to broadcast. In other words, the key ingredient in this element of the public notification system for testing purposes is the *broadcast* of the message. Little information of significant independent utility would be gained by testing actual contact with the station, where the station has no corresponding responsibility to broadcast the message conveyed to it.[19] Thus, in this circumstance, LERO's failure to contact WALK in and of itself does not show a lack of compliance with the requirements of a full participation exercise.

This ruling, however, is subject to several caveats. We do not have before us any direct challenge to the Licensing Board's determination that sounding sirens and broadcast of the EBS message were not reasonably achievable and thus need not be considered in deciding if the requirements of section IV.F.1 have been satisfied; our ruling therefore assumes the correctness of the Board's decision on that score. Inasmuch as this opinion is advisory in nature, however, we feel compelled to express our doubts about certain aspects of the Licensing Board's analysis in this regard and the parties' arguments that led to that analysis.

---

[19] This is not, as the Governments suggest, a matter of who (i.e., LILCO or the Licensing Board) had the burden of explaining or showing what is reasonably achievable. Rather, it is a matter of whether it is reasonable to expect the performance of an activity that would be largely meaningless for purposes of the overall exercise.

The Governments also argue that the tasks involved in LERO's communicating with the EBS station are not as simple as LILCO suggests. They note, in this regard, that the Licensing Board found numerous problems with LERO's communications skills in the other decision that addresses the February 1986 exercise, LBP-88-2, 27 NRC 85. We therefore believe it is more appropriate to deal with those asserted communications deficiencies in that context, rather than in connection with this challenge to the scope (as opposed to the implementation) of the exercise.

The parties and the Licensing Board have focused a lot of attention on language in section IV.F.1 that states that a full participation exercise should "test[] as much of the licensee, State and local emergency plans as is reasonably achievable." They have all failed, however, to give due weight to the rest of the phrase — "without mandatory public participation." We believe that a proper understanding of the intent and purpose of this language requires consideration of the entirety of the phrase as one complete thought — i.e., "as much of the . . . plans as is reasonably achievable without mandatory public participation" — as well as its administrative history.

The genesis of this language shows that all it means is that emergency exercises should not involve actual participation by the general public, or so-called "live tests and drills." It does not explain or define "full participation" exercise — footnote 4 serves that purpose; nor does it refer to the relatively recent development in which state and/or local governments have refused to participate in emergency planning for nuclear power plants. "No mandatory public participation" was the Commission's position in 1977 (*see* 42 Fed. Reg. 36,326-28 (1977); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 2), ALAB-486, 8 NRC 9, 16-17 (1978)), and nothing in the several subsequent changes to the agency's emergency planning regulations gives us cause to doubt the vitality of that interpretation of the language today. This language first appeared in the rules themselves in 1980, without any explanation, and it applied to both pre- and post-license exercises. *See* 45 Fed. Reg. 55,402 (1980); 44 Fed. Reg. 75,167 (1979); 10 C.F.R. Part 50, Appendix E, § IV.F.1 (1981). It is reasonable to infer from the lack of explanation about this phrase that the Commission was simply codifying its existing position of "no mandatory public participation." As the Licensing Board noted, in the 1984 amendments this language was dropped insofar as it applied to post-license exercises. LBP-87-32, 26 NRC at 486 n.8; 10 C.F.R. Part 50, Appendix E, §§ IV.F.1, IV.F.3 (1985). Contrary to the Board and the Governments (LBP-87-32, 26 NRC at 487-88), however, we see nothing in the administrative history to indicate that this was an intentional substantive change[20] or that, in any event, the phrase as retained in the pre-license exercise provision was to have a meaning different from that ascribed to it since 1977.

In light of this interpretation of the "reasonably achievable" language in section IV.F.1, we believe that the parties and the Licensing Board erred in turning to that provision as essentially an "affirmative defense" for LILCO to a claim

[20] We are inclined to think that careless drafting accounts for this change. It is unlikely that the Commission meant to require public participation for post-license exercises (the logical consequence of dropping the "no mandatory public participation" language from the biennial exercise provision), particularly without explaining such a significant change. There is also other evidence of a lack of precision in the drafting of the rule. For instance, section IV.F.1 pertains only to pre-license exercises, yet it refers to the *licensee's* (rather than the applicant's) emergency plans.

that an exercise was not "full participation." Instead, 10 C.F.R. § 50.47(c)(1) (1987) provided the appropriate provision to apply to circumstances where an applicant could not meet the Commission's emergency planning requirements. As observed earlier (*supra* note 1), the Commission has recently amended this provision to address, in addition, the specific circumstance where state and/or local governments refuse to participate in emergency planning. Thus, in the future where an applicant claims that it was not possible to test an element of an emergency plan that would otherwise be required to be included in a full participation pre-license exercise, the Board should analyze that claim pursuant to 10 C.F.R. Part 50, Appendix E, § IV.F.6, and 10 C.F.R. § 50.47(c)(1) (1988).

B. Only one of 11 school districts participated in the February 1986 emergency exercise at Shoreham. New York Exhibit 1 at 60-61. This participation involved the actual completion by LERO personnel of one school bus route (after a 40-minute delay in dispatch of the vehicle) and the simulated dispatch of 17 school buses to one high school. In its evaluation, FEMA concluded that greater school participation was needed and assigned this aspect of the exercise an "ARCA," or Area Requiring Corrective Action, rating. FEMA also noted that, despite its prior request for more school participation, LILCO decided not to invite other districts to participate. *See* LBP-87-32, 26 NRC at 496; FEMA Exhibit 1 at 38, 41, 66, 67; Tr. 7603, 7606-09.

The Governments contended that there was inadequate school participation in the exercise, and the Licensing Board agreed. The Board observed that the only evidence as to why LILCO did not invite more schools to participate was the speculation of a LILCO witness on cross-examination that other schools would not have likely participated because of resolutions expressing opposition to Shoreham. The Board also noted that LILCO conceded that more schools should have been included in the exercise and committed itself to seek such participation in the future. *See* Tr. 6951-53. The Board stressed that, under 10 C.F.R. § 2.732, LILCO has the burden of proof and therefore was obliged to establish why greater school participation was not reasonably achievable. LBP-87-32, 26 NRC at 496-97. LILCO having failed to do so, the Board thus concluded that the exercise was deficient for insufficient school participation. *Id.* at 501.

LILCO complains that it is being faulted for the mere informality of its documentation concerning the unwillingness of other school districts to participate in the exercise. It notes that FEMA characterized the lack of greater school participation as only an ARCA, rather than the higher-level "Deficiency." LILCO infers from this that FEMA does not consider the lack of greater school participation to be essential to the ultimate "reasonable assurance" finding. LILCO argues that the Licensing Board improperly ignored the significance of this inference from FEMA's testimony.

There is no dispute that the potential evacuation of schools within the emergency planning zone (EPZ) is a major element of offsite emergency planning. *See* FEMA Objectives, No. 19. *See also* 10 C.F.R. § 50.47(b)(10). A sufficient number of school and related personnel must therefore participate in a full participation exercise so as to permit verification of their integrated capability to respond to the accident scenario. 10 C.F.R. Part 50, Appendix E, § IV.F.1 n.4. As LILCO acknowledged, the participation of one high school — out of a total of 48 public and private schools in the EPZ (*see* Governments' Contentions, *supra* note 2, at 28) — is not enough to satisfy this regulatory standard. Hence, FEMA's assessment rating of this matter is beside the point. Nonetheless, it is clear from the record that, notwithstanding the ARCA rating, FEMA determined much broader school participation would be necessary before it could verify the ability of the schools generally to respond in the event of an emergency at Shoreham. Tr. 7603. Indeed, FEMA strongly recommended that in the future *all* schools (presumably in the 10-mile plume EPZ) be included in offsite exercises. FEMA Exhibit 1 at 38, 41. We therefore find LILCO's attempt to draw contrary inferences from this evidence to be unpersuasive.

We also reject LILCO's claim that, because greater school participation was so unlikely, the absence of proof on that score was just a technicality. The Licensing Board correctly ruled that LILCO has the burden of proving that the pertinent regulatory requirements are satisfied. Satisfaction of the burden of proof regarding a factual matter is not just a formality. It goes to the heart of the legal process and requires evidence — not speculation, regardless of how well-founded such speculation might appear to be. In future exercises, therefore, LILCO should at least attempt to obtain the participation of a sufficient number of schools; but if they decline, thereby precluding full participation as contemplated by the Commission's regulations, LILCO has the burden of establishing such fact pursuant to 10 C.F.R. § 50.47(c)(1). *See supra* p. 296.

C. The Commission's regulations define two emergency planning zones around a nuclear power plant facility — a "plume exposure pathway EPZ" about 10 miles in radius, and an "ingestion pathway EPZ" about 50 miles in radius. 10 C.F.R. § 50.47(c)(2). The FEMA Objectives identify three areas in connection with the ingestion pathway EPZ that are to be tested in an emergency exercise: (1) equipment and procedures for the collection, transport, and analysis of soil, vegetation, snow, water, and milk samples; (2) the ability to project dosage to the public via ingestion (based on field data) and to determine appropriate protective measures; and (3) the ability to implement protective actions for ingestion pathway hazards. FEMA Objectives, Nos. 9, 11, 12. None of these objectives

was tested in the February 1986 exercise,[21] and the Governments contended that they were improperly excluded. The Licensing Board agreed. It noted that ingestion pathway activities were excluded from the exercise largely because the NRC staff advised FEMA to emphasize areas related to emergency preparedness and response capabilities within the 10-mile plume EPZ. LBP-87-32, 26 NRC at 498-99. While the Board described this as "unfortunate," it nonetheless found that section IV.F.1 "clearly requires . . . that each state within the ingestion exposure pathway EPZ participate in the initial full-participation exercise." *Id.* at 499. Accordingly, the Board concluded that the exercise was unduly limited and did not comply with regulatory requirements. *Id.* at 499, 501.

LILCO argues that ingestion pathway exercises are not uniformly performed and have never been conducted to any significant extent in New York because of the lack of final FEMA guidance on this subject. LILCO draws an analogy to recovery and reentry activities, which the Licensing Board determined were not reasonably achievable due to a lack of guidance from the Environmental Protection Agency. *See id.* at 499-500. It also asserts that the regulations require the inclusion of ingestion pathway activities only to the extent dictated by the accident scenario tested and only once every five years for each ingestion pathway state.

We agree with the Licensing Board that the dictates of the regulation are unequivocal and that the February 1986 exercise was deficient for failure to test state ingestion pathway objectives. A pre-license full participation exercise "shall include participation by . . . each State within the ingestion exposure pathway EPZ." 10 C.F.R. Part 50, Appendix E, § IV.F.1. This language leaves little room for interpretation. To be sure, the extent of each state's participation is not detailed and will necessarily be limited by the particular accident scenario tested in the exercise. That scenario, of course, must be broad enough to meet all regulatory requirements for a pre-license exercise. *See supra* pp. 292-93. LILCO's assertion that the regulations require states to test their ingestion pathway plans only once every five years pertains solely to post-license biennial exercises and thus is of no assistance here. *See* 10 C.F.R. Part 50, Appendix E, § IV.F.3(e). And, in any event, because section IV.F.3(e) provides that ingestion pathway plans be tested "*at least* once every 5 years" (emphasis added), there is no irreconcilable conflict with the more explicit command of section IV.F.1 that ingestion pathway states *shall* participate in pre-license exercises.

With respect to the asserted practice of not regularly including ingestion pathway activities in emergency exercises, we have already determined that custom is not dispositive, particularly when the regulations clearly require otherwise.

[21] New York and Connecticut are ingestion pathway states. Apparently, there was limited involvement by Connecticut in the February 1986 exercise (*see* Tr. 6851-52), but neither state participated in the matters covered by the three specified FEMA objectives, nor did LERO participate in this regard as New York's surrogate.

See supra p. 292.[22] The fact that the NRC staff advised FEMA to focus on plume EPZ activities is, as the Licensing Board described it, unfortunate, but is also of little aid to LILCO. As the applicant for an operating license, LILCO is ultimately responsible for analyzing the Commission's regulations and determining its obligations thereunder. Finally, insofar as LILCO claims the lack of FEMA guidance on ingestion pathway activities prevented their inclusion in the exercise (the "reasonably achievable" argument), we have already explained that the proper remedy for extenuating circumstances that may preclude satisfaction of the Commission's exercise requirements is found in 10 C.F.R. § 50.47(c)(1). *See supra* p. 296.[23]

D. Under the accident scenario tested in the February 1986 exercise at Shoreham, special facilities such as nursing homes were to be evacuated. Except in two or three instances, LILCO's communications with such facilities were simulated. FEMA evaluated the performance of only one ambulance and one ambulette, and it did not determine whether enough of such vehicles and drivers would have been available to handle an actual evacuation. LBP-87-32, 26 NRC at 500. The Licensing Board concluded that the coordination and communication between LERO and the special facilities, and especially the preparedness of ambulance companies, should have been tested and evaluated in the exercise. Because the Board found nothing to indicate that a test of those aspects of the emergency plan was not reasonably achievable, it determined that the exercise failed to satisfy the requirements of section IV.F.1. *Id.* at 501.

LILCO argues that these omissions from the exercise are not material and thus do not constitute a failure to comply with the Commission's regulations. LILCO stresses that essentially all that is involved in communicating with special facilities is their ability to answer telephone calls from LERO workers. Where a special facility has its own vehicles to transport residents, this call would simply advise the facility of the need to evacuate — information it would have already obtained through the public alert and notification system. If a special facility does not have its own vehicles, the call would merely add the expected arrival time of LERO vehicles. LILCO also argues that, in accordance with FEMA's judgment and guidance, not all special facilities need to be tested in the initial pre-license exercise, but rather can be tested in several exercises over a six-year period. As for the Board's ruling on the need for an evaluation of the preparedness of ambulance companies, LILCO is uncertain of the Board's intent. It believes, however, that the Board would require FEMA to evaluate

---

[22] LILCO notes that NRC records reveal that ingestion pathway states did not participate in the pre-license exercises for several other facilities. That may well be true, but so too is the fact that no party invoked its right to litigate the matter in those cases.

[23] In this connection, we note that the Licensing Board's determination that the testing of recovery and reentry functions was "not reasonably achievable" and therefore need not be considered (*see* LBP-87-32, 26 NRC at 499-500) is not before us on appeal. *But see supra* pp. 294-96.

the performance of ambulance company officials in their function of dispatching vehicles. But in LILCO's view, this is the routine job of these persons and thus is not significant vis-a-vis FEMA's evaluation in an emergency exercise.

The participation of special facilities is a major observable portion of the offsite emergency plan and, thus, the Commission's regulations require contact with a sufficient number so as to verify their integrated capability to respond to an accident. *See* FEMA Objectives, No. 18; Tr. 7663-64.[24] Actual contact with only two or three such facilities during the 1986 exercise is insufficient to satisfy this requirement, particularly insofar as those facilities that lack their own vehicles for the transportation of mobility-impaired persons are concerned.[25] LILCO attempts to minimize the significance of the calls to these facilities, but communication and coordination with special facility personnel concerning the arrival time of LERO's vehicles is patently essential to the effective implementation of an evacuation and hence should be tested in an exercise.[26]

We agree with LILCO, however, that there is some ambiguity in the Licensing Board's ruling relating to the need for an evaluation of the preparedness of the ambulance companies that would serve the special facilities: it is not entirely clear what the Board intends by "preparedness." If the Board means that the evaluation of the actual performance of only one ambulance and one ambulette was inadequate, then we concur that that level of participation does not constitute the "sufficient number" contemplated by the regulation requiring a full participation pre-license exercise. *See* New York Exhibit 1 at 95.[27]

The Licensing Board's conclusion that the February 13, 1986, emergency preparedness exercise at Shoreham was not inclusive enough to meet the

[24] We therefore agree with LILCO that *all* special facilities need not be tested in the exercise, but disagree that all may be tested in several exercises over a six-year period, without regard to how many participate in the initial, pre-license exercise. *See supra* p. 291.

[25] There are three hospitals and 10 major nursing and adult homes in the plume EPZ. Most will require vehicles provided by LERO. New York Exhibit 1 at 85, 93, 95.

[26] This contrasts with our judgment (*supra* pp. 293-94) that, in the circumstance of the February 1986 exercise where no EBS message was broadcast, actual communication between LERO personnel and the EBS radio station would have been largely meaningless.

[27] With respect to the Licensing Board's references to FEMA's failures to evaluate the number of ambulances and drivers actually available, and to interview ambulance company officials concerning their knowledge of their emergency response duties (LBP-87-32, 26 NRC at 500), it is not clear whether those omissions were solely the consequence of LILCO's/LERO's actions or FEMA's. In light of the advisory nature of this opinion, the issue need not be resolved. We question, however, the fairness of penalizing a license applicant for the shortcomings in an exercise *evaluation* (as contrasted with the exercise itself) that are *solely* attributable to FEMA.

Commission's regulatory requirements (*see* LBP-87-32, 26 NRC 479) is *affirmed* for the reasons set forth in this opinion.

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:

Christine N. Kohl, Chairman
Alan S. Rosenthal
Dr. W. Reed Johnson

In the Matter of **Docket No. 50-322-OL-5**
(EP Exercise)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **September 20, 1988**

In response to the intervenors' request, the Appeal Board remands to the Licensing Board for appropriate action new issues raised in connection with a second pre-license emergency planning exercise conducted at the Shoreham facility; the Appeal Board, however, denies the intervenors' further request that it appoint particular Licensing Board members to hear those issues.

RULES OF PRACTICE: JURISDICTION OF BOARDS

An adjudicatory board has the inherent right (indeed the duty) to determine in the first instance the bounds of its own jurisdiction. *Duke Power Co.* (Perkins Nuclear Station, Units 1, 2 and 3), ALAB-591, 11 NRC 741, 742 (1980).

RULES OF PRACTICE: JURISDICTION OF BOARDS

In the exercise of its duty to determine the bounds of its jurisdiction, an Appeal Board has incidental authority to direct such other action as may be

appropriate in the circumstances to facilitate the disposition of the proceeding. *See id.*, ALAB-597, 11 NRC 870, 874 & n.9 (1980).

RULES OF PRACTICE: JURISDICTION OF BOARDS

Once a licensing board issues its decision disposing of an issue and appeals are filed, the Appeal Board has jurisdiction over new matters raised in connection with such issue. *Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), ALAB-859, 25 NRC 23, 27 (1987).

LICENSING BOARDS: DISCRETION IN MANAGING PROCEEDINGS

The Commission's Rules of Practice do not explicitly authorize or address the matter of disposition of different issues at different times in the same operating license proceeding by multiple licensing boards, through the issuance of several partial initial decisions (rather than one initial decision). *See, e.g.*, 10 C.F.R. §§ 2.717, 2.760. Nonetheless, due to the enormous size, complexity, and duration of NRC proceedings, these practices have become essential to case management.

RULES OF PRACTICE: JURISDICTION OF BOARDS

Where finality has attached to some but not all issues, appeal board jurisdiction to entertain new matters is dependent upon the existence of a reasonable nexus between those matters and the issues remaining before the appeal board. *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-551, 9 NRC 704, 707 (1979). "Reasonable nexus" in this context means " 'a rational and direct *link*' — not a total identity or commonality of issues." *Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-797, 21 NRC 6, 8 (1985).

RULES OF PRACTICE: JURISDICTION OF BOARDS

The Appeal Board has stressed a practical, common sense approach to the resolution of jurisdictional problems, taking into account "efficiency in the disposition of the matter at hand and fairness to the parties." *Id.* at 9 (citing *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-726, 17 NRC 755 (1983)).

RULES OF PRACTICE: DIRECTED CERTIFICATION

The Rules of Practice expressly empower the Commission to direct the certification to it of any question pending before a Licensing Board. *See* 10 C.F.R. § 2.718(i). And that authority has been explicitly delegated to the Appeal Board in 10 C.F.R. § 2.785(b)(1). *See, e.g., Puerto Rico Electric Power Authority* (North Coast Nuclear Plant, Unit 1), ALAB-605, 12 NRC 153 (1980).

LICENSING BOARDS: APPOINTMENT OF MEMBERS

The appointment of individual Licensing Board members to a particular proceeding is beyond the scope of the Appeal Board's authority and is committed to the discretion of the Commission or the Chairman of the Licensing Board Panel. *See* 10 C.F.R. §§ 1.15, 2.704, 2.721, 2.785.

LICENSING BOARDS: APPOINTMENT OF MEMBERS

Absent Commission action, the Licensing Board Panel Chairman is free to establish and reconstitute licensing boards with whichever individual Panel members he feels are appropriate, subject to review only for an abuse of discretion. *See Suffolk County and State of New York Motion to Rescind Reconstitution of Board* [sic: *Long Island Lighting Co.*] (Shoreham Nuclear Power Station, Unit 1), LBP-86-37A, 24 NRC 726, 728-29 (1986).

APPEARANCES

E. Thomas Boyle, Hauppauge, New York, **Lawrence C. Lanpher** and **Christopher M. McMurray**, Washington, D.C., **Fabian G. Palomino** and **Richard J. Zahnleuter**, Albany, New York, and **Stephen B. Latham**, Riverhead, New York, for intervenors Suffolk County, the State of New York, and the Town of Southampton.

Donald P. Irwin, Kathy E.B. McCleskey, and **Charles L. Ingebretson,** Richmond, Virginia, for applicant Long Island Lighting Company.

Mitzi A. Young for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

On September 13, 1988, intervenors Suffolk County, the State of New York, and the Town of Southampton (hereinafter, "the Governments") filed a motion asking us to appoint a licensing board with jurisdiction to hear issues raised in connection with the June 1988 emergency planning exercise conducted at the Shoreham nuclear power facility. The Governments' motion is prompted by the NRC staff's motion, filed September 9 with the so-called "OL-3" Licensing Board, asking that Board to establish a schedule for the litigation of issues arising from the June 1988 exercise. The Governments contend that we — not the OL-3 Licensing Board — have jurisdiction over all exercise issues by virtue of the appeals now pending before us from Licensing Board decisions relating to the February 1986 emergency exercise at Shoreham. *See* LBP-87-32, 26 NRC 479 (1987); LBP-88-2, 27 NRC 85 (1988).[1] Consequently, they believe it is necessary that we order the Chairman of the Atomic Safety and Licensing Board Panel to convene a licensing board to hear issues concerning the latest exercise. Further, they assert that such board should preferably consist of the members of the so-called "OL-5" Licensing Board, which rendered the exercise decisions now before us on appeal, because of the similarity in the issues likely to be raised.

Both applicant Long Island Lighting Company (LILCO) and the NRC staff believe that the OL-3 Licensing Board now has sole jurisdiction over issues relating to the June 1988 exercise, and each questions our authority even to consider the Governments' motion. LILCO and the staff therefore urge us to dismiss or deny the Governments' motion.

At the outset, we assert our "inherent right (indeed, the duty) to determine in the first instance the bounds of [our] own jurisdiction." *Duke Power Co.* (Perkins Nuclear Station, Units 1, 2 and 3), ALAB-591, 11 NRC 741, 742 (1980). We note further that, in the exercise of that duty, we have incidental authority to direct such other action as may be appropriate in the circumstances to facilitate the disposition of the proceeding. *See id.*, ALAB-597, 11 NRC 870, 874 & n.9 (1980). Thus, we decline LILCO's suggestion that we summarily dismiss the Governments' motion.

The principal question presented by the Governments' motion is whether jurisdiction over issues raised in connection with the June 1988 exercise lies with the Licensing Board (in general, without regard to the OL-5 or OL-3 designation) or with us. The answer to that question, as in the case of many legal issues, depends on how the question is framed. If the 1986 and 1988 exercises

[1] Today we issued ALAB-900, 28 NRC 275, in which we affirmed the Licensing Board's ultimate conclusion in LBP-87-32.

(and the issues that arise therefrom) are considered as entirely separate, unrelated events, agency precedent suggests that jurisdiction over any 1988 exercise issues lies with the Licensing Board. On the other hand, if both the 1986 and 1988 exercises are viewed more broadly, as involving LILCO's attempt to satisfy the Commission's requirement for a pre-license "full participation" exercise (*see* 10 C.F.R. Part 50, Appendix E, § IV.F.1), we have jurisdiction over issues thus defined. *See Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), ALAB-859, 25 NRC 23, 27 (1987) (once a licensing board issues its decision disposing of an issue and appeals are filed, appeal board has jurisdiction over new matters raised in connection with such issue). As explained below, we believe that it is more logical, as well as consistent with our case law, to follow the latter approach — i.e., to define the issue involved here broadly, as LILCO's compliance with the agency's pre-license exercise requirement. Thus, we conclude that we have jurisdiction to act in the first instance with respect to new issues raised as a consequence of the 1988 exercise.

The Commission's Rules of Practice provide little or no aid in resolving this thorny problem. For, they do not explicitly authorize or address the real source of our dilemma — the disposition of different issues at different times in the same operating license proceeding by multiple licensing boards, through the issuance of several "partial initial decisions" (rather than one "initial decision"). *See, e.g.*, 10 C.F.R. §§ 2.717, 2.760.[2] Nonetheless, due to the enormous size, complexity, and duration of NRC proceedings, these practices have become essential to effective case management.

This segmented approach to adjudication has spawned some case law to aid our analysis. Similar jurisdictional issues often arise when a party files a motion to reopen the record on an issue that is still at some stage of litigation in the adjudicatory process. We have held that, where "finality has attached to some but not all issues, appeal board jurisdiction to entertain new matters is dependent upon the existence of a 'reasonable nexus' between those matters and the issues remaining before the [appeal] board." *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-551, 9 NRC 704, 707 (1979). "Reasonable nexus" in this context means "'a rational and direct *link*' — not a total identity or commonality of issues." *Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-797, 21 NRC 6, 8 (1985). We have also stressed a practical, common sense approach to the resolution of such jurisdictional problems, taking into account "efficiency in the disposition of the matter at hand and fairness to the parties." *Id.* at 9 (citing *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-726, 17 NRC 755 (1983)).

---

[2] For *construction permit* proceedings, the Rules specifically authorize separate hearings and partial initial decisions on particular issues. 10 C.F.R. § 2.761a.

Applying the reasoning of those cases to the matter now before us supports our conclusion that the issue should be broadly defined as LILCO's compliance with the pre-license exercise requirement of Appendix E to 10 C.F.R. Part 50, and that jurisdiction over any new matters raised by the parties in this regard lies with us, rather than the Licensing Board. That Board completed its consideration of the 1986 exercise with the issuance of LBP-88-2, and the appeal from that decision is pending before us. The parties now seek to establish the schedule for the litigation of any issues relating to the 1988 exercise, which is intended to serve the same regulatory purpose as the earlier exercise found deficient by the Licensing Board. The reasonable nexus between any new exercise issues and those now under appellate review is self-evident. Indeed, the parties have acknowledged as much. Several months ago, when we suggested dismissal of the 1986 exercise appeals as moot, all parties urged us not to take such action, arguing that we should resolve the essentially legal issues raised in those appeals because they were likely to reappear in the next round of exercise litigation. *See* ALAB-900, *supra* note 1, 28 NRC at 284-85.[3]

Having thus determined that jurisdiction over any new exercise-related issues more properly lies with us, we also decide that the best course is to remand such new issues to the Licensing Board for disposition as expeditiously as possible, consistent with fairness to all the parties. *See* CLI-86-11, 23 NRC 577, 582 (1986).[4] The Governments' motion, however, additionally asks that we direct the Chairman of the Licensing Board Panel to designate specifically the members of the OL-5 Licensing Board to preside over the litigation relating to the 1988 exercise.

The appointment of individual Licensing Board members to a particular proceeding is beyond the scope of our authority and is committed to the discretion of the Commission or the Chairman of the Licensing Board Panel. *See* 10 C.F.R. §§ 1.15, 2.704, 2.721, 2.785. Thus, absent Commission action, the Licensing Board Panel Chairman is free to establish and reconstitute licensing boards with whichever individual Panel members he feels are appropriate, subject to review only for an abuse of discretion. *See Suffolk County and State of New York Motion to Rescind Reconstitution of Board* [sic: *Long Island Lighting Co.*] (Shoreham Nuclear Power Station, Unit 1), LBP-86-37A, 24 NRC 726, 728-29 (1986).

---

[3] Although LILCO now strongly asserts that only the OL-3 Licensing Board has jurisdiction over 1988 exercise issues, earlier this year it urged the *OL-5* Licensing Board to retain jurisdiction over any such issues, should they later arise. *See* LBP-88-7, 27 NRC 289, 290 (1988).

[4] Even if the Licensing Board were to have jurisdiction over these issues, it would not necessarily follow that we lack the authority to decide the Governments' motion. The Rules of Practice expressly empower the Commission to direct the certification to it of any question pending before a Licensing Board. *See* 10 C.F.R. § 2.718(i). And that authority has been explicitly delegated to us in 10 C.F.R. § 2.785(b)(1). *See, e.g., Puerto Rico Electric Power Authority* (North Coast Nuclear Plant, Unit 1), ALAB-605, 12 NRC 153 (1980).

The assignment of special docket numbers (e.g., OL-3, OL-5) to different phases of this proceeding, however, is not specifically prescribed by the Commission's Rules of Practice.[5] Nevertheless, "[f]or more effective docket management," the Licensing Board Panel Chairman previously assigned the new OL-5 docket designation to that phase of the *Shoreham* licensing proceeding instituted by the Commission in CLI-86-11 — i.e., the litigation of issues arising from the 1986 exercise. 51 Fed. Reg. 27,296 (1986). With the anticipated new round of exercise litigation, this need for effective case management continues. Given the relationship of the 1986 and 1988 exercises (*see supra* p. 307), we see no good reason to create any more confusion by abandoning the OL-5 designation for the litigation of any new exercise issues in this proceeding. Maintaining the OL-5 designation for all exercise issues is also fully consistent with the Licensing Board Panel Chairman's earlier actions and requires no strained readings of his notices. *See, e.g.*, 51 Fed. Reg. 37,682 (1986) (OL-5 Board to preside "only in the proceedings related to the emergency planning exercise;" OL-3 Board to preside "in all other proceedings pertaining to emergency planning," which "include [non-exercise] issues remanded by the Commission in CLI-86-13, [24 NRC 22 (1986),] and by the . . . Appeal Board in ALAB-832, 23 NRC 135 (1986) and ALAB-847, [24 NRC 412 (1986)]").[6]

The Governments' Motion for Appointment of Licensing Board with Jurisdiction to Hear Exercise Issues is *granted in part and denied in part:* proceedings in connection with the 1988 emergency exercise at the Shoreham facility are remanded for appropriate action to the Licensing Board in Docket No. 50-322-

[5] Under 10 C.F.R. § 2.702, the Commission's Secretary "maintain[s]" the official docket for each proceeding. *See also* 10 C.F.R. § 1.25. Presumably, this could include assignment of docket numbers.

[6] LILCO claims that in May 1983 the Commission established the OL-3 Licensing Board to preside over all emergency planning issues, and thus, the OL-3 docket is presumptively the general jurisdiction emergency planning docket, subject only to specific exemption. LILCO's Response (September 16, 1988) at 3. Relying on an unreviewed decision of the OL-5 Board, LILCO also suggests that the Commission established the OL-5 Board and specifically limited its mandate to 1986 exercise issues. *Id.* at 4, 6. *See* LBP-88-7, 27 NRC at 291.

LILCO and the OL-5 Board in LBP-88-7 are incorrect. The *Licensing Board Panel Chairman* created both the OL-3 and OL-5 "dockets" solely for case management purposes, and assigned members pursuant to his board constitution authority. *See* 48 Fed. Reg. 22,235 (1983); 51 Fed. Reg. 27,296. The notion that the Commission itself ordered such action with the intent to limit the scope of these "dockets" is without basis. Indeed, in CLI-86-11, 23 NRC at 582, the Commission merely directed the Licensing Board Panel Chairman "to reappoint the members of the earlier [OL-3] Board if they are available," and to expedite the "exercise proceeding." As it turned out, case management concerns warranted the Licensing Board Panel Chairman's creation of the new OL-5 docket, and schedule conflicts required a board reconstitution. *See* 51 Fed. Reg. 21,815 (1986); *id.*, 27,296; *id.*, 36,619; *id.*, 37,682. Thus, citations to cases holding that a licensing board's jurisdiction is confined to the scope of the proceeding as defined in the *Commission's initial notice of hearing* are wholly inapposite.

OL-5, which may be reconstituted by the Chairman of the Atomic Safety and Licensing Board Panel in his discretion.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Panel

Dr. Johnson concurs in this decision but was not available to review the opinion.

Cite as 28 NRC 311 (1988) LBP-88-24

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

James P. Gleason, Chairman
Dr. Jerry R. Kline
Mr. Frederick J. Shon

In the Matter of **Docket No. 50-322-OL-3**
(Emergency Planning)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **September 23, 1988**

In this Concluding Initial Decision, which resolves all remaining issues before it, the Licensing Board finds that the emergency broadcast system, school bus drivers, and hospital evacuation portions of the Applicant's proposed emergency plan satisfy the NRC's regulatory standards and criteria. In addition, the Board finds the Intervenors in default of Board discovery orders concerning Intervenors' own "realism" contentions on the likely state/local government *ad hoc* response to an emergency, and dismisses the Intervenors from the proceeding on that basis as a sanction.

RULES OF PRACTICE: SUMMARY DISPOSITION

The filing and characterization of statements of contested issues as material facts in dispute in response to a motion for summary disposition is inadequate and improper and will not be considered by the board in deciding the motion.

EMERGENCY PLAN: CONTENT

Where NRC regulations do not require a backup emergency broadcast system, the applicant need not prove any facts concerning the adequacy of its proposed backup EBS, and proof of adequacy of such a system cannot be made a condition of licensing.

EMERGENCY PLAN: CONTENT

Where an applicant shows that a state EBS plan satisfies NRC guidance, provides for EBS response in nuclear incidents, requires prompt public notification in appropriate circumstances, and shows that the state EBS is based on preexisting agreements between the state and the broadcast industry which comply with NRC guidance, letters of agreement between the applicant and the individual broadcast station(s) are not required by NRC regulations.

EMERGENCY PLAN: CONTENT

It is immaterial to a determination of adequacy of the state EBS whether the designated primary broadcast station meets the Federal Communications Commission criteria as a provider of primary service in every portion of the EPZ. The question is whether residents within the EPZ can be adequately notified in the case of an emergency. Where the FCC has set minimum broadcast signal strength criteria for service to an area, and the designated broadcast station meets the minimum criteria for the EPZ, the board will not accept the possibility that the FCC has defined broadcast signal strengths for an area that are too weak to be received.

EVIDENCE: EXPERT TESTIMONY

A priori attempts to predict human behavior from surveys of opinion must yield before the *a posteriori* evidence of what people have in fact done.

EVIDENCE: EXPERT TESTIMONY

However plausible hypotheses may seem regarding predictions of future human behavior, when all the evidence adduced shows no case where they have functioned and many cases where they have not, the board must disregard them.

EMERGENCY PLAN: CONTENT

While schoolchildren would not be transported as elegantly and understandingly in an emergency as one would desire them to be under regular circumstances, a slight shortage of drivers (and hence of buses), crowding, or the accepting of standees, would not be totally objectionable as an emergency measure.

EMERGENCY PLAN: CONTENT

Where the variations in average speeds for a population of hospital vehicles produce only small changes in evacuation time estimates (ETEs) by the estimate of both parties, and the inclusion of such studies would not enhance decision-making capabilities for hospitals, the board will not order sensitivity analyses in an applicant's proposed emergency plan.

EMERGENCY PLAN: CONTENT

The planning goal of NRC guidance is to make accurate estimates, whatever they may be, and not to achieve some preconceived performance standard for speed of evacuations or to adopt ETEs that are "conservatively" long. In assessing the estimates, the board is not permitted to look in only one direction for possible error in a misguided pursuit of conservatism.

EMERGENCY PLAN: CONTENT

In a predictive problem having intrinsic uncertainty of estimated variables, it constitutes reasonable assurance of quality to find that the estimates are derived objectively and are unbiased (i.e., not deliberately lengthened or shortened) and that the variance is not unreasonably large.

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

The obligation every litigant faces to provide (through discovery) information on matters in controversy is a responsibility that can neither be ignored nor evaded.

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

It is unarguable that the fair and expeditious consideration of issues in nuclear license application proceedings requires respect for and compliance with the rules of discovery. *See* 10 C.F.R. § 2.718.

RULES OF PRACTICE: SANCTIONS

The failure of any party to appear at a hearing or comply with any discovery orders can constitute a default, the consequence of which authorizes licensing boards to make such orders in regard to the failure as are just including finding the facts in accordance with the claim of the party obtaining the order. 10 C.F.R. § 2.707. The sanctions available to assist boards in the responsible management of licensing proceedings cover a wide range of options similar to those authorized by Rule 37 in the Federal Rules of Civil Procedure, with sanctions of a more serious nature generally reserved for the most critical failures of parties fulfilling their discovery obligations.

RULES OF PRACTICE: DISCOVERY

Where the critical issue is what activity the state and county would perform in the event of an accident at a nuclear power plant, and there are indications in the record that the state or local governments' opposition to the facility is not based on a technical evaluation of the applicable emergency plan, the applicant is entitled to explore through state witnesses whether that decision may have been more of a political edict that the product of an evaluation of the adequacy of the emergency plan.

RULES OF PRACTICE: SANCTIONS

Although the activities participated in by intervenors may be considered individually as lawful conduct during contested litigative proceedings, where they in combination represent a pattern of substantial and continual actions to undermine an applicant's efforts to develop an adequate emergency plan, frustrate federal review of that plan, and come perilously close to constituting interference with the federal government's exclusive power to regulate matters of radiological safety, the intervenors will be deemed to have acted willfully to frustrate the Commission's efforts to arrive at an informed judgment.

RULES OF PRACTICE: SANCTIONS

Where an intervenor's refusal to comply with the board's orders is found to be willful and, based on above, in bad faith, that conduct warrants the imposition of the most severe sanction available to licensing boards — dismissal of the intervenor as a party to the proceeding.

RULES OF PRACTICE: SANCTIONS

In choosing between the sanction of dismissal of contentions versus dismissal of a party, the board may consider the entire record of the proceeding, including the fact that a prior finding of default and dismissal of contentions as a sanction did not have the intended effect of curbing the harm or deterring reproachable conduct.

RULES OF PRACTICE: SANCTIONS

Disrespect for the adjudicatory process cannot be permitted; dismissal of the affected contentions alone is not an adequate remedy when the adjudicatory process itself is tainted by the actions or omissions of a party.

RULES OF PRACTICE: SANCTIONS

It is immaterial to the issue of sanctions whether prior board decisions would have been different if a party had provided complete information to the board. The integrity of the adjudicatory process itself is adversely affected when it is revealed after a decision is rendered that important issues *might* have been decided differently.

APPEARANCES

James M. Christman, Esq., Donald P. Irwin, Esq., Mary Jo Leugers, Esq., Kathy E.B. McCleskey, Esq., Rita Sheffey, Esq., K. Dennis Sisk, Esq., and Joseph M. Spivey, Esq., on behalf of the Applicant, Long Island Lighting Company.

Fabian G. Palomino, Esq., Richard J. Zahnleuter, Esq., Herbert H. Brown, Esq., Lawrence Coe Lanpher, Esq., Karla J. Letsche, Esq., Christopher McMurray, Esq., Michael S. Miller, Esq., Ronald Ross, Esq., J. Lynn Taylor, Esq., and Stephen B. Latham, Esq., on behalf of the State of New York, Suffolk County, New York, and the Town of Southampton, New York.

Richard Bachmann, Esq., Gregory A. Berry, Esq., Lisa Clark, Esq., Edwin J. Reis, Esq., and Mitzi Young, Esq., on behalf of the U.S. Nuclear Regulatory Commission.

William R. Cumming, Esq., on behalf of Federal Emergency Management Agency.

TABLE OF CONTENTS

CONCLUDING INITIAL DECISION ON EMERGENCY PLANNING

Overview

In this Concluding Decision, the Board combines a variety of pending issues remaining and considers a summary disposition motion on emergency broadcast system issues, remanded issues involving the adequacy of school bus drivers, hospital evacuation time estimates (ETEs) for an emergency evacuation, and noncompliance with Board orders on discovery. During the lengthy course of this contested operating license proceeding, which concerns an application of the Long Island Lighting Company (LILCO) for an operating license at the Shoreham Nuclear Power Station (Shoreham), various licensing boards have considered and adjudicated a complex selection of contentions. Testimony was received from over 200 witnesses through several hundred days of hearings and, in Partial Initial Decisions in 1983 and 1985, Licensing Boards resolved most of the contested issues in the case in favor of LILCO.[1] An additional issue involving the adequacy of reception centers has also been decided to LILCO's benefit[2] and the remaining contested matters are disposed of in this opinion. Here, we remove the remaining litigation obstacles to a full operating license by resolving the matters at issue in LILCO's favor and find no regulatory obstacles to an acceptable emergency plan for the Shoreham facility.[3]

[1] *See* LBP-83-57, 18 NRC 445 (1983) and LBP-85-12, 21 NRC 644 (1985).
[2] LBP-88-13, 27 NRC 509 (1988).
[3] Inasmuch as the record on issues other than the realism contentions is complete, those matters are resolved herein on the merits. The dismissal sanction does not therefore have any effect on any issue other than the realism litigation.

I. MOTION FOR SUMMARY DISPOSITION ON EMERGENCY BROADCAST SYSTEM (EBS) ISSUES

A. Introduction

On June 20, 1988, LILCO filed a Motion for Leave to File Summary Disposition Motion on the EBS Issue together with a Second Motion for Summary Disposition of the EBS Issue (Motion hereafter). On June 21, 1988, the Board removed its prohibition on further summary disposition motions.[4] LILCO's motion for leave to file was granted, and other parties were free to file motions of their own. Intervenors responded in opposition on July 12, 1988, and on the same date the NRC Staff responded in support of LILCO's motion.[5] Intervenors subsequently responded in opposition to the Staff's response.[6]

LILCO then filed a letter with the Board, dated July 27, 1988, requesting leave to file yet another response because Intervenors had requested affirmative relief in their response and allegedly had seriously misstated the facts. LILCO's proposed response was attached to the letter.[7] Intervenors replied August 2, 1988, contending that LILCO's latest filing should be disregarded and rejected in its entirety by the Board.[8]

LILCO's motion climaxes a complicated series of events dating back to the Commission's order reopening the record on LILCO's EBS plan after a withdrawal of WALK Radio as its primary radio station. CLI-87-5, 25 NRC 884 (1987). When WALK withdrew, LILCO revised its EBS plan by naming, *inter alia*, station WPLR in Connecticut as its lead EBS station. The revised plan was first disclosed to the Board and parties in a Motion for Summary Disposition of the WALK Radio Issue, dated November 6, 1987. After consideration of the parties' positions, the Board denied LILCO's motion on December 21, 1987, on grounds that LILCO's new EBS required review by other parties and an opportunity for contentions to be filed. The Board permitted Intervenors to submit contentions on the EBS plan. In due course, Intervenors submitted a single contention with numerous bases. The Board accepted some of the proffered bases (which were in the nature of subcontentions), rejected others,

---

[4] Memorandum and Order, June 21, 1988 (unpublished).

[5] Response of Suffolk County, State of New York, and Town of Southampton in Opposition to LILCO's Second Motion for Summary Disposition of the EBS Issue, July 12, 1988 (Response hereafter). NRC Staff Response to LILCO's Second Motion for Summary Disposition on EBS Issues, July 12, 1988 (Staff Response).

[6] Response of Suffolk County, the State of New York, and the Town of Southampton to NRC Staff Response in Support of LILCO's Second Motion for Summary Disposition of the EBS Issue, July 27, 1988.

[7] LILCO letter addressed to Judge Gleason and members of the Board, July 27, 1988. *See also* LILCO's Response to Intervenors' Response in Opposition to LILCO's Second Motion for Summary Disposition of the EBS Issue, July 27, 1988 (Proposed Response).

[8] Suffolk County, State of New York and Town of Southampton Opposition to LILCO's Unauthorized and Impermissible "Response to Intervenors' Response in Opposition to LILCO's Second Motion for Summary Disposition of the EBS Issue," August 2, 1988 (Opposition hereafter).

and opened the matter to discovery. Written testimony was filed and the stage was set for trial of the EBS issue in May 1988.

The EBS issues were not heard, however, because prior to trial the continued participation of station WPLR in LILCO's revised EBS system became doubtful, and LILCO disclosed in letters to the Board, dated May 9, May 16, and May 25, 1988, and in written realism testimony filed May 6, 1988, that it was again revising its EBS plan. Motion, Attach. 1; Response, Attachs. 2, 3. The latest scheme, which was more fully disclosed in Revision 10 to its plan, relied on the New York State EBS system with station WCBS in New York City as the lead station. The Board expressed uncertainty about provisions of the new plan and ordered limited discovery by the parties to clarify LILCO's proposal. We directed the parties to file briefing papers shortly after the end of the limited discovery concerning the proceeding. Tr. 20,429.

On June 20, 1988, Intervenors filed a briefing paper as did the Staff.[9] LILCO, however, filed its motion for summary disposition of the EBS issue. This effectively cancelled plans for hearing, and the parties responded to LILCO's motion. The briefing papers filed by Intervenors and Staff became moot regarding any procedural recommendations they contained. To the extent the briefs addressed the merits of LILCO's EBS plan, they were outdated and were not considered in deciding the EBS motion. However, the limited discovery that was ordered by the Board was interrupted by Intervenors, and LILCO was not permitted to take depositions of Intervenors' personnel. Motion, Attach. 7. Portions of Intervenors' briefing paper are relevant to the issue of whether the Board should sanction Intervenors for failure to permit discovery. We decide the issue of sanctions separately in this Concluding Initial Decision.

In this Decision the Board rules that LILCO has prevailed in its motion, and we grant summary disposition of the EBS issue.

Numerous summary disposition motions have been filed in the Shoreham proceeding over the past several years, and the governing law has been set forth in many past pleadings and decisions. No purpose would be served by another recitation here. *See* LBP-87-26, 26 NRC 201, 211-12 (1987).

In view of our decision herein, the Board finds it unnecessary to address either LILCO's letter of July 27 or Intervenors' reply of August 2. Additionally, we consider both filings improper. *See* 10 C.F.R. § 2.749(a).

B. LILCO Position

LILCO's motion states that Station WPLR will no longer be relied upon in its EBS Plan. Instead, LILCO's emergency plan now relies on the official

[9] Governments' Briefing Paper Concerning LILCO's Emergency Broadcast System, June 20, 1988. NRC Staff Briefing Paper on the Emergency Broadcasting System Issue, June 20, 1988.

New York State EBS for the Nassau-Suffolk Counties Operational area which is triggered by WCBS, the Common Point Control Station (CPCS-1), in New York City. LILCO's request for summary disposition of the EBS issue is based on the Board's earlier Partial Initial Decision, LBP-85-12, *supra* note 1, on the admitted EBS-related facts in LILCO's Second Renewed Motion for Summary Disposition of the Legal Authority Issues, on the Board's recent decision to rule in LILCO's favor on the eight "Legal Authority" contentions, and on the Statement of Material Facts and affidavits attached to the motion.

Attached to LILCO's motion was a "Statement of Material Facts as to Which LILCO Contends There Is No Genuine Issue to Be Heard on the EBS Issue." The document contains eleven factual statements about which LILCO claims there is no genuine issue. In summary, LILCO states that its EBS plan no longer relies on WPLR, that it does rely on the State EBS to broadcast emergency information, and that the trigger station for the State EBS is WCBS(AM) in New York City. LILCO states that the Nassau-Suffolk Counties Operational Area is comprised of about thirty Long Island radio stations including WALK(FM) and gives details on how the network will be activated. LILCO asserts that it will rely on the State EBS to activate tone-alert radios and that it will recrystallize the tone-alert radios so they can be activated by WCBS and WALK. LILCO's Facts 8 through 11 state the broadcast characteristics and power of WCBS and that LILCO has measured the field strength of WCBS in the emergency planning zone (EPZ). The field strength is assertedly 580 microvolts per meter (μV/m) throughout the Shoreham EPZ while the tone-alert radios can be activated by 30 μV/m.

The motion included nine supporting attachments. In summary, they consist of Revision 10 for the EBS system, a copy of the State of New York Emergency Broadcast System (EBS) Operational Plan, facts the Board ruled as admitted in a previous motion for summary disposition, a consultant report on field strengths of WCBS as a function of distance from the station, the affidavit of Douglas M. Crocker attesting to facts in LILCO's EBS plan, and the affidavit of Sudhir K. Khanna attesting to the field strength of WCBS.

LILCO argues in support of its motion that the issue of adequate coverage of the EBS network is resolved by the facts it has presented and by the fact that adequacy of coverage has already been admitted in litigation by Intervenors. LILCO claims that Intervenors are precluded from raising interface issues concerning WCBS because any such issue is encompassed within the realism/best-efforts Contention 5 for which the Board has announced it will rule in LILCO's favor as a sanction for Intervenors' refusal to comply with the Board's discovery orders.

LILCO claims that, in view of the evidence and argument it has presented, no genuine issue of material fact remains to be litigated and the Board should grant summary disposition.

C. Intervenors' Position

Intervenors filed a timely reply to LILCO's motion in which they addressed each of LILCO's asserted "facts" and which included Intervenors' "Statement of Material Facts as to Which There Exists a Genuine Issue to Be Heard on Matters Raised by LILCO's Second Motion for Summary Disposition of the EBS Issue." The response was accompanied by eight attachments consisting of case-related correspondence, Intervenors' Briefing Paper, transcript pages, and pages from depositions of Douglas M. Crocker. Intervenors filed a separate reply to the NRC Staff response to LILCO's motion but did not cite any new arguments or data not already in their response to LILCO's motion.

Intervenors argue that LILCO's new EBS proposal is materially different from its previous proposal and that they have not had adequate opportunity to review it. The Board should therefore reject this motion on the same basis it rejected LILCO's last motion for summary disposition on the EBS issue (Memorandum and Order, December 21, 1987, at 3-4 (unpublished)); the present EBS is even more radically new than the old because it relies on stations that have said they would not participate in LILCO's EBS (WALK and WPLR), and there is no agreement with any station in the new network, and in particular not with WCBS, to participate in LILCO's EBS plan. Response at 14-16. Moreover, say Intervenors, the plan is ambiguous on the continued role of WPLR in the EBS, on LILCO's continued reliance on a backup local EBS network, and on how that network would be activated in an emergency. *Id.* at 16-19.

Intervenors take issue with LILCO's assertion that there is no admitted contention concerning the adequacy of the State EBS network. They claim this is merely an attempt by LILCO to eliminate an existing contention by changing its plan and then preventing review of the new plan. They concede, however, that the contention relating to WPLR is now moot. The Intervenors urge the Board to grant summary disposition in their favor on the existing WPLR contention or declare the contention moot and as a matter of law rule for the Intervenors. They urge further that they be provided the opportunity to submit contentions and pursue discovery on the new plan. This course, allegedly, would be consistent with one taken previously under similar circumstances. Memorandum and Order, December 21, 1987; Response at 19-22.

The Intervenors cite numerous reasons why the adequacy of coverage of the State EBS has not been resolved. First, they claim that the adequacy of the State EBS has never been litigated in this proceeding and its adequacy has never been conceded. The adequacy of WALK radio to broadcast at night was, they assert, the only contention litigated in the original hearings and in any event WALK radio has withdrawn from LILCO's EBS network; furthermore, it is misleading for LILCO to claim the Governments have admitted Fact 17 in LILCO's Second Renewed Motion, because that fact was related only to Contention 5 of the

realism/best-efforts issues. There was no EBS proposal before the Board at the time that matter was decided, Fact 17 was not controverted because Intervenors believed it irrelevant to the issues before the Board, and issues of adequacy were left open by the Board when it decided against LILCO. LBP-87-26, *supra*, 26 NRC at 225. Moreover, claim Intervenors, any apparent concession of the adequacy of WALK Radio in their subsequent pleadings opposing the WPLR proposal cannot be accepted as fact in deciding this motion.

Intervenors claim that LILCO's consultant report and its supporting affidavit fail to state that WCBS provides adequate coverage of the EPZ, that the significance of the numerical field strength data in the consultant report is not stated, and that regulatory standards require a signal strength of 2 millivolts per meter (mV/m) to serve communities in excess of 2500 persons. The data in the report show that the 2-millivolt contour reaches only a small portion of the EPZ and, since there are many communities in excess of 2500 persons, Intervenors infer that WCBS coverage may not meet Federal Communications Commission (FCC) requirements and, at a minimum, the coverage of WCBS is called into question.

Finally, Intervenors claim that they were not obligated to produce witnesses for deposition by LILCO on the EBS issue because the Board's bench order of May 26 limited discovery to what was necessary for the Intervenors to ascertain the scope of LILCO's EBS proposal. In Intervenors' view, the Board ordered discovery unilaterally for their benefit. Thus, LILCO is not now entitled to any presumption adverse to Intervenors for failure to produce witnesses in discovery. In any event, according to Intervenors, LILCO abandoned its attempts to obtain discovery. Response at 29-30.

Quoting Board language denying LILCO's previous motion for summary disposition on EBS issues, Intervenors claim LILCO's present motion is purely "executory" and not a proper subject for summary disposition. In support, they cite the Board's previous denial and reasons previously provided in support of other arguments related to participation of WPLR, of WALK, and of WCBS. *Id.* at 30-32. Intervenors dispute each of LILCO's "material facts not in dispute" and rely on reasons already cited herein.

The Board summarizes the dispute according to reasons given by Intervenors. In the interest of brevity we list the basic arguments together with the "facts" they apply to in parentheses as follows: The continued role or participation of WPLR is unclear and LILCO may still rely on WPLR (disputing Facts 1, 2, 5, 6, 7, 11); WCBS has not agreed to participate in LILCO's plan (disputing Facts 2, 3, 4, 5, 8, 9, 10, 11); Intervenors have had inadequate discovery and cannot admit or deny alleged Facts (disputing Facts 3, 4, 9, 10, 11); alleged Facts are misleading, irrelevant, or not supported by the record (disputing Facts 1-11); the report of LILCO's consultant, Cohen and Dippell, does not establish adequacy of coverage of WCBS (disputing Facts 8, 10, 11). *Id.* at 33-40.

Intervenors attached a statement of material facts in dispute to their response giving twenty separate reasons why LILCO's motion should be denied. The statement consisted of a tabulation of issues that Intervenors think should be litigated.

Finally, Intervenors assert that contrary to LILCO's views they are entitled to raise interface issues in their opposition, even if the Board rules for LILCO on realism/best-efforts Contention 5 as a sanction against Intervenors. This is assertedly so because the broadcast stations are private entities that are not covered by the Commission's best-efforts assumption. According to Intervenors, even if the Governments asked the stations to broadcast emergency information, they are under no obligation to do so.

For all of the foregoing reasons, Intervenors urge the Board to deny LILCO's motion, to provide Intervenors with the opportunity to pursue discovery and to submit additional contentions on LILCO's new EBS plan.

D. NRC Staff Position

The NRC Staff agrees with LILCO and concludes that the motion for summary disposition should be granted. The Staff conclusion is based on its assessment that Contention 5, as restated by the Board, presents no legal authority issue, and that the only other contentions in the case, 20 and 57, present concerns for adequacy of broadcast coverage within the EPZ that Intervenors have not attempted to controvert under the new plan. The Staff asserts that the Board may rely on the "best-efforts" assumption to conclude that Government officials will permit LILCO to activate the system in an emergency. Even if they do not, however, FCC regulations permit the EBS system to be used without government permission in an emergency. The question of agreements with EBS stations was not within the scope of the originally admitted contention and may not now be considered. Moreover, according to Staff, such agreements are not necessary here because the Intervenors themselves will permit the EBS system to be activated. Staff Response at 6-10.

E. Other Issues

LILCO's assertion that no admitted contention remains to be heard after a finding of mootness for the WPLR contention is not correct. When the Commission reopened the EBS issue it did so with instructions to admit additional contentions only to the extent they assist in focusing further the litigation on earlier admitted issues. The earlier admitted issues still require resolution in the context of LILCO's new plan. These issues consist of Contention 5 dealing with realism/best-efforts, Contention 20 dealing with

adequacy of WALK Radio notification, and Contention 57 dealing with adequacy of activation of tone-alert radios. Contention 5 is being resolved separately in this Partial Initial Decision and need not be considered here. Contentions 20 and 57, however, express fundamental concerns about the adequacy of notification of EPZ residents in an emergency. Those concerns have been constant throughout litigation of the EBS issue even though specific factual reasons why notification in the EPZ might be inadequate have changed as the plans changed. Consistent with this view the Board previously admitted WPLR contentions only to the extent that they helped focus issues of adequacy of notification. Staff Response at 8-9. The issue that remains before us is therefore whether LILCO's new EBS plan provides for adequate emergency notification of the public within the EPZ by direct broadcast and tone-alert activation. However, contrary to Intervenors' view, this is not the occasion for filing new contentions. That opportunity would only arise, as it did previously, if LILCO's motion is denied. In responding to LILCO's motion, Intervenors have had the opportunity to focus the issues by citing material facts showing that a genuine dispute exists.

F. Intervenors' Material Facts

The Intervenors submitted a statement with their response that listed some twenty material facts purportedly in dispute. The statement consisted in its entirety of brief statements of issues the Intervenors think are, or ought to be, open for litigation. The statement did not tend to disprove or controvert any information submitted by LILCO. The Board found this statement inadequate and improper and did not consider it in deciding this motion. We have previously cautioned Intervenors on the fruitlessness of submitting such statements in answers to summary disposition motions. LBP-88-9, 27 NRC 355, 386 (1988). Intervenors also assert as facts in dispute that LILCO has not obtained letters of agreement with WCBS; broadcasters have discretion not to broadcast emergency messages when requested to do so; and LILCO's consultant report does not establish that WCBS has adequate coverage in the EPZ.

G. Analysis and Conclusions

LILCO has submitted an alternative plan for broadcasting emergency information that relies on the preexisting State EBS. The new plan does not rely on station WPLR or other local stations in a network of privately negotiated agreements to broadcast emergency information except as a fourth level of backup to be employed only as a last resort. LILCO Fact 5d. The changed plan has caused all existing contentions relating to WPLR and the previous private network to become moot. Contrary to Intervenors' assertions, however, there

is no justification for the Board to render a decision in Intervenors' favor on those issues. First, it would not advance the case to do so because it would not resolve the matter now before us which is the adequacy of the State EBS. Second, no record has been developed to support a decision on the merits; and third, no reason now exists to develop a record on the matter.

LILCO need not prove any facts concerning the adequacy of WPLR even though its future role in LILCO's plans is ambiguous or unsettled, because it has developed a primary plan that places reliance elsewhere for broadcasting emergency information. Intervenors' cannot defeat LILCO's motion for summary disposition by presentation of facts asserting inadequacy or ambiguity of WPLR's continuing role, because such facts are immaterial even if true. LILCO no longer relies on WPLR; any continuing efforts it expends to define an emergency role for WPLR are intended to produce a backup EBS. Facts 1, 5d. A backup EBS is not required by NRC, however, and the test of adequacy must be made on the basis of whether LILCO's principal plan meets NRC requirements. NRC regulations do not prevent LILCO from exceeding regulatory requirements by developing a backup system for broadcasting emergency messages to the public, and proof of adequacy of such a system cannot be made a condition of licensing.

Under these circumstances the WPLR contention and bases are dismissed for mootness without a decision on the merits. Accordingly, the adequacy of WPLR or the associated privately organized local network to broadcast emergency messages is no longer in controversy before us.

LILCO does not assert that it has obtained letters of agreement with WCBS in New York City, or with any other station, to broadcast emergency information. There is no fact in dispute, and the Board accepts as true that no letters of agreement exist. The issue does not turn on resolution of disputed facts but on whether a letter of agreement is required by NRC regulations. Both LILCO and the Staff argue that no letter of agreement is required in these circumstances.

NUREG-0654 requires applicants to provide evidence of capability of local and state agencies to provide information promptly over radio and TV at the time of activation of an alerting signal. Evidence of capability is to be provided as follows: "The emergency plans shall include evidence of such capability via agreements, arrangements or citation of applicable laws which provide for designated agencies to air messages on TV and radio in emergencies." Appendix 3 at 3-4. The guidance states further: "It may be necessary for utility organizations to sign agreements with CPCS-1 stations in order to cover a fast breaking general emergency described in Appendix 1." *Id.* at 3-15. When evidence of capability is provided, a separate letter of agreement between LILCO and WCBS might also be needed, but it is not mandatory under the guidance. In context, the guidance describes a contingent requirement, applicable if the

evidence of capability that must be provided does not include adequate assurance of prompt response in a fast-breaking emergency.

LILCO submitted "The State of New York Emergency Broadcast System (EBS) Operational Plan," dated July 1981, in support of its motion. Motion, Attach. 4. The plan states that the procedures it contains have been agreed to by the broadcast industry and the State of New York. Legal authority for the plan is cited and detailed procedures are provided. The plan specifically provides for EBS response in "nuclear incidents." Approval and concurrence have been obtained from the Chief of Staff to the Governor, the FCC, the President, New York State Broadcasters Association Inc., the National Weather Service, and Chairman, New York State Emergency Communications Committee. The plan provides that "upon receipt of a request to activate the local EBS . . . the CPCS-1 . . . may proceed as follows." The lead station will interrupt its regular broadcast to transmit the emergency message and will transmit the emergency broadcast system attention signal. Motion, Attach. 4 at 6. All other broadcast stations will be alerted by the two-tone attention signal and will perform the same procedures as outlined for the CPCS-1 station by rebroadcasting the emergency message. Motion, Attach. 4; "Emergency Broadcast System (EBS) Procedures for the Nassau-Suffolk Counties New York EBS Operational Area," fifth unnumbered page. The plan lists the actions to be taken in immediate sequence upon receiving a request and makes no reference to time delays in broadcasting except for message authentication which is always required. The State plan provides on its face for prompt station response. Intervenors have not challenged the authenticity of the plan nor have they factually controverted any of its provisions. The Board therefore accepts the plan as authentic and as an accurate depiction of the EBS response by the broadcast industry.

LILCO's evidence establishes that a State EBS plan that has the capability required by NUREG-0654 is in effect in New York State. The State plan is written in virtually identical terms to those used in NRC guidance. NUREG-0654, Appendix 3 at 3-13, 3-15. LILCO's evidence further establishes that the State plan provides for EBS response in nuclear incidents and for the prompt notification that would be required in a fast-breaking accident at Shoreham. Therefore, no additional letter of agreement between LILCO and WCBS is required to satisfy the guidance of NUREG-0654.

Intervenors' challenge based on the provision in the State EBS plan for the exercising of independent management discretion and responsibility raises no material disputed fact. The provision for management discretion is a part of FCC regulations and it therefore has generic applicability. Motion, Attach. 4 at 2. No agreement between private parties could nullify a federal rule. The plan itself cautions broadcasters to avoid escalation of public confusion and to broadcast information based on definite and confirmed facts. Such matters could require the exercise of management discretion permitted in the rule. However,

neither that provision nor any facts presented by Intervenors raise a reasonable factual question as to whether station management would broadcast confirmed emergency information when requested. Motion, Attach. 4 at 5.

Intervenors' effort to raise doubt about the adequacy of coverage of WCBS in the EPZ based on LILCO's consultant report is based on an error in reading a critical passage in that report. To avoid further error, we quote the passage verbatim from the Cohen and Dippell report. "A 0.5 mv/m signal is the FCC required [sic] for primary service to rural areas and communities with population less than 2500 persons, and this WCBS contour covers the entire EPZ. However, a signal strength of 2 mv/m is required by the FCC standards to serve communities with populations in excess of 2500 persons including 'Census Designated Places' (CDPs)." Motion, Attach. 6 at 2. The Intervenors neglected to consider the phrase "primary service" in their interpretation of the foregoing passage. The passage, as written, cites FCC signal strength criteria for a station to be designated to provide primary service in a rural area or in a community in excess of 2500 persons. The criteria do not address the minimum signal strength required for transmission of audible emergency messages in the EPZ; much less do they establish that the coverage of WCBS in the EPZ is inadequate as urged by Intervenors. LILCO's assertion of adequate coverage by WCBS in the EPZ is not controverted by facts presented in the Cohen and Dippell report.

It is immaterial to a determination of adequacy of the State EBS whether WCBS meets the FCC criteria as a provider of primary service in every portion of the EPZ. The question before us is whether or not it can adequately notify residents of the EPZ in an emergency. The Board declines, however, to put an absurd construction on a federal rule, and we therefore do not accept the possibility that FCC has defined broadcast signal strengths for primary service that are too weak to be received. Even though the consultant report does not give the minimum signal strength for adequate radio reception, the only reasonable interpretation of the federal criteria for primary stations cited by the consultant is that a strength in excess of 0.5 mV/m provides acceptable reception. It is uncontroverted that WCBS operates at maximum permissible power for AM stations and that it provides a signal strength of at least 0.58 mV/m throughout the EPZ. Motion, Attach. 9. The Board concludes that whether or not WCBS meets the FCC definition of a primary station within the EPZ, LILCO's consultant plainly intended to establish with the foregoing information that the signal strength of WCBS is adequate to provide emergency information to residents throughout the EPZ. No material facts to the contrary have been presented that would justify opposition to that conclusion.

It is uncontroverted that the EBS plan provides for WCBS to both broadcast emergency messages directly and to alert the network of Long Island stations by means of an alerting signal which will cause the network to broadcast information as well. There is no dispute that the EBS plan includes about

thirty radio stations on Long Island at least some of which can reach the EPZ with an audible signal. Thus the Long Island network can adequately broadcast information to the residents of the EPZ, even if WCBS for some reason could not. The notification system described in the State plan therefore has redundancy. Intervenors have not cited any material facts that would raise a serious question as to whether an adequate warning to residents of the EPZ could be delivered through the network of stations in the State EBS or why a redundant system would prove inadequate.

LILCO states by affidavit that it will rely on the State EBS to activate tone-alert radios and that it will replace or recrystallize its tone-alert radios so that they can be activated by either WCBS or by WALK. Facts 6 and 7; Motion, Attach. 8. LILCO's consultant report states that tone-alert radios can be activated by a signal of 30 μV/m and that WCBS has a minimum field strength of 580 μV/m throughout the EPZ. The data give adequate assurance that the tone-alert radios can be activated by WCBS unless contrary material facts are presented in opposition. Facts 10 and 11; Motion, Attach. 9. The capability of WALK Radio for activating tone-alert radios constitutes redundant capacity. However, its capability to activate tone-alert radios within the EPZ has been adjudicated and resolved. The Board found that there is no NRC requirement to include tone-alert radios in an emergency plan for special facilities. LBP-85-12, *supra*, 21 NRC at 760.

Intervenors' only answers to the foregoing facts are that they are irrelevant because letters of agreement have not been obtained, and that WALK cannot be relied upon because it previously withdrew from LILCO's EBS plan.

Intervenors' answers are not sufficient to controvert LILCO's facts. We decide herein that letters of agreement are not required by NRC regulations in this instance, where a preexisting agreement between the State and the broadcast industry complies with NRC guidance. Intervenors provide no facts showing that WALK has withdrawn from the State EBS, and its future participation in the State system is not disputed with material facts. The Board concludes from the foregoing analysis that no disputed material fact exists concerning whether LILCO's plans for activating tone-alert radios are adequate for notifying special facilities. Moreover, tone-alert radios are not required for special facilities by NRC regulation or guidance.

LILCO argues that the Intervenors are barred from raising issues concerning how it will interface with the State and County in activating the EBS system by our announced intention to dismiss Contention 5 from the proceeding. In a separate part of this Decision, the Board resolves Contention 5. We need not (and do not) decide the legal question, however, because LILCO gave its interface plan in its statement of material facts. Motion, Fact 5. It will rely on the Suffolk County Executive or the State Emergency Management Office to permit activation of the State EBS. If that fails, it will contact WCBS directly. If that

fails, it will activate the local Shoreham EBS. The plan therefore contains four levels of actions for activating the EBS. Additional detail is given in Revision 10 to the plan. Motion, Attach. 2. Nothing in that description has been controverted by a material fact.

Intervenors claim that, even if the Board does dismiss Contention 5, they are not barred from raising interface issues. Their claim is supported by legal argument that the Commission's best-efforts assumption applies only to governments and cannot be applied to private entities such as broadcasting stations. This creates genuine doubt in their view that private broadcasters will transmit emergency messages, even if requested to do so by government officials.

Intervenors present no material facts that controvert any fact concerning interface procedures submitted by LILCO. Their assertion, without supporting facts, that private broadcasters might not broadcast emergency messages is plainly absurd in the face of an existing agreement between the broadcast industry and the State of New York to broadcast such messages. *Id.*, Attach. 4. We do not decide the legal controversy concerning whether the Commission's rules apply to private entities because it is unnecessary to do so. The Board's finding is based on factual evidence that is uncontroverted by Intervenors. We do not rely on application of the best-efforts assumption to private entities in reaching our Decision.

Intervenors have not successfully controverted any material fact asserted by LILCO. Such a finding is sufficient for granting a motion for summary disposition. Nevertheless, Intervenors press additional procedural or legal arguments which in their view are sufficient basis to deny LILCO's motion. The Intervenors argue that LILCO's EBS plan is radically new and they have not had adequate time to review it. Thus they claim they cannot admit or deny several of LILCO's facts.

NRC regulations provide authority for a presiding officer to refuse the application for summary disposition or to order a continuance to permit affidavits to be obtained if it appears from an opponent's affidavit that he cannot provide by affidavit facts essential to justify his opposition. 10 C.F.R. §2.749(c). Intervenors have not provided affidavits in their response to the motion nor do they otherwise provide adequate reason why they could not obtain facts to justify their opposition to LILCO's proposal. The State EBS has been in existence at least since 1981. It is approved by New York State. No reason is given why New York State, which is a party to this proceeding and to the State EBS plan, is not already in possession of facts that would justify its opposition if they exist.

The Board has previously taken a dim view of LILCO's propensity for introducing substantial revisions to its emergency plan for the first time in motions for summary disposition. Several such motions have been denied in

the past. In a prior revision of the EBS plan involving WPLR, we labeled LILCO's motion "executory" in denying it. Intervenors urge the same result in this case. In the previous instance, however, the motion preceded Revision 9 of the plan by more than 2 months and the plan itself consisted of a new, privately developed EBS, bonded together by privately executed letters of agreement. It was executory because it rested on LILCO's assertions alone and there had been no opportunity for review by any party. In the present plan, however, LILCO will become, in effect, a user of a preexisting State plan which is approved by the State of New York, the details of which are accessible to the opposing parties. The fact that a change in plans was forthcoming was disclosed in early May 1988, and Revision 10 to the emergency plan which contained the new scheme for EBS was made available on or about May 25, 1988. Intervenors had limited discovery on the new plan. The motion for summary disposition was dated June 20, 1988, and Intervenors responded on July 12, 1988. If facts existed to justify Intervenors' opposition to the present plan, they could have been timely produced in the foregoing sequence of events. The Board concludes that Intervenors' legal or procedural objections have no merit, and they do not constitute cause for denying LILCO's motion for summary disposition.

Intervenors' argument that LILCO's plan is ambiguous or unclear is equally without merit. The State EBS plan together with Revision 10 provides a sufficiently clear disclosure of LILCO's plan to enable Intervenors to submit at least some facts that would justify their opposition, if such facts exist.

The Board did not consider LILCO's assertion that it could rely on admitted Fact 17 from a previous motion to establish that Intervenors have admitted the adequacy of coverage of the State EBS in the EPZ. Intervenors disputed LILCO's assertion, but we decide the motion on the basis of the factual evidence submitted in the motion and responses. It was unnecessary to reach the question posed by previously admitted facts.

Because we decide on other grounds that LILCO has prevailed on its motion, the Board does not decide whether LILCO is entitled to a factual presumption of adequacy of its plan as a sanction against Intervenors for refusing to permit depositions during the limited discovery we ordered when Revision 10 was published. Suffice it to say, however, that the Board cannot recall an instance in the long history of this case where it has ordered unilateral discovery for the benefit of only one party. Intervenors' assumption that we had done so in this case is simply wrong.

The Board rejected Intervenors' claim that summary disposition should be denied because a particular subject has not been previously litigated or conceded. Response at 24. That is not a proper answer to a motion for summary disposition. It is true as Intervenors assert, for example, that the adequacy of coverage of WALK Radio was not litigated in prior hearings on LILCO's emergency plan and that the Board found that the range of stations is not at issue in Contention

20. LBP-85-12, *supra*, 21 NRC at 764. The reason the matter was not at issue, however, is that Intervenors had expressed no basis for concern in their contention on the subject. Their only basis for concern in previous litigation was that WALK did not broadcast at night. The Board subsequently construed the contention to express an underlying concern for adequacy of public notification within the EPZ for the purpose of dealing with the reopened proceeding. This could include a question of coverage because the bases for concern under a new plan could have changed since the initial decision. That does not automatically trigger a new opportunity for litigation, however. Intervenors have had the opportunity in their response to factually confront LILCO's assertions about adequacy of coverage in the EPZ. We may therefore decide the issue on the basis of material facts submitted by the parties.

H. Decision

The Board concludes that Intervenors have not controverted facts submitted by LILCO concerning adequacy of broadcast coverage within the EPZ. We find that none of the facts submitted by LILCO in support of its Motion for Summary Disposition on EBS issues have been controverted by Intervenors. The facts submitted by LILCO are adequate, to establish the adequacy of its plan to comply with NRC regulations and guidance concerning a public emergency warning system. Intervenors' procedural and legal objections to LILCO's motion are without merit. No material facts are in dispute on LILCO's current EBS plan and LILCO is entitled to summary disposition as a matter of law. LILCO's Motion for Summary Disposition on EBS issues is granted.

II. SCHOOL BUS DRIVER REMAND

This remanded issue centers around the potential for "role conflict" in the school bus drivers upon whom the LILCO Plan depends for the transportation of schoolchildren in a radiological emergency. The particular role conflict to be examined here is the conflict between the societal roles that the bus drivers play as family members and as emergency drivers, and the question is whether such conflict could cause abandonment of the role of bus driver in such large numbers as to make the LILCO Plan unworkable.

A. Introduction

This issue has had a long and turbulent history in the litigation of this case. Indeed, the notion of role conflict formed the basis of one of the contentions dismissed by the Board in the Phase I portion of the proceeding in 1982. That

contention questioned the availability of all emergency workers, alleging that no provision had been made for role conflict/role abandonment of emergency workers in general.

In the Phase II portion of the hearings, we heard evidence on a contention, Contention 25, which dealt with role conflict as it might affect many categories of emergency workers, including, in particular, bus drivers. The specific subcontention, Contention 25.C, read as follows:

> Contention 25.C. The LILCO Plan fails to take into account the role conflict that will be experienced by school bus drivers. In fact, a substantial number of school bus drivers are likely to attend to the safety of their own families before they report (if they report at all) to perform the bus driving duties which LILCO assumes will be performed. Role conflict of school bus drivers will mean that neither school buses nor school bus drivers will be available to implement the LILCO Plan. Without an adequate number of buses or bus drivers, LILCO will be incapable of implementing the following protective actions:
>
> 1. early dismissal of schools (necessary under the LILCO Plan to permit school children to be sheltered or to evacuate with their parents);
>
> 2. evacuation of schools.

After hearing evidence on the potential for role conflict in all classes of emergency workers, we concluded:

> [A]lthough some emergency workers may experience a conflict between their emergency duties and their family obligations, the preponderance of the credible evidence of record establishes that this will not be a significant problem at Shoreham and that a sufficient number of emergency workers will respond in a timely fashion . . . .

LBP-85-12, *supra*, 21 NRC at 679.

With regard to school bus drivers in particular, we considered a survey of school bus drivers presented by Suffolk County witness Dr. Cole (Cole, ff. Tr. 2789, at 7); we considered the testimony of LILCO witness Dr. Mileti (Cordaro *et al.*, ff. Tr. 831, at 35; Tr. 1086, 1166 (Mileti)); and we agreed with the LILCO witness's testimony, finding that the survey would not reliably predict bus driver behavior and that even were it roughly indicative it would not suggest a massive defection on the part of the drivers. LBP-85-12, *supra*, 21 NRC at 675-76. Thus we found in LILCO's favor on the contention.

The Intervenors sought review of the decision, and in ALAB-832, 23 NRC 135 (1986), the Appeal Board, while not disturbing our findings for emergency workers other than school bus drivers, remanded the issue of role conflict for the bus drivers themselves. *Id.* at 149-54.

We had excluded certain portions of the Intervenors' proffered testimony on the matter; in particular we had excluded the results of a survey of Suffolk County volunteer firemen (Cole, ff. Tr. 1216, at 12-16), and in the Appeal

Board's view "the results of a survey as to the potential for role conflict among firemen . . . would provide insight into the likely course of conduct of school bus drivers." ALAB-832, *supra*, 23 NRC at 153. The Board reasoned that "if a trained professional emergency worker such as a fireman would put family obligations ahead of the discharge of . . . emergency duties . . . it is a fair inference that an individual not in such a line of endeavor would encounter at least as great role conflict." *Id.* Further, the Appeal Board distinguished the relevance that these data might have for school bus drivers from that which it might have for other emergency workers. *Id.* at 153 nn.5, 6.

In fine, the Appeal Board concluded that "we . . . cannot make a finding that a sufficient number of school bus drivers can be relied upon to perform their duties . . . ." *id.* at 154. And, the Board directed us to reconsider our prior findings and conclusions, to offer an opportunity for the parties to adduce additional evidence and, at a minimum, to accept the testimony related to the survey of volunteer firemen. *Id.* In remanding this issue, however, the Appeal Board left undisturbed our findings with regard to role conflict in the case of teachers (findings that had been challenged on appeal) and our findings concerning role conflict in other types of emergency workers. We had seen no role conflict problem, despite poll testimony to the contrary, since we weighed other evidence more heavily. LBP-85-12, *supra*, 21 NRC at 679. Addressing the matter of teacher role conflict specifically, the Appeal Board noted our weighting of the testimony approvingly. ALAB-832, *supra*, 23 NRC at 151-52.

In directing us to accept the testimony concerning the volunteer firemen, the Appeal Board relied upon its earlier decision in the *Zimmer* case (*Cincinnati Gas & Electric Co.* (William H. Zimmer Nuclear Power Station, Unit 1), ALAB-727, 17 NRC 760 (1982)), saying:

> It is thus unsurprising that, in the consideration of emergency planning in *Zimmer*, we found that surveys of volunteer life squadsmen and firemen concerning the role conflict they would encounter raised "a serious question as to whether bus drivers could be depended upon to carry out their responsibilities" in the event of an accident at that plant.

23 NRC at 153.

In *Zimmer* the Appeal Board had found an unresolved question as to whether bus drivers would in fact respond to their driving duties in an emergency. ALAB-727, *supra*, 17 NRC at 772. The Board perceived this question in testimony presented by Richard Feldkamp, Assistant Chief of the New Richmond Life Squad. The citation made by the Appeal Board in ALAB-727 was to a portion of Chief Feldkamp's testimony which reads:

> During the course of my involvement as both a life squadsman and fireman in association with the members of the life squad and firemen of the Village of New Richmond, approximately 95% of the life squadsmen have indicated and [sic] will not respond in a volunteer emergency

> response role in the event of a Zimmer Station accident. As to firemen, approximately 25% will not respond in an emergency role.

Testimony of New Richmond Life Squad Assistant Chief Feldkamp, ff. Zimmer Tr. 5467, at 2-3.

Further, the Appeal Board evidently gave a measure of quantitative credence to the numbers mentioned in Chief Feldkamp's testimony, saying:

> Although not in terms of bus drivers, testimony adduced at the hearing below suggested that approximately 95% of the volunteer life squadsmen and 25% of the fire fighters, also volunteers, would not respond promptly in the event of an accident . . . .

Zimmer, ALAB-727, *supra*, 17 NRC at 772.

In a more recent case, *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-836, 23 NRC 479 (1986)), the Appeal Board found the results of a survey conducted by a school superintendent entitled to greater weight than the Licensing Board there gave them. The Appeal Board remarked that the survey was "rather straightforward and neutral in the simple questions it asks the drivers," and the Board noted that the survey showed almost 42% of the drivers failing to "respond positively" to the survey itself. *Id.* at 517. The fact that the survey data left unclear just how many drivers did not respond at all to the survey was deemed "irrelevant" by the Appeal Board, since that Board believed that even failing to return such a questionnaire or answering "undecided" would suggest less than "reasonable assurance" that the driver would report for duty. *Id.* at 517 n.68.

The Appeal Board there concluded that the applicant was "obliged to produce affirmative evidence of an adequate number of available drivers from some source, once the survey results substantially clouded that matter with doubt." *Id.* at 518.

After the remand, LILCO substantially revised its plan for the evacuation of schoolchildren and moved for summary disposition of Contention 25.C on the basis of the new plan. LILCO's Motion for Summary Disposition of Contention 25.C ("Role Conflict" of School Bus Drivers), October 22, 1987. In the revised plan, LILCO proposed to provide enough of its own employees to drive as many school buses as might be needed to evacuate all schoolchildren in a single wave. Further, LILCO proposed to provide "backup" drivers for all the regular school bus drivers that such a single-wave evacuation would entail. Thus the plan moved from a situation in which LILCO relied on a comparatively small number of regular school bus drivers to make more than one trip each to a situation in which LILCO would supply enough of its own employee-drivers to evacuate the children in one wave, even if the regular drivers should renege on their duties.

The Intervenors opposed LILCO's Motion, arguing that LILCO had radically changed its plan for dealing with schoolchildren. The Intervenors charged that the Motion reflected nothing more than an executory future commitment by LILCO to recruit and train the necessary drivers, and that there had been no indication that the drivers LILCO might supply could actually serve as regular and backup drivers in an emergency. Answer of Suffolk County, the State of New York and the Town of Southampton to LILCO's Motion for Summary Disposition of Contention 25.C ("Role Conflict" of School Bus Drivers), November 13, 1987.

We denied LILCO's Motion, and we recast the issue to be dealt with, saying:

> The basic issue to be explored by the Board is whether, in light of the potential for role conflict, a sufficient number of school bus drivers can be relied upon to perform emergency evacuation duties. To assure an adequate number of bus drivers, LILCO has developed its new proposal for auxiliary drivers. It will suffice for our purposes that an opportunity to confront this plan be provided and a period for discovery on the plan's dimensions be authorized.

Memorandum and Order (Ruling on Applicant's Motion October 22, 1987, for Summary Disposition of Contention 25.C Role Conflict of School Bus Drivers), December 30, 1987 (unpublished), at 5.

In response to a later motion by LILCO, we made it clear that we regarded the subject of the remand as very circumscribed and we intended the remand to comprise only the issue of the number of bus drivers who could be relied upon to drive in a radiological emergency. In particular, we ruled that "questions concerning the availability of buses, reception centers for schoolchildren, and evacuation time estimates are not within the scope of the remanded bus driver issue." Memorandum and Order (Ruling on LILCO Motion In Limine and Motion to Set Schedule), February 23, 1988 (unpublished), at 4. With that ruling as a basis, we subsequently struck portions of the Intervenors' proffered testimony. Memorandum and Order (Pending Motions to Strike), May 9, 1988 (unpublished).[10]

During the trial on the remanded school bus driver role conflict issue, LILCO presented the testimony of Douglas M. Crocker, Robert B. Kelly, Michael K. Lindell, and Dennis S. Mileti.[11] Suffolk County presented a panel consisting

[10] The Governments would have us reconsider our original ruling, summarily reverse it, admit the proffered testimony at this late date, and base our decision on that testimony. That we decline to do. To begin with, we adhere to our original view as to the proper scope of the remanded hearing. But even were we to depart from that view, we would not consider admitting the testimony and using it without opportunity for cross-examination on the part of the other parties.

[11] Testimony of Douglas M. Crocker, Robert B. Kelly, Michael K. Lindell, and Dennis S. Mileti on the Remanded Issue of "Role Conflict" of School Bus Drivers, ff. Tr. 19,431 (Crocker *et al.*).

of sociologists Stephen Cole, Ralph H. Turner, and Allen H. Barton,[12] and a panel of eight school officials and transportation directors from school districts in and near the EPZ. This latter panel included Bruce G. Brodsky, Edward J. Doherty, Howard M. Koenig, Nick F. Muto, Robert W. Petrilak, Anthony R. Rossi, J. Thomas Smith, and Richard N. Suprina.[13] Neither the State, the Federal Emergency Management Agency (FEMA), nor the NRC Staff presented witnesses on this issue.

B. Parties' Positions

We turn first to the theoretical treatment of role conflict/role abandonment given by the opposing groups of sociologists and psychologists presented by LILCO and Suffolk County. Individuals in complex societies have multiple roles; sometimes these roles conflict. For example, one's role as a family member may conflict with one's role as a worker, while roles in religious or other organizations may conflict with either of those roles or with each other. The County's witnesses defined the concept and gave several examples. Cole *et al.* at 10-12. LILCO's witnesses, while agreeing that role conflicts could occur (Tr. 19,513, 19,548-49 (Mileti)), viewed such conflict as something that would not present a real problem. Crocker *et al.* at 48 (Lindell); Tr. 19,439 (Lindell); Tr. 19,539 (Mileti). In particular, the LILCO witnesses assert that a serious conflict of roles will not arise and role abandonment will not occur in emergency workers when each individual's emergency role is clearly understood, through training or otherwise. Crocker *et al.* at 9, 14-15; Tr. 19,497-99 (Lindell). LILCO's witnesses also believe that certain sociological forces will assist in minimizing the chance of role conflict/role abandonment in school bus drivers in an emergency, and that among these are the strong tendency of human adults to aid children (Tr. 19,567 (Mileti)), the high priority that society assigns to evacuating schoolchildren in danger (Tr. 19,529 (Mileti)), the "normative overlap" or similarity that exists between the bus drivers' ordinary work and their duties in an emergency (Crocker *et al.* at 15), and the feeling of responsibility engendered in the drivers because they were the very people who brought the children to their schools with the expectation that they would return for them later (Tr. 20,188-89 (Lindell)).

The County's witnesses, on the other hand, say that "the sociological literature demonstrates that, in our society, *family* roles tend to be the most important." Cole *et al.* at 14. These witnesses predicted that a very large number of school

[12] Testimony of Stephen Cole, Ralph H. Turner, and Allen H. Barton on the Remand of Contention 25.C — Role Conflict of School Bus Drivers, ff. Tr. 20,672 (Cole *et al.*).

[13] Direct Testimony of Bruce G. Brodsky, Edward J. Doherty, Howard M. Koenig, Nick F. Muto, Robert W. Petrilak, Anthony R. Rossi, J. Thomas Smith, and Richard N. Suprina, ff. Tr. 20,259 (Brodsky *et al.*).

bus drivers would choose to attend to the needs of their families first, performing their bus-driving duties only after they had fully satisfied themselves that their families were safe. *Id.* at 17-18.

Both sets of experts attempted to bolster their positions with experiential data. The County's witnesses cite a work by Lewis Killian (L.W. Killian, "The Significance of Multiple Group Membership in Disaster," *American Journal of Sociology*, January 1952, at 309-14) to indicate that, in four disasters studied, "[t]he great majority of persons interviewed who were involved in [role conflict] dilemmas resolved them in favor of the family, or, in some cases, friendship groups." *Id.* at 311. The witnesses also cite a 1953 Dutch study, a study done in Texas in 1958, a doctoral dissertation in 1958, and still another study in 1958. They quote only the last of these (W.H. Form and S. Nosow, *Community in Disaster* (1958)), noting that Professor Barton, one of the witnesses, summarized them all in his work *Communities in Conflict* (1969), and they assert that the conclusion that "help for family members, friends, and neighbors comes first" is typical of all the studies. Cole *et al.* at 28-29.

LILCO's expert witnesses, on the other hand, view role conflict/role abandonment as a "nonproblem." They regard the work of Killian and that of Professor Barton as "older literature" (*see* LILCO's Proposed Findings at 26). They report that they have searched the later literature, and they cite many reports to the effect that role conflict does not produce role abandonment, that role conflict does not result in loss of emergency manpower, and that emergency workers who have clear understanding of what is expected of them do their jobs. The LILCO witnesses found only one article that seriously questioned that proposition, an article by James H. Johnson (previously a witness for Suffolk County). That article reported a survey (during normal times) of teachers, one-third of whom said they would not assist in evacuating schools. Crocker *et al.* at 9-15.

LILCO's witnesses also rely heavily on work done and analysis by Dr. Russell Dynes, who testified earlier in these hearings for LILCO. Cordaro *et al.*, ff. Tr. 831. Dr. Dynes then testified that in a review of over 6000 interviews, conducted by the Disaster Research Center at Ohio State, he did not find even one instance where the functioning of an emergency organization was undercut by personnel not reporting for duty. *Id.* at 16-17. He asserted that in his experience the problem in emergencies is less likely to be a loss of personnel than a surfeit. Tr. 918-19 (Dynes). Suffolk County's witnesses disagreed with the data Dr. Dynes put forward, criticizing the Disaster Research Center study and questioning its applicability here. They pointed out particularly that the study was not directed specifically at role conflict, that the interviewees may have wanted to put a favorable light on their performance in emergencies, and that no radiological emergencies were included. Cole *et al.* at 38-39.

The Suffolk County witnesses did not actually cite any instance in which an emergency response had been impaired by role conflict. LILCO's witnesses

said they knew of no instances of role abandonment in emergencies (Crocker *et al.* at 25-27), with the possible exception of certain medical personnel at Hiroshima, who first attempted to treat victims but later gave up the attempt. *Id.* at 26 (Mileti). This was despite a study of fifty large, quickly developing, problem-laden evacuations in densely populated areas. *Id.* at 26-27 (Kelly). However, LILCO's witnesses did concede that bus drivers might not carry out their duties if they perceived that a radiological plume directly threatened their own families in a fashion similar to "a person seeing his own house on fire." *Id.* at 23 (Lindell, Mileti).

LILCO's witness Kelly (or people acting under his supervision) also conducted two telephone interview surveys, one of emergency managers and bus company officials and one of actual bus drivers involved in nineteen evacuations. The surveys found no refusals to drive by any notified bus drivers, only scattered instances involving 10% or less of any group of drivers wherein drivers arrived late because they first helped their families, and no cases where there were insufficient drivers to evacuate all who needed to be evacuated. *Id.* at 28-29. The County attacked the results of these surveys on several grounds. Governments' Proposed Findings at 53. The County brought out that Mr. Kelly had checked and corrected the results of the survey in certain instances, but had only investigated cases where role abandonment appeared to have taken place. Tr. 19,905-20 (Kelly). The County also questioned whether Mr. Kelly had made certain that the people interviewed were those most familiar with the incident investigated and most likely to know about it. Tr. 19,868-70 (Kelly). Errors were made in recording some data. Tr. 19,902-03 (Kelly). The sample of bus drivers was small (Tr. 19,938 (Kelly)), and one of the questions seemed to the Intervenors ambiguously worded. Governments' Proposed Findings at 51.

While the techniques employed may not have been such as to ensure the soundest, most iron-clad data, the Board regards the County's criticisms as minor. We believe that the survey shows what it appears to show, viz., that in past experience, role abandonment by bus drivers has been rare and not a significant impediment to emergency evacuations.

We turn now to a matter at the core of this remanded issue: the survey of firemen conducted by Dr. Cole denied admission as evidence in the earlier hearings, and a more recent survey, conducted in preparation for this remand hearing. This brings to a total of three the surveys conducted by Dr. Cole on this subject and admitted into evidence: (1) a 1982 survey of school bus drivers (*see* Cole *et al.*, ff. Tr. 2792); (2) the 1982 survey of firemen; and (3) the 1988 survey, also a survey of firemen. Cole *et al.*, ff. Tr. 20,672, at 40-41. The results of all three were discussed in the witnesses' latest testimony. *Id.* at 40-58.

Briefly summarized, the results of the 1982 survey of bus drivers indicated that 69% of the drivers said that they would first make sure their families were safely out of the evacuation zone in the event of a Shoreham emergency, 4%

more said they would check on their families before reporting, 3% said they would leave the zone immediately, and only 24% said they would report to work to take children to a shelter. *Id.* at 41.

The 1982 survey of firemen was structured in a manner sufficiently complex to require the construction of an index correlating the answers to two separate questions in order to estimate the number of firemen who would report for duty in a radiological emergency. Dr. Cole's analysis indicated that 36% of the firemen would look after the safety of themselves and their families in a way that would prevent them from reporting quickly, 55% would attempt to report quickly, and 8% did not know what they would do. *Id.* at 47. Dr. Cole found support for the results of this part of the survey in certain other questions included, questions in which the interviewee was asked to agree or disagree with a particular statement. For example, he found that 92% agreed that "[i]n the event of a nuclear emergency at Shoreham, it would be the obligation of everyone to first look after the health and safety of their [sic] family." On the other hand, only 17% agreed with the statement that "[i]n the event of a nuclear emergency at Shoreham, a volunteer fireman must place duty to the fire department over duty to family." *Id.* at 47-48.

The 1988 survey of firemen was more complexly structured and required more complex analysis than that conducted in 1982. *Id.* at 50-54. Nevertheless, Dr. Cole felt he could reliably conclude from it that less than one-third of the firemen can be counted upon to help out during an emergency at the Shoreham plant. *Id.* at 55. Asked why the fraction who would respond had diminished between 1982 and 1987, Dr. Cole ascribed the decrease to two conditions: First, the later poll provided a better assessment of what firemen would do; and second, the increased publicity about Shoreham and the intervening accident at Chernobyl had increased the concern over Shoreham in the Long Island community. *Id.* at 55-56 n.35.

Unlike the surveys introduced by LILCO and discussed above, Dr. Cole's work is predictive; that is, it asks people what they would do rather than asking what they did (or what others did). Predictably, the LILCO witnesses attacked this aspect of the surveys as they have in the past. Dr. Mileti reminded us that he has repeatedly stated in the past that poll data gathered on behavioral intentions should not be taken as predictive of future behavior. He recounted his experience in interviewing people to find what they intended to do if an earthquake were predicted. Subsequent study of a "near prediction" in fact showed their behavior to be quite different from what the interviews predicted. Crocker *et al.* at 40-41. Dr. Mileti has maintained throughout these proceedings that emergency behavior is determined by situational perceptions at the time of the emergency, not by previous intentions. *Cf.* Tr. 1085-86, 1164, 1121-22 (Mileti). Indeed, Drs. Lindell and Mileti went so far as to say that Dr. Cole's polls are measuring, not future behavior, but present attitudes, favorable or

unfavorable, toward LILCO, and possibly the attitudes of the respondents toward their families. Crocker *et al.* at 43.

We have ourselves agreed in the past that predictive polls are of dubious validity. In our Partial Initial Decision (LBP-85-12, *supra*, 21 NRC at 667, 676) we found that polls were not reliable predictors of human behavior in an emergency and we ruled against the Intervenors on both the matter of role conflict and the matter of shadow evacuation. In our Partial Initial Decision on the Suitability of Reception Centers (LBP-88-13, *supra*) we again affirmed our conviction that Dr. Cole's polling techniques would not predict future behavior. *Id.*, 27 NRC at 523.

Apparently concerned lest we might deem the supply of bus drivers inadequate, LILCO made substantial changes in its Plan with respect to the evacuation of schoolchildren. In order to remove any "lingering doubt" as to the sufficiency of drivers and to ensure that all schools would be evacuated as quickly as possible, LILCO adopted a procedure that relies on bus drivers who are members of LILCO's own LERO organization. Crocker *et al.* at 49-50. The new procedure comprises a "one-wave" evacuation (one in which enough drivers and buses are assigned to each school so that each bus and driver make only one trip). *Id.* at 50. Not only are enough LERO drivers added to the pool of regular bus drivers to accomplish this, but a sufficient number of LERO drivers are also added to yield a LERO substitute for each regular driver. The LERO drivers needed to yield a one-wave evacuation if the regular drivers do in fact drive are termed "primary" drivers; those whose duty is to drive only if the regular drivers are unable or unwilling to do so are called "backup" drivers. *Id.* at 49.

LILCO calculates that a total of 509 drivers will be needed. To perform that calculation, LILCO took the public and parochial school populations, reduced the number by 5% to account for absences, and further reduced it by 20% for high schools to account for students who would evacuate in their own cars or with someone else. For nursery schools they used the total school population. *Id.* at 50-51. They determined the number of buses needed by assuming forty students per bus for high schools and sixty students per bus for the lower grades. *Id.* These assumptions are the same as those litigated in our earlier hearings. *Id.*

LILCO expects to train a total of 613 bus drivers. *Id.* at 52. This allows 301 drivers to serve as backup drivers for the regular school bus drivers. LILCO added to that number 150% of the 208 primary drivers required to yield the needed 509; thus the plan is to supply a backup driver for every regular driver plus 150% of the primary drivers needed for a one-wave evacuation. *Id.* at 53.

To mobilize the LERO drivers, pagers will be set off to call a selected group of drivers and they will call the rest by telephone. The drivers will be trained to report directly to predesignated bus yards, backup drivers going to yards that normally supply buses, and primary drivers going to yards that do not. Backup

drivers will report to the company dispatcher and drive only if asked to do so by the dispatcher. If the bus dispatcher asks the LERO driver to drive, the driver will pick up an Assignment Packet from a box established by LILCO at the yard and head for the school designated in the packet. Primary drivers will pick up Assignment Packets and depart for their assigned schools directly. *Id.* at 53-54.

The entire plan for the callup and dispatch of the bus drivers is presently outlined in Revision 10 to the Emergency Plan, and is described in Attachments O and P to LILCO's Supplemental Testimony on the Remanded Issue of "Role Conflict" of School Bus Drivers, ff. Tr. 19,431 (LILCO's Supplemental Testimony). That late revision made only one major change to the program set forth above: It recognized that some regular bus drivers take their buses home, and it stated LILCO's belief that these drivers will return their buses to the bus yards if they decide not to drive. It makes other changes that are minor and adds twenty-one drivers for one specific school. LILCO's Supplemental Testimony at 2-3.

The Intervenors characterize LILCO's latest plan as "unworkable" and "fatally flawed." Governments' Proposed Findings at 64, 95, 100. They attack the plan on several grounds.

First they assert that the plan underestimates the school populations requiring transportation. Brodsky *et al.* at 37-43. Further, the Intervenors disagree with LILCO's computational practices in reducing the numbers by 5% to account for absences and (in the case of high schools) by 20% to account for students who drive or ride with others. Governments' Proposed Findings, *citing* Tr. 20,309 (Suprina), 20,310 (Petrilak).

The Intervenors' witnesses also assert that seating forty high school students and sixty lower-grade students on each bus would lead to extra noise and confusion "which is very distracting to the driver and poses a potential safety hazard." Indeed, they assert that "[f]or any trip over 10 miles, we would never load the bus three per seat . . . regardless of the age or size of the students." Brodsky *et al.* at 41-42 (Petrilak, Doherty, Smith). The Intervenors' witnesses also question whether LILCO has accurately represented the number of twenty-seat buses available, pointing out that many of their own buses are not full size. *Id.* at 42-43. And if teachers were to ride on the buses to assist the LERO drivers in keeping order, there would be even fewer seats. Tr. 20,414-16 (Rossi).

Further, the Intervenors' witnesses say they doubt that the LERO drivers' selection, training, and experience would properly prepare them for the safe and efficient transport of students. The witnesses stress the rigorous selection and training process that their regular drivers undergo, and they point out that there is more to competent operation and control of children than simply possessing a Class 2 bus operator's license. Brodsky *et al.* at 50-52.

LILCO and the Intervenors engage in a number of small skirmishes as to facts and law. The Intervenors would have us find that "LILCO [does] not yet have

any employees licensed to drive buses." Governments' Proposed Findings at 63-64 n.49. While LILCO points out that, in the part of the record Intervenors cite, LILCO's witness stated that the vast majority already had appropriate licenses in their possession. LILCO Reply at 42, *citing* Tr. 19,705 (Crocker). LILCO claims that its drivers would be exempt from certain State requirements for school bus drivers because they are "volunteers." LILCO's Proposed Findings at 54-55. The Intervenors counter that LERO employees are not "volunteers" under the law cited because they are given overtime pay and bonuses for their participation in LERO. Governments' Proposed Findings at 78 n.69. LILCO replies with a minor dissertation on the etymology of the word "volunteer." LILCO Reply at 50-51. The Intervenors repeatedly attempt to raise issues we have already ruled outside the scope of this proceeding: the overloading of telephone circuits (Governments' Proposed Findings at 88); the availability of buses (*id.* at 83); and the monitoring and decontamination of schoolchildren (*id.* at 96). LILCO, of course, objects to these attempts. LILCO's Reply at 52, 55, 56-57. As we observed in note 10, *supra*, we do not intend to disturb our earlier rulings.

C. Opinion and Conclusions

We have carefully considered the positions of the parties and the evidence supporting them. Our Decision must hinge upon two successive questions: first, in the face of the present record and the rulings of the Appeal Board, does the role conflict/role abandonment issue raise sufficient doubt about the availability of the regular bus drivers to oblige LILCO to produce its own substitutes in accord with ALAB-836 (23 NRC at 518); and second, to the extent that LILCO/LERO employees are relied upon, either as primary or secondary drivers, can they adequately fulfill the bus driver function.

LILCO believes that the answer to the first question is no, and hence believes that we should relieve the LERO organization from the responsibility to provide the "backup" drivers. LILCO's Proposed Findings at 58. We agree.

We are aware that the Appeal Board in *Zimmer* found that surveys of firemen and life squadsmen by a fire chief raised "a serious question as to whether bus drivers could be depended upon to carry out their responsibilities" in a nuclear emergency. We are further aware that in *Limerick* the Appeal Board found that, for certain school districts a substantial cloud was cast on the availability of drivers (ALAB-836, *supra*, 23 NRC at 518), although in the latter case the Appeal Board also found that the Licensing Board properly ignored certain other similar surveys. *Id.* at 519.

Nonetheless, in the case at bar, the Appeal Board specifically remanded this issue because we had excluded the evidence concerning firemen's role conflict and the implications thereof for bus drivers' role conflict, *not* for any

misinterpretation of the total weight of evidence on role conflict as a whole. ALAB-832, *supra*, 23 NRC at 153-54. Indeed, with regard to other classes of workers — for example, school teachers — the Appeal Board affirmed our finding that role conflict would not cripple the plan, where that finding was grounded on evidence other than survey results, even though some surveys to the contrary had also been excluded in that instance. *Id.* at 151-52. The Appeal Board directed us to admit the firemen survey evidence "at minimum," and we have done so. But we have also admitted contrary evidence which we regard as far weightier.

In dealing with the question of role conflict as it applies to teachers, the Appeal Board specifically found that historical testimony, that of the Chief of FEMA's Natural and Technological Hazards Division, to the effect that teachers had met their obligations dominated informal survey results. *Id.* In *Limerick* no such contrary evidence had emerged; indeed, the evidence of FEMA's witnesses was to the effect that the availability of bus drivers had not been assured. ALAB-836, *supra*, 23 NRC at 519.

We have considered the mass of evidence presented by the LILCO witnesses and condensed above. Those witnesses presented historical evidence to the effect that previous emergency situations have not occasioned the role abandonment of bus drivers. The Intervenors were unable to show any substantial history of such role abandonment. In the surveys cited above, surveys of both the literature and the memories of persons involved in emergency responses, response organizations simply did not lose their effectiveness because of role conflict/role abandonment.

As we note above, we have in the past accorded very little weight to Dr. Cole's surveys as predictors of human behavior, and in fact the results we thus reached have, in the main, been left undisturbed. With the admission of all the evidence, we find here as we have before that an *a priori* attempt to predict human behavior from surveys of opinion must yield before the *a posteriori* evidence of what people have in fact done. The Intervenors' challenge in this case is grounded upon a compound hypothesis for which none of the elements of scientific proof have been established. The elements of that hypothesis are: (1) Role conflict exists among emergency worker to a degree that would prevent them from performing an emergency role; and (2) opinion polls provide an adequate measure of that conflict and its impact on the response resources of an emergency organization.

These two elements may well be true. But when all the evidence adduced shows no case where they have functioned and many cases where they have not, we must disregard them. We are fully aware that LILCO has the burden of proof in showing the adequacy of its Plan to protect health and safety, but however plausible the Intervenors' hypotheses may seem to some at first blush, they would have to point out at least *some* instances in which they have appeared.

To discount LILCO's substantial evidence to the effect that bus drivers do, in fact, respond would be to require LILCO to prove a negative, viz., to show that something could never happen in the future.

We have previously found that Dr. Cole has used valid statistical and design methodology in his polls. The problem does not lie with the technique but with the fundamental concept. There is nothing inherent in the methodology that compels the conclusion that they have predictive value. The poll measures opinion at the time it is taken. It remains valid only as long as the opinions do not change. But we must pass upon a plan that is expected to remain viable for 30 years. Not only will the simple passage of time affect the real results that may occur, but the press of the situation in an accident will dominate any response. It is, in fact, precisely that effect that LILCO's witnesses tell us will change the minds of those who now say they will not help. We are inclined to agree with the LILCO witnesses who say that the polls measure opposition to Shoreham and present concern for family. That opposition is well known, but the Commission's rules do not allow such opposition to serve as a basis for a licensing decision.

The Intervenors' polls are not a real support for the role conflict/role abandonment hypothesis. LILCO's evidence substantially refutes the hypothesis. We find for LILCO, and we see no need for LILCO to supply backup drivers for the regular school bus drivers.

We turn now to the question of whether the drivers to be supplied by LILCO — LERO workers — are available in sufficient numbers and are usable as planned. As to the first matter, the availability of sufficient numbers, we believe that LILCO has carried the day. To begin with, accidents that will require the evacuation of *all* residents of the area are among the rarest of accidents. Even if all schools must evacuate, there appears to be substantial assurance of a sufficiency, even a surfeit, of drivers. True, the total school population has been adjusted downward by factors that the Intervenors call to question. But even the shortfall of sixty-four buses (and hence bus drivers) hypothesized by the Intervenors' witnesses is only of the order of 10% of the total. Brodsky *et al.* at 41. The overage of 50% of the primary drivers built into the system by LILCO should cover that and more.

Even if there were a slight shortage of drivers (and hence of buses), crowding, or the accepting of standees, would not be totally objectionable as an emergency measure. Indeed, all of the Intervenors' main objections: crowding, noise, use of inexperienced drivers, questions of State law devolving about the word "volunteer," and the objections of school officials to the use of drivers they have not approved, would pale in the face of an actual emergency. The notion, for example, that schoolchildren fleeing a hazard would be denied access to Nassau County because the County would not admit a bus unlicensed therein is ludicrous. *Id.* at 55.

True, in an emergency the children would not be transported as elegantly and understandingly as one would desire them to be under regular circumstances. But transported they would be. The Intervenors would have LILCO ensure an evacuation system that goes beyond the merely serviceable to reach the truly fastidious. We think that unnecessary. We also note that, after the remand in *Limerick*, the licensee proposed to solve the problem of possible role abandonment of bus drivers by supplying licensee employees to drive buses. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), LBP-86-32, 24 NRC 459, 464 (1986). That proposal not only met with the Licensing Board's approval (*id.* at 471), but it also received the Appeal Board's blessing. Limerick, *supra*, ALAB-857, 25 NRC 7, 15 (1987).

We believe, then, that an adequate provision has been made for a supply of bus drivers. We might emphasize that, although the respective needs for buses and drivers exhibit a one-to-one correspondence, the supply of the two resources is unrelated. We thus adhere to our finding in our Partial Initial Decision (LBP-85-12, *supra*, 21 NRC at 872-74) to the effect that it has not been shown that enough buses will necessarily be available. Indeed, since far more buses will be needed under the present Plan than under the previous one, that finding is, *a fortiori*, true now. But we here clarify that decision by stating that it was indeed our intention to leave the counting of available buses to the Staff.

D. Decision

The record upon remand and our deliberations on that record thus lead us to the decision that the Applicant has, in the case at bar, proposed a plan that swamps any possible shortfall of bus drivers with drivers from an assured source. The condition for reasonable assurance that the Appeal Board set forth in *Limerick* has been met. We acknowledge that, in the course of arranging for an adequate supply of drivers, LILCO has made substantial changes in the general scheme for evacuation of schoolchildren, and we recognize that the use of drivers from LERO may entail conditions that would not be desirable on a day-to-day basis. Nevertheless, we view the new plan as a substantial improvement on the old, and we regard its drawbacks as minor in the face of the purposes it is meant to serve.

We find that LILCO's plan to supply school bus drivers in the event of an evacuation gives reasonable assurance that the health and safety of the public will be protected. We conclude that LILCO's projected response in this area meets the standards and requirements of the NRC's Regulations.

III. HOSPITAL EVACUATION REMAND

A. Introduction

The issue here arises from the Commission's remand concerning Hospital Evacuation Time Estimates (ETEs). CLI-87-12, 26 NRC 383 (1987). The Commission ruled that ETEs in LILCO's emergency plan were required for three designated hospitals that exist either immediately within or just outside the Shoreham EPZ boundary: John T. Mather Memorial Hospital, St. Charles Hospital, and Central Suffolk Hospital. Although the latter hospital is outside the 10-mile EPZ boundary, LILCO has formulated emergency plans for it and does not allege any distinction for emergency planning purposes from the hospitals within the EPZ. Similarly, the Board did not draw such a distinction in its Partial Initial Decision and does not do so herein.

The Board concluded in its Partial Initial Decision on Emergency Planning that LILCO's plan for protective actions for the three hospitals in or near the EPZ boundary was reasonable even though LILCO did not calculate specific ETEs for each one. The conclusion was based on consideration of the hospital's location, shielding factors of hospital buildings, and the needs of hospital patients for special consideration when devising a protective action plan for radiological emergencies. LBP-85-12, *supra*, 21 NRC at 843-48. We found by inference from data in the record, however, that evacuation of the three hospitals could generally require about 8 hours and 50 minutes to evacuate in each case. *Id.* at 845.

The issue of hospital ETEs was remanded on appeal. ALAB-832, *supra*. The Appeal Board interpreted 10 C.F.R. Part 50, Appendix E, § IV, together with the guidance of NUREG-0654 as requiring an analysis of hospital ETEs without exception for case-specific circumstances.

The Commission took review of ALAB-832, agreed with the Appeal Board's interpretation of Appendix E and NUREG-0654, and returned the issue to the Licensing Board with instructions that the regulations require "evacuation time estimates for the EPZ without exceptions for special facilities such as hospitals." In so ordering, the Commission suggested that the Board might alternatively find the LILCO plan adequate from the existing record under 10 C.F.R. § 50.47(c)(1) on the ground that deficiencies in the plan are not significant for the plant in question.

In a subsequent summary disposition motion (December 18, 1987), LILCO alleged *inter alia* that it had calculated specific ETEs for the three hospitals, that it had incorporated those estimates into a forthcoming revision of its emergency plan, and that this would remedy the deficiency found by the Appeal Board and the Commission. In an Order of February 24, 1988 (Order), the Board denied LILCO's motion because it relied in part on the new ETEs and there existed a

genuine disagreement of experts as to the bases for the new calculations.[14] We determined, however, that LILCO's ETEs were the only matter within the scope of the Commission's remand order, and other issues proffered by Intervenors such as capacity of reception hospitals and letters of agreement would not be litigated.

The standards that must be met for the narrow purposes of this remand proceeding are set forth in NUREG-0654 § II.J.8, I.J.10, and Appendix 4. These sections require, *inter alia*, that plans must specify ETEs for protection of mobility-impaired persons and persons in special facilities and specify acceptable methods for making the estimates.

The issue specified by the Board in this proceeding was whether LILCO's ETEs for the three hospitals have adequate bases and accuracy to comply with NRC regulations and guidance. Governments' Proposed Findings at 141; Order at 12. The Board rules in this Decision that LILCO's hospital ETEs are accurate and that it has fulfilled the Commission's order on remand concerning hospital ETEs. We find no merit in Intervenors' assertions that we should order the results of sensitivity analyses to be included with the ETEs in LILCO's plan.

Expert witnesses were presented by LILCO, the State of New York, and the NRC Staff. Neither FEMA nor Suffolk County presented witnesses on this issue. Mr. Edward B. Lieberman and Ms. Diane P. Driekorn testified for LILCO. Dr. David T. Hartgen testified for the State of New York and Dr. Thomas Urbanik II testified on behalf of the NRC Staff. All witnesses have testified previously in this proceeding and the Board has accepted their qualifications as experts.

B. LILCO Position

LILCO's position in this controversy is that it has provided ETEs for the three EPZ hospitals as required by the Commission's remand order; that it has used computational methods similar to those employed for other special facilities; that the methods it used were previously found adequate in this proceeding; that it has set forth reasonable assumptions that were used in the analysis; and that it has employed a dynamic analysis as required by NUREG-0654. Thus, in its view, the narrow requirements of the remand have been fulfilled and it is entitled to a decision in its favor on the hospital ETE issue. LILCO's Proposed Findings at 61-66.

[14] Memorandum and Order (Ruling on LILCO's Motion for Summary Disposition of the Hospital Evacuation Issue), February 24, 1988 (unpublished). *See also* Memorandum and Order (Ruling on Intervenors' Motion for Reconsideration of Board Order on Summary Disposition of Hospital Evacuation Issue), April 14, 1988 (unpublished).

C. NRC Staff Position

The NRC Staff agrees with LILCO and proposes factual findings essentially similar to LILCO's. Staff's Proposed Findings at 10-14. The Staff's expert witness reviewed LILCO's methods and results in producing hospital ETEs and found them reasonable and in accordance with the guidance of NUREG-0654, Appendix 4. The Staff's expert made no independent calculations. Staff's Proposed Findings at 22. The Staff, however, emphasized the importance of assumptions used in the analysis. If the assumptions are similar, the results will be similar. *Id.* at 23. The Staff asserts that average vehicle speed assumed for the analysis is properly the average from beginning to end of the evacuation over the actual highways. Variation in vehicle speeds during the evacuation could be large, but the critical question for the analysis is determination of the overall average sustainable speed. *Id.* at 24. The average speed of 15 mph used by LILCO in its analysis for the Long Island Expressway is on the low side of expected speeds since no freeway in the United States has average sustained speeds less than 20 mph. *Id.* at 25-26.

D. Intervenors' Position

Intervenors argue that numerous errors revealed in LILCO's testimony during hearing render LILCO's efforts unreliable and that the Board should be skeptical of the results since other undiscovered errors may yet infect LILCO's ETEs. Governments' Proposed Findings at 156. In spite of asserted error, however, Intervenors concede that LILCO's estimates are "close enough." Such a concession would ordinarily put an end to controversy. However, Intervenors assert that their major concern is really that LILCO's hospital ETEs should be accompanied by the results of sensitivity analyses to account for uncertainties in assumptions used in the analyses. *Id.* at 157. They cite in support of this view, variation in results related to input assumptions, and a previous Board order which required that sensitivity analyses for EPZ evacuation times be included in the plan. *Id.* at 158. Intervenors also assert that they were prejudiced by the Board's ruling that LILCO could file rebuttal and error-correcting testimony because the filings were untimely. *Id.* at 153.

E. Rebuttal and Surrebuttal Testimony

LILCO presented ETEs in Revision 9 to its plan that were computed by a fairly laborious manual method which, if accurate, might reasonably have been thought to fulfill the Commission remand order which only required that hospital ETEs be included in the plan. The Board denied summary disposition on this issue because it found that a genuine dispute existed concerning the bases and

accuracy of LILCO's ETEs. However, the lines of battle apparently expanded during pretrial discovery from a narrow focus on the basis and accuracy of the ETEs to include a challenge based on Intervenors' perceived need for the emergency plan to take account of sensitivity of the estimates to uncertainties in the assumptions used in the analysis. The shifting focus was indirectly disclosed to LILCO in pretrial discovery, but it did not become fully evident until prefiled testimony was submitted. The discovery hint was sufficient, however, to cause LILCO to hasten to develop a computer program that would enable the computation of sensitivity analyses. The task was finished and results were produced virtually on the eve of hearing. Tr. 20,587-99 (Lieberman). LILCO sought leave of the Board to file rebuttal testimony that would include sensitivity analyses. *See* argument of counsel at Tr. 20,198-234. The motion was granted. Tr. 20,236. Intervenors requested leave to file surrebuttal testimony. The motion was also granted. Tr. 20,457.

LILCO's rebuttal analyses were based on computer calculations which produced essentially the same results with similar inputs as the manual calculations. The principal advantage of computer computation was to make possible rapid repetitive calculations needed for the sensitivity analyses which had become Intervenors' central concern. The computer analyses produced somewhat different results from the manual calculations, however, because LILCO's consultant found and corrected some computational errors during the program development and introduced some new errors, as was later revealed. In granting the motion to file rebuttal and surrebuttal testimony and in setting deadlines for filing surrebuttal testimony, the Board took account of the fact that the focus of controversy had expanded from that originally specified and that LILCO's manual and computer analyses produced substantially the same results. Intervenors' analyses of the fundamental bases for the manual computations would likely not be invalidated simply because LILCO had developed the means to make more rapid computations. Fairness required the Board to permit LILCO's rebuttal so that it could confront Intervenors' sensitivity allegations. While Intervenors' task of review was undoubtedly strenuous it was not prejudicial because even though new data were produced by LILCO the fundamental conceptual bases for its analyses had not changed.

F. Evacuation Time Estimates

Intervenors' surrebuttal analysis of the new computations was somewhat fruitful. Dr. Hartgen found errors in LILCO's rebuttal analyses which prompted a further corrective filing by LILCO. New York Surrebuttal Testimony, ff. Tr. 20,692, at 5-9 (Hartgen). LILCO Corrections to Rebuttal, ff. Tr. 20,586 (Driekorn, Lieberman). The errors were of such subtlety that they could only be found by an expert working with diligence; however, the errors were in the

nature of mistakes perhaps traceable to hasty development of LILCO's computer program. Governments' Proposed Findings at 155. The effect of the errors on the ETEs was small and they did not raise questions about the fundamental bases for LILCO's analyses. Tr. 20,602 (Lieberman). Mr. Lieberman corrected one more error on the witness stand which he thought might have the effect of lengthening his ostensibly final ETEs for a group of vehicles by an average of about 10 minutes. Tr. 20,582, 20,585 (Lieberman). The effect of all this review was to drive the ETEs through a short excursion which started from and returned to the original manually estimated ETEs.

The manually calculated ETE estimates in Rev. 9 for Central Suffolk, St. Charles, and Mather hospitals for normal conditions were 12:19, 12:20, and 12:00 hours, respectively. LILCO Testimony, ff. Tr. 20,856, Attach. C, at IV-184-85 (Driekorn, Lieberman). After the rebuttal, surrebuttal, and corrective testimony, the emergent estimates were, in the same order, 12:05, 12:06, and 11:47 hours. LILCO Correction to Rebuttal Testimony, ff. Tr. 20,856, at 7 (Driekorn, Lieberman). If some of these were lengthened by about 10 minutes to account for the last error, the final ETE estimates approach the original estimates. Tr. 20,602 (Lieberman). The Board concludes that the effect of the errors was inconsequential for emergency planning. While some of the corrections for adverse conditions were somewhat larger, they were, in the Board's view, equally inconsequential to the principal purpose of assisting decisionmakers in making a protective action decision in an emergency. The Board agrees with Staff that LILCO's manual computations were valid in the first instance. Tr. 20,473 (Urbanik).

Intervenors' prefiled testimony contained their own independently calculated ETEs showing sensitivity analyses based principally on the belief that average highway speeds during an evacuation are a matter of substantial uncertainty. The testimony contained a surprising result; Dr. Hartgen's independently modeled ETEs were sufficiently similar to LILCO's for similar assumed conditions to conclude that there is no factual controversy concerning the basis and accuracy of LILCO's ETEs. New York Testimony, ff. Tr. 20,692, Attach. 9 (Hartgen). Nevertheless, in his written testimony, Dr. Hartgen pressed the view that LILCO's analyses were infected with error, were unreliable, and should have included numerous sensitivity analyses. It was not until Intervenors' surrebuttal testimony was filed that Dr. Hartgen, under attack from Mr. Lieberman, defended his results by pointing out that they must be valid because they are virtually the same as those obtained by Mr. Lieberman. New York Surrebuttal Testimony, ff. Tr. 20,692, at 11, 19 (Hartgen); Tr. 20,789-91 (Hartgen).

Dr. Hartgen performed a wide-ranging sensitivity analysis using average vehicle speeds that LILCO thought were too low in some cases because the speeds were unsupported by observation or experience. However, both parties presented test cases for average speed variation of 5 mph above and below the

base case. Intervenors performed the analyses only for St. Charles Hospital while LILCO did them for all three hospitals. The results show that for St. Charles, the parties are in essential agreement on how evacuation time varies with average vehicle speed in the range of 5 mph above and below the base case. Decreasing the average speed by 5 mph lengthens the evacuation time by somewhat more than 1 hour in both analyses, and increasing the speed by 5 mph shortens the time by somewhat less than 1 hour. New York Surrebuttal Testimony, ff. Tr. 20,692, Attach. 4 (Hartgen); LILCO Corrective Testimony, ff. Tr. 20,586, at 8 (Driekorn, Lieberman).

Intervenors' additional test cases, based on more extreme reductions in average highway speeds, produced much longer ETEs. New York Testimony, ff. Tr. 20,692, Attach. 9 (Hartgen). But valid assumptions must be used in test cases if the results are to be accepted as valid. Tr. 20,530-31 (Urbanik). Dr. Hartgen himself thought that 5-mph variation was about the limit of accuracy for estimated highway speeds under level-of-service F conditions, but pressed the view that speeds could conceivably be much less. New York Testimony, ff. Tr. 20,692, at 34 (Hartgen). LILCO used 15 mph for highway speeds under congested conditions in its base case while the Staff thought that 20 mph would be more appropriate based on nationwide experience with highway traffic. Tr. 20,491, 20,515 (Urbanik). The Staff and LILCO differ by a range (not variance) of 5 mph. However, if error exists in LILCO's base analyses, it is likely in the direction of assuming speeds that are on the low side of expectation. Tr. 20,515 (Urbanik). The record will not support any more precise resolution. The Board accepts 5-mph variation in average speed from the base case as the probable limit of uncertainty in making ETEs. The ETEs could as well be shorter than LILCO found in its base case, rather than longer as advocated by Intervenors.

Wherever LILCO and Intervenors did analyses with similar parameters, they produced similar results. Controversy could have (and should have) ended voluntarily when the full significance of the various results became known. However, reason did not prevail and hearing time was devoted to meaningless pursuit of precision, strenuous efforts to find error, however small, and to debug LILCO's computer program. Tr. 20,472-73 (Urbanik).

The Board concludes that the hospital ETEs provided by LILCO are accurate. We conclude this not only because LILCO fully disclosed the bases for its analysis but also from evidence supplied by Intervenors. LILCO Testimony, ff. Tr. 20,586, at 4-14 (Driekorn, Lieberman). A common method for confirming the validity of a technical finding is to attempt to reproduce it by an independent method. This is what Intervenors did for LILCO by independent modeling and computation. We do not believe that any gross error that could have a disabling impact on emergency decisions lies latent in LILCO's programs because Intervenors scrutinized LILCO's results, found only small errors, and

confirmed their own ETEs rather than refuted LILCO's. Tr. 20,802-03 (Hartgen). Intervenors' conclusion that LILCO's ETEs are "close enough" was well founded on the record of this proceeding. Tr. 20,789-91 (Hartgen); Governments' Proposed Findings 156.

G. Sensitivity Analyses

The remaining question of whether sensitivity analyses should be included in the plan with LILCO's hospital ETEs is related only peripherally to the issue of their bases and accuracy. While such analyses are sometimes useful for the purpose of emergency planning, they have no potential for either confirming or disproving the underlying bases for the ETE model since they are obtained by repetitive runs of the model using different input parameters. Had the Board known that sensitivity analyses were to become the central issue of the proceeding, it likely would not have approved that change in scope of litigation because it does not address the issue that was remanded. The totality of evidence now gives rise to an inference that the sensitivity issue was a fallback position adopted when it became evident prior to trial that Dr. Hartgen's independent calculations tended to confirm rather than refute LILCO's results. However, there was no clear basis for that inference during trial and we shall decide the matter because we permitted a record to be developed on it.

Intervenors urge the Board to order the inclusion of sensitivity analyses for hospital ETEs into the LILCO plan. They cite inherent uncertainty in average traffic speeds as the principal reason for doing so and cite a prior Board order as precedent.[15] LBP-85-12, *supra*, 21 NRC at 794-95.

Intervenors' argument that we should issue such an order in this case because we did so in a prior decision is not persuasive. In our prior decision, we ordered the inclusion of sensitivity analyses in the plan because we had relied upon them to decide the issues then before us. We observed: "Suffolk County and the State have proved that scientific uncertainty exists in the evacuation time estimates. LILCO has reasonably estimated the magnitude of uncertainty." We saw our action, however, as causing an incremental improvement in the plan not involving any ultimate issue of its success or failure. *Id.* The required

[15] Dr. Hartgen cited a number of other subjective variables that could produce uncertainty in ETEs in his prefiled testimony, such as hospital capacity, number of patients, evacuation routes, and queue formation. Some were ruled outside the scope of litigation prior to trial. Intervenors did not substantively brief the remaining matters in their proposed findings beyond bare mention of a subject we had previously ruled outside the scope of litigation. We consider these matters to be outside the scope of litigation or abandoned and, in either case, not in need of resolution. There is no cause for the Board to pursue any of these issues further on the basis of possible public health significance because we assume Intervenors selected their best case when they chose to feature traffic speeds, which are influenced by these variables, as the principal source of uncertainty in ETEs. We infer, therefore, that no significant uncertainty that might arise from these other factors has been overlooked. Tr. 20,654-60 (Driekorn, Lieberman).

data already existed and no undue burden was imposed by including it in the plan. The uncertainty referred to in that decision was in the context of resolving highly subjective contentions regarding the impact of possible adverse human behavior on evacuation times for about 150,000 people within the entire EPZ. We did not find that projected travel speeds in the overall EPZ were *per se* so uncertain as to warrant additional fine tuning of LILCO's plan. In the present case, we deal with the possible evacuation of some 500 hospital patients, most of which would be evacuated after the EPZ evacuation was complete if the order were given. No issues of subjective human behavior are involved. The issue to be decided now is not similar to the one we confronted when we issued our previous order. Intervenors' assertion that we should now observe an uncritical consistency with a previous decision is without merit.

NUREG-0654 provides some guidance and rationale for the use of sensitivity analyses. NUREG-0654, Appendix 4 at 4-6, 4-7. It requires analyses of the major sources of variation in ETEs that could reasonably arise. Analyses of ETEs under normal versus adverse weather conditions are required, for example. Further, it prescribes generally that "the relative significance of alternative assumptions shall be addressed . . . ." Reasonableness is required, however, and the guidance cannot be read as an invitation to indulge in random or speculative sensitivity analyses that involve any permutation of input variables that might be postulated.

H. Conclusions

In this proceeding the relative significance of possible variation in assumed evacuation travel speeds was addressed exhaustively by both parties. The facts produced by that inquiry show that hospital ETEs are not sufficiently sensitive to reasonable variation in possible travel speed to effectively influence emergency decisionmaking. This is so because the reasonable bounds of uncertainty for evacuation travel speeds are relatively narrow and because (as we show below) a decision to evacuate hospitals is not itself highly sensitive to uncertainty in ETEs.

We found in our Partial Initial Decision that LILCO plans to reach a protective action decision for hospitals based only in part on dose estimates under sheltering or evacuation. In an emergency it will first order sheltering of hospital patients and will subsequently consider the advisability of evacuation. Before deciding to evacuate, it will consult with medical authorities to evaluate the possible health impacts on hospital patients of the evacuation itself. We found it reasonable for LILCO to plan for sheltering as its principal response, and evacuation as a backup response, partly because of the additional considerations that might be required to protect the health of hospital patients in an emergency. LBP-85-12, *supra*, 21 NRC at 841-46. Under LILCO's plan, evacuation of hospitals will

be considered in an emergency where a decision to evacuate all or part of the EPZ has already been made. We infer that, without additional guidance, the natural propensity of the decisionmaker might be to also evacuate the hospitals without further analysis. The advice the plan gives, however, is to consider other factors, which include both the health impacts of evacuation and those of projected radiation doses, before ordering evacuation. Hospital ETEs have only an incremental role to play in that decision. We continue to believe that this is a reasonable plan which in no way forecloses evacuation as a possible protective action.

It is clear in context, however, that the decision to evacuate hospitals will be based substantially on consideration of factors other than ETEs alone. Tr. 20,652-54 (Driekorn). While ETEs may have some role to play in decisionmaking, other factors will dominate. Nevertheless, NRC regulations and guidance require that specific ETEs be computed for hospitals. LILCO has fulfilled that requirement. We find, however, that the precision in ETEs demanded by Intervenors has no useful role to play in an evacuation decision for hospitals in the Shoreham EPZ where that decision will be secondary to one already made for the EPZ. LILCO's expert in emergency planning thought that uncertainty in ETEs on the order of 1 to 1 1/2 hours would have little influence on the decisions to be made for hospitals. Tr. 20,654 (Driekorn). We agree. Dr. Hartgen thought that the residual uncertainty in any one ETE was not less than 1 hour. Tr. 20,803 (Hartgen). Any lingering doubts related to a continuing concern for consideration of a broader range of sensitivity analyses based on extreme assumptions. The Board concludes that the reasonably possible variation in average vehicle speeds in an evacuation is not a major source of variation in ETEs for hospitals.

Finally, we consider whether there is any merit to the more extreme bounds of uncertainty asserted by Intervenors. We find their assertions have little merit because they are based on flawed and misleading evidence. The Board has long since lost its status as neophytes in the assessment of Long Island traffic disputes, and we are by now not inclined to patience with arguments based on citation of inapplicable literature, alternative analyses based on speculative input assumptions, narrowly cast argument on the meaning of "average" or general assertions of comprehensive error and unreliability.

The Board agrees with Staff, for example, that there is no ambiguity on the meaning of "average speed." Tr. 20,486-88 (Urbanik). Even without the Staff's explanation, we never had any trouble understanding that average speed in the context of a modeling exercise means the overall portal-to-portal average for a population of vehicles. It is elementary that the average takes account of the fact that instantaneous speeds at any time during a trip might fall to zero or show more variation than overall trip averages. We do not accept the view that short-term extremes that could be observed somehow imply that average speeds could be substantially different from those based on experience.

Neither do we accept Intervenors' assertion that average trip speed should be 6 mph for hospital evacuation because we adopted that figure in our Partial Initial Decision for speeds within the EPZ. We accepted that figure for a full EPZ evacuation which, we found, would take about 5 hours. It was an average for the full road network which included urban streets and intersections as well as expressways. It did not apply to expressways alone. LILCO used 6.7 mph in its hospital ETE analysis where hospital evacuation overlapped in both space and time with the EPZ evacuation. LILCO Rebuttal Testimony, ff. Tr. 20,586, at 16. (Driekorn, Lieberman). This was proper. It was misleading, however, for Intervenors to assert without supporting evidence that that speed will persist on expressways in a hospital evacuation long after the EPZ evacuation is complete. New York Testimony, ff. Tr. 20,692, at 18; New York Surrebuttal, Attach. 4(D) (Hartgen); Tr. 20,628-30 (Lieberman). We similarly do not accept a citation to literature suggesting to Intervenors that 8 mph is a likely average expressway speed. That number was picked off the geometric midpoint of a nonlinear function arbitrarily and without basis, and it applied to a jammed condition or facility closure. New York Testimony, ff. Tr. 20,692, at 13, Attach. 7, Fig. 3-4 (Hartgen); Tr. 20,744-47 (Hartgen); Tr. 20,804 (Hartgen); Tr. 20,810 (Lieberman). Finally, we reject Intervenors' citation of literature that applied to a highway ramp for a 4-second duration as evidence that general average expressway speed could be substantially lower than LILCO assumed for the full duration of an evacuation. New York Testimony, ff. Tr. 20,692, at 14 (Hartgen); Tr. 20,750-53 (Hartgen); Tr. 20,488-89 (Urbanik).

The most the record will support is that overall average speeds for a population of hospital vehicles might vary from base estimates by something less than 5 mph. That much variation produces only small changes in ETEs by the estimates of both parties. The Board concludes that inclusion of such sensitivity analyses in LILCO's plan would not enhance decisionmaking capability for hospitals, and we therefore decline to issue such an order.[16]

Intervenors' credibility in this part of the proceeding was diminished by insistence that LILCO's evacuation times are unreliable or likely longer when the evidence showed that their own ETEs tended to confirm rather than refute LILCO's. LILCO's results, which are supported by the Staff, are based on observation and experience available to all traffic engineering professionals. We doubt that the ordinary experience of professionals on a subject so mundane as vehicle speeds can in good faith be as variable as was asserted in this proceeding. Neither can we find merit in the pursuit of a sensitivity issue on the basis of a

[16] Our disposition of the sensitivity issue also disposes, without further analysis, of Intervenors' corollary demand that LILCO be ordered to provide on-line sensitivity analyses during an actual accident which would necessitate estimation and reporting of travel speeds during an evacuation. Governments' Proposed Finding at 164. Such a suggestion would be unsupportable in the regulations even if we had found cause to order the insertion of precalculated sensitivity analyses into the plan.

previous Board decision which clearly stated that sensitivity had no bearing on the ultimate success or failure of the plan. The scope of the remanded issue was narrowly defined by the Board to permit exploration of the fundamental bases for the estimates. When it became evident that there was no factual cause for controversy within the defined scope of the proceeding, the good-faith course would have been to settle or withdraw the issue.

This is not the first time in the *Shoreham* case that the parties have had the opportunity to explore the fundamental basis and accuracy of ETEs. By now, we would expect some understanding that the planning goal of NRC's guidance is to make accurate estimates, whatever they may be, and not to achieve some preconceived performance standard for speed of evacuations or to adopt ETEs that are "conservatively" long. In assessing the estimates, the Board is not permitted to look in only one direction for possible error in a misguided pursuit of conservatism. We must equally consider the possibility that evacuation times might be shorter than LILCO found.

In a predictive problem having intrinsic uncertainty of estimated variables, it constitutes reasonable assurance of quality to find that the estimates are derived objectively and are unbiased, (i.e., not deliberately lengthened or shortened) and that the variance is not unreasonably large. In this case there is no evidence that LILCO deliberately or inadvertently selected parameters that would unrealistically lengthen or shorten the results it obtained. Neither is there evidence that the bounds of uncertainty are unreasonable. LILCO based its estimates on actual experience with traffic under likely conditions of congestion. We conclude, therefore, that the results it obtained were unbiased and that the uncertainty in its ETEs constitutes intrinsic predictive uncertainty which does not prohibit a finding of adequacy of the ETEs it presented.

I. Decision

The Board finds that LILCO has sustained its burden of proof concerning the bases and accuracy of hospital ETEs and that the Intervenors' peripheral demands for inclusion of sensitivity analyses in the plan are without merit. The remand instructions of the Commission have been fulfilled, and the issue is resolved in LILCO's favor. The Board concludes that LILCO's ETEs for hospital evacuation are adequate to meet the standards and criteria of NRC's regulations.

IV. REALISM DISCOVERY AND SANCTIONS

A. Introduction

The development of emergency response plans and preparedness for the Shoreham nuclear plant with cooperation from State and County governments has shifted during the past 6 years to one of unyielding, and frequently bitter, opposition. The result has been a major expenditure in time and resources by all participants in this proceeding. The controversy over whether an adequate emergency plan is feasible for the 10-mile EPZ of the Shoreham facility has produced the main litigative battleground between New York State, Suffolk County, and the Town of Southampton (Intervenors) on the one hand, and the Long Island Lighting Company (LILCO) on the other. Except for eight contentions involving the realism principle, and three other issues resolved in other sections of this opinion (school bus drivers, emergency broadcast system, and hospital evacuation), questions concerning the adequacy of emergency planning have been decided in LILCO's favor. *See* LBP-85-12, *supra* note 1.[17]

In this part of the Board's decision, we find the Intervenors in default, bring litigation of the realism contentions to an end, dismiss Intervenors from the proceeding, and find that, absent the sanction of dismissal, a decision on the merits of the issues would have been rendered in Applicant's favor.

B. Background

The realism contentions have their origin in the decision of Applicant to develop its own Utility emergency plan after Intervenors resolved to discontinue participation in such planning and to oppose the Utility's license application. After failing to preclude a continuation of licensing proceedings on the Applicant's emergency plan,[18] the Intervenors were successful in obtaining a favorable ruling on its legal authority contentions which alleged that certain of Applicant's proposed emergency activities were prohibited by State law. LBP-85-12, *supra*, 21 NRC at 895-900. The Board's decision, supported by the Appeal Board, rejected Applicant's realism argument that, in an actual emergency, Intervenors would authorize the Utility to perform the unauthorized functions. These determinations were, in turn, reversed and remanded by the Commission. CLI-86-13, 24 NRC 22 (1986). The Commission ruling, founded on the presumption

[17] In previous decisions, all technical health and safety issues have similarly been adjudicated in LILCO's favor. *See* LBP-83-57, *supra*, and LBP-84-45, 20 NRC 1343 (1984).
[18] CLI-83-13, 17 NRC 741 (1983).

that, in a radiological emergency, State and local governments would cooperate with a utility-sponsored emergency plan and act to protect the health and safety of the public, was subsequently amplified and adopted in a new regulation. 10 C.F.R. § 50.47(c)(1), 52 Fed. Reg. 42,078 (Nov. 3, 1987).

The Commission has made it clear that the responses of New York State and Suffolk County in a radiological accident are of critical importance in the evaluation of the utility's emergency plan. The Commission has stated:

> The County appears to assert (Motion 2) that, in the event of a radiological accident at Shoreham, County personnel could not lawfully make use of the LILCO plan, even if this was under the circumstances the best way to protect the safety of the citizens of Suffolk County. We find this assertion too preposterous an abrogation of the County's obligations to its citizens to be taken seriously.[19]

Despite the Commission's conclusion, the consistent position of the State and County has been that, although they would respond in an emergency, they would not follow LILCO's plan nor would they cooperate with LILCO. Similarly, they refused to provide any description at all of the efforts that they might undertake, stating that to do so would be purely speculation:

> Q. You have stated that Suffolk County will have no plan for an accident at Shoreham and that you would not follow LILCO's Plan. What if the NRC were to license Shoreham anyway?
>
> A . . . it is unproductive to engage in make-believe by pretending how the County would act under the hypothetical circumstances of an accident at Shoreham after that plant were somehow licensed by the NRC. For reasons stated above and the attached affidavit, we would never follow LILCO's Plan or coordinate in any way with LILCO. Nor do I know what resources would be available.

Halpin (Suffolk County Executive) Testimony on Behalf of Suffolk County Concerning Contentions 1-2, 4-8, and 10 at 7-8 (Apr. 13, 1988).

> I cannot speculate what specific actions the State would take, when they would be taken, or what resources might be available in the hypothetical situation that the NRC were to license Shoreham to operate at levels above 5% power, the courts were to uphold that licensing decision, and there were a serious accident at the plant that required an offsite emergency response.

Axelrod (Chairman, New York State Disaster Preparedness Commission) Testimony on Behalf of the State of New York at 3-4 (Apr. 13, 1988).

---

[19] CLI-86-14, 24 NRC 36, 40 (1986).

In memoranda dated February 29 and April 8, 1988, the Board provided its interpretation of the new Commission rule as guidance on the realism contentions.[20] We stated, *inter alia*, that the effect of the new rule

> is to place a responsibility on state and local governments to produce, in good faith, some adequate and feasible (emergency) response plan that they will rely on in the event of an emergency or it will be assumed in the circumstance of this case that the LILCO emergency plan will be utilized by Intervenors here.

See LBP-88-9, *supra*, 27 NRC at 368.

In both of its Memoranda and Orders, the Board stated that there was a presumption in the new rule (10 C.F.R. § 50.47(c)(1), that the State and County would follow or rely on the LILCO plan which presumption was rebuttable by timely evidence that a different but adequate plan would be followed. *See* February 29 Order at 2 and April 8 Order, LBP-88-9, *supra*, 27 NRC at 368. The Board stated further that a failure on the part of the Governments to present a case for analysis and evaluation could result in a finding of default and hence in an adverse ruling on the contention to which it was applicable. February Order at 4 and April Order, LBP-88-9, 27 NRC at 370.

Although Intervenors filed testimony in response to these orders, that filing was not responsive to the Commission's concerns on the realism issue and was part of a filing objecting to the Board's orders interpreting the new rule, *supra*, and, in turn, this precipitated a number of pleadings and responses from all parties. These filings included concurring recommendations from LILCO and Staff that since Intervenors' testimony failed to produce some positive evidence of a Governmental response to an emergency for the Board to analyze, the contentions should be dismissed. LILCO also complained that its discovery efforts had been hampered and stalled by State and Suffolk County counsel for Intervenors.[21]

In a May 10 conference with counsel, the Board found that Intervenors' counsel's objections to deponents' questioning during discovery were obstructing the discovery process, and ordered that depositions of witnesses Halpin and Axelrod be resumed, and ruled that all emergency plans in New York State requested in interrogatories are relevant to the proceeding. *See* Tr. 19,381-84 (Gleason). In a subsequent Bench Order, May 26, the Board also ordered continuation of depositions of additional officials, requested by LILCO that had

---

[20] Confirmatory Memorandum and Order (Ruling on LILCO's Motions for Summary Disposition of Contentions 1, 2, 4, 5, 6, 7, 8 and 10, and Board Guidance on Issues for Litigation), February 29, 1988 (unpublished), and Memorandum (Extension of Board's Ruling and Opinion on LILCO Summary Disposition Motions of Legal Authority (Realism) Contentions and Guidance to Parties on New Rule 10 C.F.R. § 50.47(c)(1)), LBP-88-9, 27 NRC 355 (1988).

[21] *See* Governments' Objection to Portions of February 29 and April 8 Orders of April 13, 1988; LILCO's Response of April 22, 1988; Supplemental Response of May 2, 1988; and Staff Response of April 28, 1988.

been terminated unilaterally by Intervenors' counsel, and compelled responses to relevant interrogatory queries. The Board declined to reconsider its decision interpreting the new rule. Although it was now evident that, in addition to failing to respond to the Commission's concerns, the Intervenors were also actively frustrating the legitimate efforts of LILCO and Staff to discern what their emergency response might be. The Board refused to dismiss the contentions or hold the Intervenors in default at that time for not presenting a response case for evaluation, and ruled that Intervenors would be allowed to cross-examine on any matter in the proceeding not previously litigated or adjudicated.[22]

C. Suffolk County Emergency Operation Plan

On May 27, the Board was advised by LILCO's counsel of Intervenors' submission in discovery of a previously undisclosed 760-page document labeled as a New York State–Suffolk County Emergency Operation Plan (EOP). LILCO requested time to review the material, the opportunity to depose a number of State and County officials who presumably possessed information on the document, and indicated that a potential integration with LILCO's emergency plan required study and a possible change in testimony. Intervenors' response capability and the nature of such response in a nuclear incident at Shoreham have been for some years the critical issues in this proceeding and the production at that late date of a document evidencing an emergency response preparation and organization had to be critically viewed. Consequently, we requested written responses from the parties on the character of the document. Tr. 20,535, *et seq.* On June 3, the Board ordered additional discovery (of persons to be selected by LILCO) in connection with the newly produced emergency plan. Tr. 20,840 (Gleason).

D. Intervenors' Notice on Remand Proceeding

On June 10, immediately prior to a telephone conference requested by Applicant to deal with a continuing impasse on Board-ordered discovery, a filing was received from Intervenors, labeled "Government's Notice That the Board Has Precluded Continuation of the CLI-86-13 Remand," June 9, 1988 (Intervenors' Notice).

Intervenors' assertions, not clearly delineated in the filing, suggested that due to the Board's interpretation of the new rule on February 29 and April 8, 1988 — of which Intervenors had earlier unsuccessfully sought reconsideration

[22] The Board indicated that such examination would be permitted on LILCO's emergency interface with a best-efforts assumption of State and County responses as well as on any unresolved issues raised by the Licensing Board or Commission. *See* Tr. 20,432-36 (Gleason) and Board Memorandum and Order, June 21, 1988 (unpublished).

— the remanded proceeding of CLI-86-13 and the Board-ordered discovery of officials on LILCO's proposed interface procedures, with the possible exception of Halpin and Axelrod, could not go forward.

Intervenors' Notice became the priority subject of the telephone conference. On questioning, the position of the County and State was manifest that since both governments had stated repeatedly that they would not cooperate with LILCO on emergency planning or follow its plan, they could not legally have their officials deposed on issues of interfacing with LILCO's plan. In Intervenors' view, this did not constitute a willful refusal to proceed as much as a legal constraint that prevented them from participating. The Board interpreted Intervenors' motion as an unjustified refusal to comply with the Board's orders on the realism issue, stated that discovery went beyond any interface issues and ruled that, as a result, under Commission policy guidance, appropriate sanctions would be imposed. These would include either dismissing the realism contentions or rendering a default judgment on the merits in Applicant's favor. The Board requested briefs from the parties on the proposed sanctions (received on June 15) and retained jurisdiction of the separate matter concerning the Suffolk County Emergency Operation Plan. *See* Board Telephone Conference, Tr. 20,847, *et seq.*, June 10, 1988. Despite these rulings, Intervenors continued to stonewall LILCO's discovery requests.[23]

As a result, LILCO requested a telephone conference to deal with what it characterized as a "studied disregard of the legitimate authority" of the Board. That conference was held on June 24. Tr. 20,899.

In the conference and a related conference on June 29, the Board decided that in order to safeguard all parties' rights prior to resolving these issues, a focused hearing with appropriate witnesses selected from recommended lists advanced by LILCO and Intervenors would be held. The hearing (July 11, 12, 14, and 19, 1988) considered the production or nonproduction of emergency plans and the circumstances surrounding any nonproduction.[24]

---

[23] On June 16, pursuant to a LILCO request, the Board issued subpoenas for depositions of two former County officials who had been advised not to appear by counsel for Suffolk County. In a June 17 telephonic conference, the Board ordered Intervenors to produce the deponents requested by LILCO in its June 15 brief, and compelled answers to a third set of interrogatories. Intervenors filed an appeal notice of the Board's June 10 decision on sanctions, a June 20 motion to vacate, and alternatively, a June 28 motion to stay the Board's decision retaining jurisdiction of the discovery abuse issue. On the following day, Intervenors filed a motion to quash the subpoenas. Prior to filing its motion to vacate and/or stay, Intervenors' counsel advised LILCO it did not intend to comply with the Board's June 17 reconsideration and clarification motions it intended to file and that its motions would also cover discovery of the subpoenaed witnesses. *See* D. Irwin's letter to Board, June 20, 1988. Both the Appeal Board and this Board subsequently dismissed Intervenors' motions as premature. *See* Appeal Board Order, June 27, 1988 (unpublished), and Licensing Board Order, June 30, 1988 (unpublished).

[24] The parties were not required to prefile testimony, and were permitted to cross-examine the witnesses after the Board concluded its questioning. Since prehearing discovery had not been provided for the proceeding, to secure the parties' rights, they were not restricted by the scope of questions on direct examination. Intervenors recommended six (6) witnesses for the hearing, LILCO nineteen (19) and the Board designated the appearance of twelve (12). The witnesses, present or former officials who had or should have had knowledge of any State

(Continued)

E. Intervenors' Position on Sanctions

In filings of June 15, July 26, and August 1, Intervenors presented their arguments why no sanction should be imposed.[25] These are summarized below.

1. The evidence of the hearing on possible discovery abuse demonstrates that neither County nor State was unresponsive to LILCO's discovery and document requests and that any nonproduction of the County EOP was inadvertent. Further, there was no harm or prejudice to LILCO from an inadvertent nonproduction of the EOP since LILCO was furnished in discovery the bulk of the emergency planning documents in 1982 and 1983 that did exist. LILCO knew of the existence of the EOP in 1982 and 1983 and also participated in an annual hurricane conference where the EOP was discussed. Its own employee, Kelly, received a copy of the EOP from a personal contact in 1985-86 and, finally, it was only after LILCO received the EOP through Kelly and the State Disaster Preparedness Plan and Radiological Preparedness Plan had been furnished that LILCO raised questions in 1987 about government responses and capabilities. *See* Intervenors' August 1 Reply at 74-82.

2. The Board's erroneous interpretation of 10 C.F.R. § 50.47(c)(1) and application to facts and evidence of the case made it impossible to proceed with the remand and was responsible for not complying with discovery orders. *See* Intervenors' July 26 Supplement at 36-37 and August 1 Reply at 84-85.

3. Neither a dismissal of the contentions or of Intervenors from the proceeding nor any other sanction is warranted under the circumstances of the case. Intervenors previously produced their two witnesses, Halpin and Axelrod, for deposition and continued to offer them. During the April time frame, Intervenors produced eleven additional State and County witnesses for deposition, and testimony at the discovery abuse hearing demonstrated that the persons LILCO sought to depose could only provide information duplicative of Halpin and Axelrod testimony. *See* Intervenors' Reply at 82-88.

4. Although Intervenors challenge the imposition of any sanction under the circumstance of this case, they argue that dismissal from the proceedings is unwarranted, because it is the ultimate sanction, which is reserved for the most severe transgressions. Citing NRC cases as precedent for refusing such sanctions even where the failure to comply with Board discovery orders has been indicated, Intervenors contend that federal courts require that bad faith must be shown in

---

and/or County emergency plans existing during discovery periods, were sequestered during the proceeding. One witness, Norman Kelly, a LILCO employee, was alleged by Intervenors to have received a copy of the EOP in 1985. Intervenors were directed to answer LILCO's third set of interrogatories and to produce any documents related to emergency plans. *See* Telephone Conference, Tr. 20,931, *et seq.*, June 29, 1988.

[25] Governments' Response to Board Order of June 10, 1988 Concerning the CLI-88-13 Remand (Intervenors' June 15 Response); Suffolk County and State of New York Supplement to June 15 Filing (Intervenors' July 26 Supplement); Governments' Reply to July 26 Supplement Filed by LILCO and the NRC Staff Seeking Imposition of Sanctions (Intervenors' August 1 Reply).

such cases. Here, Intervenors submit there is no evidence of bad faith and when a party cannot comply through legal constraints, such as exist in this case, no such sanction can be imposed. *See* Intervenors' August 1 Reply at 88-91.

Overall, the relative importance of the unmet discovery obligation in this case is small, Intervenors argue, since there is no basis to conclude that the depositions sought by LILCO would provide additional material information on Intervenors' best-efforts response, and there is no evidence of any pattern of improper behavior. Finally, in Intervenors' view, the totality of the circumstances do not justify sanctions where, as here, Board orders, exceeding the Board and NRC's legal authority, in fact, caused the discovery impasse requiring testimony about actions that officials could not legally take.

Winnowing the arguments against sanctions by Intervenors, the position that none is justified relates to the view that their performance in meeting discovery obligations prior to June 9 was acceptable and afterwards, in not complying, was excusable. The Applicant was, accordingly, not prejudiced by any nonproduction of the Suffolk County Emergency Operation Plan: LILCO should be held responsible itself for its nonuse, and the Licensing Board carries the burden of creating the discovery refusal through its issuance of erroneous orders.

F. Discovery Responsibility

Before addressing Intervenors' arguments based on the hearing relating to the EOP as well as the Commission's standards governing the imposition of sanctions, we need to confront Intervenors' justification for refusing to proceed with discovery allegedly because the Board's orders required them to take actions that are legally precluded. Intervenors' position is totally unacceptable. The Board's rulings did not curtail or coerce any particular discovery responses. We note again the Board's bench ruling of May 26 (Tr. 20,433 (Gleason)) and supporting Memorandum of June 21 at 6 where we stated that the realism contentions would not be dismissed due to a failure of Intervenors to produce, in their testimony, some evidence of an emergency response plan. We noted there the new rule, 10 C.F.R. § 50.47(c)(1), did not compel, nor could it compel, Intervenors to produce a particular response plan for Shoreham or produce an emergency plan for any other crisis. Board Memorandum and Order, June 21, 1988, at 6. In order to reach an informed decision with regard to the effectiveness of LILCO's emergency plan, the Commission needs to know the extent to which Intervenors will respond in an emergency. Intervenors' Notice, coming as it did, following Intervenors' unsuccessful attempt to obtain reconsideration of the Board's Orders, can only be viewed as a part of an overall plan to thwart that inquiry and subvert the Commission's process, for political ends.

The obligation every litigant faces to provide (through discovery) information on matters in controversy is a responsibility that can neither be ignored nor evaded. As the Supreme Court has stated, "Mutual knowledge of all relevant facts gathered by both parties is essential to proper litigation." By eliminating the element of surprise at hearings, discovery educates in advance the basic value of party claims and defenses.[26] Discovery through deposition and oral examination of any person is authorized by the Commission's Rules of Practice, and to protect parties from abuse, licensing boards can control and restrict improper use by granting protective orders. *See* 10 C.F.R. § 2.740a-c, 2.40a(a).

It is unarguable that the fair and expeditious consideration of issues in nuclear license application proceedings requires respect for and compliance with the rules of discovery. In its *Statement of Policy on Conduct of Licensing Proceedings*, the Commission has pointed this out:

> fairness to all involved in NRC's adjudicatory procedures requires that every participant fulfill the obligations imposed by and in accordance with applicable law and Commission regulations.[27]

To be able to obtain evidence or secure information on the existence of evidence and to provide opposing parties the same option is interchangeably then a privilege and duty of each applicant and intervenor in NRC administrative proceedings. To secure those rights and responsibilities in achieving the legitimate objective of discovery — the narrowing of issues, and expediting the hearing of contested matters — licensing boards are provided, by NRC Rules of Practice, with the authority required to properly regulate hearing procedures. *See* 10 C.F.R. § 2.718.

G. Sanction Authority

In order to manage the course of proceedings and ensure that discovery procedure is effective, the Commission provides the requisite authority to impose appropriate sanctions on parties not fulfilling their participatory responsibilities. 37 Fed. Reg. 15,131 (July 28, 1972). The failure of any party to appear at a hearing or comply with any discovery orders can constitute a default, the consequence of which authorizes licensing boards to make such orders in regard to the failure as are just, including finding the facts in accordance with the claim of the party obtaining the order. 10 C.F.R. § 2.707. The sanctions available to assist boards in the responsible management of licensing proceedings cover a wide range of options similar to those authorized by Rule 37 in the Federal

[26] *Hickman v. Taylor*, 329 U.S. 495, 507 (1947); 4 Moore's Federal Practice 26-60.
[27] CLI-81-8, 13 NRC 452 (1981).

Rules of Civil Procedure. As the Commission points out, such sanctions can extend from a simple warning for the miscreant to dismissal, in more severe cases, from the proceeding.[28]

In the Commission's policy statement, *supra*, boards are requested to consider in the selection of appropriate sanctions, the

> relative importance of the unmet obligation, its potential for harm to other parties on the orderly conduct of the proceeding, whether its occurrence is an isolated incident or a part of a pattern of behavior, the importance of the safety or environmental concerns raised by the party, and all the circumstances.

Sanctions of a more serious nature are generally reserved for the most critical failures of parties fulfilling their discovery obligations. *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 1), ALAB-719, 17 NRC 387, 392 (1983). The practice in federal courts, with which the Commission's policy is consistent, may also be reviewed. *Id. See also Cincinnati Gas and Electric Co.* (William H. Zimmer Nuclear Power Station, Unit 1), LBP-82-47, 15 NRC 1538, 1542 (1982).

H. Findings on Commission Policy

It is the Board's opinion that any fair evaluation of Intervenors' conduct in refusing to comply with the Board's discovery orders of May 26 and June 3 calls for the imposition of the severest sanctions available. A review of factors to guide us in the selection of sanctions, as set forth in the Commission's *Policy on Conduct of Licensing Proceedings*, demonstrates that, in the circumstances of this case, Intervenors have crossed a legislative rubicon.

The critical issue in this proceeding is what activity the State and County would perform in the event of an accident at Shoreham.[29] The importance of discovery in being able to plumb the ramifications of the County EOP with State and County officials, in light of previous uniform discovery replies that any State and County response would be "speculative," cannot be overestimated. Recent testimony from Dr. Axelrod, the State's top official responsible to the Governor on disaster and emergency matters, suggests that the Governor's decision to oppose the Shoreham facility was not based on a State technical evaluation of an emergency plan for Suffolk County. The Applicant is entitled to explore, therefore, through State witnesses, whether that decision may have been more of a political edict as the testimony now standing implies. *See* Tr. 21,699-707. We

---

[28] *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, *supra*, 13 NRC at 454.

[29] CLI-86-13, *supra*, 24 NRC at 28; LBP-87-26, *supra*, 26 NRC at 216; Board Memoranda and Orders, February 29, 1988 at 4 (unpublished), and April 8, 1988, LBP-88-9, *supra*, 27 NRC at 371.

also reference, as an area for potential exploration, evidence relating to Dr. Axelrod's belated concerns for safety vulnerability within New York State after having disconnected, on advice of counsel, dedicated emergency communication lines with LILCO. *See* Tr. 21,710-12, 15-18, and LILCO Discovery Exh. 41. This discovery hearing testimony is referenced to establish the fact that LILCO would have been able to pursue important and relevant areas of questioning with other State and County witnesses if discovery had been permitted to proceed in the case.

The potential for harm to other parties and the orderly conduct of the proceeding through Intervenors' behavior here is incalculable. As one example, to be unable to pursue any inquiries on the Suffolk County emergency plan and the resources available to support it forces LILCO, the Staff, and the Board to evaluate critical issues only through the screen of its two preselected State and County witnesses. This limits the value of discovery in uncovering any available information supporting or contradicting Intervenors' litigative positions, and is obviously unfair, prejudicial, and not serving the ends of justice.

The impact of the discovery refusal on the orderly conduct of this proceeding needs little emphasis here. It not only has caused a collateral proceeding on discovery abuse considerations to occur, but has diverted the attention of other parties and the Board from the realism issues that were scheduled to be litigated.

The Board views Intervenors' conduct as the culmination of a pattern of behavior designed to prevent the Commission from reaching an informed conclusion with respect to the adequacy of LILCO's emergency plan.

The importance to safety of the realism contentions cannot be overemphasized. Yet, although they created the situation that made these contentions important, Intervenors refuse to contribute to their resolution. Their prefiled testimony, reiterating their previous recalcitrance, offers no help. As stated by Intervenors, their best-efforts response is to not cooperate in any manner with LILCO's emergency effort. *See* Governments' Objections to Portions of February 29 and April 8 Orders in the Realism Remand and Offer of Proof (April 13, 1988), at 17.

This is not the first occasion where Intervenors' actions have precipitated the imposition of a sanction. Onsite emergency planning contentions were dismissed by the Licensing Board after Intervenors refused to participate in Board-ordered public prehearing examinations.[30]

Throughout the protracted period of this proceeding, Intervenors have provided little evidence of a motivation to have this controversy (whether an adequate emergency plan meeting NRC regulatory standards could, or could not, be developed for the Shoreham facility) resolved on the merits, and in a timely

[30] LBP-82-115, 16 NRC 1923 (1982).

manner. They have chosen to ignore here the Licensing Board's decision in 1983 which stated:

> if the County seeks to have its findings adopted [the inadequacy of LILCO's emergency plan and the nonfeasibility of developing adequate emergency planning for Shoreham], it must litigate before us the facts which it believes support its view that it is not *feasible* to implement emergency preparedness actions which would meet NRC regulatory requirements in the event of a radiological emergency at the Shoreham nuclear power plant.[31]

In the place of presenting a positive case to evidence the nonviability of an emergency plan, Intervenors instead have persistently relied on statements of noncooperation with the Applicant and on County resolutions and policy statements that an adequate emergency plan was not possible. This persistency has been in the face of NRC statements and federal case law that the adequacy of emergency planning is the jurisdictional responsibility of the Commission.[32]

Not only have the Intervenors refused to provide any information on State and County emergency resources so that the feasibility of emergency plans could be appraised, although urged to do so by the Commission and Licensing Board (and such information the record now shows Intervenors possess), but procedural mechanisms have been consistently utilized in delaying the Board and Commission in carrying out its licensing responsibilities. Such activities include, but are not limited to, the following: County opposition based on executive privilege to discovery requests for emergency planning documents (LBP-82-82, 16 NRC 1144 (1982)); objection to Board procedure for expediting review of emergency planning contentions (LBP-82-107, 16 NRC 1667 (1982)); motion to terminate emergency proceeding on basis of County resolution that no emergency plan could be adopted (LBP-83-21, 17 NRC 593 (1983)); challenge to LILCO's financial qualifications (LBP-84-30, 20 NRC 426 (1984)); efforts to cancel exercises to test emergency preparedness plan (CLI-86-14, *supra*); and a refusal to permit discovery on EBS issues.[33]

We also note the actions of the State and County to frustrate LILCO's attempt to obtain relocation centers, its disconnecting emergency telephones and returning them to LILCO, *supra*, returning LILCO's delivered copies of

---

[31] LBP-83-22, 17 NRC 608, 643 (1983) (emphasis in original).

[32] CLI-83-13, 17 NRC 741, 743 (1983); *Citizens for an Orderly Energy Policy v. County of Suffolk*, 604 F. Supp. 1084, 1095 (E.D.N.Y. 1985).

[33] Intervenors' refusal to permit discovery to LILCO in the EBS issue would be sanctionable in the ordinary case. We reject as dilatory the suggestion, as Intervenors contend, that the Board would order unilateral discovery for the benefit of only one party. The Board interprets that argument in this case as additional evidence of a strategy for obstructing the factual resolution of the issues. We did not decide the EBS issue on the basis of Intervenors' refusal because LILCO's motion was adequate to demonstrate compliance with NRC regulations and it was uncontroverted by material facts. *See* Letters, Missal to Irwin, June 10, 1988, and Sisk to Missal, June 13, 1988; Attachments to LILCO's Brief on Appropriate Remedy for Failure to Comply with Board Orders, June 15, 1988.

its emergency plans (except those needed for litigation purposes), *ex parte* communication from the Governor to the Commission on closing Shoreham and ceasing its operation (May 15, 1986), and the passage of County law establishing criminal penalties for any person participating in emergency exercises and simulating governmental functions (enjoined by court order).[34] Although the activities participated in by Intervenors may be considered individually as lawful conduct during contested litigative proceedings, in combination they represent a pattern of substantial and continual actions to undermine LILCO's efforts to develop an adequate emergency plan and frustrate federal review. This prevents the fair adjudication of the merits of LILCO's plan. It is established by federal rule that the NRC must consider the adequacy of a utility emergency plan. CLI-83-13, *supra*, 17 NRC at 743. However, Intervenors' actions come perilously close to constituting interference with the federal government's exclusive power to regulate matters of radiological safety. Neither state nor local governments may be allowed to frustrate or impede the NRC's responsibility and ability to evaluate a utility's radiological emergency response plan. We are forced to conclude that not only are Intervenors unwilling to contribute to the resolution of the important realism issues, but have actively sought to frustrate the Commission's efforts to arrive at an informed judgment.

Finally, the Commission asks boards contemplating the issuance of sanctions to consider all of the circumstances and to tailor the sanctions to mitigate the harm caused by a party's failure to fulfill its discovery obligations. We see no indications in the events that led up to, surrounding or subsequent to Intervenors' Notice (June 9) to the Board that mitigate against a determination of willful, bad-faith refusal to comply with this Board's orders on discovery. No protective order was requested under 10 C.F.R. § 2.740(c), no advance warning was provided that Intervenors did not intend to comply with the Board's orders, and no subsequent offer of compliance was made beyond the unacceptable proffer to provide its two realism witnesses. The fact that Intervenors' refusal to comply was made to coincide with the proximate start of the realism hearings and immediately after an emergency plan for Suffolk County had surfaced and was premised on two month-old orders of the Board interpreting a Commission regulation are additional factors that combine to compel the issuance of the most severe sanction.

In noting that Intervenors have been claiming for several years that no adequate plan can be developed for Shoreham and that the LILCO plan is inadequate, the Commission has stated:

---

[34] *See Long Island Lighting Co. v. County of Suffolk*, 628 F. Supp. 654, 666 (E.D.N.Y. 1986).

They are entitled, as litigants before us, to advocate that position; they are not, however, entitled to obstruct our inquiry into the facts necessary to enable us to resolve that assertion.[35]

We find that neither the New York Governor's policy statement nor the resolution of Suffolk County that LILCO's emergency plan will not be utilized and that no County emergency response plan for the Shoreham facility will be developed, provides justification for Intervenors' claim of an inability to comply with Board-ordered discovery. This Board has already found, based on a lengthy record, that an emergency plan for Suffolk County was not impossible to implement; such assertions by Intervenors are no longer an issue.[36] A Licensing Board decision, affirmed by the Commission, has also ruled that Suffolk County's resolution cannot be used to prevent the evaluation of LILCO's emergency plan.[37]

We find, accordingly, that Intervenors' refusal to comply with the Board's orders to be an act of willful disobedience and, under the circumstances here, as constituting bad faith. We conclude that Intervenors' conduct warrants the imposition of the most severe sanction available to licensing boards.[38]

In tailoring sanctions to meet the circumstances of disobedience to Board orders, we have considered the Staff's recommendation to merely dismiss the realism contentions at issue here. Although this sanction is not as severe as dismissal of a party (Applicant's Recommendation), it nevertheless has applicability where the sanction can curb the harm complained of and where it operates as a deterrent of future reproachable conduct. We note, however, that a prior finding of default and dismissal of contentions as a sanction did not have the intended effect of curbing the harm or deterring reproachable conduct. In evaluating the two sanctions, the entire record of this proceeding was reviewed for the probative significance it imports.

---

[35] CLI-86-14, *supra*, 24 NRC at 40.

[36] LBP-85-31, 22 NRC 410, 427 (1985).

[37] LBP-83-22, *supra*, 17 NRC at 637, and CLI-83-13, *supra*, 17 NRC at 742.

[38] We have no disagreement with the NRC case law cited by Intervenors (August 1 Reply at 89) although the factual situations differ: the *Byron* case involved a delay in discovery participated in by the Applicant and the Board; the *Kerr-McGee* case, inadequate interrogatory answers; and the *Duke Power* case, nonresponsive interrogatory answers. None concerned an outright refusal to participate in Board-ordered discovery. Cases in the federal courts simply demonstrate that willfulness was a prerequisite for severe sanctions. In the *Rogers* case cited, the party in that controversy made a good-faith effort to comply with the discovery order by producing as many of the requested documents as possible and sought waivers from the Swiss Government which had confiscated the records. *See Rogers* case at 201-03. There are no redeeming features in the case at hand. Here we have circumstances where there is no allegation or evidence of any penalty for government witnesses testifying at depositions, the refusal to participate in discovery was willful, and there were no subsequent offers to remedy the refusal. Being filed on the eve of scheduling a hearing on the merits of the realism issues, and following in close sequence, notice of a previously undisclosed existing County Emergency Operation Plan, Intervenors' action can only be considered as constituting bad faith.

I. Hearing on Discovery Issues

The critical questions raised by the hearing testimony on nonproduction of emergency documents are the following:

1. Did the EOP exist at any period prior to May 24, 1988?
2. If the EOP existed, was it produced in discovery prior to that date. If not, what were the reasons for its nonproduction?
3. Were other emergency-related documents not produced?
4. Was the nonproduction of any emergency documents prejudicial to LILCO's position in the proceeding?

Existence of EOP Prior to May 1988

The Intervenors contend that the evidence is inconclusive as to when an integrated document termed the EOP first existed. However, it alleges, the evidence is indisputable that a Suffolk County 1981 Disaster Preparedness Plan, which was then and now "the heart of the present-day EOP" existed and was provided to LILCO during discovery. *See* Intervenors' Supplement of June 15, 1988, at 4-13.

LILCO asserts that the preponderance of the evidence suggests that the EOP existed in its present or virtually present form and substance as of 1982-83. *See* LILCO Supplement at 26-28. The Staff submits that the testimony indicates that at least parts of a County emergency plan existed by 1982. *See* Staff Comments at 2-3.

The Board finds that the EOP existed basically in its present form by 1983. As the Applicant points out, only 40 pages of the 750-page document handed to LILCO as the Suffolk County EOP on May 25 had no dates to indicate their time of incorporation in the EOP. All the remainder were either prior to 1984 or updates of existing material. *See* LILCO Discovery Exh. 9. As further support for this conclusion, testimony from R. Jones, a Suffolk County employee responsible for monitoring and updating the County emergency plan, corroborates the existence of the plan (Tr. 21,317, 21,376-79, 21,383, 21,389-90. Intervenors' argument that dates affixed to a document convey no particular information on the time a particular document was incorporated in the EOP does not stand up against more probative information. And, in fact, all parties appear to agree that the substantive sections of the EOP were at least in being at an early date. Moreover, to the extent that any sections of emergency plans were added or updated after 1983, Intervenors had a duty to amend their prior discovery responses but did not do so until May 1988. 10 C.F.R. § 2.740.

Was the EOP Produced in Discovery Before 1988 or Were There Reasons for Its Nonproduction?

Intervenors contend that the evidence reflects the likelihood that LILCO received the EOP, as it then existed, in 1982-83. In support thereof, it cites testimony of four County officials involved in discovery efforts during 1983-84, expressing beliefs that the EOP was forwarded for production, including a statement of one witness that he was told the document had been forwarded. Additionally, in Intervenors' sight, LILCO appears to have received at an early date most, if not all, of the 1982-83 version of the EOP, including a number of documents that later became part of the EOP. Also, Intervenors state that a substantial part of documents that LILCO that alleges as not receiving related to nonemergency matters such as federal and state statutes and regulations.

Intervenors also assert that LILCO employees attended annual Suffolk County hurricane conferences where the EOP was discussed. It alleges that a LILCO employee, Norman Kelly, privately received a copy of the EOP in 1985-86 from a County official, which he was asked to obtain by LILCO personnel responsible for emergency planning. Finally, since the County produced more than 7000 pages of documents in 1982-83 — many relating to emergency information — any nonproduction of a complete EOP, if it occurred, was nonintentional, in Intervenors' view. *See* Intervenors' Supplement at 13-24.

LILCO emphasizes that none of the County's witnesses recalls specifically the production of the EOP in discovery in 1982-83 and no counsel or County records are available to substantiate any such submittals. The records maintained by LILCO, however, indexed each of the documents received from the County by date, and a document search revealed only 161 pages produced from the 762 in the current EOP. This evidence shows, according to LILCO, that important parts of the EOP were not produced in discovery during 1982-83, including the basic plan prepared by the State of New York and a number of significant annexes. *See* LILCO Supplement at 10-13. LILCO concedes that its employee Kelly, a former director of Suffolk County's Department of Emergency Preparedness, received a copy of some part of the EOP in 1985-86 period, but contends that there is no firm evidence of who requested the document, what it was for, or what was in it. A search of Shoreham files and interviews with LILCO personnel disclosed no knowledge or existence of either a request by Kelly's superiors for the document or the plan itself, and Kelly, himself, did not recall specifically who asked him for, or received, the planning formation, and indicated the document was a lot smaller in size than the existing EOP. *See* LILCO Supplement at 28-33 and Weismantle Affidavit, July 18, 1988.

The Staff's position is that attachments or annexes to the EOP were not produced in discovery in 1982-83, although LILCO had the basic County

emergency plan, dated January 1, 1981, and probably worked with the plan in drafting the Shoreham Emergency Plan in 1982. *See* Staff Comments at 12-13.

The Board finds that a number of existing sections of the EOP were not produced prior to 1988. These include a 1979 Basic Plan, an updated 1985 Annex to the EOP on lines of succession to command, a 1983 Communication and Warning System, a 1985 Health Services responsibility document, and generally undated sections on public information, public works responsibilities, rescue services, resources, schools, and social services. *See* LILCO Supplement, Attach. 5, and LILCO Discovery Exh. 10. Importantly, they also include a radiological protection annex. *See* Annex K, LILCO Discovery Exh. 25.

There is no evidence that Intervenors produced this material either in the 1982-83 time period or any time prior to 1988. Statements from those responsible for having documents produced by Suffolk County expressed a belief that the EOP was submitted but actual knowledge of what was transmitted is missing. *See* Tr. 21,451 (Bilello); Tr. 21,472; Tr. 21,841-44 (F. Jones); Tr. 21,320 (R. Jones); Tr. 21,892 (Regan). And apparently no lists of the documents transferred is available. *See* Tr. 21,846-47 (F. Jones). The files developed by Intervenors' counsel during this period, which would contain the documents produced, were subsequently transferred to Suffolk County and have not been located to date. Tr. 21,849-50 (Letsche). On the other side of the document production issue is the evidence of a detailed index of documents received and maintained by LILCO. *See* LILCO Supplement at 29-30 and Attach. 5. And there is testimony by the County's employees that the emergency plan later produced was basically the same as the one existing in 1982-83. *See* Tr. 21,384-90 (R. Jones); Tr. 21,901-03 (Regan).

The Board is unable to determine the causes for the plan's nonproduction. Intervenors' counsel have conceded that the EOP would have been produced if it had come to their attention, if, in fact, it was not produced. *See* Tr. 20,816, 20,870 (Lanpher). The information contained therein was relevant to the issues being contested, and responsibility for the documents' nonproduction and subsequent failure to amend prior responses has to rest at State and County doorsteps. The lack of some notation in the County's files recording the EOP's transmittal, missing counsel's files that would have accounted for the EOP's production or nonproduction, and a complete index of LILCO's files maintained in the normal course of business are circumstances that dictate the conclusion that the EOP was not produced as counsel concedes it should have been.

Were Other Emergency-Related Documents Not Produced?

LILCO lists a number of documents, including other County emergency plans and a Resources Manual for EBS procedures in Suffolk County, which it alleges were only delivered late in the proceeding. *See* LILCO Supplement at 11-13, 22-

23, and Attach. 3. The State, LILCO contends, failed to produce or authenticate the core State radiological plan and the SEMO guidance document. *See* LILCO Reply at 23-24.

The Staff alleges that, in addition to being slow to authenticate the New York State Radiological Emergency Plan and the State Disaster Preparedness Plan, the State did not produce, until very late, the Suffolk County Emergency Preparedness Directory. Tr. 21,160-61 (Zahnleuter). LILCO obtained independently a document labeled New York State Local Government Plan Guidance for Radiological Ingestion Exposure Pathway, August 27, 1987, LILCO Discovery Exh. 5, Tr. 21,026-31; New York State Health Department's Radiological Procedure, Tr. 21,063, *et seq.*; LILCO Exh. 7 and the Brookhaven National Laboratory Emergency Response Plan. *See* Staff Comments at 10-11. The Intervenors contend that all documents were produced in compliance with document requests and Board Orders. *See* Governments' Reply at 40-48.

The Board finds that, although a conclusive decision cannot be rendered, the record demonstrates that the emergency-related documents not timely produced, other than the EOP, were, in fact, documents relevant to the litigation.

Was Nonproduction of Emergency-Related Documents Prejudicial?

The Applicant contends that harm to its position has occurred and that timely disclosure of documents would have conserved "years of expense in terms of time and energy incurred by it and other regulatory agencies." The knowledge concerning resources available to respond to an emergency at Shoreham, if known earlier, according to LILCO, might well have concluded the proceeding favorably to LILCO and eliminated the political and financial controversy that has imperiled both the Shoreham project and LILCO's corporate existence. *See* LILCO Supplement at 51-52 and Reply Brief at 12-13. *See also* LILCO Response at 17, June 1, 1988, ff. Tr. 20,832.

In addition to their arguments concerning the production of the EOP, which we have rejected, Intervenors argue that LILCO produced no evidence to establish any resultant prejudice even assuming some inadvertent nonproduction. *See* Intervenors' Supplement at 7, 25-26. The Staff asserts that the evidence, although showing a "spotty or piecemeal" discovery compliance record, did not establish a willful concealment of the EOP by either the County or the State. *See* Staff Comments at 5, 10. However, in their view, the failure of Intervenors to produce all the attachments and annexes to the plan and to deny the existence of any plan that could be applied to Shoreham hindered LILCO's efforts to fully determine the nature of State and County resources for their best-efforts responses. *See* Staff Comments at 12-13. *See also* Tr. 20,826 (Reis).

We conclude that great prejudice unquestionably resulted from the failure to produce the EOP in a timely manner. The question of available County plans

to accommodate emergencies, even nonnuclear in nature, has been involved in the Board's consideration of the adequacy of emergency planning for Shoreham since 1982. *See* Prehearing Conference Order, July 27, 1982, at 23-24 (unpublished). The production of plans concerning nonnuclear emergencies was requested again in 1983 and 1988 and inquiries as to the existence of State and County plans that would aid in coming to grips with an accident at Shoreham have been a central thrust since the Commission remand in CLI-86-13, *supra*, 24 NRC at 31.

The Licensing Board, in denying LILCO's first, second, and third motions for summary disposition of the realism issue, highlighted an intent in having developed the responses Intervenors would make if called on during an emergency at Shoreham. LBP-85-12, *supra*, 21 NRC at 912; LBP-87-26, *supra*, 26 NRC at 216. *See also* LBP-88-9, *supra*, 27 NRC at 367-68. The ability of the State and County to provide emergency resources for any potential accident at the Shoreham facility was an issue entitled to be pursued by LILCO and the Staff before the first motion for summary disposition was filed and evidence on emergency resources was required to be furnished by Intervenors. The harm from nonproduction of Intervenors' emergency plans extends beyond prejudice to LILCO as it affects the NRC adjudicatory process itself.

In 1984, LILCO, with knowledge of the EOP, could have formulated its first summary disposition motion on realism with more certitude of State and County emergency responses; and with additional certitude improve its prospects for having its motion granted. Instead, the Board denied LILCO's motion on grounds that: "Any proposal which introduces the highly undesirable element of uncertainty as to how the various entities will react, is inadequate." LBP-85-12, *supra*, 21 NRC at 912. Intervenors have acknowledged that Governments' emergency planning information was requested by LILCO and that it should have been produced in the 1982-83 time frame. The Commission subsequently reiterated that the actions Intervenors would take in an emergency was a central issue in the case. *Supra*. LILCO's second and third motions for summary disposition were predicated on the Commission's order or the revision to 10 C.F.R. § 50.47(c)(1) that followed, but were rejected by the Board for substantially the same reasons as the first. No evidence was placed before the Board that would show what the Governments' response would be in an emergency. That LILCO consistently attempted to have those resources disclosed even to the present is apparent from reviewing its deposition efforts. It is equally apparent that Intervenors have resisted disclosure of that critical information. *See* Depositions of Czech, Papile, and Baranski at 85-133 (Apr. 29, 1988); Axelrod Deposition at 65-107 (May 2, 1988); Halpin Deposition at 31-38, 56-78.

The Board concludes that LILCO's first, second, and third motions for summary disposition on the realism issues were decided on the basis of an

unnecessarily incomplete record. Intervenors had both the capability and the duty to supply relevant information and to amend their responses on their own nonnuclear emergency planning but did not do so. 10 C.F.R. § 2.740(e)(2). It is immaterial to the issue of sanctions, and fruitless to now consider, whether those decisions would have been different if we had had complete information on County and State emergency planning before us. Essentially, we are concerned that the process that took place reflects adversely on the integrity of the adjudicatory process itself when it is revealed after a decision is rendered that important issues *might* have been decided differently had the Board been in complete possession of available relevant facts. Here, three motions in succession were so decided. This is a matter of extreme gravity. Disrespect for the adjudicatory process cannot be permitted; dismissal of the affected contentions alone is not an adequate remedy when the adjudicatory process itself is tainted by the actions or omissions of a party.

The Board rejects Intervenors' defense that LILCO was merely dilatory in not using information available to it or that the County and State capabilities were irrelevant to the resolution of issues. It calls for an unacceptable stretch of our imagination that existing organized emergency resources and personnel could be utilized for every crisis within Suffolk County except one involving a nuclear radiation emergency at the Shoreham facility. Neither can we accept that competent counsel on either side would fail somehow to recognize the likely importance of a County emergency plan in resolving the realism issue. We conclude that LILCO would have unquestionably used the EOP to support its motions for summary disposition if the plan was in its possession.

A knowledge of County and State resources and emergency responsibilities not only would have assisted LILCO in developing its utility plan, but it is an essential ingredient in the Commission's review of that plan. The failure to timely produce the EOP was prejudicial to LILCO even to the point of threatening its corporate existence. It was equally prejudicial to the public interest in having an informed decision by the government entity with responsibility to pass on the adequacy of that plan.

J. Conclusions

After review of the entire record on the sanction issues, the Board reaches the following conclusions:

1. Intervenors unjustifiably obstructed discovery on the realism issues in April and May 1988 by presenting nonresponsive witnesses for deposition, by obstructing LILCO's questioning of witnesses in depositions, by not providing substantive answers to Interrogatories, and by a consistent refusal to provide information on the means by which Intervenors would respond to a radiological emergency at Shoreham.

2. Intervenors' notice to the Board of June 9, 1988, that neither discovery nor the proceeding itself could go forward because of erroneous prior Board orders constitutes a willful defiance of the Board's authority to rule on issues and to conduct a fair and orderly proceeding. 10 C.F.R. § 2.718. The Board believes this action by Intervenors, in itself, warrants imposition of the ultimate sanction.
3. An integrated County emergency response plan, not disclosed until May 1988, could have been produced in substantially its present form as early as 1982. Intervenors failed an obligation to produce the integrated EOP when requested and to amend their responses thereafter. 10 C.F.R. § 2.740.
4. Prejudice from nonproduction of the EOP was substantial to LILCO. LILCO's corporate existence was placed in jeopardy by adverse rulings on summary disposition motions that were not based on a complete record and expenditure of resources in time and money were probably unnecessarily wasted.
5. Intervenors' omission in not producing the EOP earlier tends to reflect adversely on the integrity of the adjudicatory process itself because important decisions were made on the basis of an incomplete record.

The actions, omissions, and consequences recited herein deserve sanctions from the Board. Considered separately, some would warrant only dismissal of Intervenors' contentions or the rendering of a decision on the merits in LILCO's favor. Collectively, however, our findings reveal a sustained and willful strategy of disobedience and disrespect for the Commission's adjudicatory processes. The total behavior seriously impacted a timely and fair resolution of the realism contentions and other emergency planning issues. Previous sanctions for disobedience did not curb the present harm and it is not mitigating, in our judgment, that Intervenors have litigated most of the other contentions in this case with due regard for discovery rules and the Board's authority to regulate the proceedings. The strategy of noncooperation and obstruction was deeply entwined with legitimate practice. Intervenors created the situation that gave rise to the realism contentions, which were sufficient in themselves to block issuance of an operating license if there were further rulings adverse to LILCO. Fair practice in their resolution was of extraordinary importance in the case. Thus disobedience and disrespect for the Commission's processes, although narrowly and selectively applied, had an important prejudicial impact on factual inquiry concerning the adequacy of LILCO's emergency plan.

The Board concludes that Intervenors' actions were willful, taken in bad faith, and were prejudicial to LILCO and the integrity of the Commission's adjudicatory process. The sanction of dismissal as parties to the proceeding is

the only appropriate penalty. The State of New York, the County of Suffolk, and the Town of Southampton are hereby dismissed from this proceeding.[39]

Although the sanction here decreed resolves the realism issues, neither time nor authority limitations permit the Board to address the issue of whether the nonproduction of the Suffolk County EOP was a willful obstruction of the Commission's discovery process. We believe it would be in the best interests of the parties and the Commission to refer this question to NRC's Office of Investigations for further review.

K. Review of Applicant's *Prima Facie* Case

The sanction of dismissal of the parties, terminating the controversy on the realism issues, does not provide for an adjudicatory resolution of the central issue of this proceeding — that being whether an emergency plan for the Shoreham facility is viable in Suffolk County. Most of the contentions involved in that issue have been previously litigated in LILCO's favor, *supra*. The Board believes that circumstances of this dispute require us to set forth here, even though it is dicta in our Decision, what would have otherwise constituted a resolution of the realism contentions on the merits. The circumstances that would have led to an adjudication of the realism contentions to Applicant's benefit, are the following:

1. The Commission directed the Licensing Board in CLI-86-13 to obtain additional information about shortcomings in LILCO's emergency plan.
2. The Commission is legally obligated to consider the adequacy of a utility plan in cases where state and/or local governments do not participate in emergency planning.
3. Neither New York State nor Suffolk County has presented testimony challenging the merits of LILCO's testimony.
4. The prolonged public controversy in the emergency planning litigation calls for a determination on whether an adequate emergency plan can be implemented for Suffolk County.
5. The Applicant's *prima facie* case, except for interface procedures, is based on the existing record.
6. LILCO's facts concerning cooperative interface activities with State and County officials would have been taken to be established as a result of Intervenors' refusal to permit discovery.
7. The questions raised by the Commission's remand concerning possible time delays in LILCO's emergency responses have been answered satisfactorily in Applicant's *prima facie* case.

[39] In regard to any challenges to an exercise recently held on the Applicant's emergency plan, an interested person can petition the Commission for a hearing on any alleged deficiencies.

The realism issues that were pending before the Board and requiring resolution question whether certain of the Utility's emergency plan provisions satisfy regulatory requirements.

Contention 1

Whether LILCO's emergency plan and the best efforts response of the State and County governments will satisfy regulatory requirements concerning directing traffic.

Contention 2

Whether LILCO's emergency plan the best efforts response of the State and County governments will satisfy regulatory requirements concerning blocking roadways, setting up barriers in roadways, and channeling traffic.

Contention 4

Whether LILCO's emergency plan and the best efforts response of the State and County governments will satisfy regulatory requirements concerning removing obstructions from public roadways, concluding the towing of private vehicles.

Contention 5

Whether LILCO's emergency plan and the best efforts response of the State and County governments will satisfy regulatory requirements concerning activating sirens and directing the broadcast and contents of emergency broadcast system messages to the public.

Contention 6

Whether LILCO's emergency plan the best efforts response of the State and County governments will satisfy regulatory requirements concerning making decisions and official recommendations to the public as to the appropriate actions necessary to protect the public health and safety, concluding deciding upon protective actions which will be communicated to the public.

Contention 7

Whether LILCO's emergency plan and the best efforts response of the State and County governments will satisfy regulatory requirements concerning protective actions for the ingestion exposure pathway.

Contention 8

Whether LILCO's emergency plan and the best efforts response of the State and County governments will satisfy regulatory requirements concerning recovery and reentry.

Contention 10

Whether LILCO'S emergency plan and the best efforts response of the State and County governments will satisfy regulatory requirements concerning access control at the EPZ perimeter.

The Applicant's proposed *prima facie* case was allegedly based mainly on matters previously adjudicated or admitted and prior Board rulings. Those parts of the record were cited in advance of a hearing scheduling. *See* LILCO's

Designation of Record and *Prima Facie* Case on the Legal Authority Issues (Contentions 1-2, 4-8 and 10), April 1, 1988.

We advised the parties in the Board's May 26 bench ruling that cross-examination on the realism contentions would be permitted on the interface or best-efforts activities set forth in LILCO's emergency plan and also on questions raised by the Licensing Board and the Commission.[40] However, in maintaining the Commission directive to use the existing evidentiary record to the maximum extent possible, no cross-examination would have been permitted on matters previously litigated or resolved by the Board. In light of the refusal of the Board-ordered discovery, Intervenors would have waived any rights it had to cross-examination.

Contentions 1 and 2 are both concerned with the efficacy of the movement of traffic, in the event an evacuation is called for, within the emergency planning zone of the Shoreham facility.

LILCO's plan for controlling traffic in an emergency was previously litigated, and the Board's decision affirming that the plan meets NRC adequacy standards is found in the Board's Partial Initial Decision (PID), LBP-85-12, *supra*, 21 NRC at 697-98, 723-25, 734-38, 781-809. The plan covers an analysis of the traffic network, a traffic control plan, and estimated evacuation times. It provides for the timely establishment and training of LERO traffic and route coordinators, adequate numbers of traffic guides, a communication network, and key designated traffic control posts where traffic flow will be facilitated or discouraged.

The Applicant has put forth in its *prima facie* case and prefiled testimony, the elements of State and County support expected to be forthcoming as part of a best-efforts governmental response under 10 C.F.R. § 50.47(c)(1). These activities contemplate the dispatch of adequate County police to traffic control points from Police Headquarters, a transfer of traffic control by LERO guides to the police and providing police officers with prepared copies of uncomplicated traffic movements for particular controlled intersections. The testimony indicates that police could be mobilized by Suffolk County as quickly as LERO traffic guides, but failing this, LILCO guides could be given permission to direct traffic until police arrived at the scene. Inasmuch as LILCO possesses the only evacuation time estimates for the County's EPZ, it is assumed by the Applicant that the best efforts of the County Executive will be to utilize LERO's controlled evacuation on which the estimates were based. Both the County Executive and the Police Commission are to be communicated with directly by appropriate LERO officials and requested to go to LERO's emergency operations center (EOC). The Police Commission could dispatch police from the EOC if he

[40] *See* LBP-87-26, *supra*, 26 NRC at 224, and CLI-86-13, *supra*, 24 NRC at 31.

chose not to work with the LERO Traffic Control Point Coordinator at Police headquarters. The testimony reflects that, since police can be assembled in a prompt sequence, no delay should occur due to the County's "best-efforts" response. *See* Prefiled Testimony — Crocker, Lieberman, Weismantle, at 28-36. There are additional facts admitted by the Board in the record (LBP-87-26, *supra*, 26 NRC at 225) which testify to the ability of Suffolk County's Police to manage and control traffic activities. *See* Admitted Facts 1, 3, 4, 5, 53, 59, 60, submitted in LILCO's Second Renewed Motion for Summary Disposition (March 20, 1987). The Applicant also cites testimony in the record that provides additional support of police capability to respond to emergencies. *See* Roberts *et al.*, ff. Tr. 2260, at 2-4, 35-36, 34-44, 48, 52-53; Regensberg *et al.*, ff. Tr. 4442 at 18; Tr. 1237-38, 1262-63. Tr. 1268 (Dilworth); Tr. 2319-21 (Roberts, McGuire); Cosgrove *et al.*, ff. Tr. 13,083, at 19-23, 55, 63, 76-77 n.6; Tr. 13,091, 13,112-16, 13,208-09 (Cosgrove, Fakler) and Lieberman affidavit, LILCO Motion for Summary Disposition of Contentions 1, 2 and 9 — Immateriality (December 14, 1987). LILCO's emergency plan for traffic evacuation and control are found in its implementing procedures (OPIPs) at OPIP 3.1.1, Attach. 10, at 3-5; OPIP 3.6.1, 3.6.3, and Plan, Appendix A.

In response to a question raised by the Commission in its remand of the realism issues, concerning time delays, CLI-86-13, *supra*, 24 NRC at 31, LILCO's prefiled testimony reflects that neither a controlled nor uncontrolled evacuation at Shoreham would likely influence protective action recommendations since such decisions are made on the basis of plant conditions. Information submitted by LILCO's traffic expert Lieberman and found in OPIP 3.6.1, Attach. 2, indicates a difference of only 35 minutes in normal weather or 55 in adverse weather between a controlled or uncontrolled evacuation, a delay that, according to the prefiled testimony, would not seriously impact an evacuation. *See* Prefiled Testimony at 40-48. LILCO cites supporting data from NUREG/CR-1856 which demonstrates a listing of twelve nuclear facilities with time estimates longer than evacuation times during Shoreham's uncontrolled adverse weather conditions and also where estimates of only a 50% compliance with summer uncontrolled times at Shoreham are calculated. *See* Prefiled Testimony at 42-43.

The Board concludes that the Applicant's traffic control plan with the best-efforts responses of New York State and Suffolk County is adequate to meet NRC's regulatory standards and evacuation criteria found in 10 C.F.R. § 50.47(b)(10); 10 C.F.R. Part 50, Appendix E; NUREG-0654, Appendix 4; and 10 C.F.R. § 50.47(c)(1)(iii).

Contention 4 involves the removal of road obstructions during an evacuation emergency.

LILCO plans to have at least twelve road crews and vehicles available for assignment to remove road obstructions in an emergency. There are also additional vehicles, owned by the Applicant, available. The plans to handle this

activity have been found adequate by the Board. PID, LBP-85-12, *supra*, 21 NRC at 711, 809-12, and are referenced in OPIP 3.1.1, Attach. 10, at 3. *See also* OPIP 3.6.3. *Also see* Cordaro *et al.*, ff. Tr. 6685, 6726, 6734-35; Baldwin *et al.*, ff. Tr. 12,174, at 63; Tr. 12,802-03 (Baldwin).

The best-efforts response proposed by LILCO assumes that the State and Suffolk County would either grant permission to LERO road crews to remove road obstacles, would operate under their direction, or the State or County would remove the obstacles with their own available road crews and equipment, with private commercial towing services that are under contract. No delay in removing obstacles is foreseen in the eventuality of an emergency since the use of additional resources on the part of the State or County would accelerate carrying out the activities. *See* Prefiled Testimony at 50-51. The ability of Suffolk County to respond to remove road obstacles has been testified to by County police officials. *See* Roberts *et al.*, ff. Tr. 2260, at 55, 57-59, and Attach. 8.

The Board concludes that LILCO's plan for removing road obstacles with the best-efforts responses of New York State and Suffolk County governments is adequate to meet NRC regulatory standards and criteria as found in 10 C.F.R. § 50.47(b)(10); Part 50, Appendix E; NUREG-0654 § J.10.k; and 10 C.F.R. § 50.47(c)(1)(iii).

Contention 5 concerns the activation of sirens and directing emergency broadcast system messages.

The issues raised by this contention concern questions on whether, when, and by whom sirens will be activated, and messages communicated in an emergency and whether any delay is inherent in the best-efforts response by State and County officials. The essential adequacy of LILCO's early warning system and the emergency broadcast system (EBS) has been previously accepted by the Board. PID, LBP-85-12, *supra*, 21 NRC at 698, 756-63, and Admitted Facts 6, 7, 14-28, 30-33. The plan provides procedures for communicating with responsible County and State officials (County Executive and State Chairman of the Disaster Preparedness Commission) and the method for activating the EBS. LILCO Plan, § 3.3, OPIP 3.1.1, Attach. 10; OPIPs 3.3.4, 3.8.2; and OPIP 5.4.1, Attach. 10.

Issues concerning the coverage of the LERO EBS are resolved elsewhere in this Decision. Both LILCO's *prima facie* case and its prefiled testimony at 54-56 reflect that with a best-efforts response no delay will develop beyond the 15-minute notification periods authorized by the regulation. Even though Phase I onsite contentions have previously been resolved in LILCO's favor, affidavits submitted by Applicant in support of a 1987 LILCO Summary Disposition Motion reveal that the Applicant's onsite notification system has been tested satisfactorily under certain actual emergency conditions. *See* Affidavits of Crocker and Devlin, LILCO Summary Disposition on Realism Contentions,

December 1987. *Also see* PID, LBP-85-12, *supra*, 21 NRC at 698, 708-09. Under the best-efforts response, LILCO's plan calls for decisions to be made with the participation of State and/or County representatives, an EBS message for the plan prepared with concurrence of the County and/or State, and the message to be read over the phone to WCBS and broadcast at the same time. *See* Prefiled Testimony at 54-58.

The Board concludes that LILCO's plan for activating sirens and directing emergency broadcast messages with the best-efforts responses of New York State and Suffolk County is adequate to meet NRC's regulatory standards and criteria as found in 10 C.F.R. § 50.47(b)(5); Part 50, Appendix E, § IV.D.3; NUREG-0654, Supp. 1, Criteria E.5, E.6; and 10 C.F.R. § 50.47(c)(1)(iii).

Contention 6 involves protective action decisions and recommendations.

Most of the issues involved in the LERO plan concerning protective action recommendations have been previously resolved in LILCO's favor by the Board. PID, LBP-85-12, *supra*, 21 NRC at 677, 693-94, 770-81; Admitted Facts 8, 10-13, 34-39, 44-52.

The sections of LILCO's emergency plan applicable are Plan § 3.6, OPIP 3.6.1, and OPIP 3.1.1, Attach. 10. These provisions set forth the method and standards for making protective action recommendations (PARs) and provide for the Director of Local Response, in coordination with State and County officials after input from LILCO, NRC, FEMA, and DOE representatives, to make the final decisions on protective actions to be implemented. PARs should be made on the basis of plant conditions, and New York State and Suffolk County both have people capable of making protective action decisions. *See* LILCO Prefiled Testimony at 59-62.

LILCO's *prima facie* case and prefiled testimony evidences that the Department of Energy RAP team will monitor data and consult with LILCO and State and local governments on appropriate protective action recommendations. The protective action guidelines (PAGs) in LERO's plan are the same as in the New York State plan, the sheltering and evacuation options in LERO's plan conform to the State plan, and the State has personnel qualified to make decisions based on dose projections and other data. Since the primary responsibility for accident assessment to be able to make timely protective response recommendations to State and County officials resides with the facility operator, it is highly unlikely, in a fast-moving accident, that a best-efforts response can do other than call for following the operator's recommendations. Consequently, this event should cause no time delay. Even in a gradually escalating accident, no appreciable delay will occur since discussions between LERO, State and County, and other government officials such as the DOE can take place or are likely to take place at LERO's EOC. *See* LILCO *Prima Facie* Case at 34-36.

The Board concludes that LILCO's plan for making protective action decisions and recommendations with the proposed best-efforts responses from New

York State and Suffolk County is adequate to meet NRC's regulatory standards and criteria found in 10 C.F.R. § 50.47(b)(10); Part 50, Appendix E; and NUREG-0654, Supp., Criteria J.9 and J.10; and 10 C.F.R. § 50.47(c)(1)(iii).

Contention 7 concerns decisions and recommendations on protective actions for the ingestion exposure pathway.

LILCO's plan for managing, monitoring, issuing warnings, notification of food procedures, and the purchase of contaminated foods was accepted by the Board as adequate in meeting NRC standards. PID, LBP-85-12, *supra*, 21 NRC at 875-78. LILCO's procedures for the ingestion exposure pathway is found in OPIP 3.6.6 which contains lists of food procedures, food provisions, and milk dealers for Shoreham's 50-mile EPZ. LILCO can also expect assistance from a number of federal agencies through the Federal Radiological Emergency Preparedness Plan (50 Fed. Reg. 46,542-51 (Nov. 8, 1985)). Additionally, LERO can expect help from the State which has similar procedures in its Radiological Emergency Preparedness Plan. The record shows that New York State is responsible for ingestion pathway response at all other nuclear plants in the State, and most of Shoreham's 50-mile emergency planning zone (EPZ) is already included within the EPZs of three other nuclear power plants. *See* LILCO *Prima Facie* Case; Prefiled Testimony at 64-65 and Attach. T. LILCO's emergency plan procedures require that permission by LERO's Director of Local Response be obtained from Suffolk County's Executive. Prior to making recommendations to the public on the ingestion exposure pathway, New York's Director of Health also needs to be contacted. Under the LILCO plan, the New York State plan and every other radiological response plan in New York State, a Recovery Action Committee with representatives from State, County, federal government, and the Utility is activated to make decisions for the public. These decisions will be based on monitoring sampling information collected by LILCO, DOE, State, and County teams. The best-efforts response from both State and County call for their cooperation in this necessary activity. *See* Prefiled Testimony at 64-67. *Also see* Admitted Facts 37, 40, 45, 46, 47, REPG Affidavit, February 10, 1988. The following provisions of Revision 9 to LILCO'S emergency plans are relevant to this issue: Plan §§ 3.6-1 to 3.6-3, 3.6-7a to 3.6-8a, Figure 3.6.1, Table 3.6.4; OPIP 3.1.1 Attach. 10; OPIP 3.6.6. No time delay is expected in making protective action decisions under these procedures. *See* Prefiled Testimony at 67.

The Board concludes that LILCO's plan for protective action decisions and recommendations for the ingestion exposure pathway with the best-efforts responses from New York State and Suffolk County is adequate to meet the regulatory standards and criteria of 10 C.F.R. § 50.47(b)(10); Part 50, Appendix E; NUREG-0654, Supp. 1, Criterion J.11; and 10 C.F.R. § 50.47(c)(1)(iii).

Contention 8 concerns decisions and recommendations on recovery and reentry.

The activities involved in recovery and reentry are matters to be decided by the Recovery Action Committee and are described in OPIP 3.10.1. This committee, with representatives from the Utility, State, County and the federal government, is similar to that used in the New York State plan and all other nuclear emergency plans in the State. The Board previously resolved the recovery and reentry issues in LILCO's favor in concluding that the proposed criteria and plans for estimating population doses were adequate. PID, LBP-85-12, *supra*, 21 NRC at 878-82.

The plan calls for the Director of Local Response to obtain the County Executive's permission prior to making recommendations on recovery and reentry to the public. A best-efforts response calls for State and local officials to cooperate on decisions required to be made. No delay is expected in making decisions and recommendations on recovery and reentry matters. LILCO uses the same radiological criteria as the State for reentry and has a detailed procedure for calculating total population doses, and there are many available agencies at the federal, State, and local level to assist in recovery and reentry activities. *See* Prefiled Testimony at 67-70 and *Prima Facie* Case at 44-48. *Also see* Plan §§ 3.10-1 to 3.10-2, 3.11-1 to 3.11-2; OPIP 3.1.1, Attach. 10; and OPIP 3.10.1.

The Board concludes that LILCO's emergency plan for making decisions and recommendations on recovery and reentry with the best-efforts responses of New York State and Suffolk County governments is adequate to meet NRC regulatory standards and criteria as found in 10 C.F.R. § 50.47(b)(13); Part 50, Appendix E; and NUREG-0654, Supp. 1, Criteria M.1, M.3-4; and 10 C.F.R. § 50.47(c)(1)(iii).

Contention 10 is concerned with establishing and maintaining perimeter access control.

LILCO's plan to assign traffic guides to all major entrances to the EPZ to discourage entry was considered adequate to meet NRC regulatory standards by the Board. PID, LBP-85-12, *supra*, 21 NRC at 703, 804-05. Additional points could be manned by County police, and the publication of clear information on contaminated areas will discourage people from entering. County police can also be utilized under a best-efforts response to continue access control, and no delay is anticipated, with adequate resources available to monitor access control. *See also* LILCO *Prima Facie* Case at 48-54 and Prefiled Testimony at 70-72. *Also see* Admitted Facts 1, 3, 4, 5, 53, 59, 60; and Plan §§ 1.4, 2.1, 2.2, Figure 2.1.2; and OPIP 3.1.1, Attach. 10.

The Board concludes that LILCO's emergency plan for perimeter access control with the best-efforts responses by New York State and Suffolk County governments is adequate to meet NRC's regulatory standards and criteria of 10 C.F.R. § 50.47(b)(10); Part 50, Appendix E; NUREG-0654, Supp. 1, Criteria J.10.j, and A.2.a; and 10 C.F.R. § 50.47(c)(1)(iii).

The Board finds that LILCO's emergency plan provides adequate protective measures that can and will be taken in the event of an emergency and that any deficiencies in the plans resulting from New York State and Suffolk County lack of participation therein are not significant. The Board finds that the Utility's emergency plan supplemented by the best-efforts responses of the State and County provide reasonable assurance that public health and safety is not endangered by the operation of the Shoreham facility. The Board finds that the Applicant's emergency plan provisions for Contentions 1, 2, 4, 5, 6, 7, 8, and 10 are adequate in meeting the NRC's regulatory requirements, standards, and criteria as found in 10 C.F.R. §§ 50.47(b) and 50.47(c)(1)(iii); Part 50, Appendix E; NUREG-0654 and Suppl. 1.[41]

L. Conclusions of Law

Based upon review of the entire record in this proceeding, the Board concludes that

1. As to the Applicant's motion for summary disposition of the emergency broadcast system issues, there are no genuine issues to be heard on matters in dispute and the motion is therefore granted.

2. As to Applicant's plan to supply school bus drivers in the event of an evacuation, the proposed protective responses are adequate to comply with NRC's regulatory standards and criteria.

3. As to Applicant's plan for the evacuation of three hospitals during an emergency, the evacuation time estimates in the proposed protective response comply with NRC's regulatory standards and criteria.

4. On the Realism Contentions 1, 2, 4, 5, 6, 7, 8, 10, Intervenors are found to be in default of Board orders on discovery and are dismissed from the proceeding. The realism contentions are, therefore, no longer "in controversy" between the parties.

5. Based on the findings of fact in this Decision, and having resolved all matters in controversy, the Board concludes that, pursuant to 10 C.F.R. §§ 2.760(a) and 50.57, the Director of Office of Nuclear Reactor Regulation is authorized to issue to the Applicant, upon making any requisite findings with respect to matters not embraced in the initial decisions, a license authorizing the operation of the Shoreham facility.

[41] The Applicant also sought resolution in its favor of Contentions 1 and 2 based on the so-called immateriality argument. Our resolution here of the entire set of realism contentions makes it unnecessary to render a separate focused decision based on the immateriality argument.

M. Order

WHEREFORE, IT IS ORDERED, as permitted by 10 C.F.R. §§ 2.760(a) and 50.57, that the Director of the Office of Nuclear Reactor Regulation is authorized to issue to the Applicant, upon making requisite findings with respect to matters not embraced in this Concluding Initial Decision, the licenses authorizing operation of the Shoreham Nuclear Power Station, Unit 1.

Pursuant to § 2.760(a), this Concluding Initial Decision 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.

Any party may take an appeal from this Decision by filing a Notice of Appeal within ten (10) days after service of this Decision. Each appellant must file a brief supporting its position on appeal within thirty (30) days after filing its Notice of Appeal, (forty (40) days if the Staff is the appellant). Within thirty (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 any appeal.

THE ATOMIC SAFETY AND
LICENSING BOARD

James P. Gleason, Chairman
ADMINISTRATIVE JUDGE

Dr. Jerry R. Kline
ADMINISTRATIVE JUDGE

Mr. Frederick J. Shon
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 23d day of September 1988.

Judge Shon, Concurring in Part and Dissenting in Part

I concur with my colleagues on the issues herein concerning bus driver availability, hospital evacuation times, and the suitability of the EBS system.

Further, I agree with the ultimate resolution of the revised "legal authority," or "realism," issues, that is, I too would find for LILCO on these matters.

I part company with my colleagues, however, on two details along the path by which they arrive at their conclusion on the legal authority issues. One of these details is minor: I am uncomfortable with the order of priority in which they have issued their "dismissal as a sanction" and "finding on the merits" decisions. I would first issue a finding on the merits, but I would note that these contentions could have been dismissed even if such a finding could not be reached. The other matter is of considerably more weight: If any dismissal is in order, I would dismiss the contentions but not the parties propounding them.

THE PRIORITY OF THE "SANCTION" AND "MERITS" DECISIONS

My colleagues say (*supra* at p. 357):

> In this part of the Board's decision, we find the Intervenors in default, bring litigation of the realism contentions to an end, dismiss Intervenors from the proceeding, and find that, absent the sanction of dismissal, a decision on the merits of the issues would have been rendered in Applicant's favor.

I believe that in matters fraught with considerations of public health and safety we owe the public a clear decision on the merits, and we owe the public that decision up front. In addition, where, as here, the Applicant has gone to the very considerable trouble and expense of preparing a plan and litigating its worth, we owe the Applicant a clear decision in its favor, also up front.

I would much prefer the following reasoning (which may, in fact, be the equivalent of my colleagues', but, in my view, is more equitable, direct, and unequivocal): I would find on the merits for the Applicant. The reasons for this finding are, in the main, set forth contention by contention in my colleagues' opinion (*supra* at p. 378 ff.). The findings for each contention differ in detail, but the fundamental reasoning is similar in each case; it is that LILCO set forth in several motions for summary disposition facts that, *prima facie*, would have dictated a finding in its favor, *but for* the complete blank in our knowledge concerning the Governments' response. When the Governments produced no direct evidence on how they would respond to an emergency and further barred us from examining that response by subverting discovery, we could only conclude that any facts they might reveal would buttress rather than controvert LILCO's case. And indeed, when the Suffolk County EOP was finally revealed, it showed that there were many resources and many responses available to the Governments, a substantial portion of which might well have application in a radiological emergency. Thus, in my view, LILCO's *prima facie* case, buttressed by the Governments' recalcitrance and by the glimpse we obtained of what the

Governments' capacities were, constituted overwhelming evidence that LILCO's Emergency Plan, coupled with the "best-efforts" response mandated by the Commission's recent rule, would satisfactorily comply with the Commission's requirements for emergency planning. It is also clear to me that such a finding by no means deprives the Governments of due process, for they were afforded opportunity to provide evidence on their proposed actions in an emergency, and they provided what was, in effect, a nullity. Nor would they engage in proper discovery.

Having observed that, I would then proceed to note that, *had we been unable to make a decision on the merits*, we could also have dismissed the contentions as a sanction for the Governments' refusal to participate in discovery. We had, in fact, warned the Governments of the possibility of just such an outcome in our Orders of February 29 and April 8, 1988. Significantly, however, we did not there suggest dismissal of the Governments as parties. Even in the telephone conference of June 10, we mentioned only the options of dismissing the contentions or ruling in LILCO's favor upon them (Tr. 20,862). The possibility of dismissal as parties arose in the telephone conference of June 24. It was broached by LILCO and accepted as a possibility by the Board (Tr. 20,920, 20,923). That was long after the Governments' obstructive action took place.

THE SCOPE OF ANY SANCTION THAT MIGHT BE INCURRED

As I note above, I would find for LILCO on the merits. But I would also express the belief that, were a finding on the merits beyond our grasp, a dismissal of the contentions as a sanction would be appropriate. Note that I say "a dismissal of the contentions," for I do not believe that a dismissal of the parties is in order. Dismissal from the entire case goes so far beyond the four corners of the Governments' obstructive behavior that I cannot consider it a properly measured response.

While the Governments did indeed improperly resist discovery on the contentions at issue, they clearly did cooperate sufficiently to permit unequivocal resolution of the other remanded matters dealt with in this Decision, and they have, through the years, been sufficiently forthcoming to permit us to produce decisions on a host of other issues. My colleagues grant that (*supra* at p. 376). The "realism" or "legal authority" issues represent a winnowing down to 8 of approximately 100 contentions originally propounded.

It is the matter of dismissal of the Governments in such a way as to preclude their participation on further issues that troubles me. I have been unable to find any clear precedent on such a sanction. Indeed, in discussing the constitutional limits on sanctions, Wright and Miller's *Federal Practice and*

Procedure suggests that the matter of scope may not have been dealt with in the federal courts, saying:

> Another aspect of the constitutional problem does not seem to have been discussed in the federal cases though it has arisen occasionally in state litigation. It is illustrated by a state court case in which a newspaper reporter, sued for libel, willfully refused to answer interrogatories asking the names of his informants, if any, for the article he wrote. It was held error to strike his answer and enter judgment against him for this failure. The court held that defendant could properly be punished for contempt and that the court was free to presume that the reporter had no informant or that the informant did not make the statement in question but that he could not be denied his day in court on other issues in the case to which the existence of an informant would have no relevance. To go beyond this, and bar the party on issues unrelated to his failure to disclose . . . would seem to exceed constitutional limits.

(8 Wright and Miller, *Federal Practice and Procedure: Civil*, § 2283 (1971), at 763-64, citations omitted.)

The 1987 Pocket Part of this same work still finds no federal cases to cite in the matter, although it does cite one contrary ruling in a state court. The state cases, of course, are in no way binding upon us. But the concept seems to me such a sound one on its face that I believe we would ignore it at our peril. It is true that there may be situations where the reprehensible behavior of a party is so egregious and the damage to an adversary's case so all-pervasive that the sanction of complete dismissal may be justified. But in the case at bar LILCO has suffered at most delay and inconvenience.[1] Indeed, LILCO *won*! The victor can scarcely be deemed to have had his case destroyed.

I recognize that my colleagues believe that two of the Governments' actions are so pervasive and so threaten the integrity of the judicial process that they justify the Governments' ouster. The first of these is the curiously styled filing of June 9: "Governments' Notice that the Board Has Precluded Continuation of the CLI-86-13 Remand." In my colleagues' view that filing represented an attempt on the part of the Intervenors to wrest control of the proceeding from the Board, an attempt that strikes at the very heart of the entire adjudication.

Like my colleagues (*supra* at p. 360), I am not quite certain what the filing was intended to accomplish. Certainly it was ill advised. If it was meant to stop the proceeding, or even to slow it down, clearly it failed miserably.

---

[1] It is unclear to me at the moment exactly how much of LILCO's time and money have been wasted. No doubt the total was substantial. However, even had the EOP been delivered and its significance recognized as early as 1983, it might not have affected the decision that subsequently denied LILCO's license. That is because the Commission had not yet put its *imprimatur* upon the "realism" and "best-efforts" concepts, and we therefore could not make assumptions about State and local reactions, even given a knowledge of their resources. Clearly, had the EOP been forthcoming after the Commission issued CLI-86-13, in July of 1986 (24 NRC 22), LILCO might well have made good use of it in supporting its subsequent motions for summary disposition. But in any event the disclosure of the EOP would have had little effect on the need to litigate such matters as bus driver availability, evacuation times, or a host of other issues, either originally or on remand.

Indeed, after the June 9 filing this case proceeded with an alacrity that it had never shown before. Within days we decided the entire case and decided it adversely to the Governments. I certainly cannot condone the filing; I, too, found it objectionable. But its net effect may well have been salutary: It brought matters to a head. My colleagues see bad faith in the filing; I see only bad judgment.

The second matter my colleagues view as pervasive misbehavior is the Governments' steadfast reluctance to disclose the EOP. The Governments, of course, claim they disclosed much or most of it early on, but that can neither be proved nor disproved. Certainly they did adopt a refractory position, claiming that any plans that they had for emergencies were irrelevant to radiological emergencies. That position was clearly untenable after the issuance of CLI-86-13, and the Governments should have taken steps to recognize that fact and supplement any earlier discovery by supplying the EOP. That, however, is at most a failure to render proper discovery on the immediate issues at hand. Here my colleagues see behavior that "taints" our earlier decisions, both the one that formally denied the license and the earlier denials of summary disposition, since those decisions were made without full disclosure. I feel, however, that there is no certainty that those decisions would have been different, since the Commission had then not yet enunciated its "realism" and "best-efforts" doctrines.

Thus I am led to the conclusion that the appropriate sanction would be dismissal of the contentions, if indeed dismissal were the only route to a decision.

But there is another troubling aspect to the dismissal of the Governments as parties. We cannot ignore the fact that the parties we dismiss *are* governments. Justice may wear a blindfold, but she cannot blink at the identity of the Governments *qua* governments. Indeed, the Commission's own rules have provided for special treatment of states for almost as long as there have been Commission rules. 10 C.F.R. § 2.715(c). And in 1978 that special treatment was expanded to include similar privileges for cities and counties. 43 Fed. Reg. 17,798.

Nor are these privileges inconsiderable ones. While § 2.715(c) of the regulations is itself styled "Participation by a person not a party," it specifically accords to state and local governments many of the prerogatives of a party, even where the governments are not parties, as they are here. It asserts that the presiding officer "will afford" such governments reasonable opportunity to "participate and to introduce evidence, [and] interrogate witnesses," and such participants may also file proposed findings and petition the Commission for review. And, in fact, these privileges are sufficient to incur the corresponding responsibilities of a party. *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760 (1977).

So I am led to the conclusion that, in general, the Commission would not exclude state and local governments (and by parallel reasoning would not eject them once they are in a case), even where the matters at issue are not those in which such governments have special technical expertise. *A fortiori*, then, it seems to me unwise to reject the present Governments' participation in emergency planning, an area where the Commission's rules have traditionally given great deference to local expertise, and where the Commission has previously placed substantial reliance on state and local planning. Indeed, the statement of consideration which accompanied the Commission's latest revision of 10 C.F.R. § 50.47(c) is riddled with such statements as: "the ideal situation [is] one in which there is a state or local plan that meets all NRC standards"; "[c]learly it will be difficult for a utility to satisfy the NRC of the adequacy of its plan in the absence of state and local participation"; and "[t]he NRC, in common with the Congress and FEMA, regards full state and local participation to be necessary for optimal emergency planning." 52 Fed. Reg. 42,078, *passim*. Thus even in making the rule change that has permitted us to find for LILCO, the Commission itself was careful to give considerable deference to the role that state and local governments might play in the matters at bar.

Taken all in all, the situation seems to me to preclude our barring the Governments from participation in all aspects of this proceeding. Certainly their recalcitrance, while possibly dilatory, did not extend to all phases of the case. And the very special treatment extended by the Commission to state and local governments in its regulations, particularly in the regulations bearing on emergency planning, suggests to me that we should be even more reluctant to bar the Governments than we would be to bar parties of a different stripe for similar conduct.

I turn now to a very singular aspect of this case: the question of what the practical difference may be between the course I recommend and that steered by my colleagues.

THE EFFECT OF THE MAJORITY'S ACTION

Both the action that I recommend and that which my colleagues have chosen result in a finding for LILCO in this case. No further matters pend before us, and one might thus argue that the distinction I would draw — the distinction between finding for the Applicant on the sole remaining matters and dismissing the opposing parties from the case — is a distinction without a difference. Clearly the Governments can appeal their dismissal, and, if that appeal results in a reversal, continue to pursue whatever other remedies may still pend. Clearly also, if the dismissal is upheld, the aspects currently under appeal would become

moot: The Governments would no longer be parties and, *nunc pro tunc*, it would be as if they never were. But such considerations, while important perhaps to the Appeal Board's scheduling of the matter, need not concern me here.

However, there is at least one phase of the case that has not been examined at all. I refer to the hearing that the Commission is likely to permit on the emergency planning exercise that was held in June of this year. Two of the present parties have already asked (albeit in somewhat differing ways) that a hearing be held on that subject. NRC Staff Motion for Schedule for Litigation of the June 1988 Exercise, September 9, 1988; Suffolk County, State of New York, and Town of Southampton Motion for Appointment of Licensing Board with Jurisdiction to Hear Exercise Issues, September 13, 1988. Even LILCO has tacitly assumed that such a proceeding is in order. LILCO's Response to NRC Staff's Motion for Schedule for Litigation of the June 1988 Exercise, September 16, 1988.

If we dismiss the Governments as parties, it may be that they could not participate in the proceeding that might develop concerning LERO's performance during the June exercise.[2] Further, while I have no clear record of what happened at that exercise, I have reason to believe that the Governments followed it closely, but that no other party adverse to the granting of a license did so. Thus there would be no mechanism by which we could test LERO's performance in the crucible of adversary procedure, as we did its performance in the February 1986 exercise, only to find it wanting. LBP-88-2, 27 NRC 85 (1988). Such an outcome seems to me patently undesirable, considering the public health and safety matters at issue.[3]

The Commission's regulations do not provide for a hearing in an operating license case absent an intervenor. That, one might well assume, is because the Commission regards intervention at that stage as simply a matter of respect for due process and the rights of the intervenors, not as a matter of additional protection for the public health and safety. Nevertheless, in a case where a hearing has previously turned up fundamental flaws in an emergency plan, we should not lightly abandon the hearing procedure as a tool for testing such plans.

---

[2] Here I deliberately choose to ignore the complex question (a question, I think, of first impression): Could the Governments, ousted from their role as parties under 10 C.F.R. § 2.714, return as governments under 10 C.F.R. § 2.715(c)?

[3] On September 20, 1988, after this dissent was written but before it could be issued, the Atomic Safety and Licensing Appeal Board issued ALAB-901. In the Memorandum and Order, the Appeal Board directed that "proceedings in connection with the 1988 emergency exercise at the Shoreham facility are remanded for appropriate action to the Licensing Board in Docket No. 50-322-OL-5 . . ." (28 NRC at 302, 308-09). What impact my colleagues' dismissal of the Governments will now have on the review of that exercise is presently unclear to me. I had, of course, previously relied upon the OL-5 Board's own determination that it no longer had jurisdiction in this case. LBP-88-7, 27 NRC 289 (1988).

I would hold it wiser not to waste any efforts the Governments may have already put into close examination of the exercise.

Mr. Frederick J. Shon
ADMINISTRATIVE JUDGE

Cite as 28 NRC 394 (1988) LBP-88-25

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Glenn O. Bright
Dr. James H. Carpenter

In the Matter of **Docket No. 50-271-OLA**
(ASLBP No. 87-547-02-LA)

VERMONT YANKEE NUCLEAR POWER CORPORATION
(Vermont Yankee Nuclear Power Station) **September 27, 1988**

The Licensing Board grants in part and denies in part a motion to compel responses to discovery requests filed by an Intervenor against the Applicant. The Board also directs the Applicant to respond to three additional issues raised by its response to one of the interrogatories.

RULES OF PRACTICE: DISCOVERY

The NRC Rules of Practice limit discovery to the boundaries of admitted contentions. 10 C.F.R. § 2.740(b)(1).

RULES OF PRACTICE: CONTENTIONS

The scope of a contention is determined by its literal terms, coupled with its stated bases.

RULES OF PRACTICE: DISCOVERY (INTERROGATORIES)

A response to an interrogatory is adequate if it is both true and complete, irrespective of the satisfaction with that response of the party that propounded the interrogatory. However, where an asserted adequate response is inconsistent with existing information of record in the proceeding and where that existing information is contained in documents arguably constituting Applicant commitments to the NRC Staff, a motion to compel further response will be granted.

MEMORANDUM AND ORDER
(NECNP Motion to Compel)

In our Second Prehearing Conference Order, dated July 12, 1988 (LBP-88-18, 28 NRC 43), we authorized additional discovery between NECNP and the Applicant concerning the revised fuel pool cooling system submitted by the Applicant on June 7, 1977, for review by the Staff. That system is the subject of (safety) Contention 1, which alleged that the then-proposed system for cooling the spent fuel pool violated the single-failure criterion, particularly as set forth in General Design Criterion (GDC) 44. On August 4, 1988, NECNP submitted interrogatories and requests for production of documents to the Applicant; on August 16, 1988, the Applicant filed its answers.

In its answers, the Applicant objected to most of NECNP's discovery requests. Thereafter, on August 31, 1988, NECNP filed a motion to compel responses to many of those requests. On September 15, 1988, the Applicant responded to that motion. (No party other than NECNP and the Applicant has taken any position on the instant discovery requests.) We turn to each interrogatory or discovery request in the sequence dealt with in NECNP's motion.

A. Interrogatories 11-17

These interrogatories in general seek details respecting compliance of the newly proposed cooling system with the environmental qualification (Interrogatories 11-12), seismic qualification (Interrogatory 13), and missile and fire protection requirements (Interrogatories 15-16), and conformance of the system with requirements concerning testing, inspection, and surveillance (Interrogatory 14) and corrosion (Interrogatory 17). The Applicant claims that these requests seek information outside the scope of the contention.

In its motion, NECNP claims that, because the contention refers to the single-failure criterion, as embodied in GDC 44, these matters are encompassed within the contention. It goes on to assert that the systems and components comprising the spent fuel pool cooling system must meet these requirements, and it assumes

that the Applicant claims otherwise (as it had done earlier in the proceeding). It also describes these requirements as "implicit in the philosophy underlying the single-failure criterion" (Motion at 4).

To be sure, early in this proceeding the Applicant did question the applicability of the single-failure criterion to the spent fuel pool cooling system. But in responding to NECNP's discovery requests, it assumed that the criterion is applicable. In this opinion, we shall do likewise. The Applicant instead argues that the *sine qua non* of the single-failure criterion is redundancy and that none of these other matters are either incorporated by reference in the single-failure criterion or, alternatively, encompassed either by the contention or its underlying basis.

We need not decide at this time whether the single-failure criterion incorporates by reference any or all of the qualification matters raised by NECNP's interrogatories. For we agree with the Applicant that Contention 1 does not encompass them. On the assumption that the single-failure criterion is applicable to the fuel pool cooling system, all of these matters could potentially have been raised as the subject of a contention. However, NECNP did not do so. Nowhere has it provided any allegation of any potential problem in any of these areas, nor any reference to a basis dealing with problems of this sort. GDC 44, which is referenced in the contention, also does not explicitly include these matters. It specifies the applicability of the single-failure criterion and spells out certain requirements bearing only on redundancy. That is not sufficient to bring into the contention the various qualification requirements covered by the interrogatories.

This is not to say that the qualification requirements raised by NECNP are not applicable to the spent fuel pool cooling system. Nor are we stating that contentions dealing with these subjects would necessarily have been acceptable at the early stages of this proceeding. The June 7, 1988 proposal by the Applicant might well have served as an appropriate vehicle for the submission of late-filed contentions on subjects of this sort, but NECNP did not follow that course of action. Instead, it embarked through its discovery request on what amounts to a fishing expedition to uncover possible problems in these areas. This is impermissible under NRC regulations and precedents.

In particular, the NRC Rules of Practice limit discovery to the boundaries of admitted contentions (10 C.F.R. § 2.740(b)(1)). The Appeal Board has emphasized that the scope of a contention is determined by the "literal terms" of the contention, coupled with its stated bases. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 (1988); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 242 (1986). This principle was applied by the Appeal Board to the very contention for which NECNP is seeking discovery, limiting the pool temperature ceiling under consideration to 150°F (as alleged by NECNP) rather than the 140°F temperature limit specified by the Standard Review Plan

and included in the rewritten contention which we had admitted. ALAB-869, 26 NRC 13, 24-25 (1987). It stated that "[w]hat the proper temperature limit for the pool should be is an issue unto itself." *Id.* at 24.

Given these considerations, it is apparent to us that NECNP's contention cannot properly be read or construed as covering the qualification and similar matters encompassed by Interrogatories 11-17. To the extent that NECNP seeks to inquire into such matters, its motion to compel further answers to the foregoing interrogatories is denied.

B. Interrogatory 5

This interrogatory sought a detailed description of the Applicant's schedule for completing the "design, installation, and testing" of the cooling system proposed by the June 7, 1988 submission to the Staff, "including but not limited to the date this system is expected to be operational." The Applicant did not object to this interrogatory but answered only that the system will be completed, designed, installed and tested prior to the storage in the spent fuel pool of more than 2000 spent fuel assemblies, "for which no more definite schedule now exists."

NECNP deems this response to be incomplete and unresponsive. It observes that, although it is difficult to predict such schedules with absolute accuracy, the Applicant must have a schedule for completion of the design, installation, and testing if indeed it is in good faith in proposing the enhancements to its spent fuel pool cooling system. For its part, the Applicant maintains that the fact that NECNP is dissatisfied is irrelevant; that so long as the answer is complete, no further answer can be compelled.

It is clear that a response to an interrogatory, *if* true and *if* complete, is adequate, irrespective of the satisfaction with that response of the party that propounded the question. Based on previous filings in this proceeding, however, we have considerable doubt that the Applicant here has provided an adequate answer.

Thus, in a meeting with the Staff on February 9, 1988, in Rockville, Maryland, the Applicant (per Mr. David McElway) stated, in terms of a "proposed schedule" which had *already* been developed by the Applicant, that the conceptual design is scheduled to be completed by the end of Cycle 14 (scheduled for September 1990), that the final detailed design would be completed by the end of Cycle 15 (scheduled for April 1992) and that the entire design change would take place during Cycle 16, so that it would be "completed and fully operational at the end of Cycle 16" (scheduled for October 1993) (Tr. 19-20 of meeting of 2/9/88, provided to the parties and Board by the Staff's memorandum dated February 16, 1988). Both the Vermont Yankee official who signed the Applicant's answer to Interrogatory 5 and one of the counsel for

the Applicant were in attendance at this meeting and must be charged with knowledge of its substance.

Later, in a letter dated March 2, 1988, to NRC, which confirmed its "commitment" to install the new cooling system, the Applicant stated that "[t]his system will be operational no later than the end of Cycle 16 (Projected to be 1993)." Against this background, the Applicant now asks us to find its answer to Interrogatory 5 to be complete and adequate. We decline to close *our* eyes to the existing record before us.

Given these inconsistencies, we have questions as to whether, if it now has no schedule (and has thus abandoned the proposed schedule previously furnished to the Staff), the Applicant is seriously pursuing the supplemental cooling system proposal. Absent a satisfactory explanation, we, if not the Staff as well, might have good reason for questioning the good faith, if not the veracity or completeness, of any statements made in support of the application. Indeed, it is necessary to avoid a situation where no schedules are established and no work is undertaken with respect to the supplemental cooling system and where, to avoid the "hardship" of shutting down the reactor, the Applicant might well seek an "emergency" extension of time within which to install the enhanced cooling system, relying in the interim on the RHR system for supplemental cooling, as proposed in the initial expansion application.

To clarify these matters, we direct the Applicant to provide a complete (and *truthful*) response to Interrogatory 5.

In addition, we direct the Applicant to respond to three issues. First, it should provide an explanation of the apparent inconsistencies between its statements made at the February 9, 1988 meeting with the Staff, its commitment in its letter of March 2, 1988, to the Staff, and its August 16, 1988 response to Interrogatory 5. Second, because one of the Applicant's counsel of record was present at the February 9, 1988 meeting (and thus was aware of the scheduling statements made by the Applicant), we direct the Applicant to explain any discrepancies between statements made at the meeting and assertions made in the Applicant's response to NECNP's motion to compel (which indicates that it was in part the responsibility of, although it was not signed by, that same counsel).

Finally, we note that the Applicant has committed to have the supplemental pool cooling system in place and operational prior to the storage of more than 2000 fuel assemblies in the pool. We also note that the June 7, 1988 submission states (at Table A.2) that, for full-core offload situations, 1954 assemblies would be in the pool by the end of Cycle 14, and 2090 by the end of Cycle 15. Inasmuch as the timing of the capacity expansion appears to be based in part on the full-core offload situation, it is not clear to us how the Applicant is reconciling its commitment to install the supplemental cooling system prior to the storage of more than 2000 bundles with a potential full-core offload situation occurring during or following Cycle 15 (apparently scheduled to occur between

September 1990 and April 1992). As a third issue to be addressed, we request the Applicant to explore this matter and, in particular, explain how it would handle a full-core offload during this period when the total number of bundles requiring storage would exceed 2000.

C. Interrogatory 6

NECNP's Interrogatory 6 asks whether the enhanced fuel pool cooling system is "similar" to that used by any other nuclear plants and, if so, to identify the plants and describe their cooling systems and any differences from that proposed for Vermont Yankee. The Applicant objected to this interrogatory insofar as it related to any equipment other than the Emergency Standby Subsystem which was proposed by the June 7, 1988 submission. With respect to that subsystem, it interpreted "similar" as relating to use of the same technologies relating to fluid flow and heat transfer and responded that the proposed system was "similar" to the subsystems used by all other commercial nuclear plants in the United States. The Applicant identified no particular plants and did not describe any differences between any other plants and the system proposed for Vermont Yankee. Nor did the Applicant state that there were no differences.

NECNP in its motion claims that the answer is unresponsive and that the Applicant's interpretation of "similar" as relating to fluid flow and heat transfer is too broad. NECNP adds that it was plainly referring to the addition of the Emergency Standby Subsystem, a plant-specific system which, in its opinion, obviously cannot be used by all other commercial nuclear power plants and, indeed, is not even now being used at Vermont Yankee. The Applicant responds only to the effect that the interrogatory was ambiguous.

In our view, the Applicant's answer was clearly nonresponsive and inadequate. Even if the proposed system might be deemed "similar" to all other domestic nuclear plants, it plainly is not identical; yet the answer makes no reference at all to any differences, as requested by the interrogatory (and for which no objection was interposed). To answer this interrogatory adequately, under the construction supplied by the Applicant, it would have been necessary to detail any known differences between the Vermont Yankee system and that used in other plants, including but not limited to such matters as, for example, heat transfer capacity of the equipment, number of fuel elements to be cooled, and water temperature that each system is designed to attain.

On the other hand, we would suspect that the Applicant, in answering this interrogatory, was in effect using the asserted ambiguity to avoid providing a meaningful response. This is particularly apparent by the Applicant's objection to answering any portion of the interrogatory that dealt with equipment other than the Emergency Standby Subsystem. In view of this objection, the remainder

of the interrogatory to be answered could only have referred to the Emergency Standby Subsystem.

For the foregoing reasons, we direct the Applicant to provide a complete answer to Interrogatory 6, at least insofar as it relates to the Emergency Standby Subsystem.

For the above reasons, it is, this 27th day of September 1988, ORDERED:

1. That NECNP's motion to compel answers to interrogatories is *granted* with respect to Interrogatories 5 and 6 and *denied* with respect to Interrogatories 11-17.

2. The Applicant shall also provide answers to the three additional matters bearing on schedules raised by the Board in conjunction with Interrogatory 5.

3. The Applicant shall respond to Interrogatories 5 and 6, and provide the additional information requested by the Board in conjunction with Interrogatory 5, within 14 days of the date of service of this Memorandum and Order. *Cf.* 10 C.F.R. § 2.740b.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 27th day of September 1988.

[*See* Clarification of this ruling, LBP-88-25A, to be published in the October issuances.]

Cite as 28 NRC 401 (1988) DD-88-15

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 16, 1988

In a Partial Initial Decision, the Director of the Office of Nuclear Reactor Regulation denies, in part, a petition requesting correction of alleged deficiencies in the emergency planning program for the Perry facility, including proposed correction of the Perry public information brochure on emergency planning.

PUBLIC INFORMATION BROCHURES ON EMERGENCY PLANNING

Public information brochures on emergency planning should afford the public necessary information that is helpful for understanding the need to take appropriate action during a nuclear power plant emergency. The public should be provided this information in language that is both understandable to the layperson and is scientifically accurate.

INFORMING THE PUBLIC ABOUT THE HEALTH EFFECTS OF IONIZING RADIATION

Public information brochures on emergency planning should explain the health effects of ionizing radiation since such information would aid members of the public in taking appropriate action during a nuclear power plant emergency. However, the brochures should not attempt to compare the dangerous ionizing

radiation that can be emitted by a nuclear power plant with nondangerous forms of nonionizing radiation such as heat, light, and radio waves.

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

I. INTRODUCTION

In a petition dated September 22, 1987, Ms. Connie Kline, Ms. Theresa Burling, Mr. Russ Bimber, and Mr. Ron O'Connell, on behalf of Concerned Citizens of Lake County, Concerned Citizens of Geauga County, and Concerned Citizens of Ashtabula County (Petitioners) requested, pursuant to 10 C.F.R. § 2.206, that the U.S. Nuclear Regulatory Commission (NRC) require the Cleveland Electric Illuminating Company, *et al.* (CEI or Licensees) to correct alleged deficiencies in the Licensees' emergency preparedness program. Thereafter, in December 1987, portions of the Licensees' program were revised, and on April 8, 1988, the Petitioners withdrew their original contentions, but added certain new contentions based upon alleged deficiencies in the revised program. On July 25, 1988, they again added additional contentions based upon a subsequently discovered Federal Emergency Management Agency (FEMA) document.

The Contentions in Petitioners' April 8, 1988 supplemental petition are addressed in this Partial Decision. For the reasons set forth below, I have determined that most of the deficiencies alleged by the Petitioners do not require correction. To the extent that deficiencies still remain, the Licensees will be directed to take necessary action.

II. BACKGROUND

On September 22, 1987, Concerned Citizens of Lake County, Concerned Citizens of Geauga County, and Concerned Citizens of Ashtabula County filed the instant petition. Their primary concern was that the 1986 Emergency Preparedness Information Handbook for the Perry Nuclear Power Plant (hereinafter referred to as "the 1986 Handbook") allegedly contained false and misleading information about nuclear power and was written in a manner that minimizes or disregards the need for emergency planning. They also believed that this handbook should have been more instructive and more usable. As relief, the Petitioners requested that the NRC direct the Licensees to redistribute a corrected handbook to the public, incorporating their proposed revisions. In addition to the handbook corrections, the Petitioners requested that the Licensees be required to make certain other revisions in their emergency preparedness program

by changing the location of receiving schools, installing emergency signs, and correcting the emergency planning portion of local telephone directories.

On October 8, 1987, the Petitioners supplemented their original petition by forwarding several newspaper articles which they requested be included as Appendices E and F of their petition. On November 9, 1987, I acknowledged receipt of their petition and advised the Petitioners that their allegations would be answered within a reasonable time.[1]

On November 3, 1987, the NRC sent the petition to FEMA for that agency's review of the Petitioners' contentions pursuant to its responsibility to advise the NRC regarding offsite emergency preparedness issues.[2]

In December 1987, the Licensees published a new emergency preparedness brochure entitled "1988 Calendar — Emergency Preparedness Information" (hereinafter referred to as "the 1988 Calendar" or "the calendar") to replace the 1986 Handbook. The 1988 Calendar was forwarded to FEMA on December 4, 1987. Subsequently, on February 26, 1988, FEMA advised the NRC that most of the alleged deficiencies in the 1986 Handbook had been rectified in the 1988 Calendar. FEMA found some deficiencies in the 1988 Calendar, but recommended that their correction could await the next annual revision to the calendar. In addition, FEMA also enclosed recommendations it had solicited from the Environmental Protection Agency, Region V (EPA), concerning those portions of the 1988 Calendar relating to radiation and health effects. FEMA also recommended that the NRC order the Licensees to work with the state and local authorities to address two other problem areas relating to the Licensees' emergency preparedness program.[3]

On March 9, 1988, the Licensees responded to the petition by contending that the Petitioners had failed to raise a factual or legal basis for their requested relief. The Licensees also contended that most of the Petitioners' requests had been rendered moot by revisions made in the 1988 Calendar.

In a supplemental petition of April 8, 1988, replying to the Licensees' March 9, 1988 response, the Petitioners agreed that the 1988 Calendar had rectified the major deficiencies in the 1986 Handbook. Accordingly, they requested that I issue a Director's Decision only on those specified portions of the 1988 Calendar that they believed are objectionable, and they acknowledged that a ruling on all

---

[1] *See* 52 Fed. Reg. 43,810 (Nov. 16, 1987).

[2] *See* 10 C.F.R. § 50.54(s)(2) and (3) and Memorandum of Understanding Between FEMA and the NRC (50 Fed. Reg. 15,485 (Apr. 18, 1985)).

[3] FEMA's recommendations were that the NRC should order the Licensees to work with state and local authorities to address issues involving the location of receiving schools and the lack of permanent emergency information signs in some locations near the Perry facility. On April 19, 1988, FEMA clarified its position on these two possible problem areas by recommending that: (1) the State of Ohio, local jurisdictions, and the Licensees should revisit, within 4 months, the existing school evacuation planning procedures involving the receiving schools with a goal of either arriving at a schedule for implementing plan changes or adopting a position on the issue, and (2) emergency information signs should be installed in Lake and Ashtabula Counties within the next 4 months or a schedule should be provided for their installation.

other matters was unnecessary. The Licensees responded to this supplement on August 2, 1988.

On May 6, 1988, the NRC requested FEMA to submit its recommendations for those remaining contentions listed in the Petitioners' April 8, 1988 supplement that were within FEMA's area of expertise. On June 22, 1988, FEMA provided its response.

The Petitioners submitted a third supplement to their petition, dated July 25, 1988, requesting that the recommendations of FEMA and EPA contained in the memoranda from FEMA to the NRC, dated February 26, 1988, and April 19, 1988, be added to the petition. In the interest of providing a timely response to the Petitioners' concerns, I am issuing a Partial Decision on those issues raised prior to the third supplement to the petition. A decision on those issues raised by the third supplement to the petition, which are independent of the matters addressed in this Decision, will be addressed in the final decision.

III. DISCUSSION

The Petitioners' remaining concerns, as listed in their supplemental petition of April 8, 1988, related to: (1) whether the 1988 Calendar had been distributed to businesses within the plume exposure Emergency Planning Zone (EPZ), (2) whether a page on emergency planning that had been distributed by the Ohio Bell Company to remedy omissions in the telephone book was delivered to businesses, (3) whether this same emergency planning page should have included instructions that it should be placed in the telephone book or at least be retained by the recipient, (4) whether the 1988 Calendar needs to emphasize that parents should listen to the Emergency Broadcasting System (EBS) broadcasts to confirm the location of receiving schools before picking up their children, (5) whether the special-needs information card which was enclosed with the 1988 Calendar should be postage-paid and preaddressed, (6) whether the information in the 1988 Calendar on the Three Mile Island accident tends to create complacency and should be removed, and (7) whether the 1988 Calendar properly characterizes ionizing radiation and its effects on people.

FEMA has provided recommendations in its June 22, 1988 review for issues (1) through (6), above. Issue (7), above, which is more within the NRC's area of expertise, was reviewed by the NRC Staff. The FEMA and the NRC Staff reviews are discussed below.

1. Whether the 1988 Calendar Has Been Distributed to Businesses Within the Perry EPZ

The Petitioners are concerned that the 1988 Calendar may not have been sent to businesses within the Perry EPZ. FEMA has investigated this issue and confirmed that businesses there received this publication. FEMA obtained this confirmation from mailing lists that it received from the Licensees and from spot-checks that it conducted in the field.

FEMA's investigation revealed that the calendars were mailed to all postal patrons in the EPZ through the services of a commercial company that used updated mailing lists obtained from the U.S. Postal Service. This mailing included an estimated 2531 businesses plus those businesses that use a post office box or a rural address.

2. Whether a Page on Emergency Planning Which Was Distributed by the Ohio Bell Company to Remedy Omissions in the Telephone Book Was Delivered to Businesses

The Petitioners are also concerned that an emergency planning insert to the telephone directory may not have been sent to businesses. FEMA's investigation of this issue revealed that 70,000 copies of this insert were mailed by Ohio Bell Company to all holders of its telephone directories, to include businesses. The FEMA investigation also disclosed that a copy of this insert was delivered by Ohio Bell Company with each new directory requested until August 1988 when a new directory was issued.

Additional confirmation that businesses received this insert was obtained by spot-checks by FEMA of local businesses in the EPZ.

3. Whether This Same Emergency Planning Insert That Was Distributed by the Ohio Bell Company Should Have Included Instructions That It Be Placed in the Telephone Book or Be Kept.

The Petitioners also complain that this emergency planning insert did not have any instructions or explanations that it should be placed in the telephone book. Thus, according to Petitioners, it is likely that recipients did not place this insert in its intended location in the directory, if they kept it at all.

Although this mailing did not specifically include instructions that the page be placed in the telephone book, FEMA's investigation revealed that adequate instructions were given to alert recipients of the importance of the insert and the need for its retention, since the envelope in which it was sent contained, in red print, the statement, "Important Emergency Information — Please Retain—."

Spot-checks by FEMA's field inspectors also confirmed that the insert was being retained.

4. *Whether the 1988 Calendar Needs to Emphasize That Parents Should Listen to the Emergency Broadcast System (EBS) Broadcasts to Confirm the Location of Receiving Schools Before Picking Up Their Children*

The Petitioners contend that the handbook should emphasize that parents should listen to EBS broadcasts before trying to pick up their schoolchildren during a radiological emergency. They base this contention on the chance that the designated receiving schools will have to be changed if they are in the path of a radiological plume during an emergency.

FEMA does not believe that the handbook is deficient in its instructions about receiving schools. Although FEMA acknowledges that the location of the receiving schools that are listed in the 1988 Calendar can be changed during an emergency, it believes that this list is appropriate information for the calendar since these schools are the official receiving centers that are intended to be utilized, and in all probability will be utilized, for schoolchildren during an emergency. While the calendar provides this important information, it also provides for the substitution of schools on this list by specifically instructing that local radio and television will provide names of receiving schools during an emergency. The calendar also emphasizes in several places that the public should listen to EBS broadcasts during an emergency and "FOLLOW THE RADIO AND TV INSTRUCTIONS."

5. *Whether the Special-Needs Information Cards Should Be Postage-Paid and Preaddressed*

The Petitioners want the special-needs cards which were sent with the 1988 Calendar to be postage-paid and preaddressed so that their utilization will be more likely. However, there are no NRC or FEMA requirements that would require these special services, and it is a matter for state and local authorities and the Licensees to decide whether they are necessary. Nevertheless, although it is not mandatory, FEMA's recommendation that consideration be given to at least preaddressing the special-needs card to be forwarded to the Licensees.

6. *Whether Information in the 1988 Calendar on the Three Mile Island Accident Tends to Create Complacency and Should Be Removed*

The Petitioners claim that the information in the 1988 Calendar about the Three Mile Island accident tends to create complacency about accidents at nuclear power plants since it incorrectly states that the radiation releases that occurred at Three Mile Island were not a hazard to the public. FEMA has advised that the section of the 1988 Calendar on the accident at Three Mile Island is a factual and accurate reference to that accident and its consequences. Therefore, the representations about the accident made in the calendar could not create complacency, and they would not need to be removed.

7. *Whether the 1988 Calendar Properly Characterizes Ionizing Radiation and Its Effects on People*

The Petitioners also allege that the 1988 Calendar encourages the public to become complacent about the dangers of nuclear power by failing to distinguish between ionizing and nonionizing radiation. They claim, in this regard, that ionizing radiation differs from nonionizing radiation in that it can break chemical bonds and be fatal to humans, while nonionizing radiation is not dangerous. According to the Petitioners, the calendar inappropriately compares the radiation that can be emitted during an accident at a nuclear power plant, which would be a form of ionizing radiation, with nondangerous, nonionizing radiation such as heat, light, and radio waves. As a cure, the Petitioners propose changing or deleting several words and sentences and clarifying an apparent contradiction in the text which states that "people cannot see, taste, feel, hear, or smell radiation" while listing heat, light, and radio waves as examples of radiation. The Petitioners also disagree with an assertion in the 1988 Calendar that doses of radiation less than 25 rems are harmless.

I agree with the Petitioners that the 1988 Calendar fails to properly characterize the ionizing radiation that can be emitted by a nuclear power plant by inappropriately comparing it with certain types of nonionizing radiation. In addition, I conclude that portions of the statement that "people cannot see, taste, feel, hear, or smell radiation" are inaccurate since people can obviously see light and feel the heat resulting from infrared radiation.

I further find that the references to 25 rems in the 1988 Calendar are inaccurate. Although there is scientific and academic controversy in the area of health effects of low doses of ionizing radiation (i.e., 0.1 to 50 rems),[4] there is substantial scientific evidence that whole-body doses as low as 10 rem can

[4] In the area of radiobiology at low doses, the spectrum of scientific beliefs ranges from beneficial effects such as the lengthening of life to detrimental effects such as undesirable genetic mutations and carcinogenesis.

produce chromosome breaks, and deleterious genetic effects can be associated with such breaks.[5] Furthermore, I find it inappropriate in a public information brochure of this kind to burden the public with scientific detail of a complex and controversial nature, especially when such detail is unneeded as information for the public's response to accidents.

Although portions of the 1988 Calendar are thus incorrect, the remedy is not deleting information about the nature of ionizing radiation and its possible health effects since such information may be helpful for public understanding of the need to take appropriate action during a nuclear power plant emergency. However, the public should be provided educational materials on this subject in language that is both understandable to the layperson and is scientifically accurate. These materials should not raise complex scientific issues, but should provide the lay reader with an appreciation of radiation and its possible health effects in a practical sense. The Licensees have appropriately limited the scope and level of sophistication in this section of the calendar, but, as noted above, have missed the mark on scientific accuracy. These inaccuracies are not so egregious, however, as to warrant correction before the next annual revision of the public information brochure/calendar. Accordingly, the Licensees will be advised to ensure that, in future revisions of this publication, the information concerning ionizing radiation and its health effects is practical and understandable to the layperson as well as scientifically accurate.[6]

---

[5] *See* Lloyd, "An Overview of Radiation Dosimetry by Conventional Cytogenetic Methods," *Biological Dosimetry* (1984), at 7, 11-12.

[6] In arriving at this decision, I have given full consideration to the EPA Region V comments and recommendations on radiation and its health effects, dated December 28, 1987, that were based on a review of the 1986 Handbook and were attached to the February 26, 1988 FEMA response. (FEMA noted that the changes in the calendar did not substantially change the basis of the EPA Region V comments and recommendations that were based on the 1986 Handbook.) Specifically, the EPA Region V found that the 1986 Handbook contained misleading statements regarding the characterization of ionizing radiation and the associated health effects. It concurred with the Petitioners that (1) these misstatements should be corrected; and recommended that (2) the handbook should be rewritten to convey to the lay public a more accurate picture of the current radiation protection philosophy to include certain technical concepts such as the linear, nonthreshold model of health effects, the principle of keeping exposure as low as reasonably achievable, and the known health effects of ionizing radiation; and (3) the Licensees should provide a reference to a statement in the 1986 Handbook that nuclear power plants are not permitted to expose the public to more than 5 millirems per year (mrem/year) and that the Perry plant only gives doses of 1 or 2 mrem/year to members of the public. I have addressed the EPA Region V recommendations (1) and (2) in the above discussion. With regard to recommendation (2), I would point out that EPA appears to recommend that a number of scientific concepts be included in the handbook (e.g., linear, nonthreshold health effects model, principle of keeping exposure as low as reasonably achievable, and known health effects of ionizing radiation). However, such detailed information would be inappropriate in a document of this type since it would not be readily understood by a layperson. In this regard, FEMA has advised that information in public information brochures should be easily understood and not overly technical, if it is to be of value to the public during an emergency. *See* FEMA REP-11, "A Guide to Preparing Emergency Public Information Materials," at 18 (September 5, 1985). With regard to recommendation (3), no reference for offsite doses is necessary since the Licensees have informed the NRC Staff that all representations concerning offsite doses during normal operation are being deleted from their 1989 public information brochure.

IV. CONCLUSION

The Petitioners seek certain specified improvements in the public information published on emergency preparedness for the Perry Nuclear Power Plant. For the reasons discussed above, I find no substantial basis for issuing an order requiring the actions requested and, therefore, the petition is denied. However, the Licensees will be advised, for their next and succeeding public information publications, to clarify the sections on ionizing radiation and its possible health effects and to consider at least providing preaddressed special-needs cards. To the extent this relief grants some of the Petitioners' requests, the petition is granted. As provided in 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary of the Commission for the Commission's review.

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 16th day of September 1988.

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 50-49**

OHIO CITIZENS FOR RESPONSIBLE ENERGY **September 28, 1988**

The Nuclear Regulatory Commission (NRC) is denying a petition for rulemaking filed by the Ohio Citizens for Responsible Energy (OCRE), Inc. OCRE requested that the NRC amend 10 C.F.R. § 50.12(a)(2) to remove the provision that would permit the NRC to grant a licensee an exemption from a rule in 10 C.F.R. Part 50 on the grounds that the rule imposes on the licensee "undue . . . costs . . . significantly in excess of those contemplated when the regulation was adopted, or . . . of those incurred by others similarly situated . . . ." OCRE argued that these words violate the ruling in *UCS v. NRC*, 824 F.2d 108 (D.C. Cir. 1987), that the NRC may not take economic costs into consideration in establishing or enforcing the safety standards required for "adequate protection" of the public health and safety. The petition is being denied because the issues raised by the petition have already been fully considered and resolved in recent rulemakings in accordance with principles that either appear in, or are consistent with, *UCS v. NRC*. In particular, § 50.12(a)(1) bars any exemption that would threaten "adequate protection."

RULE OF PRACTICE: PETITIONS FOR RULEMAKING (PUBLIC COMMENT)

No purpose is served by soliciting public comments on a petition for rulemaking that only raises issues that have already been resolved in recent rulemakings.

REGULATIONS: INTERPRETATION ("ADEQUATE PROTECTION" AND "NO UNDUE RISK")

The phrase "no undue risk" and the phrase "adequate protection" are equivalent. *UCS v. NRC*, 824 F.2d 108, 109 (D.C. Cir. 1987).

10 C.F.R. § 50.12: PERMISSIBILITY OF COST CONSIDERATIONS

Section 50.12(a) of 10 C.F.R. requires a safety finding that the exemption will not present an undue risk to the public health and safety. It is only after this statutorily based finding has been made that the Commission may, under the Atomic Energy Act, then consider whether the additional requirements for the grant of an exemption have been met, some of which include economic considerations. 50 Fed. Reg. 50,764, 50,767, col. 3 (Dec. 12, 1985); *cf. UCS v. NRC*, 824 F.2d 108, 118 (D.C. Cir. 1987).

REGULATIONS: COMPLIANCE AND "ADEQUATE PROTECTION"

While compliance with all NRC regulations provides reasonable assurance of adequate protection of the public health and safety, the converse is not correct, that failure to comply with one regulation is an indication of the absence of adequate protection, at least in a situation where the Commission has reviewed the noncompliance and found that it does not pose an "undue risk" to the public health and safety. 50 Fed. Reg. 50,764, 50,768, cols. 1-2 (Dec. 12, 1985). The regulations in 10 C.F.R. do not "define" "adequate protection." There will be times when the NRC issues a rule that requires something beyond adequate protection. This follows directly from the Commission's power under § 161i of the Atomic Energy Act to issue rules or orders to "minimize danger to life or property." *See* 42 U.S.C. 2201i; *see also UCS v. NRC*, 824 F.2d 108, 118 (D.C. Cir. 1987).

DENIAL OF PETITION FOR RULEMAKING

I. THE PETITION

On December 1, 1987, the Ohio Citizens for Responsible Energy (OCRE), Inc., filed pursuant to 10 C.F.R. § 2.802 a petition for rulemaking. OCRE requested that the NRC amend 10 C.F.R. § 50.12(a)(2) to remove the provision that would permit the NRC to grant a licensee an exemption from a rule in 10 C.F.R. Part 50 on the grounds that the rule imposes on the licensee "undue . . .

costs . . . significantly in excess of those contemplated when the regulation was adopted, or . . . of those incurred by others similarly situated . . . ."

Section 50.12 of 10 C.F.R. states, in pertinent part,

> (a) The Commission may . . . grant exemptions from the requirements of the regulations of this part, which are —
>
> (1) Authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security.
>
> (2) The Commission will not consider granting an exemption unless special circumstances are present. Special circumstances are present whenever —
>
> * * *
>
> (iii) Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated; . . .
>
> * * *

II. BASIS FOR REQUEST

OCRE proposes that ¶ (a)(2)(iii) be deleted and the remaining subparagraphs of ¶ (a)(2) accordingly redesignated, and that a new ¶ (a)(3) be added to read as follows:

> The Commission will not consider granting an exemption which has as a motivation or consequence cost savings or other financial benefits to licensees, and the Commission shall not consider any economic costs to licensees in its evaluation of any exemption request.

OCRE argues that, without the amendments it proposes, § 50.12(a)(2) will not be in conformity with the Federal Court of Appeals for the District of Columbia Circuit's decision, *UCS v. NRC*, 824 F.2d 108 (1987), which concerned the "backfit rule," 10 C.F.R. § 50.109. There the Court held, in pertinent part, that "the [Atomic Energy] Act precludes the NRC from taking costs into account in establishing or enforcing the level of adequate protection, but allows the NRC to consider costs in devising or administering requirements that offer protection beyond that level." 824 F.2d at 114.

OCRE asserts that "[t]here can be no doubt that the regulations in 10 C.F.R. Part 50 form the basis of the adequate protection standard. " Petition at 4. OCRE cites two judicial rulings to support its assertion: It claims that the Commission's Appeal Board "declared" that "the *sine qua non* of adequate protection to public health and safety is compliance with all applicable safety rules and regulations promulgated by the Commission." Petition at 4-5, *quoting Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), ALAB-

161, 6 AEC 1003, 1009 (1973). OCRE moreover says that it is "significant" that the Court in *UCS v. NRC* "placed major reliance on Maine Yankee in buttressing its interpretation of the Atomic Energy Act." Petition at 5, *citing UCS v. NRC*, 824 F.2d at 117.

On the basis of its assertion that compliance with the regulations is necessary for adequate protection, OCRE concludes that 10 C.F.R. § 50.12(a)(2)(iii) "stands in defiance" of the Court's ruling in *UCS v. NRC* because the rule "explicitly allows economic costs of compliance . . . to form a special circumstance justifying noncompliance with, by means of exemption from, the NRC's adequate protection standards." Petition at 5.

III. REASONS FOR DENIAL

The issues raised by OCRE in this petition were thoroughly discussed in the rulemaking leading up to the 1985 revision of § 50.12, and those issues were resolved in that rulemaking in accordance with principles that either appear in, or are consistent with, *UCS v. NRC*. In particular, OCRE's assumption that compliance with the regulations is necessary for adequate protection was considered and rejected by the Commission in the rulemaking in 1985 on § 50.12, and again in the renewed rulemaking in 1987-88 on the backfit rule, 10 C.F.R. § 50.109.[1]

In the *Federal Register* notice setting forth the proposed revisions to § 50.12, then-Commissioner Asselstine, who soon thereafter dissented from promulgation of the backfit rule (50 Fed. Reg. 38,097, 38,106-10 (Sept. 20, 1985)), proposed that the revisions include the cost provision OCRE now petitions to have deleted. 50 Fed. Reg. 16,506, 16,510, col. 1 (Apr. 26, 1985). The purpose of the provision was not, as OCRE believes, to make way for "pleas of poverty" by utilities (*see* Petition at 5). The provision focused not on the utility's financial condition but rather on the possible failure of the pertinent regulation to foresee extraordinary costs. This part of the rule, and indeed the whole rule, simply acknowledges what is acknowledged in any reasonable jurisprudence, namely, that foresight is limited and, therefore, that any rule must make room for unforeseen exceptional situations.

In response, the Union of Concerned Scientists (UCS) argued that the Commission did not have statutory authority to consider economic factors in granting an exemption. On this ground, UCS opposed several provisions of the proposed revisions to § 50.12, not just Mr. Asselstine's cost proposal. *See* 50 Fed. Reg. 50,764, 50,767, cols. 2-3. Indeed, UCS went the larger step — fully

[1] No purpose would have been served by soliciting public comment on issues already resolved in recent rulemakings. Thus, the NRC has not sought public comment on OCRE's petition.

consistent with the proposition that compliance with the regulations is necessary for adequate protection — and argued that the Commission had no authority to issue exemptions at all. *Id.* at 50,766, cols. 2-3. UCS explicitly stated the assumption OCRE now relies on, namely, that "the regulations establish the minimal requirements for safe operation of a nuclear power plant . . . ." *Id.* at 50,768, col. 1.

The Commission rejected UCS' assertions and in so doing enunciated propositions that have been either explicitly upheld by the Court in *UCS v. NRC* or are fully consistent with the Court's holdings.

First, the Commission emphasized that the rule "requires a safety finding that the exemption will not present an undue risk to the public health and safety . . . . It is only after [this] statutorily based finding[] [has] been made that the Commission may then consider whether the *additional* requirements for the grant of an exemption have been met, some of which include economic considerations." *Id.* at 50,767, col. 3 (emphasis in original). In *UCS v. NRC*, the Court clearly held that the Atomic Energy Act permitted cost considerations once adequate protection was established. Noting that "no undue risk" and "adequate protection" were equivalent phrases, 824 F.2d at 109, the Court ruled that, "[i]f the Commission wishes to do so, it may order power plants already satisfying the standard of adequate protection to take additional safety precautions. When the Commission determines whether and to what extent to exercise *this* power, it may consider economic costs or any other factor." *Id.* at 118 (emphasis in original).

Second, the Commission explained the relation between adequate protection and compliance with the regulations:

> [W]hile it is true that compliance with all NRC regulations provides reasonable assurance of adequate protection of the public health and safety, the converse is not correct, that failure to comply with one regulation or another is an indication of the absence of adequate protection, at least in a situation where the Commission has reviewed the noncompliance and found that it does not pose an "undue risk" to the public health and safety.

50 Fed. Reg. at 50,768, cols. 1-2; *see also id.* at 50,771, col. 3.

In the recent rulemaking to conform the backfit rule to the Court's holdings in *UCS v. NRC*, the Commission affirmed this account of the relation between adequate protection and compliance with the regulations. In that rulemaking, OCRE argued, as it does here, that the regulations "define" adequate protection. From this assertion, OCRE concluded that the Commission cannot apply cost-benefit considerations to a proposed rule without applying cost-benefit considerations in setting the standards of adequate protection, contrary to the Court's principal holding in *UCS v. NRC*. *See* 50 Fed. Reg. 20,603, 20,609, cols. 1-2. In response, the Commission said that

> the rules do not, strictly speaking, "define" adequate protection, and they only presumptively assure it. Not only may there . . . be individual cases that require actions that go beyond what is necessary under the regulations to assure adequate protection, there will also be times when the NRC issues a rule which requires something beyond adequate protection. This follows directly from the Commission's power under section 161 of the Atomic Energy Act, affirmed by the Court, to issue rules or orders to "minimize danger to life or property." *See* 42 U.S.C. 2201; *see also UCS v. NRC*, 824 F.2d at 118. If a proposed rule requires something more than adequate protection, applying a cost standard to the proposed rule will not be introducing cost considerations into the setting of the adequate protection standard and is therefore permitted.

Id. at 20,609, col. 2. Similarly, if a rule requires something more than adequate protection, or if adequate protection can be secured by means other than those set forth in the rule in question, then consideration of unforeseen extraordinary costs in response to a request for an exemption that would not present an undue risk to public health and safety does not introduce cost considerations into enforcing the adequate protection standard and is therefore permitted.

Neither of the two judicial decisions OCRE cites are to the contrary. In *Maine Yankee*, the principal issue was whether a licensing board had to look beyond compliance with the regulations to determine whether there was reasonable assurance of adequate protection. The Appeal Board did not, as OCRE claims, "declare" that compliance with the regulations is a "*sine qua non*" of adequate protection. The Board was a good deal more restrained. It said that, "on the *face* of it," certain statements in the Atomic Energy Act "would appear to *suggest*" that compliance was the *sine qua non* of adequate protection. *See* 6 AEC 1009 (emphases added). From this hypothetically stated proposition, the Board concluded that, at least in the case before the Board, where no showing was made that compliance with the regulations fell short of adequate protection, "the demonstration of compliance with the regulations entitled the Board below to find adequate protection to the health and safety of the public." *Id.* at 1010. The Board hypothetically assumed here that compliance with the regulations was necessary for adequate protection, but the Board could just as easily have reached the same conclusion by hypothetically assuming that compliance with the regulations would provide an even greater level of safety than adequate protection.

Neither does *UCS v. NRC* support OCRE's claims. OCRE sees "significance" in the extent to which the Court "relied" on *Maine Yankee*. However, the Court uses *Maine Yankee* only to show that the Commission itself had long ago held that the Atomic Energy Act prohibited the consideration of economic costs in making adequate protection determinations. *See* 824 F.2d at 117. To make its point, the Court draws on a different part of *Maine Yankee* than OCRE does. *See id.* The Court nowhere says that compliance with the regulations is necessary for adequate protection, nor does the Court even quote the language OCRE

quotes from *Maine Yankee*. Indeed, it would have been surprising if the Court had said such a thing, for the Court affirms the Commission's power to require, by rule or in specific cases, more than adequate protection. *See, e.g., id.* at 118. From this it follows that some rules may require more than adequate protection and thus that exemptions from these rules may be granted on the specified costs grounds if the exemptions do not present undue risks to public health and safety.

Because the issues OCRE raises in its petition were fully considered in the 1985 rulemaking on 10 C.F.R. § 50.12 and were resolved in that rulemaking in accord with principles that either were affirmed by *UCS v. NRC* or are fully consistent with it, OCRE's petition to have § 50.12 amended is denied. Because the petition raises no new policy issue, and because the denial of the petition relies wholly on existing Commission precedent, the denial is being issued over the signature of the Executive Director for Operations.

For the Nuclear Regulatory
Commission

Victor Stello, Jr.
Executive Director for Operations

Dated at Rockville, Maryland,
this 28th day of September 1988.

Cite as 28 NRC 419 (1988) CLI-88-8

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket Nos. 50-443-OL
50-444-OL
(Offsite Emergency Planning)

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 7, 1988

The Commission vacates those portions of ALAB-883 that require a finding on prompt offsite notification systems before low-power operation, and specifically vacates the Appeal Board's order that authorization of low-power operation may not be given effect until the contested issues about such a system are resolved favorably for Seabrook. The Commission directs the Chairman of the Atomic Safety and Licensing Board Panel in consultation with the Seabrook "onsite" and "offsite" Atomic Safety and Licensing Boards to determine which of those Licensing Boards should try the prompt notification issues.

EMERGENCY PLAN(S): LOW-POWER LICENSE (COMPARATIVE RISK ANALYSIS)

The Commission reexamined whether there was a safety basis for requiring prompt public notification as a prerequisite to low-power testing operations and reaffirmed its earlier view that the risks at low power were significantly less than at full power and therefore concluded that such a system was not needed.

EMERGENCY PLAN(S): LOW-POWER LICENSE (STANDARD FOR ISSUANCE); NOTIFICATION REQUIREMENTS

The Commission clearly established by rule that it was discontinuing the practice of reviewing offsite public notification systems as part of the applicants' onsite plan which needed to be in place before low-power testing began. Findings on only those offsite standards specified in 10 C.F.R. § 50.47(d), as amended, are to be prerequisite to low-power testing.

ORDER

On February 3, 1988, the Atomic Safety and Licensing Appeal Board held that issues relating to the means in an emergency for promptly notifying the offsite public were required to be resolved favorably to the applicants before low-power testing operations at Seabrook could proceed. ALAB-883, 27 NRC 43 (1988). The applicants sought Commission review of that decision by petition dated February 18, 1988, and in due course the Commission received the views of the parties. The matter remains before us, and we dispose of it today by this order in which we vacate those portions of ALAB-883 that require a finding on prompt offsite notification systems before low-power operation.

Related to its deliberations in *Seabrook* and in the interval between issuance of ALAB-883 and this order, the Commission conducted a rulemaking in which, among other things, it reexamined whether there was a safety basis for requiring prompt public notification as a prerequisite to low-power testing operations. *See* Notice of Proposed Rulemaking, 53 Fed. Reg. 16,435 (1988). In the preamble for the final rule, the Commission reaffirmed its earlier view that the risks at low power were significantly less than at full power and therefore concluded that such a system was not needed. The Commission clearly established by rule that it was discontinuing the practice of reviewing offsite public notification systems as part of the applicants' onsite plan which needed to be in place before low-power testing began. Findings on only those offsite standards specified in 10 C.F.R. § 50.47(d), as amended, are to be prerequisite to low-power testing. The

rule becomes effective on October 24 and is applicable to this proceeding. See 53 Fed. Reg. 36,955 (1988).

In light of the foregoing, the Commission vacates that portion of the Appeal Board's memorandum and order in ALAB-883 which holds that an adequate system for prompt public notification in the event of an accident is a prerequisite to authorizing low-power operation. The Commission specifically vacates the Appeal Board's order that authorization of low-power operation may not be given effect until the contested issues about such a system are resolved favorably for Seabrook.[1] The Commission believes that no useful purpose would be served in discussing whether the Appeal Board was correct in interpreting the regulations as they stood at the time ALAB-883 was issued. Accordingly, no further consideration of ALAB-883 is warranted.

Finally, the Commission directs the Chairman of the Atomic Safety and Licensing Board Panel in consultation with the Seabrook "onsite" and "offsite" Atomic Safety and Licensing Boards to determine which of those Licensing Boards should try the prompt notification issues. The Commission expresses no view on the question.

It is so ORDERED.

For the Commission[2]

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 7th day of October 1988.

[1] This is not to say that such authorization is now appropriate. The Commission has required that applicants demonstrate reasonable assurance that there will be available funding for decommissioning in the event that low-power testing occurs and a full-power license is not granted. *See* Commission Order, CLI-88-7, 28 NRC 27 (1988).

[2] Commissioner Roberts was on official government travel and was unavailable to participate on this order.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Christine N. Kohl, Chairman
Alan S. Rosenthal
Howard A. Wilber

In the Matter of **Docket No. 50-322-OL-3**
(Emergency Planning)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **October 7, 1988**

Upon consideration of one part of a bifurcated appeal, the Appeal Board reverses the Licensing Board's decision, LBP-88-24, 28 NRC 311 (1988), insofar as it purports to dismiss the intervenors from a portion of the proceeding that is before another Licensing Board; it also vacates the Licensing Board's authorization of a full-power license due to the unresolved emergency planning issues pending before the other Licensing Board.

APPEAL BOARD: DISCRETION IN MANAGING APPEALS

The sequence and manner in which the Appeal Board addresses issues raised on appeal is a matter inherently committed to its discretion.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

Commission regulations require a "full participation" emergency exercise within the two years preceding the issuance of a full-power operating license for a nuclear power facility. Further, intervenors may litigate the issue of whether this pre-license exercise reveals any "fundamental flaws" in the emergency plan for the facility. ALAB-900, 28 NRC 275, 282-83 (1988).

RULES OF PRACTICE: SANCTIONS (AUTHORITY OF LICENSING BOARDS)

Whatever the extent a licensing board's authority may be with respect to the imposition of sanctions against a party, and irrespective of whether a party's conduct in a proceeding warrants sanctions, there is no basis for extending that authority to matters within the purview of a different decisionmaker.

RULES OF PRACTICE: SANCTIONS (AUTHORITY OF LICENSING BOARDS)

A licensing board can dismiss a party from only the part of the proceeding within that board's purview, when other parts of the proceeding are pending before a different board. In such a multiple-board situation, the ultimate sanction of dismissal from the entire proceeding can be accomplished by obtaining the sanction of dismissal from each of the boards before which different parts of the proceeding are pending.

NUCLEAR REGULATORY COMMISSION: MULTIPLE LICENSING BOARDS

The use of multiple boards to conduct various aspects of a single proceeding is a discretionary case management tool; it cannot, however, be used to shield unlawful behavior or to defeat Commission policy.

APPEAL BOARD: STANDARDS OF REVIEW

Unappealed licensing board conclusions on legal issues do not have precedential effect. *Duke Power Co.* (Cherokee Nuclear Station, Units 1, 2, and 3), ALAB-482, 7 NRC 979, 981 n.4 (1978).

NUCLEAR REGULATORY COMMISSION: MULTIPLE LICENSING BOARDS

The multiple-board case management tool cannot be used to affect a party's right to be judged independently and fairly by each board before which it appears. Thus, one of several boards presiding in a single proceeding cannot take advantage of the multiple-board approach and expand its own authority to matters pending elsewhere through the vehicle of a discovery sanction.

RULES OF PRACTICE: SANCTIONS (BASIS FOR LEVYING)

In a multiple-board proceeding, a licensing board considering dismissal as a sanction should take into account such things as the nature and pervasiveness of the behavior being punished and the relationship of the sub-proceeding in which the disciplinary action is taken to other sub-proceedings affected by it.

RULES OF PRACTICE: SANCTIONS (BASIS FOR LEVYING)

The basis for dismissal of a party from a proceeding as sanction for failure to comply with a discovery order must be fully articulated. *See Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 41 (1977), *aff'd*, CLI-78-1, 7 NRC 1, *aff'd sub nom. New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir. 1978). *See also Patton v. Aerojet Ordnance Co.*, 765 F.2d 604, 607-08 (6th Cir. 1985).

RULES OF PRACTICE: JURISDICTION OF BOARDS

An adjudicatory board has the inherent right and duty to determine, in the first instance, the bounds of its own jurisdiction. *Duke Power Co.* (Perkins Nuclear Station, Units 1, 2, and 3), ALAB-591, 11 NRC 741 (1980).

RULES OF PRACTICE: SANCTIONS (BASIS FOR LEVYING)

Dismissal from a proceeding is so harsh a penalty, it should be imposed only in extreme circumstances. *Wyle v. R.J. Reynolds Industries, Inc.*, 709 F.2d 585, 589 (9th Cir. 1983).

APPEARANCES

E. Thomas Boyle, Hauppauge, New York, Lawrence Coe Lanpher, Karla J. Letsche, and Michael S. Miller, Washington, D.C., Fabian G.

Palomino and Richard J. Zahnleuter, Albany, New York, and Stephen B. Latham, Riverhead, New York, for intervenors Suffolk County, the State of New York, and the Town of Southampton.

Donald P. Irwin, James N. Christman, K. Dennis Sisk, and Charles L. Ingebretson, Richmond, Virginia, for applicant Long Island Lighting Company.

Edwin J. Reis for the Nuclear Regulatory Commission staff.

DECISION

On September 23, 1988, the so-called "OL-3" Licensing Board issued its "Concluding Initial Decision on Emergency Planning," LBP-88-24, 28 NRC 311, in connection with Long Island Lighting Company's (LILCO) application for an operating license for its Shoreham nuclear power facility. In that decision, the Board resolved on the merits and in LILCO's favor several outstanding emergency planning issues. As to eight other issues — the "realism" contentions — the Board found intervenors Suffolk County, the State of New York, and the Town of Southampton (hereinafter "the Governments") to be in default of certain OL-3 Licensing Board discovery orders and ordered all three Governments "dismissed from the proceeding." *Id.* at 357, 385. The Board determined that the realism issues were thus "no longer 'in controversy' between the parties" and that the record on all other matters was complete and warranted a decision in LILCO's favor. *Id.* at 385, 317 & n.3.[1] It therefore authorized the Director of the NRC's Office of Nuclear Reactor Regulation (after making the requisite findings on uncontested matters) to issue a full-power operating license for Shoreham. *Id.* at 386.

Soon thereafter the Governments filed notices of appeal from the Licensing Board's decision. They also moved jointly for bifurcation of the appeal and expeditious review of one narrow "jurisdictional" issue: whether the OL-3 Licensing Board can dismiss the intervening Governments from a portion of the licensing proceeding not pending before that particular Licensing Board. Specifically, they noted that the Licensing Board in the "OL-5" phase of

[1] Notwithstanding its conclusion that the realism issues were no longer in controversy, the Licensing Board elected to review what it characterized as LILCO's "prima facie" case on those issues. LBP-88-24, 28 NRC at 377-85. On the strength of that review, it found that, "absent the sanction of dismissal, a decision on the merits of the issues would have been rendered in [LILCO's] favor." *Id.* at 357, 385. The Board acknowledged, however, that, given its dismissal of the Governments from the proceeding, this finding was dicta. *Id.* at 377. Presumably for this reason the Board did not allude specifically to the finding in setting forth its conclusions of law. *See id.* at 385.

this proceeding has matters pending before it in connection with the recent emergency exercise conducted at Shoreham.

In an unpublished order dated September 27, 1988, we granted the Governments' request to bifurcate and to expedite their appeal on the jurisdictional question.[2] LILCO and the NRC staff oppose the Governments' appeal.[3] As explained below, we reverse the OL-3 Licensing Board's decision in LBP-88-24 insofar as it purports to dismiss the Governments from a segment of the case pending before a different Board. Consequently, because issues remain to be resolved in this proceeding, the OL-3 Licensing Board's full-power license authorization is necessarily void and must be vacated.

A. The Governments' argument is brief and to the point. In ALAB-901, 28 NRC 302 (1988), issued three days before LBP-88-24, we remanded to the *OL-5* Licensing Board for appropriate and expeditious action certain new matters raised in connection with the June 1988 emergency exercise at Shoreham.[4] On September 22, pursuant to our direction in ALAB-901, the OL-5 Licensing Board issued an order scheduling further proceedings in that part of the case. Thus, according to the Governments, the OL-3 Licensing Board did not have jurisdiction over the entirety of this licensing proceeding and could not therefore dismiss, or purport to dismiss, the intervenors from the proceeding as a whole.[5]

LILCO disagrees and asserts that the OL-3 Board had not only the power but the duty to dismiss the Governments from the proceeding. It makes several arguments to support this view. First, LILCO states that the OL-3 Board's findings on the merits — i.e., that the Governments' conduct was willful, prejudicial, and in bad faith, warranting their dismissal — must be

---

[2] Our unpublished September 29 memorandum and order sets forth in detail and in response to a LILCO motion our reasons for considering separately and expeditiously the discrete jurisdictional issue raised by the Governments' appeal. LILCO makes much of the fact that we bifurcated the Governments' appeal without soliciting other parties' views first. The sequence and manner in which we address issues raised on appeal is, of course, a matter inherently committed to our discretion. Moreover, bifurcation of this appeal is of no greater moment than a determination to enter a stay to preserve the status quo — action that we have also taken on an ex parte basis, where in our judgment, the circumstances warranted it. In both instances, full briefing on the merits by all parties followed.

[3] The Governments moved for leave to file a reply to LILCO. LILCO opposed their motion, but, in the alternative, tendered a response to the Governments' reply brief and requested oral argument. In view of the decision we reach here, we need not consider the Governments' further arguments, and their motion is therefore *denied*. LILCO's alternative response is necessarily rejected as well.

[4] As explained in ALAB-900, 28 NRC 275, 282-83 (1988), the Commission's regulations require a "full participation" emergency exercise within the two years preceding the issuance of a full-power operating license for a nuclear power facility. As a result of a court decision and a corresponding change in the Commission's rules, intervenors may litigate the issue of whether this pre-license exercise reveals any "fundamental flaws" in the emergency plan.

The June 1988 exercise is LILCO's second attempt to satisfy the pre-license exercise requirement. (The OL-5 Licensing Board found the 1986 exercise deficient in scope and we affirmed that conclusion in ALAB-900.) Following the recent issuance of the Federal Emergency Management Agency's favorable report on the 1988 exercise, the NRC staff and the Governments sought to initiate proceedings in that regard. In ALAB-901, we held that we had jurisdiction over all matters relating to LILCO's compliance with the pre-license exercise requirement, but we remanded all new matters concerning the 1988 exercise to the OL-5 Board for disposition.

[5] The Governments stress that they will challenge, on the merits, their dismissal from any part of the proceeding, as well as other parts of LBP-88-24, when they brief the unexpedited portion of their appeal.

assumed correct for the purpose of this appeal. Second, a discretionary case management tool (the use of multiple licensing boards for discrete segments of the proceeding) cannot be used to shield unlawful, punishable behavior or to revise Commission policies. Third, any licensing board has the power to dismiss a party from the entire proceeding. Fourth, federal case law supports the OL-3 Board's dismissal of the Governments from the proceeding.[6]

The staff, which asked the OL-3 Licensing Board to dismiss only the Governments' realism contentions, rather than the Governments themselves from the entire proceeding (*see* LBP-88-24, 28 NRC at 369), takes a somewhat different approach in opposing the Governments' appeal. It objects to the separate and expeditious consideration of the jurisdictional issue and does not address the merits of this question at all. Instead, the staff urges us to review the record below on the merits of the sanction issue (presumably later, after full briefing by the parties) and to determine if the Governments' conduct warrants their dismissal from all or any part of the Shoreham proceeding. The staff believes that this would avoid the difficult jurisdictional issue raised here. It also urges this approach even if it would cause delay in the exercise proceeding pending before the OL-5 Board.

B. We agree with the Governments that the OL-3 Licensing Board did not have the authority to dismiss them from those portions of the proceeding that are pending before another Board. Whatever the extent a licensing board's authority may be with respect to the imposition of sanctions against a party, and irrespective of whether the Governments' conduct in this proceeding warrants sanctions, there is no basis for extending that authority to matters within the purview of a different decisionmaker.

1. As is evident from the preceding paragraph, we agree with LILCO that, for the purpose of deciding the discrete jurisdictional issue now before us on appeal, we must presume the correctness of the OL-3 Board's decision on the merits. Thus, we assume *arguendo* that the Governments obstructed the discovery process and failed to obey certain OL-3 Board orders; that their conduct was willful, in bad faith, and prejudicial to LILCO; and that the only appropriate sanction is dismissal, which the OL-3 Board was clearly authorized to order at least as to that part of the proceeding pending before it.[7] Given these assumptions of punishable conduct, the sole question raised by the Governments' bifurcated appeal is — to repeat — whether the OL-3 Board has the authority to dismiss the Governments from that part of the proceeding now pending before a different adjudicatory board.

---

[6] LILCO makes a fifth argument: that the intervenors' status as sovereign governmental entities does not protect them from the consequences of their misdeeds. In view of our decision, we need not reach this issue.

[7] It should go without saying that, because these assumptions are for argument purposes only, they reflect no view whatsoever on our part as to the merits of the sanctions issue. We will take that matter up in the second part of the Governments' appeal. *See supra* note 5.

LILCO makes several other points in connection with its "presumption of correctness" argument. It claims that, if the Governments prevail here, the use of multiple licensing boards in one proceeding will essentially eliminate the ultimate sanction of dismissal of a party from the entire proceeding, which Commission policy specifically authorizes. *See Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 454 (1981) (hereinafter "Commission Policy"). It also argues that, by agreeing with the Governments' jurisdictional argument, we would be effectively reversing the OL-3 Board's decision on the merits to dismiss the *parties*, rather than merely their realism *contentions*. LILCO is wrong on both counts.

By holding that a licensing board can dismiss a party from only the part of the proceeding within that board's purview, when other parts of the proceeding are pending before a different board, in no way do we vitiate the ultimate sanction of dismissal from the entire proceeding. That result can still be accomplished by requesting the sanction of dismissal from each of the boards before which different parts of the proceeding are pending. While that may appear to be burdensome, it is an illusory burden: if the conduct allegedly warranting another party's dismissal from the entire proceeding is, in fact, so egregious and pervasive, the party requesting that sanction should have little difficulty in making its case before each board then presiding over different facets of the proceeding. For example, the party seeking sanctions would not be precluded from arguing to "Board B" that an opposing party's conduct — though above reproach before "Board B" — was so contumacious and prejudicial before "Board A" as to warrant dismissal from the "Board B" proceeding as well. This procedure assures that no particular board is "more equal" than any other board presiding in the same overall proceeding, and prevents the arrogation by one board of authority legitimately vested in another.[8] More important, it protects a party's fundamental right to be judged by each decisionmaker before whom it appears.

LILCO's other point — that upholding the Governments' jurisdictional claim would amount to a reversal on the merits of the OL-3 Board's determination to dismiss the parties, rather than their contentions — is equally flawed. Our jurisdictional holding does not affect in any respect the OL-3 Board's authority to dismiss the Governments as parties from *that part of the proceeding over which the OL-3 Board presides*. The OL-3 Board considered a number of issues other than the realism contentions. Although that Board resolved those other

[8] We previously rejected LILCO's argument that the Commission established the OL-3 Licensing Board as the "general jurisdiction" board for this proceeding. ALAB-901, 28 NRC at 308 n.6. If that had been the intent, then an appropriate notice to that effect should have been given at the outset.

issues on the merits, its dismissal sanction appears to apply to those issues as well.[9]

2. We have no quarrel, in general, with LILCO's second argument — that a discretionary case management tool cannot be used to shield unlawful behavior or to defeat Commission policy.[10] As discussed above, the use of multiple licensing boards does neither, and effective means exist to seek redress (including dismissal from an entire proceeding) for assertedly improper conduct in an adjudication. But the corollary of LILCO's general principle is also true: a discretionary case management tool cannot be used to affect a party's right to be judged independently and fairly by each board before which it appears. Thus, one of several boards presiding in a single proceeding cannot take advantage of the multiple-board approach and expand its own authority to matters pending elsewhere through the vehicle of a discovery sanction. *See infra* note 21.[11]

3. LILCO next argues that any Licensing Board assigned to this proceeding has the power to dismiss a party from the entire proceeding. According to LILCO, this simply follows from the Commission's policy specifically authorizing dismissal of a party. We have already addressed this matter, *supra* p. 429, and conclude that there is no conflict between our jurisdictional ruling here and the Commission Policy.[12]

In connection with this argument, LILCO states that a licensing board considering dismissal as a sanction should take into account "such things as the nature and pervasiveness of the behavior being punished and *the relationship of the sub-proceeding in which the disciplinary action is taken to other sub-proceedings affected by it.*" LILCO's Answer, *supra* note 10, at 1 (emphasis added). We fully agree with LILCO that these are factors a licensing board

---

[9] Thus, if we determine, on the merits, that the OL-3 Board properly dismissed the Governments from the OL-3 part of the proceeding, there will be no *need* to address the Governments' appeal from the Board's ruling on other issues, such as the emergency broadcast system contention.

[10] In this section of its brief, LILCO summarizes the history of this proceeding and makes arguments in support of the merits of the OL-3 Board's imposition of sanctions. *See* LILCO's Answer (October 4, 1988) at 5-10. As we have stressed repeatedly, the issue before us at this juncture is not about the merits of the sanctions decision; indeed, as LILCO has urged, we have assumed *arguendo* the correctness of that decision. *See supra* p. 428.

LILCO also impliedly criticizes our ruling in ALAB-901, 28 NRC at 308 n.6, that the OL-5 Board had erred in certain respects in a decision it issued in March 1988, LBP-88-7, 27 NRC 289. *See* LILCO's Answer at 8. LILCO seems to suggest that, because the Licensing Board ruling there at issue had not been appealed, it was binding. We have long held, however, that unappealed licensing board conclusions on legal issues do not have precedential effect. *Duke Power Co.* (Cherokee Nuclear Station, Units 1, 2, and 3), ALAB-482, 7 NRC 979, 981 n.4 (1978).

[11] As this case demonstrates, the use of multiple boards has both advantages and disadvantages. It permits faster resolution of increasingly complex issues in litigation that goes on for years. But it also leads to procedural anomalies that generate more disputes. On balance, however, the advantages outweigh the disadvantages, in our view. In any event, this practice is currently a necessity in NRC litigation, and the parties must take the good with the bad. (We note that multiple licensing boards, without special "OL" docket numbers, are in use in the *Seabrook* proceeding. There are also multiple appeal boards for different phases of both *Seabrook* and *Shoreham*.)

[12] We also note that, at the time of issuance of the Commission Policy, multiple licensing boards were used rarely, if ever. In fact, this case management tool is not even mentioned in the Policy Statement. *See* 13 NRC at 452-59. Thus, we cannot reasonably draw any inferences as to the Commission's intent on the issue now before us.

should consider. The OL-3 Licensing Board majority opinion, however, fails to reflect that that Board gave any serious consideration to the relationship of its action to the proceeding pending before the OL-5 Board. The OL-3 Board knew three days before its decision (when, by happenstance, ALAB-901 was issued) that proceedings before the OL-5 Board would soon be under way with regard to the 1988 exercise.[13] Indeed, the day before LBP-88-24 was issued, the OL-5 Board issued its scheduling order. Yet the OL-3 Board majority's sole reference to that fact is found in the following cryptic footnote.

> In regard to any challenges to an exercise recently held on the Applicant's emergency plan, an interested person can petition the Commission for a hearing on any alleged deficiencies.

LBP-88-24, 28 NRC at 377 n.39.[14] The meaning of this footnote is unclear, but no matter how it is construed, it provides no explanation for the Board's apparent attempt to extend its authority to matters pending elsewhere. This failure to provide reasons for such a significant aspect of the Board's decision would be cause alone to reverse and remand the Board's decision on the jurisdictional issue raised by the Governments' appeal. *See Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 41 (1977), *aff'd*, CLI-78-1, 7 NRC 1, *aff'd sub nom. New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir. 1978). *See also Patton v. Aerojet Ordnance Co.*, 765 F.2d 604, 607-08 (6th Cir. 1985) (basis for dismissal as sanction for failure to comply with discovery order must be fully articulated).[15] Because solely a question of law is involved here, however, there is no need for a remand to the Licensing Board for further consideration of the issue.[16]

---

[13] The fact that no contentions have been proffered and admitted yet in the OL-5 proceeding is irrelevant. At least until the OL-3 Board's dismissal decision, there appeared to be no dispute among the parties as to the Governments' right to *the opportunity to propose litigable contentions* concerning the 1988 emergency exercise. At this stage, that right is necessarily equivalent to the right to litigate an already admitted contention.

[14] In his partial concurrence and dissent, Judge Shon (who sits on both the OL-3 and OL-5 Boards) takes note of the pending exercise proceeding and our recent decision in ALAB-901. LBP-88-24, 28 NRC at 392.

[15] We do not suggest that the three days between the issuance of ALAB-901 and LBP-88-24 necessarily provided adequate time for the Licensing Board to address the issue of the extent to which it could impose sanctions against the Governments. There is no apparent reason, however, why the Board had to issue its decision when it did, and no reason why it could not have solicited the parties' views on this matter before it so unequivocally reached the substantive conclusions that the record on all remaining issues was complete and that no litigation obstacles to the issuance of a full-power license remained.

In this regard, we do not understand LILCO's reference to our decision in *Duke Power Co.* (Perkins Nuclear Station, Units 1, 2, and 3), ALAB-591, 11 NRC 741 (1980) (inherent right and duty of board to determine, in the first instance, the bounds of its own jurisdiction). *See* LILCO's Answer at 4 n.1. LBP-88-24 must be read as reflecting the OL-3 Board's conclusion that it possessed the jurisdiction to dismiss the Governments from the entire proceeding. The fact that the Board chose not to explain the basis for that conclusion cannot serve to relieve us of the obligation to review it on the Governments' appeal.

[16] Both LILCO and the staff note that "abuse of discretion" is the proper standard for federal appellate court review of district court orders imposing discovery-related sanctions. We are aware of no such constraint, however, on the scope of review of a jurisdictional issue like that involved here.

4. LILCO's last argument is that "federal case law makes clear that a court's authority to impose sanctions, including dismissal from the entire case, cannot be limited by bifurcated proceedings or other 'case management tools' that are typically employed in complex federal litigation." LILCO's Answer at 10-11. LILCO later acknowledges that these cases may be distinguishable from the matter here at issue. *Id.* at 14. They are indeed distinguishable, and on essential points.

In *Branca v. Security Benefit Life Insurance Co.*, 773 F.2d 1158, 1164-66 (11th Cir. 1985), *aff'd in part and remanded in part on other grounds*, 789 F.2d 1511 (1986), the court of appeals held that a federal district court in Florida could order sanctions against a defendant in litigation pending in that court for that defendant's failure to comply with an order to compel issued by a federal district court in Kansas. The Kansas court became involved, not because it had jurisdiction over any "merits" issues in the involved Florida lawsuit concerning insurance proceeds, but because it was merely the site of a deposition taken in connection with that suit. On this basis alone, *Branca* is clearly distinguishable from the controversy that confronts us. More significant, however, Federal Rule of Civil Procedure 37(b)(2) explicitly authorizes the court in which an action is pending to impose sanctions against a party for failure to comply with discovery orders issued by other courts in connection with the pending action. This rule recognizes the fact that deponents in federal litigation often reside in districts other than where the litigation is pending. These outlying district courts essentially act as agents in discovery disputes on behalf of the court presiding over the lawsuit. If the "lawsuit" court disagrees with a ruling of the "discovery" court, the former has the ultimate jurisdiction under the rule to resolve any discovery dispute. Not only is this fact pattern inapposite here, the NRC Rules of Practice contain no provision comparable to Rule 37(b)(2).

LILCO's other citations are equally unpersuasive. While each involves either multi-phase litigation, multiple claims and counterclaims, or multiple litigants, in every case the same judge presided over all aspects of the litigation. *See Weisberg v. Webster*, 749 F.2d 864, 869-72 (D.C. Cir. 1984); *Wyle v. R.J. Reynolds Industries, Inc.*, 709 F.2d 585, 588-91 (9th Cir. 1983); *Aztec Steel Co. v. Florida Steel Corp.*, 691 F.2d 480, 482 (11th Cir. 1982), *cert. denied*, 460 U.S. 1040 (1983). Thus, unlike here, no issue arose as to the presiding judge's authority to impose a sanction that would affect a party's status as a litigant in a related action pending before a different judge.[17]

[17] In fact, in *Weisberg*, 749 F.2d at 872, the court noted that the presiding district judge was "particularly close" to the overall proceeding involved there. Interestingly, the *Wyle* court pointed out that "'the sanction must be specifically related to the particular 'claim' which was at issue in the order to provide discovery.'" 709 F.2d at 591 (quoting *Insurance Corp. of Ireland, Ltd. v. Compagnie des Bauxites de Guinea*, 456 U.S. 694, 707 (1982)).
(Continued)

5. As noted above, the staff does not address the jurisdictional question raised by the Governments' appeal. Instead, it essentially asks us to reconsider our determination to answer that question separately and expeditiously. The staff believes that we can avoid the jurisdictional question entirely by reviewing the OL-3 Board's sanction decision on the merits. Citing a concern for the integrity of the NRC's adjudicatory process, the staff also asserts that that is the preferred course, even if it means staying the exercise proceeding now before the OL-5 Board.[18]

We decline the staff's suggestion that we reconsider our decision to give the Governments' jurisdictional appeal priority. Our September 29 memorandum and order already deals with that matter. *See supra* note 2. We add only two points in further response to the staff. First, we do not believe that consideration of the merits of the Board's sanction decision would necessarily allow us to pretermit the jurisdictional question before us.[19] In any event, because this issue might well arise in other proceedings, there is added cause to decide it now. *See supra* note 11. *See also* ALAB-900, 28 NRC at 284-85. Second, as a consequence of ALAB-901 and the OL-3 Board's decision in LBP-88-24, the status of the exercise litigation before the OL-5 Board is in doubt. We believe it is our responsibility to clarify the status of that litigation and to do so as promptly as possible.[20] We also reject the notion that delay of the proceeding in connection with the 1988 exercise is acceptable. As we noted in ALAB-900, 28 NRC at 285 n.5, the time actually available under the Commission's regulations to litigate and to decide any admissible exercise-related contentions does not allow for much slack.

6. Finally, even if there were no jurisdictional constraints on the OL-3 Board's imposition of sanctions, dismissal from a proceeding is "so harsh a penalty, it should be imposed only in extreme circumstances." *Wyle*, 709 F.2d at 589. Consistent with this guiding principle, a board should be particularly cautious in extending the scope of this sanction to matters beyond those over which it is presiding, particularly where, as here, the sanction directly leads

---

Although we are not obliged to do research for either a party or a licensing board, we have discovered no federal authority that would support the OL-3 Licensing Board's jurisdiction to dismiss the Governments from that part of this proceeding pending elsewhere.

[18] The staff does not suggest, however, a corresponding stay of the license authorization.

[19] As noted above (note 11), there are multiple appeal boards and several pending appeals in this proceeding, leading to the prospect of even greater procedural problems if the jurisdictional conflict between licensing boards is not resolved now.

[20] Two very recent events in this case vividly demonstrate the need for expeditious resolution of the jurisdictional issue before us. In an unpublished memorandum and order dated October 6, the Chairman of the Licensing Board Panel denied LILCO's October 3 motion for reconstitution of the OL-5 Licensing Board. One of the alternative reasons given (at 2) by the Panel Chairman for his action is that, notwithstanding the Governments' appeal, "there is, at this juncture, no proceeding pending for which to appoint a board." The OL-5 Board as well has issued (also on October 6) a memorandum and order denying, on a similar ground, the Governments' request for a postponement of the time for filing exercise contentions.

to termination of the proceeding and authorization of an operating license.[21] The OL-3 Board's majority opinion, insofar as it forecloses the Governments from the OL-5 proceeding concerned with the 1988 exercise, does not reflect adequate attention to all of the significant implications of its decision. *See supra* pp. 430-31.

C. Because we conclude that the OL-3 Licensing Board did not have the authority to dismiss the Governments from a portion of the proceeding pending before a different Board, all outstanding emergency planning issues have not been resolved. Thus, the stated basis for the OL-3 Board's full-power license authorization does not exist, and, *a fortiori*, that authorization must be vacated.[22]

Insofar as it purports to dismiss the Governments from the proceeding now before the OL-5 Licensing Board, LBP-88-24, 28 NRC 311, is *reversed*; the authorization of a full-power license included in LBP-88-24 is *vacated*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

[21] If one of several licensing boards presiding in a single proceeding was considering the imposition of a lesser sanction — e.g., drawing inferences on certain issues unfavorable to the party being punished — we cannot imagine that board extending this sanction to matters pending before a different board, and certainly not without a substantial justification and explanation. No less should be required of a board seeking to impose the severest sanction of all.

[22] We express no view as to whether there is another basis for the authorization of a license afforded by the Commission's regulations. *See, e.g.*, 10 C.F.R. § 50.47(c)(1).

Cite as 28 NRC 435 (1988) LBP-88-25A

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Glenn O. Bright
Dr. James H. Carpenter

In the Matter of **Docket No. 50-271-OLA**
(ASLBP No. 87-547-02-LA)

VERMONT YANKEE NUCLEAR POWER CORPORATION
(Vermont Yankee Nuclear Power Station) **October 24, 1988**

The Licensing Board denies reconsideration of, but clarifies, its opinion in LBP-88-25, 28 NRC 394 (1988).

RULES OF PRACTICE: DISCOVERY (INTERROGATORIES)

Given the importance of the issues underlying the grant of a license under the Atomic Energy Act, parties must ensure that communications between one party and another or between a party and the licensing board result in a common understanding of the intended message.

MEMORANDUM AND ORDER
(Supplemental Opinion Concerning Response to NECNP Interrogatory 5)

By our Memorandum and Order (NECNP Motion to Compel), LBP-88-25, 28 NRC 394 (1988), we determined, *inter alia*, that the response of Vermont Yankee Nuclear Power Corp. (Applicant) to Interrogatory 5 of the New England Coalition on Nuclear Pollution (NECNP) was not adequate, and we directed the Applicant to provide a further response. The Applicant has now done so and, additionally, has requested reconsideration of certain portions of LBP-88-25. We find that, although formal reconsideration is not warranted, some clarification of those aspects of LBP-88-25 concerning Interrogatory 5 may be in order.

1. Background

Interrogatory 5 (filed August 4, 1988) sought a description "in detail" of the Applicant's "schedule for completing the design, installation, and testing" of the proposed enhanced spent fuel pool cooling system, "including but not limited to the date this system is expected to be operational" (at 4). The Applicant responded that all of the spent fuel pool cooling system was already designed, installed, tested, and operational, "with the exception of the Emergency Standby Subsystem of the Spent Fuel Pool Cooling System, which will be completely designed, installed and tested prior to the storage in the spent fuel pool of more than 2,000 spent fuel assemblies, *but for which no more definite schedule now exists*" (Response dated August 16, 1988, at 5-6, emphasis supplied).

NECNP was dissatisfied with that answer and, on August 31, 1988, filed a motion to compel a further response. It recognized the difficulty in predicting schedules with absolute accuracy but claimed, in particular, that if the Applicant were in good faith in proposing the enhanced system it must have a more definite schedule. The Applicant responded to NECNP's motion (on September 15, 1988, at 7) to the effect that, so long as an answer is complete, no further answer can be compelled; and that, in essence, no schedule existed.

In LBP-88-25, we found the Applicant's response to Interrogatory 5 to be inadequate, and we directed a further response. We did so not primarily on the basis of NECNP's assertions — although we agreed with them in principle — but rather on the basis of independent information which had previously been supplied to us (as well as to the parties) by the Staff. As set forth in LBP-88-25, that information stemmed from the transcript of a public meeting between representatives of the Applicant and the Staff which took place on February 9, 1988, together with a commitment made in a letter to the Staff dated March 2, 1988. Among other matters, the Applicant at the meeting set

forth what it described as a "proposed schedule" (Tr. 19), based on projected cycles of reactor operation which it also described as "projected dates based on our current schedules" (Tr. 20). *See* LBP-88-25, *supra*, 28 NRC at 397. This information appeared to us to be at least a rough projection of a schedule under which design, installation, and testing of the supplementary system was projected to occur. This was further emphasized by the March 2 commitment letter to the Staff, which stated that "[t]his system will be operational no later than the end of Cycle 16 (Projected to be 1993)."

Because of the apparent inconsistency between the Applicant's response to Interrogatory 5 and its previous presentation to the Staff summarized above, we expressed doubt as to the adequacy of the answer to Interrogatory 5 and directed a further response to the interrogatory. We further commented that "*[a]bsent a satisfactory explanation*, we, if not the Staff as well, *might* have good reason for questioning the good faith, if not the veracity or completeness, of any statements made in support of the application." LBP-88-25, *supra*, 28 NRC at 398, emphasis supplied). We went on to spell out three specific issues concerning the schedule that we wished the Applicant to address (of which the last had no bearing on the apparent inconsistencies).

2. *Motion for Reconsideration*

On October 7, 1988, the Applicant filed not only its further answers to interrogatories (including Interrogatory 5) (hereinafter "Further Answers") but also a motion for reconsideration of that portion of LBP-88-25 dealing with Interrogatory 5. Its motion starts with the premise that, in LBP-88-25, we "reached and published" a conclusion concerning the truthfulness and completeness of the Applicant's prior answer (Motion at 1, 2, 3). It goes on to criticize the Board for reaching such a conclusion on the basis of material allegedly taken out of context and without first providing the Applicant an opportunity to explain the apparent inconsistencies. The Applicant takes the position that the initial answer was true and complete, and that it did not have or need to have at that time (and does not have now) any "firm milestone date" for installation or operation of the system, beyond the time when 2000 assemblies in the pool would be exceeded (Further Answers at 2).

It describes its presentation to the Staff at the February 9, 1988 meeting in terms of a "feasibility analysis for completing implementation of the proposed addition prior to the storage of the 2,001st spent fuel assembly in the spent fuel pool." The Applicant explained (Further Answers at 4-5):

> The purpose of this presentation to the Staff was threefold: (i) to demonstrate that the proposed addition was a feasible solution to the problem, (ii) to show that design, implementation and testing could be accomplished prior to storage of more than 2,000

> assemblies, and (iii) to make clear to the Staff that Vermont Yankee did not intend implementation of the proposed addition until the Staff has concurred that the proposal effectively resolved or mooted concerns previously expressed. . . . Mr. McElwee projected general milestones first in his presentation in terms of plant cycles and then in response to a Staff question in terms of estimated earliest possible dates. Plant cycle lengths vary according to plant operating history. Mr. McElwee did not state then, nor has it ever been the position of Vermont Yankee, that such a series of general milestones had been formally established as the Vermont Yankee schedule for implementation of the addition. . . .

The Applicant went on to acknowledge that the language upon which the Board relied is "susceptible of being misinterpreted if taken out of the context of the Vermont Yankee presentation" (Further Answers at 5; Motion at 4). It concluded, however, that "[i]n fact, there is no inconsistency between or among Mr. McElwee's presentation, Vermont Yankee's prior answer to Interrogatory No. 5, and the facts" (Further Answers at 5).

Finally, the Applicant perceives our conclusion as impairing the reputation for the highest standard of candor and ethical conduct in dealing with all branches and departments of NRC, maintained by Vermont Yankee and its counsel. The Applicant asks us to strike or modify the portion of LBP-88-25 dealing with Interrogatory 5 and to republish the same or (alternatively) its "Further Answers" to the interrogatory.

3. *Opinion*

We begin by emphasizing that, contrary to the Applicant's perception, LBP-88-25 never "reached and published" a conclusion concerning the truthfulness and completeness of the Applicant's prior answer to Interrogatory 5. We only pointed to some information of record which raised significant questions in this regard and posed certain inquiries designed to bring out the true facts. We qualified our statements regarding truthfulness and completeness with the very real *caveat* (which the Applicant seems to have overlooked) that only "absent" a satisfactory explanation "might" those adverse inferences be accurate.

With its supplemental response, the Applicant has, in our view, negated any adverse inferences as to truthfulness or completeness which may have attended its prior answer, notwithstanding the fact that neither the February 9 meeting between the Applicant and Staff nor the subsequent March 2 "commitment" letter referenced Mr. McElwee's presentation as being a feasibility analysis. We trust that this conclusion will remove the source of the Applicant's concern.

We add, however, that, if the Applicant had provided with its initial answer the additional explanations included in its "Further Answers," the misunderstandings that may have resulted would not have had an occasion to develop. In that connection, as the Applicant itself acknowledges, terms like "schedule" may have different meanings to different persons in different contexts. The instant

case is but one example. Given the importance of the issues underlying the grant of a license under the Atomic Energy Act, parties must ensure that communications between one party and another or between a party and the Board result in a common understanding of the intended message.

In addition, the current lack of schedule for the enhanced fuel pool cooling system leaves in place for an indefinite time period the present alleged (and apparent) violation of the single-failure criterion which seems to be occurring routinely, through reliance on the residual heat removal system every time there is a partial core offload. *See* Tr. 55-56, 59, 77-78 (first prehearing conference); ALAB-869, 26 NRC 13, 21 n.4 (1987). Although carried out by the Applicant under the authority of its current technical specifications, and beyond our authority to remedy in this proceeding (which is limited to consideration of the storage of more than 2000 fuel assemblies in the spent fuel pool), we nonetheless believe that a schedule leading to the elimination of this troubling issue as soon as possible is preferable to the current practice.

4. Conclusion

In light of the foregoing, we find no need formally to reconsider our prior ruling. To the extent that further clarification may have been warranted, it is being provided here. This Memorandum and Order is being published out of sequence, immediately following LBP-88-25. (Because of publication schedules, it appears as the first Licensing Board issuance in the October 1988 edition of NUREG-0750, the Nuclear Regulatory Commission Issuances.)

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 24th day of October 1988.

Cite as 28 NRC 440 (1988) LBP-88-26

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Glenn O. Bright
Dr. James H. Carpenter

In the Matter of **Docket No. 50-271-OLA**
(ASLBP No. 87-547-02-LA)

VERMONT YANKEE NUCLEAR POWER CORPORATION
(Vermont Yankee Nuclear Power Station) **October 11, 1988**

The Licensing Board admits two late-filed contentions and denies admittance of a third.

RULES OF PRACTICE: NONTIMELY SUBMISSION OF CONTENTIONS

A proposed contention submitted after the initial time period for the filing of contentions in a proceeding is deemed to be "late-filed" and must satisfy not only the usual standards for contentions, set forth in 10 C.F.R. § 2.714(b), but also a balancing of the five factors set forth in 10 C.F.R. § 2.714(a).

NEPA: BEYOND-DESIGN-BASIS ACCIDENTS

Claims of increased risk from beyond-design-basis accidents are not litigable as a matter of law or of Commission discretion under the 1980 NEPA Policy Statement, in a license amendment proceeding involving the proposed expansion

in capacity of a spent fuel pool. ALAB-869, 26 NRC 13, 31 n.28; ALAB-876, 26 NRC 277, 285 (1987).

RULES OF PRACTICE: CONTENTION, ADMISSIBILITY OF

If a less-than-design-basis accident is offered as the foundation for a contention asserting the potential existence of a self-sustaining zirconium fire in the spent fuel pool, a basis must be furnished to demonstrate how such a fire could arise. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-880, 26 NRC 449, 456-57 (1987).

NEPA: ENVIRONMENTAL ASSESSMENT

Even though an environmental assessment need only "consider" a subject, a challenge to the EA's consideration of the subject may be entertained. 10 C.F.R. § 51.104(b).

RULES OF PRACTICE: CONTENTIONS

In considering whether an adequate basis has been set forth to serve as the foundation for a contention, a Licensing Board may not look to the merits of material in the basis. *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980).

NEPA: ENVIRONMENTAL IMPACT STATEMENT

The need for an environmental impact statement in a spent fuel pool capacity expansion proceeding must be evaluated on a case-by-case basis.

NEPA: CONSIDERATION OF ALTERNATIVES

NEPA has two differing requirements for the consideration of alternatives. Section 102(2)(C) requires a detailed discussion, but only where an EIS is also required. Section 102(2)(E) requires a consideration of alternatives in all cases in which there are "unresolved conflicts concerning alternative use of available resources," irrespective of whether or not an EIS is required. Where an EIS is required, the § 102(2)(E) discussion may be subsumed within the § 102(2)(C) discussion.

NEPA: CONSIDERATION OF ALTERNATIVES (§ 102(2)(E))

Where the objective of an action can be achieved in one of two or more ways that will have differing impacts on the environment, the § 102(2)(E) requirement comes into play.

MEMORANDUM AND ORDER
(Late-Filed Environmental Contentions)

This proceeding involves the proposed expansion in the capacity of the spent fuel pool at the Vermont Yankee Nuclear Power Plant, in Vernon, Vermont. On August 15, 1988, following the issuance by the NRC Staff on July 25, 1988, of its Environmental Assessment (EA) of the project, the New England Coalition on Nuclear Pollution (NECNP), an Intervenor in this proceeding, and the Commonwealth of Massachusetts, currently participating as an interested State pursuant to 10 C.F.R. § 2.715(c), jointly submitted for litigation three late-filed contentions. The State of Vermont favors their admission, whereas Vermont Yankee Nuclear Power Corp. (Applicant) and the NRC Staff each are opposed to admission of any of them. For reasons set forth below, we accept two of the contentions and deny the third.

A. Background

In our initial Prehearing Conference Order, dated May 26, 1987, LBP-87-17, 25 NRC 838, we admitted three contentions: one safety and two environmental. The safety contention (Contention 1), sponsored by NECNP, concerned the spent fuel pool cooling system; the environmental contentions, sponsored jointly by NECNP and Massachusetts, concerned, respectively, NRC's consideration of the environmental aspects of severe accidents (Contention 2) and of alternatives to the proposed course of action (Contention 3). Upon appeal by the Applicant, the Appeal Board let stand (with minor modifications) our admission of Contention 1 but reversed our admission of the two environmental contentions, Contentions 2 and 3. ALAB-869, 26 NRC 13 (1987). Thereafter, it denied reconsideration of its ruling on Contention 2, the severe-accident contention. ALAB-876, 26 NRC 277 (1987).

In LBP-87-17, we established a schedule for the submission of new contentions following issuance of various NRC Staff review documents. Following issuance of the Staff's EA, and within the schedule previously established by us, NECNP and Massachusetts jointly submitted three new environmental contentions, each purportedly based in part on material appearing in the EA. The

State of Vermont, participating as an interested State, favored their admission.[1] The Applicant and Staff each opposed admission of any of the new contentions.[2] The Intervenors filed a reply on September 14, 1988, and the Applicant and Staff filed responses to that reply, on September 21 and 30, 1988, respectively.[3]

The three newly filed contentions — denominated by NECNP and Massachusetts as "Environmental Contentions" to avoid confusion with the three contentions that we earlier admitted — are deemed to be "late-filed" under the Commission's Rules of Practice inasmuch as they were submitted after the initial time period for the filing of contentions in this proceeding. No party disputes that, in those circumstances, the contentions must satisfy not only the usual standards for contentions, set forth in 10 C.F.R. § 2.714(b), but also a balancing of the five factors set forth in 10 C.F.R. § 2.714(a). We turn now to an examination of these standards as applied to the new environmental contentions which are before us.

B. Environmental Contention 1

This contention alleges that the risk associated with a self-sustaining fire in the spent fuel pool, without hypothesizing a beyond-design-basis event, constitutes sufficient potential effect on the environment to require preparation of an environmental impact statement (EIS). The contention is similar to, although not identical with, former Contention 2, the admission of which was reversed by the Appeal Board.

In former Contention 2, the Intervenors asserted in effect that the risk of a particular accident was sufficient to require analysis by the Staff in an EIS. We summarized the particular accident in question in the following terms:

> (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.

---

[1] Response of the State of Vermont to Joint Motion of NECNP and the Commonwealth of Massachusetts for Leave to File Late-Filed Contentions, dated August 29, 1988.

[2] Licensee's Response to "Joint Motion of [NECNP] and the Commonwealth of Massachusetts for Leave to File Late-Filed Contentions," dated August 29, 1988 (Applicant's Response); NRC Staff Response to Joint Motion of New England Coalition on Nuclear Pollution and the Commonwealth of Massachusetts for Leave to File Late-Filed Contentions, dated September 6, 1988 (NRC Staff Response).

[3] We granted permission for NECNP and Massachusetts to file their joint reply and for the Applicant and Staff to respond to new information in that reply. Memorandum and Order, dated September 13, 1988 (unpublished).

LBP-87-17, *supra*, 25 NRC at 845. We went on to characterize the accident as a "beyond design basis accident," but held that it could be considered in a proceeding such as this under carefully circumscribed conditions. A further description of our rationale appears in the Separate Statement of Judge Bechhoefer, which is appended to this Memorandum and Order at pp. 451-54, *infra*.

The Appeal Board reversed our ruling on this contention on the basis that claims of increased risk from beyond-design-basis accidents are not litigable, as a matter of law under the National Environmental Policy Act (NEPA), 42 U.S.C. § 4332, and as a matter of discretion under NRC's 1980 NEPA Policy Statement, 45 Fed. Reg. 40,101. ALAB-869, 26 NRC at 31 n.28; ALAB-876, 26 NRC at 285. In doing so, it noted that, on appeal, NECNP had argued that a "beyond-design-basis accident" was not a precondition for the postulated self-sustaining fire in the spent fuel pool. The Appeal Board rejected that argument on the ground that, in admitting the contention, we had not been faced with such a claim. ALAB-876, 26 NRC at 284.

Such a claim is now before us. But the accident in question appears to be the same one as the Appeal Board ruled could not be considered, as a matter of law: a self-sustaining zirconium fire in the spent fuel pool, caused in part by a partial fuel melt and hydrogen release to the reactor building (where the Vermont Yankee spent fuel pool is located). The Intervenors have posited a situation (and have furnished a basis) upon which a likelihood of hydrogen release in the reactor could be founded. But they have not explained how, in an accident considered within the design basis for this reactor, this hydrogen could both detonate and lead to the consequences in the spent fuel pool envisaged by the contention.

The Applicant opposes this contention on essentially two grounds. First, it asserts that the hypothesized accident is no different from that previously proposed by the Intervenors, that its identification thus did not depend on anything in the EA and, accordingly, that it must be rejected both because it is nonlitigable as a matter of law and because it is untimely.[4] Alternately, the Applicant asserts that no basis has been identified for the assertion that a self-sustaining zirconium fire in the spent fuel pool could result from the release of hydrogen identified by the Intervenors and, accordingly, the contention lacks the requisite basis.[5] The Staff argues only that the accident in question is a greater-than-design-basis accident substantially similar to that rejected by the Appeal Board and, therefore, the contention must be rejected as a matter of law.[6]

---

[4] Applicant's Response, dated August 29, 1988, at 7-9.

[5] Applicant's Response to Joint Reply, dated September 21, 1988, at 1-3.

[6] NRC Staff Response, dated September 6, 1988, at 6-8.

We agree that the accident in question is essentially similar to that which was the subject of the former Contention 2. Under the law of the case, which the Appeal Board spelled out in ALAB-869 and ALAB-876, the proffered contention is nonlitigable as a matter of law. Although it can be argued whether or not the Appeal Board reached the correct answer on the contention in question — *see* Judge Bechhoefer's Separate Statement for a further explanation of our ruling in LBP-87-17 which was reversed by the Appeal Board — we each have no doubt that we are currently bound by the law of the case and that, in these circumstances, the contention must be rejected as a matter of law.

We add that, if a less-than-design-basis accident is intended to be offered as the foundation for a self-sustaining zirconium fire in the fuel pool, we agree with the Applicant that no adequate bases have been furnished to demonstrate how such a fire could arise. *See Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-880, 26 NRC 449, 456-57 (1987). If so construed, the contention has to be rejected for lack of an adequate basis. 10 C.F.R. § 2.714(b).

C. Environmental Contention 2

1. This contention asserts that the EA fails to consider adequately the consequences and risks posed by the proposed amendment of "worker exposure to radiation." This risk is allegedly sufficient to warrant preparation and issuance of an EIS.

As the bases for this contention, the Intervenors first incorporate by reference their bases for Environmental Contention 1. Then they assert that the EA "does not provide an adequate scientific basis to assess occupational risk." Specifically, "[t]he environmental assessment does not state the number of workers who will be exposed as a result of the proposed amendment."[7] They further allege that the EA postulates a 33-person-rem dose goal but fails to provide data to support this hypothesis. Finally, the Intervenors assert that, in postulating the 33-person-rem dose, the EA ignores potential doses from a number of different categories of events. With their reply, the Intervenors provided certain specific information concerning fuel-handling accidents (for which they cite the SER for the reracking permitted by License Amendment 104) and inadvertent drainages of spent fuel pools (for which they cite NRC Information Notice No. 88-65, dated August 18, 1988).

The Applicant and Staff each claim that the contention lacks a basis and lacks specificity. In addition, the Applicant claims that the incorporation by reference of the bases of the severe-accident contention can have no more validity for

[7] Proposed Contentions at 3-4.

this contention than with respect to the severe-accident contention, which we have rejected as nonlitigable under the authority governing this proceeding. The Applicant also asserts that, since the EA "considered" occupational exposure, no more can be required. Finally, the Applicant would have us balance the factors dealing with late-filed contentions against the admission of this contention.

2. This contention includes several distinct claims. Basically, it asserts that the treatment of occupational exposure in the EA is inadequate for a number of reasons. It would remedy those deficiencies by the preparation and issuance of an EIS. But presumably, if it did not succeed in attaining that result, it would nevertheless seek revision of the EA through the medium of our Initial Decision in this proceeding. *See* 10 C.F.R. §§ 51.34(b), 51.102(c), 51.104(b).

In evaluating this contention against the bases provided, it is clear that, as the Applicant claims, the severe-accident portion of the basis can be no more successful in founding a basis for this contention than for Environmental Contention 1. Whether in an EIS or an EA, we must abide by the conclusions of ALAB-869 and ALAB-876 that "beyond design basis accidents" of the type alleged cannot be considered in a license amendment proceeding of this type.

Beyond that, however, we disagree with the Applicant and Staff that an adequate basis has not been set forth. The allegation that the EA fails to record individual worker exposures is not only patently true but potentially meritorious, *per se*. (The Applicant's argument that any consideration by an EA of a subject is in itself adequate counters the regulation that these matters are litigable (10 C.F.R. § 51.104(b)) and, indeed, is barely more than frivolous.) Furthermore, many of the events referred to are too diffuse and nonspecific to be acceptable as bases for this contention; they fail to provide a foundation for any assertion of excess occupational exposure. However, the references to fuel-handling accidents and inadvertent pool drainages do not suffer from this deficiency. The arguments against their validity provided by the Applicant and Staff go to their merits, not their acceptability as bases. That is a process in which we cannot engage at this stage of the proceeding. *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980).[8]

In sum, we find this contention to be acceptable, but limited to the three bases we have referenced: (1) the failure of the EA to describe individual worker exposures (particularly in terms of the number of workers receiving additional exposures through this amendment, the maximum exposures to be received by individual workers, and the number of workers who likely would

[8] We note, however, that NRC Information Notice 88-65 states (at 2): "Drainage of SFPs can cause potentially high radiation doses and damage to fuel elements . . ." and that three such inadvertent drainages were reported as occurring within a period of approximately 9 months. Evaluation of the import of this information must, of course, await consideration on the merits of Environmental Contention 2.

receive various levels of exposures); (2) the failure to consider the occupational exposure (if any) resulting from fuel-handling accidents; and (3) the failure to consider occupational exposure (if any) resulting from inadvertent drainages of the pool that might reasonably be expected to occur.

3. To accept any contention at this stage of the proceeding, we must balance the lateness factors set forth in 10 C.F.R. § 2.714(a).[9] The Staff would balance these factors in favor of admission of this contention (although it opposes admission on other grounds).[10] The Applicant concedes that, if this contention is regarded as a challenge to the EA (as we have construed it), then it does not dispute that there is good cause for the delay in submission. But on the basis of a balancing of all the factors, it nevertheless urges that we not accept the contention.[11]

The Applicant would reach negative conclusions on factors (iii) and (v). In particular, it asserts that "history supplies overwhelming evidence that the probability that an EIS would be required is nil, and the probability that rejection of the proposed license amendment would be required on environmental grounds is even less." Those arguments, however, are irrelevant. In the first place, the contention as we perceive it seeks either an EIS or, if not warranted, a revised EA. Second, the Commission has directed that the need for an EIS in a case such as this be evaluated on a case-by-case basis. ALAB-869, *supra*, 26 NRC at 30; *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). Finally, the Applicant's approach would substitute its own judgment for the informed environmental review mandated by the NRC regulations. We decline to follow that path.

Balancing the five factors, no one contests that the first, second, and fourth balance in favor of admission of the contention. The third, concerning the Intervenors' ability to help develop an adequate record, was not addressed by the Intervenors. By their very act of pointing to certain aspects of the EA that are apparently deficient, however, and by providing documentary materials supporting certain of their claims, the Intervenors have already contributed to the development of the record. We view this third factor as either neutral or slightly in favor of admission. The fifth (potential expansion of issues and delay) is negative but not to a degree that would outbalance the others. In short, we

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

[10] Staff Response at 10-13.

[11] Applicant's Response at 13 n.21.

agree with the Staff (as well as the Intervenors) that this contention should not be rejected on timeliness grounds.

D. Environmental Contention 3

1. The third environmental contention claims that NRC, in its EA, has failed to give adequate consideration to the alternative of dry-cask storage, as required by § 102(2)(E) of NEPA, 42 U.S.C. § 4332(E) and implementing NRC regulations. It is similar to Contention 3, which we earlier admitted but which the Appeal Board dismissed as premature, on the ground that it could not be considered prior to issuance of the EA. (Former Contention 3 included one additional alternative, which is not now being raised.)

As bases for the current contention, the Intervenors (in addition to incorporating by reference the bases for Environmental Contentions 1 and 2) criticize the EA for lack of any discussion of the environmental impacts of dry-cask storage and for rejecting that alternative solely on the ground that the design, construction, and NRC review of such storage facility could not be completed in sufficient time to meet the Applicant's need for further capacity. The Intervenors add that this operational inconvenience to the Applicant is not a valid ground for rejecting an environmentally preferable alternative in a situation where, as here, the urgency is attributable in part to the Staff's failure to issue an EA in a timely fashion. (Indeed, the Intervenors sought to raise this contention almost 2 years ago and were precluded from doing so by the Applicant's and Staff's objections to their contention, which we had admitted.) The Intervenors also fault the EA for including only a bare conclusion as to the feasibility of dry-cask storage and for not explaining why dry-cask storage could not be available in sufficient time to meet the Applicant's needs.

The Applicant and Staff both oppose this contention. They each claim, in essence, that there is no requirement that an EA discuss which alternatives are preferable. The Applicant adds that neither the contention nor its basis makes any mention of "unresolved conflicts concerning alternative uses of available resources," the standard under which alternatives are evaluated under § 102(2)(E) of NEPA. The Applicant and Staff also assert the adequacy of the discussion of alternatives in the EA. They each compare the type of discussion of alternatives called for in an EIS (mandated by § 102(2)(C) of NEPA) and assert that, in order to obtain the type of discussion of alternatives that they seek, the Intervenors must first establish a need for an EIS (which they assertedly have not done).

2. NEPA, of course, has two differing requirements for the discussion of alternatives. Section 102(2)(C) requires a detailed discussion, but only where an EIS is also required (i.e., where there are significant environmental impacts resulting from a proposed action). On the other hand, § 102(2)(E), upon which the Intervenors rely here, requires a consideration of alternatives in all cases

in which there are "unresolved conflicts concerning alternative use of available resources," irrespective of whether or not an EIS is otherwise required.[12] NRC's implementing regulation in 10 C.F.R. § 51.30(a)(ii) explicitly requires an EA to discuss "alternatives as required by Section 102(2)(E) of NEPA."

Contrary to the Applicant's position, the discussions of alternatives mandated by §§ 102(2)(C) and (E), respectively, are not mutually exclusive. Section 102(2)(E) applies in all cases in which the underlying conditions are satisfied but, where an EIS is required, the § 102(2)(E) discussion may be subsumed within the § 102(2)(C) EIS discussion. *Environmental Defense Fund v. Corps of Engineers*, 470 F.2d 289, 296 (8th Cir. 1972), *cert. denied*, 412 U.S. 931 (1973);[13] *see also Dairyland Power Cooperative* (La Crosse Boiling Water Reactor), LBP-80-2, 11 NRC 44, 73 (1980), *vacated on other grounds*, ALAB-638, 13 NRC 374 (1981).

The Staff also claims that the alternative use of resources at issue under § 102(2)(E) is no different from that at issue at the operating license stage of review and, because the EA here is supplementary to the EIS prepared at the operating license stage, the EA need not discuss any alternative use of resources. For their part, the Intervenors assert that none of the issues governing the spent fuel pool expansion were treated in the operating license EIS, inasmuch as the fuel pool at that time contemplated storage of only one-fifth the number of assemblies under consideration here, and those for only a few months at a time.

Where the objective of an action "can be achieved in one of two or more ways that will have differing impacts on the environment," the § 102(2)(E) requirement comes into play. *Trinity Episcopal School Corp. v. Romney*, 523 F.2d 88, 93 (2d Cir. 1975), *on remand*, 445 F. Supp. 204 (S.D.N.Y. 1978), *rev'd sub nom. Karlen v. Harris*, 590 F.2d 39 (2d Cir. 1978), *rev'd on other grounds sub nom. Stryker's Bay Neighborhood Council, Inc. v. Karlen*, 444 U.S. 223 (1980);[14] *see also Hanley v. Kleindienst*, 471 F.2d 823, 834-35 (2d Cir. 1972); *North Carolina v. Hudson*, 665 F. Supp. 428, 444-46 (E.D.N.C. 1987). We agree with the Intervenors that the resources at issue here (including but not limited to the resources potentially affected by the additional occupational exposure referenced in the bases for Environmental Contention 2) are different from those at issue earlier, sufficient to trigger the 102(2)(E) discussion sought by the Intervenors. An unresolved conflict concerning the alternative use of available

[12] The NRC Staff is incorrect when it asserts that "Section 102(2))(E) concerns EIS's, not EA's" (Staff Response at 9). *See River Road Alliance, Inc. v. Corps of Engineers*, 764 F.2d 445, 452 (7th Cir. 1985), *cert. denied*, 475 U.S. 1055 (1986).

[13] At the time of the *EDF* decision, current § 102(2)(E) of NEPA was designated as § 102(2)(D). The provisions are otherwise identical.

[14] The Supreme Court reversal, relied on by the Applicant, was predicated upon the Circuit Court's intrusion into an agency decision which, after the initial remand to consider alternatives, was based on a sound record. That reasoning would not be applicable here, where we represent one step in NRC's process for reaching a final agency decision.

resources is at issue here. Indeed, in its EA, the Staff concluded (at 4) that "the expansion capacity of the existing pool is a resource that should be used" — manifestly a different view of the appropriate use of resources than advocated by the Intervenors. Moreover, at least in the situation here (where strong differences of opinion clearly exist), the Applicant's insistence on an explicit reference to an unresolved conflict concerning use of resources represents a pleading nicety with no foundation under the NRC Rules of Practice.[15]

We conclude that Environmental Contention 3 is not barred on legal grounds, includes a sufficiently specific basis,[16] and should be admitted as an issue in controversy irrespective of its eventual merit (subject to the timeliness considerations set forth below).

3. As in the case of Environmental Contention 2, the Staff would balance the lateness factors in favor of admitting the contention.[17] The Applicant does not contest that the Intervenors have "good cause" for the untimely filing but would nonetheless balance the lateness factors against admission, primarily on the ground that admission of the contention would prolong and complicate the proceedings and that "[a]pproval or disapproval of a re-racking-based spent fuel expansion is simply not going to turn on environmental considerations."[18] As in the case of Environmental Contention 2, however, this generic conclusion is one hypothesized by the Applicant but not adopted by the Commission. As long as NEPA requirements govern a proceeding such as this, we are unwilling to assume in advance — prior to hearing or even to discovery — that NEPA factors cannot contribute to NRC's proper resolution of potential environmental issues.

As in the case of Environmental Contention 2, we find factors (i), (ii), and (iv) to balance in favor of admission, (iii) to be neutral or slightly in favor of admission, and (v) to disfavor admission of the contention, although not strongly so. As suggested by the Staff, we balance the factors in favor of admission.

E. Discovery

Discovery on the two contentions which we are here admitting is governed by the schedule we established in LBP-87-17: It will extend for 45 days from the date of service of this Memorandum and Order. LBP-87-17, *supra*, 25 NRC

[15] We agree with the Intervenors that the case of *Borough of Morrisville v. Delaware River Basin Commission*, 399 F. Supp. 469, 479 & n.8 (E.D. Pa. 1975), *aff'd (without opinion)*, 532 F.2d 745 (3d Cir. 1976), cited by the Applicant, may properly be construed to concern only the discussion of alternatives in an EIS, notwithstanding the inclusion of language with broader implications (although never explicitly extending to the requirements of § 102(2)(E)).

[16] For reasons stated earlier, we are not relying on the bases for Environmental Contention 1 (concerning severe accidents) which are incorporated by reference.

[17] NRC Response at 10-13.

[18] Applicant's Response at 15 n.25.

at 862. During that time period, answers to interrogatories must be received, second-round questions asked and answered, and document production must be completed. As a target, we anticipate that oral argument material on these contentions could be filed during January 1989, and that oral argument could take place in February 1989.

F. Order

For the reasons stated, it is, this 11th day of October 1988, ORDERED:

1. Environmental Contention 1 is hereby *rejected* as an issue in controversy in this proceeding.
2. Environmental Contentions 2 and 3 are hereby *admitted* as issues in controversy in this proceeding.
3. Discovery on Environmental Contentions 2 and 3 will be *governed* by the schedule outlined in § E of this Memorandum and Order.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 11th day of October 1988.

Judge Carpenter joins in this Memorandum and Order but was not available to review the final draft.

SEPARATE STATEMENT OF JUDGE BECHHOEFER

I fully agree with the Board's unanimous opinion that Environmental Contention 1 is barred from litigation, as a matter of law, by virtue of the law of the case, as set forth in ALAB-869 and ALAB-876. I also agree that, if the contention were to be construed, as the Intervenors now suggest, as hypothesizing an accident within the design basis, then no scenario has been identified that would lead to a self-sustaining zirconium fire in the fuel pool and, hence, no basis has been set forth.

What I disagree with is the conclusion in ALAB-869 and ALAB-876 that the original Contention 2 is not litigable, either as a matter of law or of Commission discretion. I believe that both original Contention 2 and the essentially similar

Environmental Contention 1 are litigable, at least as a matter of discretion, under applicable Commission Policy Statements. To that end, perhaps the Board's decision in LBP-87-17, 25 NRC 838 (1987), needs further clarification.

In LBP-87-17, we treated the accident hypothesized by former Contention 2 as a "beyond design basis accident" the risk of which (in particular, the probability of specified consequences) was being challenged. 25 NRC at 846. ALAB-869 and ALAB-876 treated the accident similarly. ALAB-869, *supra*, 26 NRC at 30-31. In my view, the accident was and is clearly beyond the design basis under which the Vermont Yankee facility was licensed (back in 1972).

It is well settled, of course, that, as the Appeal Board pointed out in both ALAB-869 and ALAB-876, NEPA does not require consideration of events that are remote and speculative. *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. ___, 93 L. Ed. 2d 302 (1986). To characterize the accident in this manner, however, "only frames the question; it does not supply the answer." *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 553 n.3 (1980) (concurring opinion of Mr. Farrar, joined by Chairman Rosenthal).

The contention before us attempts to supply an answer; it raises questions about the remoteness of certain consequences said to result from the accident in question. It cites bases that at least theoretically could modify the perceived risk of the hypothesized accident. Thus, what was undoubtedly — and properly, in view of then-extant knowledge — not even considered as falling within the class of design-basis accidents in 1972 might be so classified today, assuming the Intervenors were successful in establishing that the frequency of occurrence and consequences were comparable to others being considered today as design-basis accidents. The analysis adopted by the Appeal Board, however, would require the NRC, at least insofar as its adjudicatory processes are concerned, to bury its head in the sand and assume (notwithstanding the proffer of evidence that might lead to other conclusions) that an accident scenario the risk of which was once regarded as remote or speculative must always be so regarded.

To avoid any misconceptions, I am not advocating any backfitting, should the risk of what was once regarded as a "beyond design-basis accident" be found to be not properly so classified at this point in time. Nor am I expressing any opinion whatsoever on whether the information in the bases cited by the Intervenors — in particular, NUREG-1150 and NUREG/CR-4982 — would so raise the risk of the accident in question that (as claimed by the proffered contention) an EIS would be required. It is improper in evaluating the admissibility of a contention to reach any conclusion whatsoever on the validity of the bases relied upon. *Allens Creek*, ALAB-590, *supra*, 11 NRC 542. All I am saying is that NEPA, when coupled with the Commission's adjudicatory system, is at least an environmental full-disclosure law which

permits the Intervenors to assert that NRC's decisionmakers (and the public) should be informed of the risk (i.e., probabilities and consequences) of the proffered accident.

My primary disagreement with the Appeal Board's rulings in ALAB-869 and ALAB-876 is its holding that the NRC had precluded consideration as a matter of discretion of contentions such as former Contention 2, through NRC's Interim Policy Statement on "Nuclear Power Plant Accident Conditions Under the National Environmental Policy Act of 1969," 45 Fed. Reg. 40,101 (June 13, 1980) (hereinafter "NEPA Policy Statement"). The Appeal Board determined that, as a matter of Commission discretion, the NEPA Policy Statement permits discussion of beyond-design-basis accidents only in proceedings for construction permits or operating licenses, and not in license amendment proceedings such as this one.

I would agree that, if looked at in isolation, the discretionary authority provided by the NEPA Policy Statement does not extend to proceedings such as this one. Nor did this Board rely on that policy statement for authority to hear the contention when we accepted former Contention 2 for litigation. As set forth in LBP-87-17, we relied instead on the Commission's subsequently issued "Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants," 50 Fed. Reg. 32,138, 32,144-45 (Aug. 8, 1985) (hereinafter "Severe Accident Policy Statement"). We ruled that the risk of the proffered accident could be examined under the Severe Accident Policy Statement, using the methodology set forth in the NEPA Policy Statement.

The Severe Accident Policy Statement, in the Board's view, as expressed in LBP-87-17, permits examination of the *risk* of "beyond-design-basis accidents," using the *methodology* for examination specified in the NEPA Policy Statement. The NEPA Policy Statement is incorporated by reference into the Severe Accident Policy Statement, but only to specify the methodology for reviewing the risk of "beyond-design-basis accidents" and not for defining the proceedings in which the examination of risks would be permitted.

The Severe Accident Policy Statement itself defines the proceedings to which it is applicable and in which the risk of severe accidents may be examined. The portion of that Policy Statement which explicitly incorporates the NEPA Policy Statement deals primarily with operating license applications for plants currently under construction — a class clearly covered by the terms of the NEPA Policy Statement. But the Severe Accident Policy Statement further provides (50 Fed. Reg. at 32,144, emphasis added) that "[t]his item *also* applies to any hearing proceedings that might arise for an operating reactor" — precisely the type of proceeding with which we are here confronted. Insofar as applicability is concerned, therefore, the later-issued Severe Accident Policy Statement supersedes the limited scope of the NEPA Policy Statement.

In sum, by incorporating the methodology of the NEPA Policy Statement, the Severe Accident Policy Statement did not also incorporate the limitations on applicability of the NEPA statement. The Severe Accident Policy Statement includes its own statement of applicability and, as demonstrated above, it applies to this proceeding. It permits examination in this proceeding of the risk of accidents such as that postulated by the Intervenors, assuming an appropriate contention founded upon the requisite basis (as is the case here).

If I were writing on a clean slate, I would accept either former Contention 2 or Environmental Contention 1 (construed as asserting a "beyond-design-basis accident"), under the authority of the Severe Accident Policy Statement. However, because the law of the case is to the contrary, I agree with my colleagues that we must reject Environmental Contention 1 as a matter of law.

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Cite as 28 NRC 455 (1988) LBP-88-27

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

B. Paul Cotter, Jr., Chairman
Glenn O. Bright
Dr. Richard F. Cole

In the Matter of **Docket No. 50-335-OLA**
(ASLBP No. 88-560-01-LA)

FLORIDA POWER & LIGHT COMPANY
(St. Lucie Nuclear Power Plant, Unit 1) **October 14, 1988**

In this Memorandum and Order, the Licensing Board grants in part and denies in part the Applicant's motion for summary disposition of all contentions relating to the grant of a license amendment permitting the reracking of the spent fuel pool at the St. Lucie Nuclear Plant.

RULES OF PRACTICE: SUMMARY DISPOSITION

The purpose of the summary disposition procedure is to avoid holding hearings on issues where there is no genuine dispute of material fact.

RULES OF PRACTICE: SUMMARY DISPOSITION

In moving for summary disposition, the movant, not the opposing party, has the burden of showing the absence of a genuine issue as to any material fact.

RULES OF PRACTICE: SUMMARY DISPOSITION

Conclusionary statements in the motion for summary disposition, unsupported by factual showings as, for example, in affidavits, will not support a decision on the motion in favor of the movant.

RULES OF PRACTICE: SUMMARY DISPOSITION

Where the evidentiary material in support of a motion does not establish the absence of a genuine issue of material fact, summary disposition must be denied, even if no opposing evidentiary material is presented. Conversely, 10 C.F.R. § 2.749(b) (1988) makes absolutely clear that the opponent to a properly supported motion for summary disposition may not rest upon "mere allegations or denials" but must answer setting forth "specific facts" showing there is a genuine issue of fact.

MEMORANDUM AND ORDER
(Ruling on Motions for Summary Disposition)

I. INTRODUCTION

Licensee, Florida Power & Light Company, has moved for summary disposition of the six remaining contentions in this proceeding.[1] Those contentions, filed by Campbell Rich, a nearby resident, challenge whether specific aspects of Licensee's plan to rerack the spent fuel pool at its St. Lucie Unit 1 plant will adequately protect the public health and safety. The reracking at issue would

> authorize the licensee to increase the spent fuel pool storage capacity from 728 to 1706 fuel assemblies. The proposed expansion is to be achieved by reracking the spent fuel pool into two discrete regions. New, high density storage racks will be used.

52 Fed. Reg. 32,852.

In the six contentions at issue here, Mr. Rich asserts that: (a) there is a danger of radiation releases from a cask-drop accident (Contention 1); (b) analyses of materials deterioration or failure of materials integrity are inadequate (Contention 3); (c) the high-density design, through various mechanisms, could cause a major release of radioactivity into the environment (Contention 4); (d)

[1] Of the seven contentions originally admitted to the proceeding, LBP-88-10A, 27 NRC 452 (1988), Contention 2, concerning a temporary storage crane, was dismissed by unpublished order dated July 27, 1988, at the request of the Intervenor when he learned that the crane had been removed.

the cooling system will be inadequate in the event of a single failure of the pumps or the electrical system, thus creating greater potential for an accidental radioactive release (Contention 5); (e) the high-density storage racks are a new and unproven technology (Contention 6); and (f) the increased number of fuel rods will increase the probability of a criticality accident (Contention 7). Mr. Rich's response to the motion for summary disposition only addressed Contentions 3, 6, and 7. The Nuclear Regulatory Commission Staff supported the Licensee's motion on all six contentions.

For the reasons set forth within, we grant the motion as to Contentions 1, 3 (in part), 4, and 5. We find that there is no issue of material fact as to those contentions and that Licensee is entitled to a decision thereon as a matter of law. Licensee's motion is denied as to parts of Contention 3 and 7 and Contention 6 in its entirety.

II. THE SPENT FUEL POOL

The spent fuel pool at issue in this proceeding is adjacent to Unit 1 of the St. Lucie Plant owned and operated by Florida Power & Light Company on Hutchinson Island in St. Lucie County, Florida. The St. Lucie plant contains two units and is sited 12 miles south of Fort Pierce on the east coast of Florida. Licensee submitted nine affidavits[2] averring facts not contested by Intervenor unless otherwise noted in the text. We find from an examination of each affiant's education and experience that each is qualified to testify as an expert witness.

Licensee's uncontested affidavits establish the following facts about the spent fuel pool. The pool itself is 37 feet long, 33 feet wide, and 40 feet 6 inches deep. It is constructed of 6-foot-thick reinforced concrete walls and a reinforced concrete floor and foundation mat 9 feet 6 inches thick. The floor and walls are

---

[2]Licensee's affidavits are as follows:

1. Affidavit of Stephen Marschke on Admitted Contention 1 (Mr. Marschke is a Supervising Engineer in the Nuclear Licensing Department of Ebasco Services Inc., New York, N.Y.);
2. Affidavit of Murray Weber on Admitted Contention 1 (Mr. Weber is a supervising civil engineer in the Nuclear Licensing Department of Ebasco Services, Inc., New York, N.Y.);
3. Affidavit of Murray Weber on Admitted Contention 3;
4. Affidavit of Dr. Gerald R. Kilp on Admitted Contention No. 3 (Kilp Affidavit 3a) (Dr. Kilp is an Advisory Engineer in the Engineering Department of the Westinghouse Electric Corp., Pittsburgh, Pa.);
5. Affidavit of Dr. Gerald R. Kilp on Admitted Contention 3 (Kilp Affidavit 3b);
6. Affidavit of Dr. K.P. Singh on Admitted Contentions 3 and 6 (Dr. Singh is President of Holtec International, Mount Laurel, N.J.);
7. Affidavit of Dr. K.P. Singh on Admitted Contentions 4 & 5;
8. Affidavit of John B. Houghtaling on Admitted Contentions 4 & 5 (Mr. Houghtaling is a Project Manager with Ebasco Services Inc., Kenner, La.); and
9. Affidavit of Dr. Stanley E. Turner on Admitted Contentions 6 and 7 (Dr. Turner is Chief Scientist of Holtec International, Mount Laurel, N.J.).

lined with stainless steel, 1/4 inch thick on the floor and bottom of the walls and 3/16 inch thick on the remainder of the walls. Weber-3, ¶ 4.

A separate but adjacent fuel cask storage area is located at the northeast corner of the spent fuel pool. It is 10 feet long, 12 feet wide, and 3 feet 6 inches deep. *Id.* The south and west walls of the fuel cask storage areas are over 14 feet high and are made of steel plate lined with 1/4-inch stainless steel. The spent fuel cask weight is limited to 25 tons. Weber-1, ¶¶ 8 and 9.

The fuel assembly structures containing the spent fuel to be stored in the pool are made of stainless steel and inconel. The cladding on the assemblies is made of Zircaloy. These materials were selected because of their resistance to harmful changes in their properties resulting from: (1) high radiation fields in nuclear reactors; and (2) their exceptional resistance to corrosion in high-temperature water and steam. Kilp-3b, ¶ 4. The assemblies were designed and constructed to withstand the high temperatures experienced in nuclear reactor vessels (500° to 640° Fahrenheit ("F") at the coolant outlet). Vessel or core temperatures are far more severe than those normally encountered in spent fuel pools which are well below the boiling temperature of water (212°F) at atmospheric pressure. Kilp-3a, ¶ 10; Kilp-3b, ¶ 8; Houghtaling-4 & 5, ¶ 14.

The amendment authorized Licensee to increase the spent pool capacity from 728 to 1706 fuel assemblies. The old storage racks were removed. The pool, as reracked with new, high-density racks, is divided into two discrete regions, identified as Regions 1 and 2, each with its own specially designed racks. Region 1 contains four rack modules with capacity for 342 fuel assemblies. It is designed to receive and store new assemblies up to 4.5 weight percent U-235 or spent fuel that has not achieved adequate "burnup" (i.e., U-235 depletion) for storage in Region 2. Safety Evaluation by the Office of Nuclear Reactor Regulation Relating to the Reracking of the Spent Fuel Pool at the St. Lucie Plant, Unit No. 1 as Related to Amendment No. 91 to Unit 1 Facility Operating License No. DPR-67, Florida Power and Light Company, Docket No. 50-335, at 2 (hereinafter "SER-Amendment 91"). The SER is attached to License Amendment 91 for the St. Lucie Plant.

The essential difference between Region 1 and Region 2 rack modules is that the Region 1 racks are provided with additional neutron-absorbing insulation (Boraflex) so as to absorb the higher neutron concentrations that would come from fresh nuclear fuel. The Region 1 racks consist of stainless steel, square cross-section tubes equipped with a sheet of Boraflex and cover plate on each of its four sides. The spacing between assemblies in Region 1 is 10.12 inches. SER-Amendment 91 at 2 and Appendix A at 39, 40.

Region 2 contains thirteen rack modules with capacity for 1364 fuel assemblies. The spacing between assemblies is 8.86 inches and Boraflex panels are sandwiched between channels. The Region 2 channels do not have cover plates and the Boraflex panels are held in place by the mating of adjacent channels.

Id., Appendix A at 41, 42. Region 2 racks with their slightly closer spacing and about 50% of the Boraflex neutron shielding material contained in Region 1 racks, are designed to receive and store spent fuel that meets fuel burnup requirements. The burnup requirements depend upon initial U-235 concentration and are graphically displayed in Figure 5.6-1 of Amendment 91 to License DPR-67 at 5-6b. The racks, as installed, are designed to provide storage up to the year 2008, assuming full-core offload capability. SER-Amendment 91 at 2.

The basic source of heat energy in the spent fuel pool is the decay heat emanating from the spent fuel. "Decay heat" is the term used to describe the heat generated by the continuing radioactive decay of fission products within spent fuel assemblies stored in the spent fuel pool after the fuel assembly contents have burned up to a certain extent in the nuclear reactor. The decay heat generated from such assemblies in the spent fuel pool diminishes very rapidly. Singh-4 & 5, ¶¶ 9, 10, and Fig. 1. Decay heat is transferred to the pool water and hence to materials in contact with the water. Secondary heat sources are the gamma and neutron bombardment of pool materials. Kilp-3a, ¶ 12; Kilp-3b, ¶ 5; Weber-3, ¶ 17.

The spent fuel pool cooling system is a closed loop consisting of two centrifugal pumps and a tube-and-shell heat exchanger with a maximum capacity of 34 million British Thermal Units per hour (MBTU/hr). The normal maximum heat load condition was calculated to be 33.70 MBTU/hr. SER-Amendment 91 at 7, 8; Houghtaling-4 & 5, ¶¶ 5, 6; Singh-4 & 5, ¶¶ 12, 13.

III. CONTROLLING LAW

The requests for summary disposition at issue here are filed pursuant to 10 C.F.R. § 2.749(a) which authorizes any party to move for a decision "in that party's favor as to all or any part of the matters involved in the proceeding." The purpose of the summary disposition procedure is to avoid holding hearings on issues where there is no genuine dispute of material fact. *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 457 (1981). *See Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 550 (1980).

The rule requires that each party must file a statement of material facts as to which they believe there is no genuine issue to be heard, and "[a]ll material facts set forth in the statement . . . will be deemed to be admitted unless controverted . . . ." Moreover, under subsection (b) of § 2.749

> When a motion for summary disposition is made and supported as provided in this section, a party opposing the motion may not rest upon the mere allegations or denials of his answer; his answer . . . must set forth specific facts showing there is a genuine issue of fact. If no such answer is filed, the decision sought, if appropriate, shall be rendered.

Nevertheless, the movant, not the opposing party, has the burden of showing the absence of a genuine issue as to any material fact. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753 (1977). Conclusionary statements in the motion, unsupported by factual showings as, for example, in affidavits, will not support a decision on the motion in favor of the movant. Thus, *where the evidentiary material in support of a motion does not establish the absence of a genuine issue of material fact, summary disposition must be denied,* even if no opposing evidentiary material is presented. *Adickes v. Kress & Co.*, 398 U.S. 144, 159 (1970), *cited in Perry, supra.* Conversely, our rule, at 10 C.F.R. § 2.749(b) (1988), makes absolutely clear that the opponent to a properly supported motion for summary disposition may not rest upon "mere allegations or denials," but must answer setting forth "specific facts showing there is a genuine issue of fact." *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 453 (1980).

IV. RULINGS ON MOTION

A. Contention 1

Contention 1 avers:

> That the calculation of radiological consequences resulting from a cask drop accident are not conservative, and the radiation releases in such an accident will not meet with the 10 CFR Part 100 criteria.

LBP-88-10A, *supra,* 27 NRC at 470. As the bases for this contention Intervenor asserts that:

> The study prepared by the Department of Nuclear Energy, Brookhaven National Laboratory entitled "Severe Accidents in Spent Fuel Pools in Support of Generic Safety", NUREG/CR-4982, BNL-NUREG-52093, indicates that ". . . the calculation of radiological consequences resulting from such an accident are, at this point in time, apparently impossible to determine." There is substantial uncertainty in the fission product release estimates. These uncertainties are due to both uncertainty in the accident progression (fuel temperature after clad oxidation and fuel relocation occurs) and the uncertainty in fission product decontamination." (S.6) In light of such uncertainty, no estimate can be determined to be conservative.

Request for Hearing and Petition for Leave to Intervene at 4 (Served January 21, 1987) (hereinafter, "Amended Petition").

1. Radioactive Releases (10 C.F.R. Part 100)

Licensee asserts through uncontroverted affidavits and an uncontroverted statement of material facts that its

> analyses of postulated cask drop accidents for damaged fuel were conservatively performed and showed that any radiation releases would be well within 10 C.F.R. Part 100 guideline values.

Licensee's Statement of Material Facts as to Which There Is No Genuine Issue to Be Heard with Respect to Intervenor's Contentions, Contention 1, ¶ 23 (hereinafter, "Licensee's Facts"). For the reasons set out below, we agree.

Licensee's analysis begins with a recitation of the dose limitations in 10 C.F.R. § 100.11(a) (1988) for: (1) an individual located at a point on the exclusionary area boundary; and (2) an individual located at any point on the outer boundary of the low population zone. Licensee notes that the dose for the former would control for a cask-drop accident and avers that criticality would not occur under the postulated accident conditions. Marschke-1, ¶¶ 5, 6.

For its radiological consequence analysis, Licensee draws from the assumptions in Regulatory Guide 1.25, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Reactors," the document referenced by § 15.7.5 of the Standard Review Plan (NUREG-0800) ("SRP"). Using the fission product release fractions specified in Regulatory Guide 1.25, Licensee assumed conservatively "that all fuel assemblies in the completely filled fuel pool were ruptured" and that all of the radioactive noble gases and iodine in the gas gap of the fuel rods were released. *Id.*, ¶¶ 11-13, 15, 17. These assumptions were made for two cases, both assuming the pool was filled, in one instance after one-third of the fuel assemblies had been removed to the pool from the core and in the other in which all fuel assemblies had been removed to the pool from the core. Because of the delay in transferring spent fuel from the core (whether one-third or the entire core) to the pool, mandated by the St. Lucie Unit 1 technical specification, Licensee's analysis concluded that the exclusion area exposures would be 10% or less of the 10 C.F.R. Part 100 guidelines. *Id.*, ¶¶ 10, 13, and Table 1. Thus, Licensee concluded that the exclusionary area boundary doses were determined to be well within 10 C.F.R. Part 100 exposure guidelines and that, consequently, NRC regulatory requirements and guidance have been met. *Id.*, ¶ 19.

We agree. We find that Licensee's assumptions, analysis, and conclusions are quite reasonable and are otherwise uncontroverted. Licensee has met its burden of proof in this portion of its motion in demonstrating that its calculations of radiological consequences with respect to releases from a cask-drop accident satisfy the regulatory requirements set out in 10 C.F.R. Part 100. We are satisfied

that there is no genuine issue of material fact remaining as to this portion of Contention 1 and grant summary disposition in favor of Licensee thereon.

2. *Cask-Drop Accident Consequences*

Contention 1 sets out as the mechanism for the foregoing radioactive releases, a cask-drop accident in the spent fuel pool, relying on the uncertainties identified in a report by the Brookhaven National Laboratory entitled, "Severe Accidents in Spent Fuel Pools in Support of Generic Safety Issue No. 82," NUREG/CR-4982, BNL-NUREG-52093 (July 1987) (hereinafter "BNL Report"). The contention appears to assume a total loss of water in the pool caused by structural damage to the pool resulting from the cask drop. Since we have found that any releases would not exceed regulatory requirements, there is no need to examine Licensee's analysis of a cask-drop accident at Unit 1, particularly since Intervenor has not controverted the affidavits and facts submitted by Licensee in support of its motion for summary disposition of the question.

Nevertheless, in light of our obligation under 10 C.F.R. § 2.749(a) to make an affirmative finding of the absence of any genuine issue of material fact, it is worth reciting some of the significant differences between the BNL Report's cask-handling assumptions and the actual configuration of cask handling at the St. Lucie Unit 1 spent fuel pool described in Licensee's motion. The BNL Report states that

> some spent fuel pools have a special section for the shipping cask separated from the main pool by a wall with a weir or gate. For such a configuration the number of passes over the pool edge would be zero and hence the risk to the main pool from a cask drop would be zero.

BNL Report at 37 n.a. As described above, the St. Lucie plant is so configured.

The BNL Report also appears to assume an accident involving a 100-ton cask. As noted, casks at Unit 1 are limited to a weight of 25 tons. Weber-1, ¶ 9. *See* p. 458, *supra.*

Based on an assumed maximum distance drop of a 25-ton cask onto the thinnest part of the mat at the bottom of the pool, Licensee concluded, using conservative assumptions as to factors such as energy loss, cask rigidity, temperature, and live and dead loads, that "[a]ll safety factors are greater than one and therefore the cask drop accident will not cause spent fuel pool structural failure." Weber-1, ¶ 12. Licensee considered other possible scenarios but found that none of them equalled the impact energy generated by the dropping of a cask from the maximum height possible. *Id.*, ¶ 13.

Licensee acknowledges the possibility of "fine hair line cracks" developing in the cask storage area but concludes that the amount of water leakage would

be so low in volume as to be easily handled by the makeup water capability of the pool's makeup system. *Id.*, ¶ 12. We agree.

Other possible scenarios for a cask-drop accident have been considered, but the impact energy would be less than the scenario discussed above. We find that any threat of radiological release is bounded by that discussion and that other cask scenarios would not cause radiological consequences exceeding the 10 C.F.R. Part 100 criteria. *See id.*, ¶ 13.

Accordingly, as to Contention 1, we are satisfied that the showing made by Licensee establishes that there are no genuine issues of material fact and that Licensee is entitled to judgment as a matter of law. Licensee's motion is granted as to Contention 1, and it is dismissed with prejudice.

B. Contention 3

Admitted Contention 3 states as follows:

> The Licensee and Staff have not adequately considered or analyzed materials deterioration or failure in materials integrity resulting from the increased generation of heat and radioactivity as a result of increased capacity in the spent fuel pool during the storage period authorized by the license amendment.

LBP-88-10A, *supra*, 27 NRC at 470. As bases for the Contention, Intervenor asserts that

> The spent fuel pool facility at the St. Lucie plant, Unit No. 1, was originally designed to store a lesser amount of fuel for a short period of time. Some of the problems that have not been analyzed properly are:
>
> a) Deterioration of fuel cladding as a result of increased exposure and decay heat and radiation levels during extended periods of pool storage.
>
> b) Loss of materials integrity of storage rack and pool liner as a result of exposure to higher levels of radiation over longer periods.
>
> c) Deterioration of concrete pool structure as a result of exposure to increased heat over extended periods of time.

Amended Petition at 5-6.

1. Background

At oral argument, Petitioner asserted that the normal temperature of the pool would be increased, subjecting the pool materials, particularly the concrete, to greater stress. Petitioner asserted that the calculation of these factors was "clearly inadequate." LBP-88-10A, *supra*, 27 NRC at 462. The Board limited

the scope of the contention to the length of time authorized by the licensing amendment at issue, March 1, 2016. *Id.* at 463. Weber-3, ¶ 14.

Licensee submitted four affidavits in support of its motion for summary disposition of Contention 3. Each of Licensee's affiants addressed the impacts of radiation and heat on one or more of the materials comprising the fuel pool.[3]

The NRC Staff supports Licensee's motion and submitted the affidavit of Edmond G. Tourigny.[4] Mr. Tourigny generally supported each of Licensee's affiants in their submittals on this contention. Intervenor filed a timely response in opposition to the motion. Intervenor's reply addressed only the impact of the increased generation of heat and radioactivity on the neutron-absorbing material Boraflex.

2. *Uncontested Issues*

a. *Levels of Radiation and Heat*

Four types of radiation (alpha, beta, gamma, and neutron) will be present in the spent fuel pool to varying degrees. The alpha and beta radiation are of no concern because they cannot penetrate the fuel cladding surface to any significant depth and hence will not have any effect on the cladding outer surface or any materials outside of the cladding surface. Kilp-3b, ¶ 5. The situation is different with gamma and neutron radiations. Kilp-3a, ¶ 8. The effects of each of these types of radiation on materials are a function of cumulative exposure. Gamma radiation dosage is expressed in rads (roentgen absorbed dose), while the cumulative neutron exposure is expressed in neutrons per square centimeter (neutrons/cm^2). The estimated maximum accumulated gamma radiation dosage for the reracked pool ranges from 5×10^{10} rads for the fuel cladding and assemblies to 3×10^{10} rads for the fuel pool structural concrete. The maximum accumulated neutron dose for the reracked pool ranges from 5×10^{15} to 9.8×10^{14} neutrons/cm^2. Kilp-3a, ¶ 11; Turner-6 & 7, ¶ 39; Weber-3, ¶¶ 9, 10.

Radioactive decay of the unstable nuclides present in the spent fuel is the energy source responsible for the thermal loading in the fuel pool. Immediately after a normal refueling discharge into the fuel pool, the temperature of the pool water could rise to a maximum of 133.3°F. After 8 days this would then decrease to approximately 128°F. Weber-3, ¶ 12. A full-core discharge into the pool could raise the temperature to a maximum of 150.8°F which would decrease to approximately 141°F within 9 days. *Id.*, ¶ 13.

---

[3] Weber-3; Kilp-3a; Kilp-3b; and Singh-3 & 6. *See* note 2, *supra*.

[4] Mr. Tourigny is the Nuclear Regulatory Commission Project Manager for both units at the St. Lucie plant. He has been employed by the Commission in various capacities for 12 years and has Masters of Engineering degrees in both the industrial and the nuclear fields.

b. Effects on Non-Boraflex Materials

Licensee has estimated the "worst-case" gamma and neutron doses to the fuel pool materials and compared those doses to the results of dose experiments on the same materials. The following Table illustrates the principal comparisons.

RADIATION DOSE AND EFFECT

Material	Estimated Max. Accum. Dose Over License Period	No Significant Effects Dose	References
Fuel cladding & fuel assemblies	Neutrons 5×10^{15} neutrons/cm^2	*	Kilp-3a, ¶¶ 11, 12; Kilp-3b, ¶ 5; Turner-6 & 7, ¶ 39
	Gamma radiation 5×10^{10} rads	No effect	
Steel liner & rack materials	Neutrons 5×10^{15} neutrons/cm^2	$10^{17\text{-}18}$ neutrons/cm^2	Kilp-3a, ¶¶ 11, 12; Turner-6 & 7, ¶ 39
	Gamma radiation 5×10^{10}	No effect	
Concrete	Neutrons 9.8×10^{14} neutrons/cm^2	3×10^{20} neutrons/cm^2	Weber-3, ¶ 9, 10
	Gamma radiation 3×10^{10} rads	3×10^{11} rads	

*The maximum integrated fluence dose to the fuel cladding and fuel assemblies accumulated in the spent fuel pool over the license duration is estimated to be 5×10^{15} neutrons/cm^2. The difference between reactor neutron fluences and spent fuel pool fluences is several orders of magnitude. The added neutron exposure attributed to as long as 40 years in the spent fuel pool is equivalent to less than 2 minutes in the reactor when it is at full power. Kilp-3a, ¶ 9; Turner-6 & 7, ¶ 39. A typical fuel assembly will receive approximately 10^{22} neutrons/cm^2 during its stay in the reactor as compared to 10^{15} neutrons/cm^2 maximum over a period of 40 years in a spent fuel pool environment. Kilp-3b, ¶ 6.

The results of the comparisons demonstrate that the concrete, including imbedded steel, stainless steel storage racks, pool liner, fuel assemblies and

cladding will not be affected in any significant way by the radiation exposure accumulated over the operating license period. Weber-3, ¶¶ 6-11, 17, 21; Kilp-3a, ¶¶ 4-12, 18, 19; Kilp-3b, ¶¶ 4-7, 13, 15.

Regarding temperature effects, Licensee demonstrates that adequate consideration was given in design and selection of non-Boraflex materials used in the fuel pool. Temperature over the range expected will cause no change in material properties and will have no detrimental effect on the integrity of the materials or the ability of the material to perform its intended function over the operating license period. Weber-3, ¶¶ 12-16, 17-19, 20, 22; Kilp-3a, ¶¶ 10, 13-19; Kilp-3b, ¶¶ 8-12, 14, 15.

3. *Contested Issue: Boraflex*

Colloquially referred to as a "poison," Boraflex is an effective entrapper of neutrons. It is produced by uniformly dispersing Boron carbide particles in a silicone-polymeric matrix. Singh-3 & 6, ¶ 12. Since the early 1980s Boraflex has been the "poison" of choice for high-density fuel racks at many U.S. commercial nuclear power plants. *Id.* Licensee argues that the impacts of heat and radiation on the Boraflex have been adequately considered and describes test programs designed to confirm the neutron-absorptive characteristics and identify the physical and chemical characteristics under a variety of radiation levels, radiation rates, and environments. *Id.*, ¶¶ 15-20.

Last year in connection with the Turkey Point proceeding (Docket Nos. 50-250, 50-251), the NRC published information concerning a potentially significant problem pertaining to the formation of gaps in the Boraflex absorber (separations of the neutron-absorbing material) in high-density storage racks. "Board Notification Regarding Anomalies in Boraflex Neutron Absorbing Material," BN-87-11, June 15, 1987; *see also* NRC Information Notice 87-43, "Gaps in Neutron-Absorbing Material in High-Density Spent Fuel Storage Racks" (SSINS No. 6835), issued September 8, 1987. The problem was identified at the Quad Cities Plant, a commercial reactor with high-density storage racks similar in design to the St. Lucie racks. The Joseph Oat Corporation manufactured the racks at both Quad Cities and St. Lucie.

Licensee argues that the problems identified at Quad Cities have been resolved and will not occur at St. Lucie. In brief, Licensee asserts that the principal reason for the cracking and gap formation following irradiation at the Quad Cities plant was excessive restraint of the Boraflex plate which was caused by the fabrication process and the use of adhesive during Boraflex installation. However, Licensee notes that the St. Lucie racks are designed to provide complete in-plane dimensional changes to Boraflex. Singh-3 & 6, ¶¶ 33-36. Intervenor disagrees that the problems identified at Quad Cities have been resolved and cites several sections of a Quad Cities report assessing the Boraflex

performance. "Preliminary Assessment of Boraflex Performance in the Quad Cities Spent Fuel Racks," Report No. NET-042-01, Revision 0, dated April 10, 1987 (hereinafter "Quad Cities Report"). *See* Intervenor's Response to Licensee's Motion for Summary Disposition of Intervenor's Contention 3 at 2-7.

Licensee filed seventy-one statements of material fact as to which it claims there are no genuine issues to be heard with respect to Intervenor Contention 3. Mindful of the standards of review discussed on pp. 458-59, *supra*, the Board agrees with and accepts Licensee's findings numbered 1-7, 9-52, and 62-67. Most, but not all, of these findings pertain to non-Boraflex materials, and the Board concludes that summary disposition of Contention 3 as regards non-Boraflex materials is warranted.

As to the effect of radioactivity and heat on Boraflex, sufficient question is raised in the Intervenor's filings to require denial of summary disposition as to Boraflex. Accordingly, Licensee's motion for summary disposition is granted in part and denied in part. Because Licensee has not demonstrated that there are no outstanding safety problems regarding the performance of Boraflex, that issue remains to be resolved in Contention 3.

C. Contention 4

In Contention 4, Intervenor asserts

> That the high-density design of the fuel storage racks will cause higher heat loads and increases in water temperature which could cause a loss-of-cooling accident and/or challenge the reliability and testability of the systems designed for decay heat and other residual heat removal, which could, in turn, cause a major release of radioactivity into the environment.

LBP-88-10A, *supra*, 27 NRC at 470-71. As bases for its contention, Intervenor recites that

> (a) The NRC has stated in numerous documents that the water in spent fuel pools would normally be kept below 122 degrees F. The present temperature of the water at the St. Lucie Plant, Unit No. 1 is estimated to be 110 degrees F. After the reracking, the temperature of the water would rise to 152 degrees F on a normal basis, and could reach 182 degrees F with a full core load added.
>
> (b) There is also the possibility that a delay in the make-up emergency water could cause the zirconium cladding on the fuel rods to heat up to such high temperatures that any attempt at later cooling by injecting water back into the pool could hasten the heat up, because water reacts chemically with heated zirconium to produce heat and possible explosions. Thus, the zirconium cladding could catch on fire especially in a high-density design and create an accident not previously evaluated.

Amended Petition at 6. Intervenor did not submit any filing in opposition to Licensee's motion for summary disposition on this contention. However, as previously noted, we are constrained to examine Licensee's filings in support of its motion to determine that there is no genuine issue of material fact and that summary disposition is appropriate, 10 C.F.R. § 2.749(b) (1988).

In support of its motion, Licensee has established the following material facts. Fuel assemblies, which are the source of heat generation in the spent fuel pool, are removed to the spent fuel pool after they have burned up a certain amount of the uranium oxide of which they are composed. However, the fission products accumulated in the fuel assembly continue to decay, producing the heat at issue here. That heat must be continuously removed. Singh-4 & 5, ¶ 9. The heat generated is greatest when the fuel rods are first transferred into the pool after removal from the reactor, so much greater that the heat generated by a single fuel assembly that has been in the pool only 1 hour is greater than the heat generated by eighty assemblies that have been in the pool for 2 years. *Id.*, ¶¶ 10, 11, and Figure 1. Consequently, the increased storage capacity of the spent fuel pool, from 708 to 1706 cells, does not mean a correspondingly proportional increase in the total heat generated in the pool. *Id.*, ¶ 11.

The spent fuel pool cooling system ("SFPCS") uses water to transport heat generated by the stored assemblies from the pool to the power plant heat sink. The heated water is drawn from the top of the pool at a steady rate, circulated through the tube side of a tubular heat exchanger where it exchanges heat with a closed-loop component cooling water system ("CCWS") and is then returned to the bottom of the pool. Houghtaling-4 & 5, ¶ 5; Singh-4 & 5, ¶¶ 12, 13. Considerable quantities of heat are drawn off through evaporation and through the pool slab and walls, but these leakages are ignored for conservatism in the design of the cooling system. Singh-4 & 5, ¶ 19. Similarly, the design assumes a deposit on heat transfer surfaces and ignores film coefficient benefits. *Id.*, ¶¶ 20, 21.

The cooling system is comprised of two parallel pumps that together can pump 3000 gallons per minute (gpm) through the heat exchanger. One pump can handle a normal fuel assembly offload, but both are needed for a full-core discharge. *Id.*, ¶ 17. The CCWS can handle heat removal in abnormal conditions with only one loop. The CCWS is powered from independent, safety-related power supplies. These are loaded onto the emergency diesel generators in the event of a loss of offsite power. The SFPCS pumps are powered by independent electrical sources and can receive backup power from the emergency diesel generators. The SFPCS is controlled and monitored from a local instrument panel supplemented by annunciator alarms in the control room to alert operators to any unusual conditions in the SFPCS or the fuel pool itself. Houghtaling-4 & 5, ¶¶ 6, 7, 9, 10.

Reracked Pool Temperatures

Licensee has conducted a heat transfer analysis of the fuel pool system for both a "normal-batch" offload of fuel assemblies and a full-core offload pursuant to the standards set out in the SRP and the NRC Branch Technical Position referenced in the SRP. The peak temperatures derived from that analysis are within the maximums permitted by the foregoing standards and descend rapidly after peaking. The NRC Staff's independent analysis corroborates Licensee's analysis. Singh-4 & 5, ¶¶ 23-25; SER-Amendment 91 at 8.

Licensee also performed a loss-of-cooling analysis postulating a failure of the cooling system when the water in the pool had reached maximum temperature. Two significant conclusions were reached. First, the pool would not reach boiling for over 13 hours when loaded with a normal batch and 5 hours with a full-core offload. Given the backup sources of makeup water, those time frames are adequate to take remedial action. Singh-4 & 5, ¶ 26. Second, even unattended pool boiling with a full-core offload would require 46 hours before the 23 feet of water over the fuel assemblies would evaporate. Licensee concludes that under those circumstances ample time is available to remedy the situation. NRC Staff agrees. *Id.*; Tourigny, ¶ 7.

Finally, Licensee concludes that boiling will not damage the fuel itself because of the effects of nucleate boiling, i.e., the formation of steam bubbles on the fuel rod surface which more efficiently transfers heat from the rods. Surface temperature would stabilize at 300°F, "well below the temperature at which any cladding damage can occur." Singh-4 & 5, ¶¶ 29, 30.

Given the time frames before the fuel assemblies would be exposed, the multiple sources of makeup water, the temperature of any makeup water, and the high temperatures required before cladding damage can occur, we find no basis for Intervenor's allegation that a delay in makeup water could cause any cladding damage, much less an explosion or fire. Houghtaling-4 & 5, ¶ 18. The electrical systems are remotely located and subject to regular testing under the Plant Technical Specifications. *Id.*, ¶ 17. We perceive no scenario that would change the reliability and testability of the heat removal systems resulting from the high-density reracking, and Intervenor has suggested none.

For all the foregoing reasons, we find no genuine issue of material fact with respect to Contention 4. Licensee has affirmatively demonstrated the safety of the spent fuel pool cooling system with respect to any possible threat from heat loads or loss-of-cooling accidents. Accordingly, Licensee's motion is granted as to Contention 4, and it is dismissed with prejudice.

D. Contention 5

Admitted Contention 5 reads as follows:

> That the cooling system will be unable to accommodate the increased heat load in the pool resulting from the high-density storage system and a full core discharge in the event of a single failure of any of the pumps or the electrical power supply to the pumps on the shell side of the cooling system and/or in the case of a single failure of the electrical power supply to the pumps on the pool side of the spent fuel pool cooling system. This inability will, therefore, create a greater potential for an accidental release of radioactivity into the environment.

LBP-88-10A, *supra*, 27 NRC at 471. No basis was specified to support Amended Contention 5.

In admitting this contention, the Licensing Board stated that the "Licensee's evidence on this contention should be directed toward applicability of and compliance with Criterion 44 of 10 C.F.R. Part 50, Appendix A." *Id.* at 464. At the March 29, 1988 Prehearing Conference, Mr. Rich emphasized his concern over the alleged vulnerability of the electrical power supply, in particular, vulnerability to the effects of humidity, wear, corrosion, elevated temperatures, and exposure to radiation on components. Tr. 80. Essentially, the contention alleges that, if a pump or pump power supply fails, then the spent fuel pool cooling system will be unable to accommodate the increased heat load associated with the higher-density fuel storage under full-core discharge conditions. *Id.*

In its Motion for Summary Disposition, Licensee asserts that

> consistent with the requirements of Criterion 44 of Appendix A to 10 C.F.R. Part 50, the SFPCS is capable of maintaining the fuel pool temperature within acceptable limits, even under full core discharge conditions, with a single active failure on the shell and/or pool side of the heat exchanger. Even if a complete loss of forced cooling were to occur, the fuel would be kept covered and maintained at a safe temperature, given the multiple sources of makeup water and the long lead time before the pool water level could reach an unacceptable level.

Licensee's Facts, Contention 5, ¶ 16. We agree. Licensee's Affidavits and Statement of Material Facts were uncontroverted. As noted above, Intervenor failed to respond to Licensee's Motion for Summary Disposition on Contention 5.

Licensee first provides a complete description of the Spent Fuel Pool Cooling System ("SFPCS"). Briefly, it consists of two 1500-gpm centrifugal pumps, a heat exchanger wherein the SFPCS rejects excess pool water heat to the component cooling water system ("CCWS"). The component cooling water, in turn, rejects its heat to the intake cooling water ("ICW") system. Each of these systems has at least two independent loops. Houghtaling-4 & 5, ¶¶ 4-6, 10-11.

During normal operation, only one loop in the SFPCS is in operation. *Id.*, ¶ 9. During abnormal conditions, such as full-core discharge, both loops are placed in operation. Singh-4 & 5, ¶ 17. The CCWS has enough capacity that only one loop is needed to remove fuel pool heat during abnormal conditions. Houghtaling-4 & 5, ¶ 10.

The SFPCS is controlled and monitored from a local instrument panel. In addition, alarms are provided by annunciators in the control room sufficient to alert operators to any unusual conditions in the SFPCS or the fuel pool itself. High and low CCWS flows are also annunciated in the control room. *Id.*, ¶¶ 6, 9.

The SFPCS pumps are powered by independent electrical supplies and are capable of receiving backup power from the emergency diesel generators. The CCWS components are powered from independent safety-related power supplies. These are loaded onto the emergency diesel generators in the event of loss of offsite power. *Id.*, ¶ 7.

A single active failure of an SFPCS pump or its power supply would reduce pool flow capability to that of one pump, but even in the case of the abnormal, full-core offload situation, the pool water would remain within acceptable temperature limits as allowed in the SRP. A single active failure of a pump in the CCWS would not reduce cooling of the pool water because the CCWS is fully capable of removing the abnormal case heat load with only one pump operating. *Id.*, ¶¶ 14, 15.

We further note that all components in the SFPCS and the CCWS are designed to operate continuously without degradation at temperatures above the expected maximum temperatures. The electrical equipment associated with the SFPCS and CCWS are remotely located and would not be affected by pool environmental conditions. All critical components of the systems are routinely tested in accordance with plant technical specifications. Houghtaling-4 & 5, ¶ 17.

Even if the highly unlikely event of loss of all forced cooling occurred, there would be adequate time available to obtain water from several sources: the refueling water tanks, the primary water tank, and even the city water supply. There is even water available through a crosstie with the ICW system which could supply 150 gpm to the pool which is more than adequate to maintain the pool level under abnormal conditions. *Id.*, ¶ 8.

Given these multiple sources of makeup water even under the worst conditions, the fuel will remain covered and the bulk temperature of the pool water will not exceed boiling. *Id.*, ¶ 18. The fuel cladding temperature will therefore be maintained well below the point where any fuel damage would occur, inasmuch as the pool is unpressurized and thus the bulk pool temperature could not exceed the boiling temperature. *Id.*; Singh-4 & 5, ¶¶ 27-30.

Therefore, as to Contention 5, we conclude that the above material presented by the Licensee establishes that there are no genuine issues of material fact and that Licensee is entitled to judgment as a matter of law. Licensee's Motion for Summary Disposition of Contention 5 is granted, and it is dismissed with prejudice.

E. Contention 6

Contention 6 avers:

> That the proposed use of high-density storage racks designed and fabricated by the Joseph Oats Corporation is utilization of an essentially new and unproven technology.

LBP-88-10A, *supra*, 27 NRC at 471. As bases for the contention Intervenor asserted that:

> As recently as September 8, 1987, the NRC has provided information concerning these racks to all nuclear power reactor facilities warning of a ". . . potentially significant problem pertaining to gaps . . . ." "The concern is that separation of the neutron absorbing material used in high-density fuel storage racks might compromise safety." (NRC Information Notice No. 87-43. SSINS NO.: 6835). Again on October 23, 1987, the NRC is requiring more information of FP&L in order to assess the integrity of the Boraflex system. The answer to this latest inquiry has not yet been made available to the public.
>
> FP&L's response to these and other problems relating to the use of Boraflex incorporated in a system designed by the Joseph Oat Corporation represents an essential modification of the current technology to such an extent that it, in fact, represents utilization of a new technology and fabrication process that is, thus, unproven and untested.

Amended Petition at 8.

Licensee filed two affidavits in support of its motion for summary disposition: "Affidavit of Dr. Stanley E. Turner on Admitted Contentions 6 and 7," and "Affidavit of Dr. K.P. Singh on Admitted Contentions 3 and 6." *See* note 2, *supra*. Dr. Singh's affidavit was proffered to demonstrate that the problems encountered with the use of Boraflex in high-density storage racks at other nuclear power plants have been resolved and will not occur at St. Lucie 1. Dr. Turner's affidavit addresses criticality analyses and conformance with NRC criteria and applicable industry standards.

NRC filed the affidavit of Edmond G. Tourigny which supported Licensee's motion. Mr. Tourigny stated that on October 29, 1987, he visited the Joseph Oat Corporation and observed racks during various stages of fabrication and agrees with Licensee that all aspects of rack construction embody proven design concepts and well-established fabrication techniques and that the racks incorporate proven technology for Boraflex installation and positioning. He

concludes by stating that he does not believe that the use of high-density racks designed and fabricated by the Joseph Oat Corporation constitutes the use of a new and unproven technology. Tourigny, ¶ 9.

Licensee argues that the aspects of rack technology employed for producing the St. Lucie 1 racks utilize a proven and widely applied technology, and reflect established industry practice. Singh-3 & 6, ¶ 22. Licensee states that the rack manufacturer, the Joseph Oat Corporation, has extensive experience in the manufacturing of spent fuel storage racks using Boraflex panels, that all significant construction features of the racks are direct adaptations of established technology and the production control methods in use at the Joseph Oat Corporation are derived from two decades of nuclear component manufacturing. *Id.*, ¶¶ 31, 32. Licensee also states that the only departures from established industry practice in the construction of the St. Lucie racks were the elimination of the silicone-based adhesive used to cement the Boraflex in place and modification of the manufacturing process so as to install Boraflex in place with minimal surface loading. *Id.*, ¶ 30. It is precisely those changes that Intervenor focuses on in its claim that the use of the St. Lucie Unit 1 racks constitutes utilization of an essentially new and unproven technology. *See* Intervenor's Response to Licensee's Motion for Summary Disposition of Intervenor's Contention 6 at 2-12.

Licensee filed thirty-five statements of material fact as to which it claims there are no genuine issues to be heard with respect to Intervenor Contention 6. Many of these findings were filed with the motion for summary disposition of Contention 3 and were rejected there on the basis of questions raised by Intervenor. The Board agrees with and accepts Licensee's Findings 1, 7, 8, 12, 16, 19, 20, 22, 27, and 29. Because Licensee has not established that there are no outstanding safety issues concerning the use of Boraflex the remaining findings state the subject matter for evidentiary hearing where Intervenor will be provided an opportunity to pursue questions raised as to those issues. Licensee's motion for summary disposition of Contention 6 is denied.

F. Contention 7

Admitted Contention 7 reads as follows:

> That the increase of the spent fuel pool capacity, which includes fuel rods that are more highly enriched, will cause the requirements of ANSI-N16-1975 not to be met and will increase the probability that a criticality accident will occur in the spent fuel pool and will exceed 10 CFR Part 50, A 62 criterion.

LBP-88-10A, *supra*, 27 NRC at 471. The bases for the contention read as follows:

> The increase in the number of fuel rods stored and the fact that many of them may have experienced fuel failure or may be more highly enriched and have more reactivity will increase the chances that the fuel pool will go critical, and cause a major criticality accident and perhaps, explosion that will release large amounts of radioactivity to the environment in excess of the 10 CFR 100 criteria.

Amended Petition at 11. We amended Intervenor's contention as originally filed to delete reference to failed fuel, and admitted the contention. LBP-88-10A, *supra*, 27 NRC at 468. In so admitting this contention, we stated that "[c]riticality control is one of the basic concerns when fuel is being stored, and the methods used to achieve this control are of great importance." *Id.*

Licensee states that

> It can be concluded that the design of the *St. Lucie 1* storage racks conforms to safe and conventional practice in the industry, conforms to all applicable regulations and guidance, and provides assurance that a criticality accident cannot occur under any credible postulated accident condition. Turner Affidavit, ¶72.

Licensee's Facts, Contention 7, ¶29. We agree in large part, but will require clarification of two items noted below.

Licensee describes the pool design and neutronics behavior, as determined by analysis. Turner-6 & 7, ¶¶4-13. Licensee then describes the various regulations pertaining to fuel storage pools and NRC guidance for achieving the necessary conditions for meeting these requirements. *Id.*, ¶¶17-19, 22, 23. Licensee's analyses' in light of that regulatory guidance were described in some detail. The results of the analyses showed that the maximum calculated values for k_{eff} in the pool were 0.9409 for Region 1 and 0.9435 for Region 2. *Id.*, ¶¶23, 25, 28-30. These values are within regulatory requirements.

Licensee also analyzed the following conditions as potential causes of accidents: increased temperature, boiling, dropped assembly, and abnormal fuel location. Turner-6 & 7, ¶32. Licensee concluded that a k_{eff} will be maintained less than 0.95 under all credible accident conditions. *Id.*, ¶42.

Licensee states that the largest reactivity effect would result from a fresh fuel assembly of 4.5% enrichment being loaded into a Region 2 storage cell. *Id.*, ¶33. Licensee's Facts, Contention 7, ¶25, is dependent upon restricting storage of different enrichment fuel in the proper region. Intervenor argues that the Standard Review Plan, §9.1.2, Part II, 2.b, requires that "[t]he design of the storage racks is such that a fuel assembly cannot be inserted anywhere other than in a design location." Intervenor's Finding (Contention 7), ¶¶6, 12. Licensee has not shown how erroneous insertion could be avoided. We find that a full explanation of the measures that are taken by the Licensee to comply with this Standard Review Plan requirement must be provided.

Licensee states that even if "somehow the pool was allowed to drain criticality would not occur . . . since, without water, there would be no neutron moderator in the pool — a necessary condition of criticality. Weber Affidavit-1, 6." Licensee's Facts, Contention 7, ¶ 24. Intervenor, in his "Intervenor's Response to Licensee's Motion for Summary Disposition of Intervenor's Contention 7," ¶ 9, questions this position, citing instances where criticality has occurred in the absence of water. We can find no factual evidence in the record to support Licensee's position; it is presented as a bald statement with no explanation as to why absence of a moderator will prevent criticality. We cannot accept Licensee's statement without adequate explanation of why moderation is necessary to achieve criticality.

In conclusion, we accept Licensee's Facts, Contention 7, ¶¶ 2-21, 26-28.[5] We reject Licensee's Facts, Contention 7, ¶¶ 22-25, pending further explanation as stated in our above consideration. Accordingly, Licensee's motion for summary disposition of Contention 7 is granted in part and denied in part as set out above.

V. CONCLUSION

We find that there is no genuine issue of material fact and that Licensee is entitled to judgment as a matter of law with respect to:

1. Contentions 1, 4, and 5;
2. The non-Boraflex materials issues in Contention 3;
3. All issues in Contention 7 except:
   a. the danger of improper storage of fresh fuel assemblies; and
   b. the danger of a criticality accident in the absence of a moderator.

Licensee's motion denied as to Contention 6 and will be granted as to all other contentions with the exception of the matters listed above.

Pursuant to 10 C.F.R. § 2.743(b), the parties shall file all direct written testimony of witnesses with the Board and serve copies on each other on or before November 22, 1988. Filed and served means received. Hearing on the issues remaining in this proceeding will commence on Tuesday, December 6, 1988, at 9:00 A.M. in the vicinity of the St. Lucie Plant. The parties will be notified of the location on or about November 7, 1988.

[5] Licensee's Facts 1-3, 5, and 7-9 are not addressed here. They relate to the premise that the use of Boraflex will perform its intended function. The question of the suitability of Boraflex will be litigated under Contentions 3 and 6, and will not be repeated under Contention 7.

VI. ORDER

For all the foregoing reasons, and upon consideration of the entire record in this matter, it is, this 14th day of October 1988, ORDERED:

1. That Licensee's Motion for Summary Disposition of Intervenor's Contentions is granted as to Contention 1, part of Contention 3, Contention 4, Contention 5, part of Contention 6, and part of Contention 7;

2. That Licensee's Motion for Summary Disposition is denied as to the issues concerning Boraflex in Contentions 3 and 6, and the issues concerning the improper storage of fresh fuel assemblies and the danger of a criticality accident in the absence of a moderator in Contention 7; and

3. That hearing on the remaining matters at issue will commence on December 6, 1988, in the vicinity of the St. Lucie Plant.

THE ATOMIC SAFETY AND
LICENSING BOARD

B. Paul Cotter, Jr., Chairman
ADMINISTRATIVE JUDGE

Glenn O. Bright
ADMINISTRATIVE JUDGE

Dr. Richard F. Cole
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 14th day of October 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Administrative Law Judge:

Morton B. Margulies

In the Matter of **Docket No. 30-1391-SC**
(ASLBP No. 88-565-01-SC)

EDWARD HINES, JR. MEDICAL CENTER
(Veterans Administration) **October 7, 1988**

ORDER
(Approving Agreement to Terminate Proceeding and Terminating Proceeding)

On October 1, 1988, the parties to this enforcement proceeding, the NRC Staff and Dr. Maynard L. Freeman, filed with the Administrative Law Judge (1) an Agreement to Terminate Proceeding that had been accepted by both parties; and (2) a joint motion requesting the Judge's approval of the Agreement and the entry of an order terminating this proceeding, with a proposed Order.

I have reviewed the Agreement under 10 C.F.R. § 2.203 to determine whether approval of the Agreement and consequent termination of this proceeding are in the public interest. Based upon the review, I am satisfied that approval of the Settlement Agreement and termination of this proceeding based thereon are in the public interest. The terms of the Agreement satisfy the interests of the public and parties without the need for a hearing.

Accordingly, I approve the Settlement Agreement attached hereto and incorporated by reference into this Order. Pursuant to § 2.203, this proceeding is terminated on the basis of the attached Agreement.

Morton B. Margulies
ADMINISTRATIVE LAW JUDGE

Dated at Bethesda, Maryland,
this 7th day of October 1988.

ATTACHMENT

AGREEMENT TO TERMINATE PROCEEDING

On August 24, 1987, the NRC issued to the Veterans Administration, Edward Hines, Jr. Medical Center (Hines Hospital) an "Order to Show Cause Why License Should Not Be Modified Effective Immediately" (Order). 52 Fed. Reg. 32,623 (1987).

Hines Hospital is the holder of a specific byproduct material license of broad scope No. 12-01087-07 originally issued by the NRC on October 15, 1958, pursuant to 10 C.F.R. Parts 30, 33 and 35. (The license was most recently renewed on September 24, 1985, and expires on September 30, 1990.) As a result of the Order, the license was amended effective immediately, *inter alia*, by adding the following condition:

> On receipt of this Order, Dr. Maynard L. Freeman shall be removed from all licensed activities and shall thereafter not serve in any position involving the performance or supervision of any licensed activities (e.g., as an authorized user) including the supervision of any nuclear medicine technologists.

The Order issued against Hines Hospital was based on alleged violations of NRC requirements allegedly determined during inspections and investigations conducted at Hines Hospital from December 16, 1986, through June 30, 1987. Hines Hospital did not challenge the Order. However, Dr. Maynard L. Freeman, through his first attorney, challenged the Order by filing on September 22, 1987, a Response to the Order. Dr. Freeman also filed an Answer to the Order, a Request for a Hearing Pursuant to the Order, and a Request for Hearing Pursuant to 10 C.F.R. § 2.714(d). Dr. Freeman, through his first attorney, also requested the NRC to defer action on his request for a hearing pending conclusion of a meeting with him and the NRC's continued evaluation of Dr. Freeman's response. That meeting and evaluation did not result in any relaxation of

the Order by the Staff. By letter dated January 25, 1988, then Counsel for Dr. Freeman requested that the hearing process go forward. That request led to the designation of the Administrative Law Judge (ALJ) on February 18, 1988.

By Orders dated May 24, 1988, and June 23, 1988, respectively, the ALJ granted the Staff's motions of May 23, 1988, and June 22, 1988, respectively, to extend a temporary stay of the proceeding which had been originally granted by the ALJ, over the objections of Dr. Freeman, on April 29, 1988, to and including June 24, 1988, and July 15, 1988, respectively. On July 13, 1988, the ALJ granted a joint motion of the Staff and Dr. Freeman for a further extension of the temporary stay of this proceeding to and including August 31, 1988.

By letter dated June 13, 1988, Staff Counsel advised the ALJ that Dr. Maynard L. Freeman had tendered his resignation to Hines Hospital. Staff Counsel further advised that Hines Hospital had accepted Dr. Freeman's resignation. Dr. Freeman states that his resignation was tendered for reasons unassociated with these proceedings. Dr. Freeman's last day of official duties at the Hines Hospital was May 31, 1988. As a result of Dr. Freeman having ceased performing duties at Hines Hospital, and, further, since he is no longer physically present at said hospital, it is the NRC Staff's position that the condition imposed on the Hines Hospital license is moot since it can have no practical effect on Dr. Freeman.

Dr. Freeman, however, vigorously disputes this position and argues that notwithstanding his departure from Hines Hospital, he is entitled to contest the validity of the underlying basis for the conditions applicable to him set out in the August 24, 1987 Order. However, the parties believe it is in the public interest to terminate this proceeding without further litigation and, therefore, the NRC Staff and Dr. Maynard L. Freeman hereby agree as follows:

1. Based on this Agreement, except as specified in the second sentence of this paragraph, Dr. Freeman hereby withdraws his requests for a Hearing pursuant to the Order and pursuant to 10 C.F.R. § 2.714(d) which requests were filed on September 22, 1987. In the event the NRC initiates a future proceeding, the subject matter of which includes expressly or implicitly the conditions of the Order of August 24, 1987, that were applicable to Dr. Freeman, the Staff agrees not to interpose any objection to any request for a hearing by Dr. Freeman based on this withdrawal, or interpose laches, estoppel, waiver, or any equitable type defense or the passage of time as they relate to the underlying basis of the August 24, 1987 Order.
2. The Staff agrees to provide, pursuant to Dr. Freeman's request for production, the following NRC documents:
   a. Office of Investigations (OI) Report of Investigation No. 3-87-003 (Edward Hines, Jr., Veterans Administration Medical Center) — Alleged Willful Failure to Report Diagnostic Misadministrations

and Alleged Willful Material False Statements — Dated November 4, 1987, and Exhibits 1-33 Attached thereto;

b. OI Report of Investigation No. 3-87-0035 (Edward Hines, Jr., Veterans Administration Medical Center) — Alleged Material False Statements—Dated March 29, 1988 and Exhibit 1 attached thereto. [This Report has only one Exhibit].

3. The NRC Staff agrees to provide copies of the foregoing documents without cost to Dr. Freeman. The documents will be provided to Counsel for Dr. Freeman on or before October 31, 1988. It is understood by Dr. Freeman that the delay in providing the documents in question is necessitated by the fact that the NRC Staff must review the documents in order to remove, if necessary, the home address, home telephone numbers, and any other information which may be exempt from release by virtue of the Privacy Act or any other provision of law, of any persons mentioned or discussed in the documents in question. Dr. Freeman agrees to the removal of such information and recognizes that such action on the part of the NRC is necessary to protect the privacy of any such persons mentioned or discussed in the documents in question and to comply with the Privacy Act.

4. For a period of one year from the date of this agreement, Dr. Freeman agrees to voluntarily advise, in writing, the NRC in the event he is employed in any activity regulated by the NRC or which would be regulated by the NRC but for an agreement with a state pursuant to section 274 of the Atomic Energy Act of 1954, as amended. The notice required by this provision shall state the name and address of his employer and a brief description of his duties and be mailed or sent to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. In the event that Dr. Freeman shall engage in an activity requiring NRC authorization, regulation or licensing, then the filing of any application for a license or approval as an authorized user shall be deemed to satisfy this requirement.

5. The NRC Staff and Dr. Freeman shall jointly move the ALJ for an Order approving this Settlement Agreement and terminating this

proceeding. This Agreement shall become effective upon approval by the ALJ.

Jeffrey Lerner
Counsel for Dr. Maynard
L. Freeman

Bernard M. Bordenick
Counsel for NRC Staff

Dated: October 1, 1988

Seen and approved:

Dr. Maynard L. Freeman

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of Docket No. 50-293

BOSTON EDISON COMPANY
(Pilgrim Nuclear Generating Station) October 6, 1988

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.

In DD-87-14, 26 NRC 87 (1987), the Director denied Petitioners' request insofar as it related to emergency preparedness and containment issues. The Director here denies the petition insofar as it relates to management issues.

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

Introduction

On July 15, 1986, William B. Golden and others (Petitioners) filed with the Nuclear Regulatory Commission (NRC) 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 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. The Petitioners asserted 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 asserted that the Licensee and the NRC have failed to resolve these safety issues.

On August 21, 1987, I issued an Interim Director's Decision in response to the petition. I concluded that the petition, with the exception of the Licensee management issue, should be denied. I further stated that the management portion of the petition would be addressed in a subsequent response.

Background

As noted in my Interim Decision, 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, with respect to this matter, the Petitioners provided an extensive list of management deficiencies that have been documented in NRC inspection reports and in systematic assessment of licensee performance (SALP) reports. The areas of concern included management effectiveness in plant operations, radiological controls, onsite emergency preparedness, maintenance and modifications, surveillance 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 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 former 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 Report 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 engineering and technical support), the letter transmitting SALP Report No. 85-99 expressed NRC's concern about the Licensee's apparent "inability to improve performance, or sustain improved performance once achieved."

The NRC has monitored management issues at Pilgrim station since the writing of SALP Report No. 85-99 and performance of the Diagnostic Team inspection. The results of the SALP report and the Diagnostic Team inspection indicated that the management problems were evidenced by (1) the lack of a clear organizational structure, (2) recurring management changes, (3) chronic staffing vacancies, (4) the lack of a stable management team at the plant, and (5) the inhibiting of progress in the functional areas assessed during the SALP period.

The Interim Decision discussed several management changes that had 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 performed 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.

Starting with the Confirmatory Action Letter (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. At a meeting with the Licensee on July 30, 1986, I informed the Licensee that, even when the technical issues set forth in CAL-86-10 were resolved, I would not approve restart of the plant until the management issues discussed in SALP Report No. 85-99 also were resolved. In addition, on August 27, 1986, in a letter to the Licensee, I 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.

In the Interim Decision I noted that the NRC Staff agreed with the Petitioners that significant management deficiencies have existed at Pilgrim station. In fact as evident from the foregoing, the Staff's concerns with respect to management not only encompassed but went beyond the specific items raised by the Petitioners. It is in this broader context that the Staff has evaluated actions taken by BECo to resolve management deficiencies. I stated that (1) the NRC would continue to observe and evaluate the Licensee's performance through ongoing inspections, bimonthly management meetings with the Licensee, and the

SALP process; (2) the NRC would 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; and (3) the NRC would also evaluate the Pilgrim Restart Plan and other information to determine whether the issues raised by the Petitioners, including management issues, have been adequately resolved.

The NRC Staff's conclusions on the adequacy of management at the Pilgrim facility arise principally from the inspection efforts reflected in two documents: (1) SALP Report No. 87-99, which covers the period of February 1, 1987, through May 15, 1988, and (2) the report on the Integrated Assessment Team Inspection (IATI) performed in August 1988.

For the reasons discussed below, Petitioners' request to initiate a proceeding with respect to alleged deficiencies in the Licensee's management is denied.

Discussion

I. MANAGEMENT

A. SALP Report No. 87-99 Results

On July 27, 1988, the Staff issued its most recent SALP report, SALP Report No. 87-99 (Enclosure A), which covers the period of February 1, 1987, through May 15, 1988. The Staff indicated that the Licensee had made extensive efforts, including corporate and site reorganizations, and had installed a new management team. The new management team undertook numerous projects and programs to improve the physical condition of the plant and to enhance programmatic performance. These management initiatives were generally successful in correcting deficiencies in organization, staffing, and upgrading of the physical condition of the plant. The Staff also indicated that the new management team was effective in improving programmatic performance in areas previously identified as having significant weaknesses. The Staff further stated that the Licensee's self-assessment process was effective in identifying other areas needing further management attention.

The Regional Administrator, Mr. William Russell, acknowledged in the letter transmitting the SALP report that BECo had made extensive efforts to upgrade performance in functional areas that were previously assigned Category 3 ratings. These areas were Radiological Controls, Surveillance, Fire Protection, Security and Safeguards, and Assurance of Quality. Only one area remained with a rating lower than Category 2; a Category 3-Improving rating was assigned to the Radiological Controls functional area. The use of "Improving" in the rating indicated improvement in the organization, programs, and performance in the

functional area. (The definitions of the category ratings and detailed findings in all the SALP functional areas are provided in Enclosure A (not published).)

Although the necessary positive results were becoming apparent at the close of the assessment period, the ability to sustain the improved performance had not yet been demonstrated. The NRC Staff determined that continued close monitoring of the Licensee's activities was necessary to ensure continued improvement of performance. This close monitoring required an assessment team inspection, discussed below, to further measure the effectiveness and readiness of the BECo management controls, programs, and personnel to support safe restart and operation of the Pilgrim Nuclear Power Station.

B. Integrated Assessment Team Inspection Results

The IATI was conducted during the period of August 8 through August 24, 1988, and the inspection report, dated September 7, 1988, is provided as Enclosure B (not published). The team inspection included an assessment of (1) the organizational structure currently in place at the Pilgrim Nuclear Power Station, (2) the administrative processes in place to control and coordinate the activities and actions affecting safe and reliable operation of the Pilgrim facility, and (3) the adequacy of staffing, qualifications of personnel, and mechanisms to enhance and promote stability in the organization's technical and managerial staff.

The inspection team concluded that the current organization is well structured and provides for an appropriate distribution of responsibilities and accountabilities for the activities being performed by the functional units within the organization. This appraisal was not true for the former organization. The depth of managers in functional areas should contribute to stability in the organization by providing for the development of technical and managerial skills previously lacking. The current organizational structure provides a framework for career growth that should help reduce chronic staffing vacancies that existed in the past. Redistribution of functional responsibilities and depth in management throughout the organization provides the framework necessary to enhance stability and to support safe and reliable operation of Pilgrim.

The authorized staffing level is ample, in contrast to previous staffing levels, and has been filled to a degree acceptable to perform all the necessary activities and functions of the organization for all plant conditions, including operation.

The resumes and position descriptions of key managers and selected personnel throughout the organization were audited by NRC inspectors during the IATI. The educational and experience backgrounds of personnel were compared to the requirements of the positions held, as delineated in American National Standards Institute (ANSI) N18.1-1971, "Selection and Training of Personnel for Nuclear Power Plants," with a focus on the management experience of key

personnel. No deficiencies were identified relating to the qualification requirements of the ANSI standard. More significantly, there has been an increase of talented management personnel with extensive and successful management experience in key positions. The enhanced mixture of qualified management and technical personnel on the plant staff should result in a stable management team that was previously lacking.

Management has updated a variety of procedures to provide policy for and control and coordination of the activities and actions of the organization. The corporate policy relating to the Nuclear Organization contained in the Mission, Organization, and Policy Manual includes, among other goals, striving to achieve rising standards of performance, dedication to protecting the environment and public, and rigorous adherence to procedures. The other procedures adequately identify corporate policy, organization, interfaces, functional requirements, responsibilities, accountabilities, and qualifications necessary for the control of activities and the coordination of actions within the organization. This improved control and coordination has resulted in progress in the functional SALP areas that was previously inhibited.

Several management meetings were observed during the IATI to assess the interactions of managers and the effectiveness of the policies and procedures being implemented. Close observation of the functional areas was made to augment findings and conclusions on the effectiveness of the organization, management controls, and communications. These observations and interviews also provided the team with insight into the worker's perception of management policies, involvement, effectiveness, and the resulting effect on safety.

The team members, through the observations and interviews, noted a positive change in the attitude toward nuclear safety throughout the Pilgrim organization. This change in attitude is evidence of corporate management's ability to communicate policy and has resulted in improved performance of safety-related activities. These improvements were acknowledged in the most recent SALP report and the IATI report. The IATI observations support the conclusion that BECo management is effective in communicating corporate goals and that management oversight is ensuring that the goals are being supported and pursued.

The IATI report concluded that the Licensee has an acceptable organization that is adequately staffed with qualified personnel, has mechanisms in place to enhance stability, and has controls and programs to support safe startup and operation of the Pilgrim Nuclear Power Station. These conclusions are based on the above discussion and supported by the details in the enclosures to this Decision.

II. COMBINED EFFECTS OF MANAGEMENT, CONTAINMENT, AND EMERGENCY PLANNING ISSUES

The Petitioners claim that even if the alleged deficiencies taken separately do not pose an intolerable risk, taken in the aggregate they do.

I concluded in my Interim Decision that the Petitioners had not established evidence of design flaws or high risk in connection with containment performance for the Pilgrim Mark I containment. I also noted that the Licensee announced a voluntary program to enhance the Pilgrim containment capabilities. Since that time the Licensee has continued its efforts to improve containment performance. For example, the Pilgrim containment now has enhanced safety features including a fire water inter-tie to the residual heat removal system, redesigned drywell spray nozzles, and an improved long-term nitrogen supply.

As discussed above, there have been a number of changes in the organization which have provided strengthened management capable of adequately managing the safe startup and operation of the Pilgrim facility.

I indicated in the Interim Decision that the emergency planning issues raised by the Petitioners were not sustained by FEMA's review of the petition and I denied that portion of the petition addressed to emergency planning issues. I noted, nevertheless, that other emergency planning issues raised by FEMA's "Self-Initiated Review and Interim Finding for the Pilgrim Nuclear Power Station, Plymouth, Ma.," were a matter of serious concern. The Commission still has under consideration the emergency planning issues raised by FEMA. However, containment performance is not grounds for the relief requested and the improved management organization has removed the need for any further enforcement action on this basis.

Conclusion

For the reasons discussed above, the information identified by the petition does not warrant the initiation of the requested proceedings in regard to the management issues. Accordingly, the Petitioners' request for action pursuant to 10 C.F.R. § 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 Rockville, Maryland,
this 6th day of October 1988.

Attachments:
A. SALP Report No. 50-293/87-99
B. IATI Report No. 50-293/88-21

[The attachments have been omitted from this publication but can be found in the NRC Public Document Room, 2120 L Street, NW, Washington, DC.]

Cite as 28 NRC 491 (1988) DD-88-17

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of **Docket No. 50-293**

BOSTON EDISON COMPANY
(Pilgrim Nuclear Generating Station) **October 6, 1988**

Massachusetts Governor Michael S. Dukakis and Attorney General James M. Shannon filed a Petition on behalf of the Commonwealth of Massachusetts and its citizens (Petitioners) with the Nuclear Regulatory Commission (NRC) requesting that the Director of the Office of Nuclear Reactor Regulation (NRR) institute a proceeding to modify, suspend, or revoke the operating license held by Boston Edison Company (BECo, the Licensee) for its Pilgrim Nuclear Generating Station (Pilgrim). In particular, the Petitioners requested the NRC to (1) modify the Pilgrim license to bar restart of the facility until a plant-specific probabilistic risk assessment (PRA) is performed for Pilgrim and all indicated safety modifications are implemented; (2) modify the Pilgrim license to extend the current shutdown pending the outcome of a full hearing on the significant outstanding safety issues and the development and certification by the Governor of adequate emergency plans; and (3) issue an Order, effective immediately, to modify the Pilgrim license to preclude the Licensee from any taking steps in its power ascension program until a formal adjudicatory hearing is held and findings of fact are made concerning safety questions raised regarding Pilgrim.

The relief sought by the Petitioners is based on allegations of (1) evidence of continuing serious managerial deficiencies at Pilgrim, (2) evidence that a plant-specific PRA as well as the implementation of any safety modifications indicated thereby should be required prior to Pilgrim's restart, and (3) evidence that the state of emergency preparedness does not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency during operations at Pilgrim.

In DD-88-7, 27 NRC 601 (1988), the Director denied Petitioners' request insofar as it related to the need for a PRA. The Director here denies the petition insofar as it relates to management issues. A decision regarding emergency preparedness issues will be made in a subsequent response.

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

INTRODUCTION

On October 15, 1987, Massachusetts Governor Michael S. Dukakis and Attorney General James M. Shannon filed a petition on behalf of the Commonwealth of Massachusetts and its citizens (Petitioners) with the Nuclear Regulatory Commission (NRC) requesting that the Director of the Office of Nuclear Reactor Regulation (NRR) institute a proceeding to modify, suspend, or revoke the operating license held by Boston Edison Company (BECo, the Licensee) for its Pilgrim Nuclear Generating Station (Pilgrim). In particular, the Petitioners requested the NRC to (1) modify the Pilgrim license to bar restart of the facility until a plant-specific probabilistic risk assessment (PRA) is performed for Pilgrim and all indicated safety modifications are implemented; (2) modify the Pilgrim license to extend the current shutdown pending the outcome of a full hearing on the significant outstanding safety issues and the development and certification by the Governor of adequate emergency plans; and (3) issue an Order, effective immediately, to modify the Pilgrim license to preclude the Licensee from taking any steps in its power ascension program until a formal adjudicatory hearing is held and findings of fact are made concerning safety questions raised regarding Pilgrim.

On May 27, 1988, I issued an Interim Director's Decision in response to the petition. I concluded that information identified in the petition does not warrant the initiation of the requested actions in regard to the probabilistic risk assessment and attendant plant modifications. Accordingly, I denied the request on this issue. I further stated that the management and emergency preparedness portions of the petition would be addressed in a subsequent response.

As noted in my Interim Decision, the Petitioners alleged that serious managerial deficiencies continue to exist at Pilgrim. As the bases for their petition, the Petitioners cite (1) consistently low ratings in systematic assessment of licensee's performance (SALP) reports; (2) the Licensee's inability to sustain performance improvements; (3) the Licensee's poor enforcement record regarding the severity level and number of violations; and (4) recent news articles concerning security problems and the use of excessive overtime. Documents

cited by the Petitioners include SALP Reports Nos. 85-99 and 86-99 and various inspection reports dated from 1985 to 1987.

The Petitioners provided no substantial new information or evidence that was not known to the NRC when it issued the "Interim Director's Decision Under 10 C.F.R. § 2.206," DD-87-14, 26 NRC 87, dated August 21, 1987, in response to the petition filed on July 15, 1986, by Massachusetts State Senator William B. Golden and others also alleging deficiencies in the Licensee's management.

The NRC Staff's conclusions on the adequacy of management at the Pilgrim facility arise principally from the inspection efforts reflected in two documents (1) SALP Report No. 87-99, which covers the period of February 1, 1987, through May 15, 1988, and (2) the report on the Integrated Assessment Team Inspection (IATI) performed in August 1988.

DISCUSSION

The Staff's concerns with respect to management not only encompassed but went beyond the specific items raised by the Petitioners. It is in this broader context that the Staff has evaluated actions taken by BECo to resolve management deficiencies.

A. SALP Report No. 87-99 Results

On July 27, 1988, the Staff issued its most recent SALP report, SALP Report No. 87-99 (Enclosure A (not published)), which covers the period of February 1, 1987, through May 15, 1988. The Staff indicated that the Licensee had made extensive efforts, including corporate and site reorganizations, and had installed a new management team. The new management team undertook numerous projects and programs to improve the physical condition of the plant and to enhance programmatic performance. These management initiatives were generally successful in correcting deficiencies in organization, staffing, and upgrading of the physical condition of the plant. The Staff also indicated that the new management team was effective in improving programmatic performance in areas previously identified as having significant weaknesses. The Staff further stated that the Licensee's self-assessment process was effective in identifying other areas needing further management attention.

The Regional Administrator, Mr. William Russell, acknowledged in the letter transmitting the SALP report that BECo had made extensive efforts to upgrade performance in functional areas that were previously assigned Category 3 ratings. These areas were Radiological Controls, Surveillance, Fire Protection, Security and Safeguards, and Assurance of Quality. Only one area remained with a rating lower than Category 2; a Category 3-Improving rating was assigned to

the Radiological Controls functional area. The use of "Improving" in the rating indicated improvement in the organization, programs, and performance in the functional area. (The definitions of the category ratings and detailed findings in all the SALP functional areas are provided in Enclosure A.)

Although the necessary positive results were becoming apparent at the close of the assessment period, the ability to sustain the improved performance had not yet been demonstrated. The NRC Staff determined that close monitoring of the Licensee's activities was necessary to ensure continued performance improvement. This close monitoring required an assessment team inspection, discussed below, to further measure the effectiveness and readiness of the BECo management controls, programs, and personnel to support safe restart and operation of the Pilgrim Nuclear Power Station.

B. Integrated Assessment Team Inspection Results

The IATI was conducted during the period of August 8 through August 24, 1988, and the inspection report, dated September 7, 1988, is provided as Enclosure B (not published). The team inspection included an assessment of the organizational structure currently in place at the Pilgrim Nuclear Power Station. The assessment also included the administrative processes in place to control and coordinate the activities and actions affecting safe and reliable operation of the Pilgrim facility. The adequacy of staffing, qualifications of personnel, and mechanisms to enhance and promote stability in the organization's technical and managerial staff.

The inspection team concluded that the current organization is well structured and provides for an appropriate distribution of responsibilities and accountabilities for the activities being performed by the functional units within the organization. This appraisal was not true for the former organization. The depth of managers in functional areas should contribute to stability in the organization by providing for the development of technical and managerial skills previously lacking. The current organizational structure provides a framework for career growth that should help reduce chronic staffing vacancies that existed in the past. Redistribution of functional responsibilities and depth in management throughout the organization provides the framework necessary to enhance stability and to support safe and reliable operation of Pilgrim.

The authorized staffing level is ample, in contrast to previous staffing levels, and has been filled to a degree acceptable to perform all the necessary activities and functions of the organization for all plant conditions, including operation.

The resumes and position descriptions of key managers and selected personnel throughout the organization were audited by NRC inspectors during the IATI. The educational and experience backgrounds of personnel were compared to the requirements of the positions held, as delineated in American National

Standards Institute (ANSI) N18.1-1971, "Selection and Training of Personnel for Nuclear Power Plants," with a focus on the management experience of key personnel. No deficiencies were identified relating to the qualification requirements of the ANSI standard. More significantly, there has been an increase of talented management personnel with extensive and successful management experience in key positions. The enhanced mixture of qualified management and technical personnel on the plant staff should result in a stable management team that was previously lacking.

Management has updated a variety of procedures to provide policy for and control and coordination of the activities and actions of the organization. The corporate policy relating to the Nuclear Organization contained in the Mission, Organization, and Policy Manual includes, among other goals, striving to achieve rising standards of performance, dedication to protecting the environment and public, and rigorous adherence to procedures. The other procedures adequately identify corporate policy, organization, interfaces, functional requirements, responsibilities, accountabilities, and qualifications necessary for the control of activities and coordination of actions within the organization. This improved control and coordination has resulted in progress in the functional SALP areas that was previously inhibited.

Several management meetings were observed during the IATI to assess the interactions of managers and the effectiveness of the policies and procedures being implemented. Close observation of the functional areas was made to augment findings and conclusions on the effectiveness of the organization, management controls, and communications. These observations and interviews also provided the team with insight into the worker's perception of management policies, involvement, effectiveness, and the resulting effect on safety.

The team members, through the observations and interviews, noted a positive change in the attitude toward nuclear safety throughout the Pilgrim organization. This change in attitude is evidence of corporate management's ability to communicate policy and has resulted in improved performance of safety-related activities. These improvements were acknowledged in the most recent SALP report and the IATI report. The IATI observations support the conclusion that BECo management is effective in communicating corporate goals and that management oversight is ensuring that the goals are being supported and pursued.

The IATI report concluded that the Licensee has an acceptable organization that is adequately staffed with qualified personnel, has mechanisms in place to enhance stability, and has controls and programs to support safe startup and operation of the Pilgrim Nuclear Power Station. These conclusions are based on the above discussion and supported by the details in the enclosures to this Decision.

C. Emergency Preparedness Update

In the May 27, 1988 Interim Director's Decision (DD-88-7, 27 NRC 601), the emergency preparedness portion of the Petitioner's request was deferred. The Decision stated, however, that the determination as to whether to restart Pilgrim will involve consideration of the emergency planning issues identified by the Federal Emergency Management Agency (FEMA).

Since that Decision, considerable progress has been made toward improving offsite emergency preparedness, including an updated evacuation time estimate study, the development of a shelter implementation program, the development of a training program for offsite emergency response personnel, and the renovation of the offsite emergency operations centers. Draft plans for all seven of the emergency planning zone towns and reception center communities have been forwarded by the Commonwealth of Massachusetts to FEMA for informal technical review. FEMA has provided a review of six of the plans to the Commonwealth. In its letters of March 30, 1988, and August 12, 1988, FEMA has indicated that progress in improving offsite emergency planning for Pilgrim has been made. In addition, classroom training and hands-on training have been conducted for some emergency responders.

The NRC will continue to monitor the progress of the Licensee's efforts to assist Massachusetts and the local governments in improving their emergency response programs. Although progress has been made toward improving emergency preparedness at Pilgrim, the process is not complete.

CONCLUSION

For the reasons discussed in my May 27, 1988 Interim Director's Decision and above, a decision cannot be made at this time regarding emergency preparedness issues. That 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 actions in regard to the management issues. Accordingly, the Petitioners' request for action pursuant to 10 C.F.R. § 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 Rockville, Maryland,
this 6th day of October 1988.

Attachments:
A. SALP Report No. 50-293/87-99
B. IATI Report No. 50-293/88-21

[The attachments have been omitted from this publication but can be found in the NRC Public Document Room, 2120 L Street, NW, Washington, DC.]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Christine N. Kohl, Chairman
Alan S. Rosenthal
Dr. W. Reed Johnson

In the Matter of **Docket No. 50-322-OL-5**
(EP Exercise)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **November 10, 1988**

The Appeal Board sets out its views on what constitutes a fundamental flaw in an offsite emergency preparedness plan for a nuclear facility, as may be revealed in an exercise of that plan.

EMERGENCY PLANS: CONTENT (SUFFICIENCY)

Reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency is the basic regulatory standard against which emergency plans are measured. 10 C.F.R. § 50.57(a)(1).

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

Commission regulations require a "full participation" exercise of an offsite emergency preparedness plan in the two-year period preceding issuance of a

license authorizing operation above 5% of rated power. 10 C.F.R. Part 50, Appendix E, § IV.F.1.

ATOMIC ENERGY ACT: HEARINGS (EMERGENCY PREPAREDNESS EXERCISE RESULTS)

Although intervenors have a right under section 189(a)(1) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2239(a)(1), to a hearing in licensing proceedings on the results of an emergency preparedness exercise, the Commission may limit the issues in such a hearing to whether the results indicate that the emergency preparedness plans are fundamentally flawed. In this regard, the Commission may determine that minor or ad hoc problems occurring on the exercise day are not relevant. *Union of Concerned Scientists v. NRC*, 735 F.2d 1437, 1448 (D.C. Cir. 1984), *cert. denied*, 469 U.S. 1132 (1985).

EMERGENCY PLANS: CONTENT (DEFICIENCIES IN)

A fundamental flaw in an emergency preparedness plan is a deficiency that would preclude a finding of reasonable assurance that protective measures can and will be taken in the event of a radiological emergency. CLI-86-11, 23 NRC 577, 581 (1986).

EMERGENCY PLANNING: ABSENCE OF STATE AND LOCAL GOVERNMENT PARTICIPATION

Under the Commission's so-called "realism" rule, the Commission assumes that, in an actual emergency, state and local governments that have refused to participate in offsite emergency planning for a nuclear power facility would make a "best effort" response, relying on the utility's emergency plan. 10 C.F.R. § 50.47(c)(1); CLI-86-13, 24 NRC 22, 29 (1986).

EMERGENCY PLANS: CONTENT (DEFICIENCIES IN)

A fundamental flaw in an emergency plan, as revealed in an exercise, has two principal components. First, it reflects a failure of an essential element of the plan, and, second, it can be remedied only through a significant revision of the plan.

EMERGENCY PLANS: CONTENT (DEFICIENCIES IN)

With respect to the first factor of the two-part test for determining a fundamental flaw in an emergency plan, whether an essential element of the plan is involved should be determined by reference to the 16 basic emergency planning standards set forth in 10 C.F.R. § 50.47(b) and the requirements of 10 C.F.R. Part 50, Appendix E.

EMERGENCY PLANS: TRAINING

Under the Commission's regulations, the emergency response training program is considered part of the emergency plan. *See* 10 C.F.R. § 50.47(b)(15); *id.*, Part 50, Appendix E, § IV.F.

EMERGENCY PLANS: CONTENT (DEFICIENCIES IN)

Minor or isolated problems on the day of an exercise do not constitute fundamental flaws in the emergency plan. *UCS*, 735 F.2d at 1448. Deficiencies that alone would not constitute a fundamental flaw, however, can be considered collectively, provided they are pervasive and show a pattern of related or repeated failures associated with a particular essential element of the plan.

EMERGENCY PLANS: CONTENT (DEFICIENCIES IN)

The second factor of the test for determining a fundamental flaw in an emergency plan requires consideration of how the failure in the plan, as revealed by the exercise, can be corrected. If the involved portion of the plan itself must be reassessed and reconceived to a significant extent in order to prevent such a failure in the future, then there is a fundamental flaw. On the other hand, where the problem can be readily corrected, the flaw cannot reasonably be characterized as fundamental.

RULES OF PRACTICE: CONTENTIONS (EMERGENCY PLANS)

Any contention alleging that an exercise revealed a fundamental flaw in an emergency plan must address both factors of the test for determining fundamental flaw in order to satisfy the Commission's requirement that the bases for each contention be set forth with reasonable specificity. 10 C.F.R. § 2.714(b). *See* CLI-86-11, 23 NRC at 581.

OPERATING LICENSE: EMERGENCY PREPAREDNESS (EXERCISE)

The purpose of an emergency exercise is to provide important and material information to the Commission so that it can determine whether any deficiencies in the emergency plan as shown by the exercise are significant under the Commission's regulations. CLI-86-14, 24 NRC 36, 39 (1986).

EMERGENCY PLANS: FEMA FINDINGS (EXERCISE)

A Federal Emergency Management Agency (FEMA) "Deficiency" rating — the worst of three possible categories of problem areas — on an element of an exercise is not necessarily tantamount to a fundamental flaw. Under the Commission's regulations, a FEMA finding constitutes a rebuttable presumption on questions of emergency plan adequacy and implementation capability. 10 C.F.R. § 50.47(a)(2). FEMA findings are therefore entitled to presumptive but not conclusive weight. Thus, an applicant has a greater, but not impossible, task in convincing a board that a FEMA Deficiency does not amount to a fundamental flaw in the plan.

EMERGENCY PLANS: FEMA FINDINGS (EXERCISE)

If FEMA has found no Deficiencies or assigned a less severe rating to a problem revealed by an exercise, an intervenor seeking the admission of contentions that allege a fundamental flaw has a more difficult task, but it cannot be precluded from even offering such contentions.

APPEARANCES

Kathy E.B. McCleskey, Richmond, Virginia (with whom **Donald P. Irwin** and **Lee B. Zeugin**, Richmond, Virginia, were on the brief), for applicant Long Island Lighting Company.

Michael S. Miller, Washington, D.C. (with whom **E. Thomas Boyle**, Hauppauge, New York, **Lawrence Coe Lanpher**, **Susan M. Casey**, and **P. Matthew Sutko**, Washington, D.C., **Richard J. Zahnleuter**, Albany, New York, and **Stephen B. Latham**, Riverhead, New York, were on the brief), for intervenors Suffolk County, the State of New York, and the Town of Southampton.

Mitzi A. Young (with whom Lisa B. Clark was on the brief) for the Nuclear Regulatory Commission staff.

DECISION

1. In CLI-86-11, 23 NRC 577, 581 (1986), the Commission restricted hearings on the results of emergency planning exercises to those issues concerned with whether an exercise revealed "deficiencies which preclude a finding of reasonable assurance that protective measures can and will be taken, i.e., fundamental flaws in the plan."[1] According to the Licensing Board in LBP-88-2, 27 NRC 85 (1988), the February 1986 emergency exercise conducted at the Shoreham facility revealed several "fundamental flaws" in the offsite emergency plan for that facility. Specifically, those flaws were in the areas of communications, traffic control, and training. *Id.* at 212-13. The appeal of applicant Long Island Lighting Company (LILCO) from that Licensing Board decision is pending before us. This past June, however, another such "pre-license" emergency exercise was conducted at Shoreham,[2] and litigation of issues raised in that regard is already under way before the Licensing Board. By letter dated October 26, 1988, LILCO contends that "an authoritative definition" of fundamental flaw from us could materially aid the new exercise litigation.

Last May, in connection with another LILCO appeal from an earlier Licensing Board decision on the *scope* of the February 1986 exercise, we issued a memorandum disclosing our tentative conclusions on the merits of that appeal. *See* Memorandum of May 25, 1988 (unpublished).[3] We took that action so that our preliminary views on the required scope of a pre-license exercise could be relied upon to the extent feasible in the design and conduct of the then-upcoming June exercise. LILCO suggests that a similar course is again appropriate with regard to its pending appeal from the Licensing Board's fundamental flaw decision.

We had hoped to be able to issue our decision on the entirety of LILCO's appeal by this time, but other unexpected developments of greater urgency in this proceeding have required our attention since the argument on this appeal. The incipient litigation of any issues arising from the June 1988 exercise, however,

---

[1] "[R]easonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency" is the basic regulatory standard against which emergency plans are measured. 10 C.F.R. § 50.47(a)(1).

[2] The Commission's regulations require a "full participation" exercise of an offsite emergency plan in the two-year period preceding issuance of a license authorizing operation above 5% of rated power. 10 C.F.R. Part 50, Appendix E, § IV.F.1.

[3] Our subsequent decision on LILCO's appeal was consistent with those tentative views. *See* ALAB-900, 28 NRC 275 (1988), *petition for review pending*.

should proceed as efficiently and expeditiously as possible.[4] We do not want the absence of our full decision on LILCO's appeal to be the source of any delay in that litigation. Thus, deciding now the seminal issue of what is meant by a "fundamental flaw" — and leaving for later resolution the remainder of LILCO's appeal from LBP-88-2 — is amply warranted. This approach is also especially appropriate, given that LILCO's appeal is technically moot and any decision we render would be advisory in nature. *See* ALAB-900, *supra* note 3, 28 NRC at 284-85.

2. In *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), *cert. denied*, 469 U.S. 1132 (1985) (hereinafter, "*UCS*"), the court struck down a Commission rule that effectively barred the litigation of the results of emergency preparedness exercises in licensing proceedings. It concluded that intervenors have a right under section 189(a)(1) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2239(a)(1), to a hearing on such issues because the Commission considers them to be material to a licensing decision. The court, however, expressly declined to restrict the Commission's authority to limit the issues in such a hearing. Specifically, the court suggested that the Commission could consider only whether the results of an exercise indicate that emergency preparedness plans are fundamentally flawed, and could determine that "minor or ad hoc problems occurring on the exercise day" are not relevant. 735 F.2d at 1448. The Commission subsequently adopted that very standard in CLI-86-11, explaining further that a fundamental flaw in the plan is a deficiency that would "preclude a finding of reasonable assurance that protective measures can and will be taken." 23 NRC at 581.

LILCO would define fundamental flaw more explicitly and suggested a three-part test to the Licensing Board: would the alleged flaw substantially affect the public health and safety; is it pervasive or systemic; and is it readily correctable through additional training or equipment? The intervening Governments (Suffolk County, the State of New York, and the Town of Southampton), which oppose LILCO's appeal, believe that the standard in CLI-86-11 is explicit enough and that any new test was beyond the Board's power

[4] In CLI-86-11, 23 NRC at 582, the Commission directed litigation of the 1986 exercise to be expedited "to the maximum extent consistent with fairness to the parties." We have already repeated that direction to the Licensing Board with regard to the 1988 exercise litigation. *See* ALAB-901, 28 NRC 302, 307 (1988), *petition for review pending*. *See also* ALAB-900, 28 NRC at 284-85 & n.5 (noting that the two-year "window" for the pre-license exercise was already closed just after the issuance of the Licensing Board's initial decision on the 1986 exercise).

to impose.[5] For its part, the Licensing Board appeared to accept the first two parts of the test urged by LILCO and to reject the third. *See* LBP-88-2, 27 NRC at 92-93. *But see* Licensing Board Prehearing Conference Order (October 3, 1986) (unpublished) at 4 (referring to the rejection of contentions alleging "readily correctable problems").

We agree with the Governments' claim that no *new* test beyond that set forth in CLI-86-11 is permitted. That does not foreclose, however, further elaboration or interpretation of the Commission's fundamental flaw standard to guide the boards in their application of it to particular contentions raised by the parties. We thus concur with LILCO that something more is needed to flesh out the fundamental flaw standard in the hope of making it easier to apply in litigation that necessarily leaves little room for delay and semantic debate.

3. In our view, a fundamental flaw in an emergency plan, as revealed in an exercise, has two principal components. First, it reflects a failure of an essential element of the plan, *and*, second, it can be remedied only through a significant revision of the plan.

With respect to the first factor, whether an essential element of the plan is involved should be determined by reference to the 16 basic emergency planning standards set forth in 10 C.F.R. § 50.47(b) and the requirements of 10 C.F.R. Part 50, Appendix E.[6] Minor or isolated problems on the day of the exercise do not constitute fundamental flaws in the emergency plan. *UCS*, 735 F.2d at 1448. Deficiencies that alone would not constitute a fundamental flaw, however, can be considered collectively, provided they are pervasive and show a pattern of related or repeated failures associated with a particular essential element of the plan. If the problem revealed by the exercise is delay — i.e., a failure to meet the time estimates on which the plan is premised — the delay must be substantial and thus likely to have affected the protective action recommendations in an actual emergency. Where the deficiency is the result of a particular person's failure to follow the requirements of the emergency plan itself, such deficiency is not a fundamental flaw unless that person performs a critical role under the

[5] The NRC staff, which supports most of LILCO's arguments on appeal, relied on the CLI-86-11 standard before the Licensing Board. On appeal, however, the staff argues for the first time that "fundamental flaw" should be interpreted with reference to the Commission's so-called "realism" rule, set forth in CLI-86-13, 24 NRC 22, 29 (1986), and codified a year ago at 10 C.F.R. § 50.47(c)(1). Under that rule (issued well in advance of the Licensing Board's decision), the Commission assumes that, in an actual emergency, state and local governments that have refused to participate in offsite emergency planning for a nuclear power facility (such as those here) would make a "best effort" response, relying on the utility's emergency plan.

The staff has failed to provide any persuasive reason why it did not raise its new "realism" argument before the Licensing Board, and thus why it is proper for us to consider it now. *See Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, 7 NRC 341, 348 (1978). In any event, we fail to see how the realism rule is germane to the discrete matter now before us — i.e., the definition or meaning of fundamental flaw. No one has argued, or indeed could argue, that LILCO's plan is per se fundamentally flawed because it is a utility, rather than a governmental, plan.

[6] Under the Commission's regulations, the emergency response training program is considered part of the emergency plan. *See* 10 C.F.R. § 50.47(b)(15); *id.*, Part 50, Appendix E, § IV.F.

plan and there is no backup structure or provision that would mitigate the effects of the individual's failure.[7]

The second factor requires consideration of how the failure in the plan, as revealed by the exercise, can be corrected. If the involved portion of the plan itself must be reassessed and reconceived to a significant extent in order to prevent such a failure in the future, then there is a fundamental flaw. On the other hand, where the problem can be readily corrected, the flaw cannot reasonably be characterized as fundamental.[8]

Any contention alleging that an exercise revealed a fundamental flaw in the emergency plan must address both of these factors in order to satisfy the Commission's requirement that "the bases for each contention [be] set forth with reasonable specificity." 10 C.F.R. § 2.714(b). *See* CLI-86-11, 23 NRC at 581. As the Licensing Board explained,

> [a]n adequate basis assures that the contention raises a matter appropriate for litigation in the proceeding, establishes a sufficient foundation for the contention to warrant further inquiry into the subject matter addressed by the allegations, and puts the other parties sufficiently on notice so that they will know at least generally what they will have to defend against or oppose.

Prehearing Conference Order at 3. *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). Requiring an "exercise" contention to identify a failure of an essential element of the plan that can be corrected only through a significant revision of the plan itself is also reasonable in the circumstances. Such contentions arise very late in the proceeding, and, as the *UCS* court recognized, they warrant treatment that is efficient yet fair to all parties. *See* 735 F.2d at 1448-49. Well-focused, concrete contentions are essential if that goal is to be realized. There is also substantially more information available on which to base exercise contentions than is ordinarily the case — most notably, the post-exercise assessment of the Federal Emergency Management Agency (FEMA). Thus, it is reasonable to expect greater detail in such contentions.[9] It is also important to keep in mind that the purpose of an

---

[7] In this connection, due to the inevitably large number of turnovers in emergency personnel expected during the life of an operating license, undue attention should not be devoted to the performance during the exercise of any one individual.

[8] In a decision subsequent to CLI-86-11, the Commission commented with seeming approval on another Licensing Board's rejection of exercise contentions that alleged only "'minor, ad hoc, *correctable* problems.'" *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-86-24, 24 NRC 769, 777 & n.10 (1986) (emphasis added), *aff'd sub nom. Eddleman v. NRC*, 825 F.2d 46 (4th Cir. 1987). Thus, we do not believe that the Commission intended in CLI-86-11 to exclude consideration of possible corrective action from the fundamental flaw determination. *Cf.* 10 C.F.R. § 50.54(s)(2)(ii) (in determining if shutdown of operating reactor is appropriate, Commission will consider action taken to correct deficiencies disclosed in biennial emergency exercises).

[9] We also note that, under FEMA's regulations, the public is given an opportunity to observe a meeting at which the exercise is evaluated, prior to FEMA's issuance of its post-exercise assessment. 44 C.F.R. § 350.9(e).

emergency exercise is "to provide important and material information to the Commission" so that it can determine whether any deficiencies in the plan as shown by the exercise are "significant under our regulations." CLI-86-14, 24 NRC 36, 39 (1986).

The test for a fundamental flaw as we interpret it here is akin to that required for contentions alleging quality assurance (QA) deficiencies. In *Union Electric Co.* (Callaway Plant, Unit 1), ALAB-740, 18 NRC 343, 346 (1983), we noted that the magnitude and complexity of a nuclear power plant made the expectation of error-free construction both unrealistic and unreasonable. Thus, where QA deficiencies are alleged, two factors are to be considered: whether all identified construction errors have been corrected, and, even if they have been, whether the breakdown in proper QA procedures was so pervasive as to raise legitimate doubt about the integrity of the facility and its safety-related structures. *Ibid.*

The analogy between the areas of quality assurance and emergency planning is close. QA audits are intended to discover if there are any QA program deficiencies; emergency exercises are intended to reveal any deficiencies in the emergency preparedness plan. A QA program and an emergency plan are both comprehensive in scope and involve myriad elements. A QA program must provide "adequate confidence that a structure, system, or component will perform satisfactorily in service." 10 C.F.R. Part 50, Appendix B, Introduction. An emergency plan must provide "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." 10 C.F.R. § 50.47(a)(1). It is therefore reasonable for roughly the same factors to be taken into account with regard to issues arising from either a QA audit report or an emergency exercise evaluation: the significance and extent of the breakdown or failure, and the nature of the corrective action necessary. And, if this analysis is appropriate for the consideration of alleged QA deficiencies — in which the public health and safety are implicated more directly — it is reasonable to apply it as well to emergency exercise contentions.[10]

Lastly, there is the question of what weight should be given to FEMA's post-exercise assessment in making the fundamental flaw determination. Specifically, is a FEMA "Deficiency" rating — the worst of three possible categories of problem areas — on an element of the exercise tantamount to a fundamental flaw as contemplated by CLI-86-11? The answer, in our view, is "not necessarily." Under the Commission's regulations, a FEMA finding constitutes "a rebuttable presumption on questions of [emergency plan] adequacy and implementation capability." 10 C.F.R. § 50.47(a)(2). FEMA findings are therefore entitled to presumptive but not conclusive weight. Thus, an applicant has a greater, but not

[10] In *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1320-21 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26, *cert. denied*, 107 S. Ct. 330 (1986), the court wrote approvingly of the *Callaway* analysis in connection with alleged QA deficiencies at the Diablo Canyon facility.

impossible, task in convincing a board that a FEMA Deficiency does not amount to a fundamental flaw in the plan. So too, if FEMA has found no Deficiencies or assigned a less severe rating to a problem revealed by the exercise, an intervenor seeking the admission of contentions that allege a fundamental flaw has a more difficult task, but it cannot be precluded from even offering such contentions. Otherwise, the Commission would be abdicating its ultimate decisionmaking responsibility in the area of emergency planning to FEMA. *See generally* ALAB-900, 28 NRC at 292, 296-97.

To the extent it is inconsistent with this opinion, LBP-88-2, 27 NRC at 90-93, is *reversed*; a decision on the remainder of LILCO's appeal from LBP-88-2 will be issued in due course.

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
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 29, 1988

The Appeal Board affirms the Licensing Board's order, LBP-88-20, 28 NRC 161 (1988), insofar as it determines that the issue of the environmental qualification of a particular cable (RG58) used in the Seabrook nuclear power facility need not be resolved prior to authorization of low-power operation of the facility.

APPEAL BOARDS: SCOPE OF REVIEW

In keeping with court practice, arguments and issues not raised before a licensing board cannot properly be pressed initially on appeal. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 235 (1986) (citing an earlier decision in the same proceeding, ALAB-836, 23 NRC 479, 496 n.28 (1986)). *See also 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).

APPEARANCES

Diane Curran, Washington, D.C., for the intervenor New England Coalition on Nuclear Pollution.

Thomas G. Dignan, Jr., and **Deborah S. Steenland**, Boston, Massachusetts, for the applicants Public Service Company of New Hampshire, *et al.*

Gregory Alan Berry for the Nuclear Regulatory Commission staff.

DECISION

On remand from us, the Licensing Board has before it the issue of the environmental qualification of RG58 coaxial cable used in the Seabrook nuclear power facility.[1] On June 29, 1988, the Commission entered an unpublished order in which it directed that Board to determine whether the issue needed to be resolved before operation at levels not to exceed five percent of rated power (i.e., low-power operation) was authorized. Following the receipt of the parties' submissions on that question, the Board issued a memorandum and order on August 8 in which it concluded that "the remanded coaxial cable issue is not relevant to low-power operations inasmuch as the safety concerns raised therein would not adversely impact upon the public health and safety if the Seabrook facility were to be authorized to operate only up to 5% of rated power."[2]

The sponsor of the RG58 cable issue, intervenor New England Coalition on Nuclear Pollution (Coalition), has appealed that determination. The appeal is opposed by both the applicants and the NRC staff. We affirm.

---

[1] *See* ALAB-891, 27 NRC 341 (1988). The basis of the remand was that the Licensing Board's treatment of the issue in LBP-87-10, 25 NRC 177 (1987), and certain subsequent memoranda did not appropriately dispose of the matter. In this connection, we observed that neither the Licensing Board nor any party had brought to light any evidence of record that might adequately support that Board's finding that the environmental qualification of the RG58 cable has been established. ALAB-891, 27 NRC at 351.

[2] LBP-88-20, 28 NRC 161, 168-69 (1988). The Board went on to note that it was not then in a position to renew an earlier authorization of low-power operation because of the pendency of another issue — specifically, whether the provisions in the applicants' emergency response plan for providing public notification of a nuclear emergency to those within the Massachusetts portion of the Seabrook plume exposure pathway emergency planning zone are adequate. *Id.* at 169. Since the rendition of LBP-88-20, however, the Commission has declared that the public notification matter is no longer a bar to low-power operation in light of a recently promulgated amendment to 10 C.F.R. 50.47(d). *See* CLI-88-8, 28 NRC 419 (1988); 53 Fed. Reg. 36,955 (1988).

In addition, the Licensing Board took note in LBP-88-20 of the fact that the NRC staff had not as yet reviewed or evaluated the applicants' position that the RG58 cable issue is not relevant to low-power operation. Accordingly, the Board stated that, if so requested by the Commission, the staff should provide such an evaluation to the Commission before a low-power license is issued. LBP-88-20, 28 NRC at 169. To our knowledge, no such request has been forthcoming.

Finally, as the Commission also observed in CLI-88-8, 28 NRC at 421 n.1, in any event low-power operation must await the disposition of a pending financial qualification question.

A. The Coalition's principal claim is that "[t]he Commission lacks authority, under either the Atomic Energy Act or NRC regulations, to permit operation of the Seabrook nuclear power plant at low power levels before completing litigation of contested safety issues."[3] For this reason alone, we are told, completion of the remand on the RG58 cable issue must precede the issuance of a low-power license for Seabrook.[4]

This line of argument need not detain us long. For, as the Licensing Board correctly observed[5] (but the Coalition fails to acknowledge in its appellate papers), we provided our answer to it just last May. In response to essentially the same assertions that the Coalition presents here, we determined both (1) that 10 C.F.R. 50.57(c) affirmatively authorizes the issuance of a low-power license so long as no matters germane to such operation remain unresolved; and (2) that it is for the Commission and not us to entertain any challenge to that section based upon the provisions of the Atomic Energy Act of 1954, as amended.[6]

The Coalition assigns no reason why those determinations should now be reexamined by us and we can think of none. In the circumstances, it is a fair inference that the Coalition desires simply to preserve for examination by higher authority its claim that, as a matter of both statute and regulation, an authorization of low-power operation is not permissible unless and until all safety contentions have been resolved.[7] Needless to say, it could have accomplished that objective by the mere notation that it was in disagreement with our prior disposition of the claim. There was no need for it to brief anew its position on the question.

B. In its brief to the Licensing Board on the question whether the RG58 cable issue stood as an obstacle to low-power operation, the Coalition confined itself to the claim that, as a matter of law, the resolution of all contested safety issues is a condition precedent to such operation.[8] On its appeal, however, the Coalition endeavors to advance an entirely new claim. It now asserts that the failure of the RG58 cables during low-power operation might result in the presentation of misleading information to the plant operators.[9] In this connection, the Coalition does not appear to dispute the applicants' assertion that the computer instrumentation and level detectors to which the cables are

---

[3] New England Coalition on Nuclear Pollution's Brief in Support of Appeal of Licensing Board's Memorandum and Order Dated August 8, 1988 (September 23, 1988) [hereafter "Coalition's Appellate Brief"] at 6.

[4] *Ibid.*

[5] *See* LBP-88-20, 28 NRC at 166-67.

[6] *See* ALAB-892, 27 NRC 485, 489-93 (1988). The Coalition made particular reference to the hearing rights said to be guaranteed to it by section 189a. of the Act, 42 U.S.C. 2239(a).

[7] On June 13, 1988, the Coalition filed a petition for Commission review of ALAB-892. That petition is still pending.

[8] *See* New England Coalition on Nuclear Pollution's Brief in Opposition to Authorization of Low Power Operation at Seabrook Nuclear Power Plant (July 21, 1988).

[9] *See* Coalition's Appellate Brief at 9.

connected have no assigned role in the achievement of a safe shutdown in the event of an accident during low-power operation.[10] Nonetheless, the Coalition hypothesizes, because they are in the "habit" of relying on those components for information about plant status during normal operation, the operators "would be inclined to refer to them during the course of an accident."[11]

"We have repeatedly stressed . . . that, in keeping with court practice, arguments and issues not raised before the Board below cannot properly be pressed initially on appeal."[12] This settled principle may well come into play in this instance. To be sure, the Coalition's filing below preceded by one day the applicants' submission to the Licensing Board in support of the proposition that the RG58 cables are not germane to low-power operation. It is unclear to us, however, that the Coalition's new claim necessarily hinged upon disclosures in that submission. Be that as it may, over two weeks elapsed between expedited delivery of the applicants' submission to the Coalition and the issuance of the Licensing Board's August 8 memorandum and order. This interval appears to have been sufficient to enable the Coalition to seek leave to present any additional arguments that might have been suggested by representations in the applicants' papers.[13]

In any event, the Coalition's belated concern is without substance. As the Coalition explicitly acknowledges, the applicants advised the Licensing Board (without contradiction) that only three systems (referred to collectively as the "Safe Shutdown Instrumentation" (SSI)) are required for safe shutdown during low-power operation: the Reactor Trip System, the Engineered Safety Features Actuation System, and the Category I Accident Monitoring Instrumentation. Given their training and the established procedures with which they must become

---

[10] *Ibid.* The assertion was advanced at p. 4 of the Applicants' Memorandum in Support of Permitting Low Power Operation Prior to Resolution of "Coaxial Cable" Issue (July 22, 1988) [hereafter "Applicants' July 22 Memorandum"].

[11] *Id.* at 9-10.

[12] *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 235 (1986) (citing an earlier decision in the same proceeding, ALAB-836, 23 NRC 479, 496 n.28 (1986)). *See also 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).

[13] In its November 17, 1988 response to the oppositions of the applicants and the staff to the appeal, the Coalition seeks (at 3) to justify its tardiness in advancing its new claim on the ground that its purpose was simply to show that the Licensing Board has acted arbitrarily and capriciously in failing "to even consider the applicability of the second Staff criterion for relevance to low power operation." That endeavor falls far short of the mark. According to the Coalition's response (at 2), the criterion in question was "whether failure of the RG-58 cables could mislead plant operators." But the Coalition can scarcely fault the Licensing Board for not addressing that matter in light of the Coalition's failure even to make such an assertion.

In this connection, the Coalition may well not have received its copy of the staff's filing with the Licensing Board until about August 1 (it was served by first class mail on July 27). That being so, it is conceivable that the Coalition did not have a sufficient opportunity to react, before the Licensing Board's August 8 ruling, to the staff's reference therein to the possibility that operators might be misled. Once the Coalition received the ruling, however, nothing stood in the way of its promptly seeking *Licensing Board* reconsideration of the Board's asserted failure to address that possibility.

familiar,[14] there is every reason to expect the operators to rely upon these systems in determining the proper course of action on their part.

In the final analysis, the Coalition would have us assume that the operators are likely to cast aside their instructions and, wholly inconsistent with governing procedures, place reliance on possibly suspect information garnered from sources outside of the three systems designed to cope with an accident at low power. In the absence of a concrete showing that such serious operator error is a realistic possibility, and the Coalition provided none, the conjecture is scarcely worthy of extended consideration.

C. For the foregoing reasons, we are satisfied that the Coalition has provided no cause to overturn the result reached by the Licensing Board in its August 8 memorandum and order. Our review of the matter has not stopped, however, at that point. We have gone on to consider whether there is affirmative support in the record for the conclusion that the environmental qualification of the RG58 cable is not essential to safe Seabrook operation at low power. We find that there is.

Specifically, the required demonstration is contained in the affidavit of Bruce E. Beuchel, a senior electrical engineer with the responsibility for performing engineering evaluations and preparing engineering design changes involving instrumentation and control systems for the Seabrook facility.[15] As explained in detail in his affidavit, he had conducted analyses that (1) established the portions of the SSI required during low-power operation; and (2) then verified that those portions would not be affected by an RG58 cable failure (to the point of destruction) in an accident environment. The Coalition does not even endeavor to challenge the Beuchel analysis or the conclusions that were drawn from it.[16]

The Licensing Board's August 8, 1988 memorandum and order, LBP-88-20, 28 NRC 161, is *affirmed* insofar as it determines that the RG58 cable issue need

[14] *See* 10 C.F.R. 55.41, 55.43, 55.45.

[15] The affidavit, dated July 22, 1988, was attached to the Applicants' July 22 Memorandum. Mr. Beuchel's qualifications are set forth immediately following the affidavit.

[16] We need not, and do not, explore the sufficiency of the applicants' other evidence on the point.

not be resolved prior to authorization of low-power operation of the Seabrook facility.

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:

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

In the Matter of

Docket No. 50-322-OL-3
(Emergency Planning)

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

November 29, 1988

On appeal of the Licensing Board's partial initial decision concerning the suitability of the applicant's proposed reception centers to be used in monitoring, decontaminating and sheltering evacuees in the event of a radiological emergency, LBP-88-13, 27 NRC 509 (1988), the Appeal Board remands the case for further consideration of the monitoring planning basis. The remand also directs the Licensing Board to consider the effects on its finding and conclusions of an intervening state court judgment enjoining the applicant from using one of the proposed facilities as an emergency reception center.

REGULATIONS: INTERPRETATION (10 C.F.R. § 50.47(c)(1))

The invocation of 10 C.F.R. § 50.47(c)(1) raises a host of factual questions that must be resolved before the realism principle set forth in that section can come into play.

EMERGENCY PLANS: UTILITY PLAN AS SUBSTITUTE

It is not true that 10 C.F.R. § 50.47(a)(2) precludes the Licensing Board from deciding the specific issues involved under a utility plan unless the Board first obtains FEMA findings; rather, that section provides that "[a]ny other information" that is also available to FEMA may be considered by the Commission in assessing the adequacy of the plans.

EMERGENCY PLAN: FEMA FINDING (REBUTTAL PRESUMPTION)

In a licensing proceeding, any FEMA finding constitutes a rebuttal presumption so even where FEMA has made findings the Licensing Board clearly has the authority to decide issues contrary to those findings on the basis of other record evidence.

RULES OF PRACTICE: REOPENING OF AN EVIDENTIARY RECORD

A motion to reopen a closed record under the Commission's Rules of Practice is designed "to consider additional *evidence*" of a factual or technical nature. 10 C.F.R. §§ 2.734(a), (b) (emphasis supplied).

RULES OF PRACTICE: REOPENING OF AN EVIDENTIARY RECORD

A reopening motion is not the necessary, or even appropriate, vehicle to bring to the Appeal Board's attention a recent nonevidentiary development like a state court injunction against the applicant, any more than such a motion would be the required method for advising the Appeal Board of relevant changes in the agency's regulations, applicable statutes or case law.

EMERGENCY PLANNING: FEMA FINDING

The Commission's regulations, 10 C.F.R. § 50.47(a)(2), do not require that the Licensing Board await specific FEMA findings, "preliminary, interim or otherwise," on the overall adequacy of proposed reception centers as a condition precedent to deciding the discrete issues about those centers.

APPEARANCES

David T. Case, Washington, D.C. (with whom **Christopher M. McMurray** and **Ronald R. Ross**, Washington, D.C., **E. Thomas Boyle**, Hauppauge, New York, **Fabian G. Palomino** and **Richard J. Zahnleuter**, Albany, New York, and **Stephen B. Latham**, Riverhead, New York, were on the brief), for intervenors Suffolk County, the State of New York and the Town of Southampton.

James N. Christman, Richmond, Virginia (with whom **Mary Jo Leugers** and **David S. Harlow**, Richmond, Virginia, were on the brief), for applicant Long Island Lighting Company.

Richard G. Bachmann for the Nuclear Regulatory Commission staff.

DECISION

The Commission's regulations provide that no operating license for a nuclear power reactor can be issued unless there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.[1] Among other things, the regulations require that emergency response plans allow for "[a] range of protective actions . . . for the plume exposure pathway EPZ [Emergency Planning Zone] for emergency workers and the public."[2] On May 9, 1988, the Licensing Board issued a partial initial decision setting forth its findings on various issues concerning the three reception centers proposed by the Long Island Lighting Company (LILCO) for use in monitoring, decontaminating, and sheltering evacuees from the EPZ in the event of an off-site radiological emergency at the Shoreham Nuclear Power Station.[3] For such an occurrence, LILCO's emergency plan calls for employing its own Bellmore, Hicksville, and Roslyn service facilities located in Nassau County some forty miles west of the Shoreham plant in the towns of Hempstead, Oyster Bay and North Hempstead, respectively. The Licensing Board found for LILCO on all nine of the reception center issues, concluding that "the Applicant's planning basis, traffic plan, reception center locations, monitoring, registration, and decontamination procedures, staffing plans, and provisions for handling evacuees are adequate and satisfy the NRC's regulatory standards . . . ."[4]

---

[1] 10 C.F.R. § 50.47(a)(1).
[2] 10 C.F.R. § 50.47(b)(10).
[3] *See* LBP-88-13, 27 NRC 509 (1988).
[4] *Id.* at 567.

The intervenors, Suffolk County, the State of New York and the Town of Southampton, have appealed, claiming that the Licensing Board committed four fundamental errors. They argue that the Board erred in accepting LILCO's planning basis for monitoring evacuees and in making its various findings concerning the utility's reception centers without first obtaining findings on the adequacy of the centers from the Federal Emergency Management Agency (FEMA). Next, the intervenors assert that the Board erred in rejecting their position regarding the possibility of substantial additional "shadow evacuation" in an emergency by people living around LILCO's reception centers. Finally, they argue that the Board erred in striking their testimony addressed to LILCO's evacuee registration procedures.

After the parties' briefs addressing these issues were filed, the Supreme Court for the State of New York, Nassau County, handed down a decision granting summary judgment for the plaintiff in the zoning case of *Town of Hempstead v. Long Island Lighting Co.*[5] In that case, the Town of Hempstead sought to restrain LILCO from using its Bellmore facility as a radiological emergency reception center, claiming that such use violated the special exception permit under which the building was constructed. Subsequently, on September 20, 1988, the court entered judgment in the case permanently enjoining LILCO, without prior approval of the Town of Hempstead, from using, or representing that it will use, the Bellmore site as a reception center, and from placing any trailer and utility connections on the site. In addition, the court ordered the immediate removal of any facilities or equipment already installed at the Bellmore center for use in the event of a radiological emergency.

As explained below, we remand the case to the Licensing Board for consideration of the effects on its findings and conclusions of the state court's injunction against using the Bellmore facility as a reception center. At the same time, and as we also explain below, the Board should consider anew the monitoring planning basis and, in selecting such basis, it should fully articulate its reasoning. With respect to the remaining issues raised by the intervenors on appeal, either that portion of the intervenors' appeal is denied or the Licensing Board's findings are affirmed.

I.

The Licensing Board's decision recites the long history of the reception center issue in this operating license proceeding and we need not rehearse it here.[6] Suffice it to note that, after the Veterans Memorial Coliseum in Nassau County,

[5] Index 23779/87 (N.Y. Sup. Ct., Aug. 22, 1988).
[6] *See* LBP-88-13, 27 NRC at 511.

New York, could no longer be used by LILCO as a reception center, LILCO once again amended its emergency plan and moved to reopen the record to substitute its own Bellmore, Hicksville, and Roslyn facilities for the Coliseum. The Licensing Board granted LILCO's motion and the proceeding continued focused on nine specific issues, all relating to the appropriateness of these three facilities as reception centers. After eleven days of hearings, the Board issued its findings on the contested issues concerning such matters as the planning basis for monitoring evacuees, traffic plans, reception center locations, staffing plans, and monitoring and decontamination plans. At the time the Board handed down its decision, the zoning case pitting the Town of Hempstead against LILCO was still pending and the Board quite properly refused to speculate on the outcome of the zoning dispute involving LILCO's Bellmore center. It nevertheless recognized that a state court ruling adverse to LILCO held the potential for undermining the findings and it therefore suggested that the appropriate course was for the parties to bring such a ruling to its attention.[7]

While the intervenors' appeal on the reception center issues was pending, the Supreme Court for the State of New York, Nassau County, entered its judgment enjoining LILCO from using, or representing that it will use, its Bellmore facility as a reception center in the event of a radiological emergency and directing that LILCO remove from the site any auxiliary facilities or equipment already installed for that purpose. That judgment seemingly undercuts the very foundation of the Licensing Board's findings. As the Board stated at the beginning of its opinion, its "Decision addresses the adequacy of *three* reception centers proposed by LILCO for public use in the event of a radiological emergency at Shoreham."[8] Yet the state court injunction effectively removes one of LILCO's reception centers, Bellmore, from its emergency plan thereby leaving only two such centers. The emergency plan challenged by the intervenors called for three reception centers (Bellmore, Hicksville, and Roslyn), and it was in that factual setting that the specific issues were litigated by the parties and then decided by the Board below. Indeed, of the nine contested issues, those concerning traffic plans, evacuation routes, reception center locations, staffing plans and monitoring and decontamination plans appear to be impacted directly by the removal of the Bellmore facility as a reception center. In the circumstances, a remand to the Licensing Board for it to consider the effects of the state court's judgment upon its findings is the most appropriate course.

The evidentiary record on the reception center issues is substantial and our perusal of it convinces us that the Licensing Board should make the initial assessment of the impact of the state court's ruling on the Board's findings. The trial Board heard the witnesses, examined the exhibits, and issued extensive

[7] *Id.* at 567.
[8] *Id.* at 510 (emphasis supplied).

findings. Obviously, it is most familiar with the record and in the best position to evaluate the effects of the state court's injunction on the continuing efficacy of LILCO's emergency plan and to deal with all of the evidentiary conflicts in the record arising from the loss of the Bellmore facility.[9] Moreover, this course of action is also necessary in light of our remand to the Licensing Board of the planning basis issue.[10] The Board's resolution of that issue may well affect many of its findings regarding the sufficiency of LILCO's remaining reception centers.

In supplemental papers filed after the state court entered its judgment in *Town of Hempstead*, LILCO argues that the injunction restraining it from using the Bellmore facility as a reception center is "immaterial" to the licensing proceeding because the realism principle of 10 C.F.R. § 50.47(c)(1) dictates that, in a real emergency, the facility nevertheless would be available. In such a situation, LILCO claims that it would ask the local government authorities to suspend the zoning ordinances pursuant to the New York State Executive Law and that, under the realism rule, it is indisputable that local authorities would use their best efforts to respond to the emergency. According to LILCO, such efforts necessarily would include providing the requisite prior approval or invoking existing statutory authority to suspend local zoning laws that prevent evacuees from being helped. In a similar vein, LILCO argues that even though the injunction has required it to remove its decontamination trailer and related equipment from the Bellmore site, it nevertheless will provide decontamination showers at that facility in an emergency by either employing mobile equipment, expanding existing restrooms or seeking an amendment to its special use permit from the Town of Hempstead. Thus, LILCO claims the state court injunction is immaterial and has no impact on the availability of the Bellmore facility.

LILCO's argument is seriously deficient in a number of respects. Even putting to one side the substantial factual and legal questions concerning the interpretation and applicability of the New York State Executive Law as it relates to the officials of the Town of Hempstead in the event of an accident at Shoreham, the realism principle of 10 C.F.R. § 50.47(c)(1) is not the panacea LILCO apparently assumes. Rather, the invocation of that regulation raises a host of factual questions that have not yet been subject to scrutiny by the other parties or decided by the Licensing Board but which must be resolved before the realism principle comes into play.

---

[9] For example, the court enjoined LILCO from representing that it will use its Bellmore facility as a reception center. Hence, the Licensing Board will need to consider, *inter alia*, the question of whether any existing public information material referring to Bellmore is still appropriate. *See* Tr. 18,296-97. Similarly, the Board may need to evaluate the adequacy of any modifications to the public information material and steps to make the public aware of such modifications.

[10] *See infra* p. 535.

By its own terms, 10 C.F.R. § 50.47(c)(1) is applicable only if LILCO can first demonstrate that (1) its inability to use the Bellmore facility "is wholly or substantially the result of the non-participation" of the Town of Hempstead in LILCO's emergency plan, and (2) it "has made a sustained, good faith effort to secure and retain the participation" of the Town of Hempstead.[11] To date, LILCO has not made this factual showing with respect to the Town of Hempstead and, in the circumstances presented, may not be able to make such a demonstration. For example, the circumstances leading to the *Town of Hempstead* decision, as revealed by the supplemental appellate papers, do not appear to involve a question of "non-participation" at all. Moreover, the intervenors assert that LILCO has never even asked the Town to participate in emergency planning for Shoreham and that the local zoning laws long predate LILCO's designation of the Bellmore property as a reception center. In any event, this requisite factual showing is a condition precedent to LILCO's successful reliance on the presumptions of the realism rule and such facts must be proved before the Licensing Board. Similarly, LILCO's various proposed solutions to compensate for the loss of its decontamination trailer and associated equipment at the Bellmore site also raise a series of factual issues regarding the feasibility and adequacy of those solutions. Therefore, at best, LILCO's argument lacks the necessary factual predicates for employing the realism principle of the Commission's regulations.[12]

Additionally, LILCO argues that the state court injunction restraining LILCO from using its Bellmore facility as an emergency reception center is not properly before us because the intervenors informed us of it by letter. LILCO claims they should have moved to reopen the record. Stated most charitably, LILCO's argument is devoid of merit.

A motion to reopen a closed record under the Commission's Rules of Practice is designed "to consider additional *evidence*" of a factual or technical nature.[13] A reopening motion is not the necessary, or even appropriate, vehicle to bring to our attention a recent nonevidentiary development like the court's decision in *Town of Hempstead*, any more than such a motion would be the required method for advising us of relevant changes in the agency's regulations, applicable statutes or case law. In each instance, we may take notice of such nonevidentiary matters. Moreover, LILCO's argument elevates form over substance. For, in

[11] 10 C.F.R. §§ 50.47(c)(1)(i), (ii).

[12] LILCO also suggests that we should ignore the state court's injunction because it has filed a notice of appeal as well as a motion with the trial court seeking reargument and an amendment of the judgment. Thus, according to LILCO, "the precise language of the final judgment is . . . still an open issue." LILCO's Report to the Appeal Board (October 21, 1988) at 2. As LILCO is well aware, the trial court's judgment is final and fully enforceable until it is overturned on appeal or otherwise amended. LILCO has neither sought nor obtained a stay of the court's mandate and therefore we are not free to ignore it as LILCO apparently wishes. In the event the judgment is reversed on appeal or amended, LILCO can bring that fact to the attention of the Licensing Board.

[13] 10 C.F.R. §§ 2.734(a), (b) (emphasis supplied).

connection with the remand we order here, the Licensing Board essentially will be considering the very factors to be taken into account in ruling on a motion to reopen — i.e., the safety significance of the loss of the Bellmore facility and the effect of that loss on the overall adequacy of LILCO's plan for reception centers.

II.

In considering on remand the significance, if any, of the recent judicial development pertaining to the availability of the Bellmore reception center, the Licensing Board also will have to reexamine at least one of the subsidiary findings in its May 9 decision. Specifically, the Board's conclusion that the LILCO emergency response plan made adequate provision for reception centers rested on the Board's acceptance of LILCO's estimate respecting the number of evacuees from the Shoreham plume exposure pathway EPZ that would seek radiological monitoring in the event of an accident at the facility. For the reasons that follow, the basis assigned by the Board for that acceptance does not withstand analysis. In addition, we have been referred to nothing in the record that might serve as an adequate substitute for that basis. Thus, the Board will be confronted with the necessity of determining (perhaps following the receipt of additional evidence) whether the LILCO estimate can be justified on some other basis that does enjoy the requisite record support. If such justification is lacking, the Board will be obliged to arrive at a different planning estimate based upon the disclosures of record (as possibly expanded). That estimate will then have to be employed in deciding whether the reception centers found to be currently available will suffice insofar as the monitoring (and possible decontamination) of evacuees is concerned.

A. By way of background, the Commission's regulations contain the general requirement that emergency plans for the area surrounding a nuclear power plant provide adequate facilities and equipment to support the emergency response.[14] More detailed guidance on this score is found in a document issued jointly by the NRC and FEMA in November 1980 and identified as NUREG-0654/FEMA-REP-1 (Rev. 1), "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." Included within this guidance is the provision in Criterion II.J.12 for radiological monitoring of EPZ evacuees:

> Each organization shall describe the means for registering and monitoring of evacuees at relocation centers in host areas. The personnel and equipment available should be capable

[14] 10 C.F.R. § 50.47(b)(8).

of monitoring within about a 12 hour period all residents and transients in the plume exposure EPZ arriving at relocation centers.[15]

NUREG-0654/FEMA-REP-1 does not directly address the question of the number of individuals (expressed as a percentage of the total EPZ population) that must be used as a planning basis in deciding upon the necessary facilities and equipment for monitoring evacuees. In its decision, the Licensing Board determined that, as urged by LILCO with NRC staff endorsement, the appropriate basis is twenty percent of the EPZ population.[16] From all that appears, the Licensing Board's acceptance of the figure was founded almost exclusively upon an internal FEMA memorandum. While there was other evidence adduced on the subject, the Board essentially eschewed any reliance upon it.

The memorandum in question, dated December 24, 1985, was addressed to certain regional FEMA officials and was signed by Richard W. Krimm, Assistant Associate Director for Natural and Technological Hazards, Office of State and Local Programs and Support. It stated at the outset that its purpose was to provide "interpretative guidance" with respect to Criterion II.J.12 in NUREG-0654/FEMA-REP-1. In full, the memorandum's analysis on the matter was as follows:

> The question arises as to the percentage of the evacuees that could reasonably be expected to arrive at a relocation center(s). Previous experience gathered on evacuation responses to a variety of natural and technological emergencies is not conclusive. Research into this matter, however, has revealed that anywhere from 3 to 20 percent of the evacuees arrived at relocation centers or shelters. For radiological emergencies, it is reasonable to assume that additional evacuees, to allay their concerns and fear over radiation, will go to relocation centers whether or not they have been exposed to radiation. Thus, the percentage of potential evacuees for radiological emergencies may be closer to the upper end of the 3 to 20% range.
>
> The congregate care issue is reviewed as a part of all Atomic Safety and Licensing Board hearings, although it has never been formally litigated at such a hearing. The congregate care facility capacity in the vicinity of nuclear power plants is usually cited as being between 5 and 15 percent of the estimated number of evacuees. With these percentages in mind, it is apparent that there is significant diversity in the frame of reference surrounding this issue.
>
> The guidance provided below is based on the following factors: (1) Past experience with evacuations regardless of the nature of the emergency, (2) inclusion of fear and uncertainty factors associated with radiological emergencies and (3) percentage of potential evacuees for congregate care facilities cited in ASLB hearings.

---

[15] NUREG-0654/FEMA-REP-1 (Rev. 1) at 65. This guidance has been reinforced in the recent September 1988 supplement to NUREG-0654/FEMA-REP-1 concerning utility-prepared offsite emergency response plans such as that in issue here. It is now stated that the personnel and equipment available *shall* be capable of monitoring within about a 12-hour period all residents and transients in the plume exposure pathway EPZ arriving at relocation centers. NUREG-0654/FEMA-REP-1 (Rev. 1, Supp. 1) at 20.

[16] LBP-88-13, 27 NRC at 523. With a stated population of approximately 160,000 within the EPZ surrounding Shoreham, arrangements need to be made, using the twenty percent figure, for the monitoring of 32,000 evacuees. *Id.* at 513.

The memorandum then opined that state and local radiological emergency preparedness plans should include trained personnel and equipment at relocation centers for the monitoring of a minimum of twenty percent of the population within the EPZ.[17]

On their appeal, the intervenors take issue with the Licensing Board's reliance upon the Krimm memorandum. In large measure, that objection rests on the use of data pertaining to the *sheltering* of evacuees in congregate care facilities for the purpose of determining the percentage of the evacuees who might seek *monitoring* but not require sheltering.

B.1. The genesis of the Krimm memorandum was an October 4, 1985 letter from Joseph H. Keller, a FEMA consultant assisting in the evaluation of the Shoreham emergency response plan, to FEMA Region II Counsel in which Mr. Keller requested clarification of Criterion II.J.12.[18] By way of explanation for the request, Mr. Keller noted that the Licensing Board had found the LILCO emergency response plan to be defective because of its failure to prepare adequately for the monitoring of members of the general public arriving at the reception center.[19] As he observed, while a planning basis of twenty percent of the EPZ population had been considered acceptable by the Licensing Board for the sheltering of evacuees, that Board did not view the number of evacuees seeking monitoring necessarily to be the same as the number seeking sheltering assistance.[20] Although Mr. Keller's immediate concern was in regard to the review of the LILCO plan, his letter went on to observe that the issue could affect the review of emergency response plans for all nuclear power facilities.

Copies of the Keller letter were sent to FEMA's Washington, D.C. headquarters and one of those copies found its way to the Field Operations Branch. Craig S. Wingo, the Chief of that Branch, forwarded the letter to Marshall E. Sanders, Chief of FEMA's Policy Development Branch, because, as Mr. Wingo stated, the issue was applicable as well to emergency response plans other than that for Shoreham.[21] Subsequently, Mr. Sanders' staff (with a member of that staff

---

[17] In the event that radiological releases from an accident dictate monitoring of a greater percentage of the EPZ population, the memorandum indicates that state and local governments would be expected to develop and implement *ad hoc* response measures. The memorandum does not refer to the situation at Shoreham, where the state and local governments have refused to participate in emergency planning. But the applicability of its guidance to LILCO was not disputed at the hearing below.

[18] *See* FEMA Exhibit 1.

[19] *See* LBP-85-31, 22 NRC 410, 417 (1985). At the same time, LILCO contemplated the use of the Veterans Memorial Coliseum as the sole reception center for evacuees. As previously noted, the Coliseum subsequently became unavailable.

[20] *Ibid.* After a remand to the Licensing Board for additional consideration (ALAB-847, 24 NRC 412 (1986)), we affirmed the Board's determination that there might be evacuees seeking monitoring who would not require sheltering and directed it to go forward with its consideration of a LILCO motion to reopen the record. ALAB-855, 24 NRC 792 (1986).

[21] *See* FEMA Exhibit 1.

referenced as the point of contact) prepared the memorandum for the signature of Mr. Krimm, a superior of Messrs. Sanders and Wingo.[22]

The Krimm memorandum was offered and admitted into evidence as FEMA Exhibit 1.[23] None of the FEMA witnesses sponsoring its admission, however, was a member of Mr. Sanders' staff or had contributed in any fashion to the actual preparation of the memorandum.[24] Of those sponsoring witnesses, the single FEMA employee, Ihor W. Husar, stated in general that he did not formulate FEMA policy.[25] The other two FEMA witnesses were employees of contractors that had been engaged by FEMA to assist in the review of the Shoreham emergency response plans.[26] One of them was Mr. Keller, the individual who had solicited the interpretation of Criterion II.J.12 that had been supplied in the Krimm memorandum.[27]

Beyond the fact that they were not involved in the preparation of the memorandum, the FEMA witnesses were unable to provide significant information on either its development or the reasoning behind its assumptions. In this connection, the written testimony of these witnesses contained little discussion of the basis for the estimate of the percentage of evacuees that would require sheltering assistance.[28] The responses of Messrs. Keller and Husar to questions posed to them on cross-examination were similarly not very illuminating. Mr. Keller stated that he had been told by a FEMA employee that existing data disclosed that between three and fifteen percent of the evacuees would require sheltering.[29] This being so, he reasoned, the authors of the Krimm memorandum presumably had adopted the twenty percent figure for the evacuees to be monitored (whether or not also requesting sheltering) as including a "fudge factor."[30] For his part, Mr. Husar expressed the opinion that the FEMA estimate was "reasonable" but went on to acknowledge that it would also be "reasonable" to use a higher percentage as a planning basis (even though he probably would not do so).[31]

2. We now turn to whether, despite the lack of involvement of the FEMA witnesses in its preparation and their resultant inability to supply adequate support for its conclusions, the Krimm memorandum nonetheless provides on

---

[22] Tr. 18,311-14.

[23] Tr. 18,262. It was also introduced into the record as Attachment L to Crocker, et al., LILCO Exhibit 1 (admitted into evidence at Tr. 17,421).

[24] Tr. 18,312-15. *See*, on the matter of the need for sponsorship of documentary evidence, *Kerr-McGee Chemical Corp.* (Kress Creek Decontamination), ALAB-885, 27 NRC 59, 69 n.15 (1988); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-891, 27 NRC 341, 351 (1988). *Cf. Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-555, 10 NRC 23, 26-27 (1979).

[25] Tr. 18,260, 18,359-60.

[26] Tr. 18,260.

[27] Tr. 18,311, 18,315.

[28] *See* Baldwin, et al., FEMA Exhibit 2 (admitted into evidence at Tr. 18,264) at 7.

[29] Tr. 18,321-23.

[30] Tr. 18,322.

[31] Tr. 18,357, 18,360-61.

its face a sufficient foundation for the Licensing Board finding in question. For several reasons, we think it does not.

To begin with, underlying the analysis in the memorandum appears to be the tacit assumption that the issue it addresses is generic in character. For, as we read it, the memorandum concludes, without qualification, that a twenty percent planning basis will suffice in the formulation of monitoring arrangements for not merely Shoreham but all other nuclear facilities as well. That premise, however, is not so clearly justified as to warrant acceptance in the absence of an explanation of the reasoning at the root of its adoption. To the contrary, it seems to us that, among other things, the demographic and meteorological characteristics of a particular EPZ might have considerable influence upon the percentage of the persons within the EPZ that would, in the event of an accident, seek monitoring either on instruction or on their own initiative. For example, some EPZs doubtless could have a population that is concentrated close to or in a prevalent downwind direction from the reactor. It seems fair to assume for planning purposes that the percentage of such an EPZ population that would seek monitoring would significantly exceed that of the population of an EPZ in which most persons were located at greater distances from the reactor and upwind. If for some reason this assumption is flawed — i.e., that, in fact, all EPZs can be deemed fungible for this purpose — the preparers of the memorandum assuredly had an obligation to provide some measure of elucidation.[32]

If anything, the existence of this obligation became even more manifest upon the receipt of the testimony of a FEMA witness to the effect that, prior to the issuance of the Krimm memorandum, FEMA arrived at appropriate planning bases for monitoring on the strength of what it considered reasonable for the particular EPZ under examination.[33] On this score, Mr. Keller referred to the selection of a planning basis of thirty-five to forty percent for the EPZ surrounding the Nine Mile Point nuclear facility in New York.[34] Further, a FEMA review preceding the Krimm memorandum had led to a determination that an emergency plan for the Trojan facility in Oregon was inadequate because of its failure to provide a capability to monitor, within approximately twelve hours, one hundred percent of the portion of the EPZ population in adjacent Washington State.[35] Mr. Keller opined that, given the Krimm memorandum, that determination has now been withdrawn.[36] While that may be so, the question

[32] The NRC staff apparently recognizes (at least implicitly) that demographic and meteorological characteristics of the EPZ are relevant in the determination of a monitoring planning basis. As will be seen later (*infra* p. 529), it introduced into evidence an analysis that took into account some of the demographic and meteorological features specific to the Shoreham EPZ.

[33] Tr. 18,371.

[34] Tr. 18,371, 18,379.

[35] Tr. 18,372-74.

[36] Tr. 18,374.

respecting the underpinnings of Mr. Krimm's election to eschew EPZ-by-EPZ analyses remains unilluminated.

Moving on to an examination of the three factors identified in the memorandum as the bases for its guidance,[37] each has weaknesses that were not resolved on the record below. The first of the factors is past experience with emergency evacuations, respecting which it is said that three to twenty percent of the evacuees arrived at shelters. The memorandum does not indicate, however, the emergencies from which this percentage range was derived, let alone how many persons sought sheltering in the case of a specific emergency.[38] Yet the type of emergency could be significant with respect to the percentage of evacuees requiring sheltering assistance. For example, a widespread emergency (such as a hurricane or severe nuclear accident) might be expected to produce a greater need for community sheltering arrangements than would a more localized event in which nearby relatives or friends outside of the area of danger might well be able to fulfill most sheltering requests.[39] In this regard, it is noteworthy that, in contrast to the percentage range for evacuees requiring sheltering assistance that the Krimm memorandum now suggests, other LILCO witnesses indicated in an earlier (1984) phase of this proceeding that, based on their review of past emergencies, planning for the sheltering of twenty percent of the EPZ population was being conducted.[40] This sheltering assumption appears unchanged, as LILCO's current emergency plan procedures still call for provisions to be made for congregate care (i.e., sheltering) of twenty percent of the EPZ population.[41]

The second factor cited in the Krimm memorandum as a basis for the twenty percent planning basis figure was the "fear and uncertainty" associated with radiological emergencies. The memorandum assumes, without discussion, that, because of this factor, the percentage of the evacuees who might report for monitoring will be closer to the upper end of the three-to-twenty percent range for sheltering. But the record contains very little to enable a confident judgment respecting the accuracy of such an assumption.[42] In this connection, the fact that, as LILCO stresses, only a small percentage of the evacuees during the Three

---

[37] *See supra* p. 523.

[38] Although staff witness Falk Kantor testified on cross-examination that he had been provided by a contributor to the Krimm memorandum with a list of the reports of emergencies that had been considered by him (Tr. 19,189-91), and that list was then placed in evidence as Suffolk County Exhibit 33 (Tr. 19,209), the record remains devoid of any illumination respecting the percentage of evacuees that might seek sheltering in the event of a particular type of emergency.

[39] A widespread evacuation could also result in the demand for hotel accommodations in the surrounding region (outside the evacuation zone) exceeding the supply, with the consequence that a higher percentage of evacuees might require sheltering assistance.

[40] Cordaro, et al., fol. Tr. 14,707, at 18-20.

[41] *See* Crocker, et al., LILCO Exhibit 1, Attachment P, OPIP 4.2.3 at 3.

[42] Suffolk County witness Stephen Cole conducted a survey of Long Island residents aimed at determining, in general terms, the size of the group that would report for monitoring in the event of an accident at Shoreham. Cole, et al., Suffolk County Exhibit 13 (admitted into evidence at Tr. 17,815) at 12-13. As found by the Licensing Board, however, such surveys are of little value in predicting the percentage of the population that will, in fact,

(Continued)

Mile Island (TMI) accident in 1979 sought monitoring does not tell us much regarding the percentage of Shoreham EPZ evacuees that would likely request such action.[43] For it also appears that the TMI monitoring program was not put into effect until two weeks *after* the accident and, still further, it is unclear whether there was an announcement at any juncture that evacuees should be monitored.[44]

Finally, the Krimm memorandum asserts, with no elaboration whatever, that "[t]he congregate care facility capacity in the vicinity of nuclear power plants is usually cited as being between 5 and 15 percent of the estimated number of evacuees."[45] While it is then stated that the source of this representation is "ASLB hearings," Mr. Krimm fails to identify a single NRC proceeding in which the issue of the adequacy of congregate care facilities was even litigated. That deficiency assumes additional importance in light of the fact that, for the purpose of implementing the Shoreham emergency plan, LILCO currently assumes that twenty percent of the evacuees will require congregate care.[46] Beyond that consideration, estimates respecting the percentage of evacuees that will require sheltering (and thus necessarily will undergo monitoring) are of little, if any, assistance in arriving at an informed judgment respecting the percentage of the EPZ population that might seek monitoring alone. As Mr. Krimm appears implicitly to concede, there is no established relationship between the number of evacuees in the two categories. The most that can be said is that the total number of persons to be monitored will exceed the number of persons seeking sheltering. Accordingly, sheltering estimates provide no more than a base point in arriving at a reasoned estimate with respect to monitoring requirements.

C. In sum, the Licensing Board erred in endorsing, on the strength of the Krimm memorandum alone, the twenty percent planning basis for the monitoring of evacuees. It remains to be considered whether there was other evidence adduced by the applicant or the staff that, although not relied upon by the Board, was so compelling as to have mandated the result reached below on

---

seek monitoring. LBP-88-13, 27 NRC at 523. Regardless of the survey results, that percentage will be significantly influenced by the information provided to the public at the time of the accident.

[43] *See* Crocker, et al., LILCO Exhibit 1 at 15.

[44] *Ibid.*; Tr. 18,470-71, 19,192-95. It is worthy of passing note that, although the Krimm memorandum endeavors (albeit inadequately) to take into account that some evacuees might be led to seek monitoring because of fear rather than an official instruction, the Licensing Board rejected this concept of a "monitoring shadow" in reaching its result that a twenty percent figure was appropriate. LBP-88-13, 27 NRC at 523, 551. Nonetheless, the Board did caution that confused or conflicting emergency information provided to the public could cause a monitoring shadow that would result in a much greater number of individuals reporting for monitoring. *Id.* at 523-24. LILCO contends, however, that no "competent emergency planning professional" had ever embraced the idea that people are so frightened of radiation that they would flee from it no matter what the actual risk. LILCO's Brief in Opposition to Intervenors' Appeal of the Licensing Board's Partial Initial Decision on the Suitability of Reception Centers (July 25, 1988) at 35.

[45] *See supra* p. 523.

[46] Crocker, et al., LILCO Exhibit 1, Attachment P, OPIP 4.2.3 at 3.

the planning basis issue. The witnesses sponsored by LILCO certainly did not supply such evidence. Indeed, their testimony went a very short distance in providing support for the twenty percent figure.

To begin with, witness Dale E. Donaldson was produced as a former NRC employee who had assisted in late 1979 in the drafting of a precursor of NUREG-0654/FEMA-REP-1.[47] He stated that, although they did not have a specific number of evacuees in mind for the monitoring planning basis, the drafters believed that only a small percentage of the EPZ population would require monitoring.[48] Whatever may have been the belief of Mr. Donaldson and his colleagues, however, as seen Criterion II.J.12 mandates the availability of sufficient personnel and equipment to monitor within the specified twelve hour period all those arriving at the reception centers.[49] Thus, the question is how many people are, in fact, likely to come to the centers. On this score, the speculation to which Mr. Donaldson referred — nine years ago — is of little moment.

Witness Diane P. Dreikorn testified that, the Krimm memorandum to one side, the "sound judgment" of LILCO's emergency planners led them to the conclusion that a twenty percent figure was a good starting point.[50] She went on to indicate that LILCO had gone beyond that point and supplied the capability (assuming the availability of the Bellmore facility) of monitoring forty-six percent of the EPZ population.[51] And, for his part, Douglas M. Crocker did little more than relate his experience with floods and coal mine "problems" in Kentucky, simply noting that few persons arrived at evacuation shelters.[52] That experience obviously has very limited probative value with regard to the matter at hand.[53]

In contrast to LILCO, the staff presented an analysis to buttress its endorsement of the twenty percent figure.[54] That analysis was performed by Lewis G. Hulman, the Chief of the Plant Systems Branch in the Division of Boiling Water Reactors of the Office of Nuclear Reactor Regulation, and involved both projected population concentrations within the Shoreham EPZ and various meteorological data.[55] The purpose of the analysis was to determine the probability that a certain number of individuals within the EPZ would be exposed in the

---

[47] Crocker, et al., LILCO Exhibit 1 at 8; Tr. 17,439-40.
[48] Crocker, et al., LILCO Exhibit 1 at 8; Tr. 17,452-54.
[49] *See supra* pp. 522-23.
[50] Tr. 17,744.
[51] *Ibid.*
[52] Tr. 17,759-60.
[53] *See supra* p. 527.
[54] Kantor and Hulman, Staff Exhibit 5 (admitted into evidence at Tr. 19,184). In his prepared testimony as the lead staff witness on the question of the reasonableness of the twenty percent figure, Mr. Kantor put considerable emphasis on the analysis. *See* Kantor, Staff Exhibit 5 at 7.
[55] Hulman, Staff Exhibit 5, at 1-2.

event of a radiological accident at Shoreham.[56] The Licensing Board did not examine Mr. Hulman's methodology or conclusions in great detail, simply noting the "fortuitous" similarity between his results and the Krimm memorandum conclusion.[57] As we see it, however, the Hulman analysis might have represented a good beginning for the establishment of a planning basis but, of itself, scarcely compelled the conclusion that the twenty percent figure was reasonable. The percentage of the population that would be contaminated by exposure to the radioactive plume occasioned by an accident perforce will be smaller than the percentage of evacuees arriving at the reception center(s) either on instruction or on their own initiative.[58] In this connection, it is a virtual certainty that, in determining who should be monitored, the official(s) charged with the responsibility for making that decision will select an area larger than that over which the plume passed.[59]

D. For the foregoing reasons, we cannot now accept the Licensing Board's determination that "a figure of 20% of the EPZ population, expandable in extreme cases, is a defensible figure for the number of people for which planners must provide a 12-hour monitoring capacity."[60] As we have seen, that determination does not derive adequate support from the sole piece of evidence — the Krimm memorandum — upon which the Board relied. Nor have we been pointed to any other evidence in the existing record that might compel the conclusion that, albeit for the wrong reason, the Licensing Board reached the right result on the planning basis issue.

This is not to say that we have now determined that it would be impossible to justify the use of the twenty percent figure. We need not and do not speculate on that point. It is enough for present purposes to decide that nothing in the portions of the existing record brought to our attention supplies the requisite justification. It may be, of course, that the parties have overlooked some crucial evidence nestled in the deep recesses of that record. It is also conceivable that the applicant and staff might be able to adduce additional evidence that would cure the deficiencies in the proof presented by them to date. But these are

---

[56] *Id.* at 1, 7-8.

[57] LBP-88-13, 27 NRC at 523.

[58] The intervenors assert that the staff analysis produced too low a prediction respecting the number of contaminated individuals because of its assumption of constant wind direction throughout the accident. The staff believes that the analysis compensated for this assumption (1) by including the total population residing within a two-mile radius of the plant and (2) by omitting protective measures such as sheltering. Hulman, Staff Exhibit 5, at 8; Tr. 19,211-12, 19,222-23. Before reliance can be placed on the staff analysis, the sensitivity of the results of the analysis to historical variations in wind directions for the site will have to be explored. Further, Mr. Hulman selected a value for the number of individuals likely to be contaminated based on the probability that ninety percent of all accidents would result in a fewer number of contaminated individuals. Tr. 19,224. An explanation as to why ninety percent is an appropriate criterion is necessary.

[59] In this regard, the testimony of LILCO's witnesses indicated that, for protective action planning purposes, the plume is considered to cover a much larger area than that assumed by the Hulman analysis. *Compare* Hulman, Staff Exhibit 5, at 7, with Crocker, et al., LILCO Exhibit 1 at 9.

[60] LBP-88-13, 27 NRC at 523.

matters that must be dealt with by the Licensing Board in the first instance. In reaching its conclusion regarding the significance of the judicial decision on the availability of the Bellmore facility, the Licensing Board must resolve the planning basis issue. And its evaluation of the evidence of record on that issue — whether that evidence is found in the present record or is newly adduced on the remand — must, of course, be made in light of our critical appraisal in this opinion of the Krimm memorandum and the testimony of various witnesses on the planning basis issue.

In this connection, we appreciate that there has been no prior experience in this country with the immediate monitoring of individuals who were located within a nuclear facility's EPZ at the time of a radiological accident at that facility. Moreover, our attention has not been directed to any other type of accident or natural disaster that might call for some form of monitoring. Consequently, there will not likely be hard empirical evidence to justify any conclusion respecting the number of persons likely to seek monitoring, but not sheltering, in the event of a Shoreham radiological emergency.[61] It does not perforce follow, however, that it will prove impossible to provide a *reasoned* estimate on that score, sufficient to undergird a monitoring planning basis well under one hundred percent of the EPZ population. There are many areas in which estimates likewise must be made, for one purpose or another, without the benefit of empirical experience. Whether an estimate so disadvantaged can carry the day necessarily hinges upon whether a rational explanation has been supplied for it. As we have seen, the present difficulty with the Krimm memorandum (and the Licensing Board's finding based upon it) is that they are devoid of such an explanation.

III.

The intervenors also raise three other issues on appeal. First, in an argument that is simple and straightforward, they maintain that 10 C.F.R. § 50.47(a)(2) mandates that the agency's findings on the adequacy of an emergency plan must be based on a review of FEMA's findings and determinations. According to the intervenors, FEMA made no findings, "preliminary, interim or otherwise" on the overall adequacy of LILCO's reception centers and FEMA witnesses testified that they could make no findings until a graded emergency plan exercise was conducted.[62] The intervenors therefore assert that the Licensing Board's findings

[61] As suggested earlier in this opinion (*supra* p. 527), the data associated with such events as hurricanes might be useful in predicting the percentage of persons within the EPZ that would require *sheltering*.
[62] Intervenors' Brief (June 20, 1988) at 31.

are based on a legally deficient record and the case must be remanded to await such findings.

The answer to the intervenors' argument is equally short and direct. The Commission's regulations do not require that the Licensing Board await specific FEMA findings, "preliminary, interim or otherwise," on the overall adequacy of LILCO's reception centers as a condition precedent to deciding the discrete issues about those centers.

In its entirety, 10 C.F.R. § 50.47(a)(2) states that

> [t]he NRC will base its finding [that adequate protective measures can and will be taken] on a review of the Federal Emergency Management Agency (FEMA) findings and determinations as to whether State and local emergency plans are adequate and whether there is reasonable assurance that they can be implemented, and on the NRC assessment as to whether the applicant's onsite emergency plans are adequate and whether there is reasonable assurance that they can be implemented. A FEMA finding will primarily be based on a review of the plans. Any other information already available to FEMA may be considered in assessing whether there is reasonable assurance that the plans can be implemented. In any NRC licensing proceeding, a FEMA finding will constitute a rebuttable presumption on questions of adequacy and implementation capability.

Among the flaws in the intervenors' argument is that they read only the first sentence of the section and ignore the remainder. Contrary to their assertions, it is not true that the regulation precludes the Licensing Board from deciding the specific issues involved here under a utility plan unless the Board first obtains FEMA findings. Rather, section 50.47(a)(2) provides that "[a]ny other information" that is also available to FEMA may be considered by the Commission in assessing the adequacy of the plans. In this case, that information is the evidentiary record supplied by the parties. Moreover, in a licensing proceeding, any FEMA finding constitutes only a "rebuttable presumption." Thus, for example, even where FEMA has made findings, the Board clearly has the authority to decide issues contrary to those findings on the basis of other record evidence. That being so, it is difficult reasonably to read section 50.47(a)(2) as denying the Board the authority to decide the issues involved here on the basis of other evidence when there are no FEMA findings. Before us, the intervenors do not (and on the basis of the record cannot) claim there is no evidence to support the Board's findings on each of the challenged issues regarding LILCO's reception centers. They argue only that, based on an erroneous reading of a single sentence of the regulation, there are no FEMA findings in the record. Accordingly, the intervenors' argument must fail.

Next, the intervenors complain about the Licensing Board's treatment of their claim that, in a radiological emergency, LILCO's reception centers will become "locally unwanted land uses" (LULUs) that will precipitate a shadow evacuation by the people living around the centers. In direct testimony, a witness for Suffolk

County indicated that people living in the vicinity of the reception centers will perceive them as threats, i.e., LULUs, because people discern radiation and its associated hazards with particular dread and the centers are designated as places where decontamination activities will be conducted. According to the county's witness, the people residing in the heavily populated areas around LILCO's centers therefore will flee in an emergency. In the areas around the reception centers, this shadow evacuation will assertedly add to the considerable congestion already on the overloaded road network from people leaving the EPZ and further delay beyond acceptable limits evacuees from the EPZ.[63] The intervenors argue that the Licensing Board did not make explicit findings on this matter and therefore committed reversible error for failing to articulate any basis for resolving this question.

As the intervenors correctly point out, the Licensing Board has a duty "to articulate in reasonable detail the basis for [its] determinations" so that the parties and any reviewing tribunal can apprehend the foundation for the lower Board's ruling.[64] Here, however, the basis for the Licensing Board's resolution of this issue is readily apparent so the intervenors' argument is without merit.

Under an organizational heading titled "The Evacuation Shadow Phenomenon," the Licensing Board initially catalogued the testimony of the parties on the evacuation shadow purportedly caused by the distance of LILCO's reception centers beyond the boundary of the EPZ. The Board then turned to the LULU issue and detailed the testimony presented by the county and the contrary testimony of LILCO's witnesses. The latter claimed that relevant empirical evidence overwhelmingly demonstrated that people do not flee from places simply because they involve some sort of radiological activity but, instead, they evacuate a hazardous area only when the danger has been defined by an authoritative source.[65] Next, under a heading labeled "Board Decision on Evacuation Shadow Phenomenon," the Licensing Board referenced its earlier decision in LBP-85-12,[66] where it addressed the shadow phenomenon and concluded that in an emergency the public will behave in accordance with the public information given them. The Board found that the county's evidence on the locations of the reception centers did not shake its faith in the correctness of its earlier conclusion, even though it is possible that an evacuation shadow could occur if confusing or conflicting public information was disseminated. Finally,

---

[63] Johnson, et al., Suffolk County Exhibit 15 (admitted into evidence at Tr. 17,998) at 17-20.

[64] *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-104, 6 AEC 179 & n.2 (1973). *See Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 41 (1977), *aff'd*, CLI-78-1, 7 NRC 1, *aff'd sub nom. New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir. 1978). *See also* 5 U.S.C. § 557(c).

[65] LBP-88-13, 27 NRC at 549-50. *See* Crocker, et al., LILCO Exhibit 1 at 23.

[66] 21 NRC 644 (1985).

it closed this portion of its decision with a one sentence paragraph stating "[h]ere we find LILCO has carried the day."[67]

Even though the Licensing Board did not make separate explicit findings on the LULU question, we believe it is clear from the ultimate finding in favor of LILCO, the organization of its discussion of the evacuation shadow, and its last remark, that the Board was rejecting outright the county's evidence that LILCO's reception centers would become locally unwanted land uses spurring additional shadow evacuations in a radiological emergency. Rather, the Board chose, as it said, to let LILCO's witnesses carry the day on this issue as well by adopting their testimony that paralleled the Board's earlier finding in LBP-85-12 that in an emergency the public will behave according to the information given them.

Finally, the intervenors claim that the Licensing Board erred in striking the direct testimony of several of their witnesses that addressed the adequacy of LILCO's procedures for registering evacuees at its reception centers. This testimony was one paragraph long and was filed by the State's panel of witnesses from the New York Radiological Emergency Preparedness Group. The gist of the testimony was that LILCO's registration procedures were insufficient because they called for recording the names and addresses of only those evacuees found to be contaminated and did not call for recording the names of all evacuees monitored at the reception center.[68] On LILCO's motion,[69] the Licensing Board struck this portion of the prefiled direct testimony ruling that it does not materially relate to the issues in the proceeding. Alternatively, the Board found that the State had not offered any regulatory basis for requiring more stringent recordkeeping procedures.[70] Even though the Board struck the State's testimony, it nevertheless considered the question of the adequacy of LILCO's registration procedures in its findings. The Board found that detailed information on uncontaminated evacuees was not needed and that LILCO's recordkeeping procedures were adequate.[71] The intervenors now assert, without more, that the Board's ruling striking their testimony was without any basis and clearly in error. They ask us to reverse the Board's finding and to remand the issue for further evidentiary hearings.

While it is true that the Licensing Board initially struck the State's direct testimony on this matter, the Board, in effect, reversed its earlier ruling when it announced its findings and considered the issue raised by the State's witnesses. Moreover, as is apparent from its decision, the Board fully considered the State's

---

[67] LBP-88-13, 27 NRC at 551.
[68] Papile, et al., New York State Exhibit 1 at 22-23.
[69] LILCO's Motion to Strike Testimony of Papile, et al. (April 18, 1987), at 2-3.
[70] Memorandum and Order (June 17, 1987) (unpublished) at 4-5.
[71] LBP-88-13, 27 NRC at 562-63.

direct testimony in making its finding on the adequacy of LILCO's recordkeeping procedures, so the State was not harmed by the Board's original ruling.[72] Indeed, the testimony relied upon by the Board in deciding the issue against the State was elicited by one of the intervenors on cross-examination of a FEMA witness.[73] In the circumstances, any error by the Board in initially striking the testimony was, at most, harmless and requires neither that we reverse the Board's finding nor that we remand the issue for further evidentiary hearings.[74]

IV.

For the foregoing reasons, the Licensing Board's findings in LBP-88-13, 27 NRC 509 (1988), regarding the questions of "locally unwanted land use" and LILCO's registration procedures are *affirmed*. The portion of the intervenors' appeal challenging the Board's action of making findings without first obtaining FEMA findings is *denied*. That part of the Licensing Board's decision concerning the monitoring planning basis is *vacated*. The case is *remanded* to the Licensing Board for further consideration of the monitoring planning basis and the effect of the judgment in *Town of Hempstead v. Long Island Lighting Co.*, Index 23779/87 (N.Y. Sup. Ct., Aug. 22, 1988), on the Board's findings dealing with the sufficiency of LILCO's reception centers.[75]

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

---

[72] *Ibid.*

[73] Tr. 18,274-76.

[74] *See* ALAB-788, 20 NRC 1102, 1151 (1984).

[75] We are fully aware that in LBP-88-24, 28 NRC 311 (1988), the Licensing Board dismissed the intervenors from the proceeding and that decision has been appealed. Regardless of the outcome of the appeal, however, some further Licensing Board action will be necessary after the appellate process has run its course in light of our treatment of the substantive health and safety issues involved. *See Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-230, 8 AEC 458 (1974). *Cf. Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), ALAB-655, 14 NRC 799, 803 (1981).

We are, of course, also aware of the President's November 18, 1988 Executive Order No. 12,657 titled "Federal Emergency Management Agency Assistance in Emergency Preparedness Planning at Commercial Nuclear Power Plants." 53 Fed. Reg. 47,513 (1988). Section 3(b)(2) authorizes FEMA in certain circumstances "to provide reception centers or shelters and related facilities and services for evacuees." *Id.* at 47,514. When, as and if that authority is invoked, and FEMA undertakes to furnish reception centers in supplementation of or substitution for those supplied by LILCO, the Licensing Board presumably will be so advised and can take that new development into account.

Cite as 28 NRC 537 (1988) LBP-88-28

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ivan W. Smith, Chairman
Gustave A. Linenberger, Jr.
Dr. Jerry Harbour

In the Matter of

Docket Nos. 50-443-OL
50-444-OL
(ASLBP No. 82-471-02-OL)
(Offsite Emergency Planning)

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, *et al.*
(Seabrook Station, Units 1 and 2)

November 17, 1988

MEMORANDUM AND ORDER
(Ruling on Applicants' Motion for Sanctions)

By motion dated October 20, 1988, the Applicants seek sanctions against the Massachusetts Attorney General in the form of dismissing Joint Intervenor (JI) Contentions 45, 55, and 58 to the extent that the contentions address the issue of whether bus companies relied upon in the Seabrook Plan for the Massachusetts Communities (SPMC) will respond to a radiological emergency. JI Contentions 45 and 55 contain an allegation that such reliance is misplaced in that some bus companies are not willing to participate. JI Contention 58 contains a general allegation that the SPMC fails to provide for an adequate number of manned emergency vehicles.

On February 17, 1988, in a Memorandum and Order (Revising Schedule and Approving Protective Order) (unpublished), the Board issued a temporary protective order intended to provide to the Intervenors early information about the identity of suppliers of emergency services in the SPMC, while barring public disclosure of the covered information. Later, in our Memorandum and Order (Protecting Information from Public Disclosure) of March 23, 1988, LBP-88-8, 27 NRC 293, we extended the protective order until the beginning of the hearing. In that order we explained that we had observed that a "small but aggressive minority of Seabrook opponents . . . have demonstrated by civil disobedience their willingness to frustrate the licensing process by extra-legal means." We noted also that the Commission itself had commented that the Seabrook plant is surrounded by an emotionally charged atmosphere and expected that this Board would fashion protective orders that would allow full litigation of contested issues without unnecessarily violating personal privacy. *Id.* at 294, 296-97, *citing* CLI-87-13, 26 NRC 400, 404-05 (1987).

In prohibiting public disclosure of the protected information, the Board's main concern was that undisciplined opponents to Seabrook would see and use an opportunity to influence the outcome of this proceeding by interfering with the arrangements between Applicants and suppliers of emergency services.

The Massachusetts Attorney General opposed the entry of a protective order. But, after a full discussion of the matter, Assistant Attorney General John Traficonte committed the Office of the Massachusetts Attorney General to obedience to a Board order protecting the information. Tr. 9726. The issue was briefed further and the orders were finally issued. Subsequently "authorized persons," including those employed by the Attorney General, either by signing affidavits of nondisclosure (nonattorneys) or by professional commitments (attorneys), agreed to comply with the protective order.

Now Applicants protest the Attorney General's conduct on three separate occasions where protected information was revealed or could have been revealed to the public. The first occurred on July 2, 1988, when Assistant Attorney General Allan R. Fierce attended a FEMA-sponsored public meeting in New Hampshire concerning the June 28-29, 1988 general exercise of the New Hampshire Radiological Emergency Response Plan (NHRERP) and the SPMC. Mr. Fierce submitted in advance fourteen written questions to the FEMA presiding chairman, Mr. Donovan. Some of the questions were read and discussed in public; some were not. In the latter group were questions 9, 12, and 14 which sought the identity by company name of the buses used, or relied upon and not used, in the exercise. *See* Attachment "A" to Applicants' Motion (partial transcript).

Applicants contend that Mr. Fierce, by the respective questions, demanded public disclosure of protected information. Applicants claim further that, but for their intercession with FEMA, the information might have been publicly

revealed. The information involved was clearly intended to be protected by the Board's order. Moreover, as Applicants correctly state, Mr. Fierce did not have to seek the information through the FEMA meeting. As an "authorized person," and counsel in this proceeding, he would have received the information under the terms of the protective order.

Finally, Applicants note the presence at the meeting of persons whose angry and disruptive public debate has been extensive, and who are not parties covered by any protective order. The transcript of the public meeting supports Applicants' characterization.

To the Board's puzzlement, Mr. Fierce did not join in the Attorney General's answer to Applicants' motion. The answer, signed by Assistant Attorney General Stephen A. Jonas, undertakes to interpret Mr. Fierce's intentions. Mr. Jonas argues that Mr. Fierce did not ask for the names of the bus companies during the public portion of the meeting and that he repeatedly indicated that FEMA need not immediately or publicly provide the protected information.

Our reading of the transcript indicates that, true, Mr. Fierce did not insist upon immediate, thus necessarily public, responses to his questions. The meeting was coming to an end, he was by necessity seeking later, written responses from FEMA. His questions about the protected information were simply not reached before the meeting closed. Mr. Jonas' claim that Mr. Fierce "repeatedly encouraged FEMA to provide him with the information in a nonpublic fashion, after the meeting" (Answer at 4) is not supported in the transcript. Mr. Fierce never urged a *nonpublic* disclosure — his remarks were directed to the *timing* of the disclosure. In fact, Mr. Fierce sought even more public time than scheduled to cover his questions. Tr. 160-61.

Mr. Jonas maintains that Mr. Fierce's "intent was to gather information about the details of the exercise, not to trick FEMA into revealing protected information." Answer at 4. But he doesn't explain why Mr. Fierce did not avail himself of ready access to the protected information in his capacity as legal counsel to a party and as an "authorized person" under the protective order.

It turned out that the protected information was not publicly revealed, perhaps because counsel for Applicants wrote to FEMA's General Counsel about the matter and provided a copy of the Board's protective order of March 23, 1988. FEMA, we note, is not covered by the protective order, and it is not clear that Mr. Donovan, FEMA's meeting chairman, even knew about the protective order.

We cannot conclude with any degree of assurance whether Mr. Fierce intended to force the public disclosure of protected information. If his intent was benign, he used poor judgment. He demonstrated a careless disregard for the purposes of the protective order. Even now, after full reflection on the issue, the Massachusetts Attorney General condones Mr. Fierce's efforts by arguing that he is not prohibited from obtaining information about bus companies from other sources and thereby disclosing that information. Answer, nn.2, 3. The

argument is literally correct as far as the protective order goes — providing that the Attorney General does not use information given to him under the terms of the protective order as an instrument to cause public disclosure of the information.

However, the Attorney General runs a risky course if he intends to force public disclosure of protected information. We will view any resulting intimidation of potential witnesses as a serious matter and will hold the Attorney General accountable in this proceeding for the foreseeable results of his actions. The parties have the general responsibility to conduct themselves with honor in NRC proceedings as they should in a court of law. 10 C.F.R. § 2.713. For now, however, we find that there was no violation of the Board's protective order in connection with the FEMA meeting. This is not the same as finding that Mr. Fierce acted properly at the FEMA meeting.

On September 21, 1988, the Attorney General disclosed the name of the owner of a siren location in a filing in the "onsite" proceeding. But he promptly closed the breach by retrieving all copies of the protected information. This was a wholly responsible and appropriate response. The episode is of no moment except that it should have signaled the need for tighter procedures in the Office of the Attorney General.

Assistant Attorney General Pamela Talbot, relatively new to the proceeding, apparently received no such signal. She violated the terms of the protective order on October 7, 1988, by identifying on the public record eight bus companies in the Attorney General's Supplemental Response to Applicants' First Set of Interrogatories. Again, the Attorney General took action to correct the error, but we don't know whether the effort was prompt enough or thorough enough. It took until October 19 to close the breach. Answer at 7. Recognizing that the Attorney General may continue to gather and perhaps reveal otherwise protected information from independent sources, the careless breach on October 7 is important. Accountability has been compromised.

The Attorney General argues that sanctions are not required because no harm has been done. First, according to Mr. Jonas who did not attend the hearings, the protective order was entered without any evidence of harassment of *contractors*, thus unnecessary. Answer at 8. That argument is made to the wrong people. The Board members themselves were harassed by emotionally volatile persons who, as nonparties, are beyond the Board's jurisdiction. There is every reason to fear that one or several of these persons would attempt to intimidate contractors.

In any event, the Attorney General's argument comes too late. The protective order was appropriate and lawful. It was not appealed. We have recognized from the beginning that the spirit of such an order can be defeated by a clever lawyer — perhaps legally and without penalty. But we depended upon the Attorney General's commitment to obey the order in exchange for the early availability of the information. In *Commonwealth Edison Co.* (Byron Nuclear Power Station,

Units 1 and 2), ALAB-735, 18 NRC 19, 25 (1983), the Appeal Board noted that up to that time the Commission's adjudicatory boards have acted under the assumption that protective orders will be obeyed. Such is still the case. We have never known of an NRC protective order being disobeyed or evaded — or, until now, even carelessly violated.

Next, the Attorney General argues that some real effect must be demonstrated before sanctions are justified. Answer at 8. But, as a practical matter, the overriding need and justification is to protect against future, and in this case irreparable, harm to Applicants' proprietary interest in their contracts and harm to their position in the case. Equally important is the need to safeguard the integrity of the NRC adjudicatory process. Noteworthy by its absence is any assurance from the Attorney General that steps have been taken to prevent future violations of the protective order. Rather, his answer sends the opposite message: The protective order is not needed, may be circumvented, and *post hoc* corrective measures are sufficient.

The Commission has recommended to boards a broad range of sanctions for parties who fail to meet their obligations. *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 454 (1981). The sanctions range from minor to severe. They can be remedies for harm done, or they may be prospective, to prevent future harm. *Id.* Applicants' motion, to dismiss the respective contentions, is near the severe end of the spectrum and calls for more than is needed, either as a remedy or as a warning. The NRC Staff agrees.

Instead we impose the following dual-purpose sanctions:

1. To remedy any harm that may have been done on October 7 by revealing the names of the relevant bus companies, the Attorney General may not use any information about the bus companies gathered after October 7 as evidence or for cross-examination in this proceeding. This is a mild remedy, not one bit more than required in the circumstances.
2. To prevent violations, the Attorney General is warned that he faces more severe sanctions in the event that his agents disclose protected information in the future. *See Policy Statement, supra*, 13 NRC at 454.
3. Also to prevent future violations, the Office of the Massachusetts Attorney General shall report to the Board what measures it has taken to prevent disclosure of information protected by the Board's order of March 23, 1988. The report shall be signed by Attorney General Shannon himself.

Finally the Board calls upon all parties and interested persons to consider carefully the consequences of evading the protective order — even by lawful means. The protective order does not restrict the Intervenors from fully developing their cases. Discovery into the arrangements with contractors is

permitted. In fact the Intervenors were invited to seek relief from the protective order in any case where their discovery needs require it. LBP-88-8, 27 NRC at 300. Public disclosure of the protected information will not aid the Intervenors' cases unless nonparties intimidate the contractors. Even then the Board will try to nullify any unfair litigative advantage.

Everyone must recognize that there is at least some significant probability that Seabrook will someday operate. Good emergency plans must be made without regard to this adjudication. The Attorney General himself emphasizes that the unwillingness of the bus companies to actually respond in a radiological emergency is a serious safety matter. Buses would be depended upon to evacuate schoolchildren, the sick, the disabled, and the aged. Answer at 10. Interfering with the bus companies' agreements to respond to an emergency at Seabrook is no different than disabling a safety system at the plant itself. To afford confidential information to the zealots who would intimidate the bus companies would be irrational, nonavailing, and reckless.

THE ATOMIC SAFETY AND
LICENSING BOARD

Jerry Harbour
ADMINISTRATIVE JUDGE

Gustave A. Linenberger, Jr.
ADMINISTRATIVE JUDGE

Ivan W. Smith, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland
November 17, 1988

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

James H. Sniezek, Acting Director

In the Matter of **Docket No. 50-498-OL**

HOUSTON LIGHTING AND POWER COMPANY, *et al.*
(South Texas Project, Unit 1) **November 16, 1988**

The Director of the Office of Nuclear Reactor Regulation denies an appeal by the Government Accountability Project (GAP) of Director's Decision DD-88-3 (27 NRC 308 (1988)). The appeal challenged both the responsiveness of DD-88-3 to GAP's petition under 10 C.F.R. § 2.206 and the adequacy of NRC's review of safety allegations received through GAP. The Commission referred the unauthorized appeal to the NRC Staff to be treated as a request for reconsideration of the denial of GAP's petition. In this Decision, the Director finds no basis for reversal of DD-88-3, primarily because he has determined that DD-88-3 fully responded to the issues raised in GAP's petition and set forth an adequate basis for the conclusions reached, and that the NRC's investigation was adequate to evaluate safety at the South Texas Project.

RULES OF PRACTICE: PETITIONS UNDER 10 C.F.R. § 2.206

Commission regulations do not authorize appeals from Director's decisions denying petitions under 10 C.F.R. § 2.206.

NUCLEAR REGULATORY COMMISSION: HEALTH AND SAFETY RESPONSIBILITIES

A programmatic or generic issue is identified as a result of a sequence of events. When a deficiency is found in a component or hardware item, an investigation is conducted to determine first the immediate cause and then

the root cause of the deficiency. If a root cause is found, the potential for programmatic or generic involvement is then investigated. In order to identify a programmatic concern, there must be findings of safety deficiencies.

TECHNICAL ISSUES DISCUSSED

Part 50, Appendix B, Criterion I, of 10 C.F.R.

SUPPLEMENT TO DIRECTOR'S DECISION DD-88-3

Introduction

On March 21, 1988, the Government Accountability Project (GAP) filed with the Commission an appeal of Director's Decision DD-88-3 (27 NRC 308). The decision denied GAP's January 26, 1988 petition filed pursuant to 10 C.F.R. § 2.206, requesting a delay in the Commission's vote on a full-power license for South Texas Project (STP), Unit 1, because of alleged deficiencies in the NRC's review of allegations received through GAP.[1] Specifically, GAP's January 1988 petition requested that the vote be delayed until there had been a complete investigation of all allegations regarding STP and release to the public of a report disposing of each allegation.

By letter dated March 22, 1988, the Secretary of the Commission informed GAP that the Commission was denying its appeal of DD-88-3, because Commission regulations do not authorize appeals from § 2.206 denials.[2] Nevertheless, the Secretary stated that the filing was being referred to the NRC Staff to determine whether it raised anything that would cause the Director to reconsider his denial of GAP's § 2.206 petition.

In its appeal, GAP asserts that the Director's Decision is not responsive to its request and is not based on substantial evidence, and therefore it is arbitrary and capricious. Specifically, GAP alleges that the Decision is not responsive with regard to the following: (1) the petition asserts a programmatic breakdown in quality; (2) the petition asserts that the Safety Significance Assessment Team (SSAT), which investigated the allegations, was subject to cost and scheduling pressure in violation of federal regulations; (3) the numerical treatment of

[1] GAP also filed a February 12, 1988 letter addressing concerns related to the investigation of STP allegations. The NRC treated the letter as a supplement to the petition. Thus, any reference herein to the January 26, 1988 petition encompasses the February 12, 1988 supplement.

[2] In the appeal, GAP also requested a 48-hour housekeeping stay of the Commission's authorization for the NRC Staff to issue a full-power operating license to STP, Unit 1. The Commission also denied the stay request per the Secretary's March 22d letter.

the allegations is misleading; and (4) the petition asserts that allegations of wrongdoing have not been investigated. Claiming that the Director's Decision relied almost exclusively on the SSAT's examination of the allegations as reported in NUREG-1306, GAP also provides an "analysis" of the results of the NRC's inspection effort, and concludes that (1) the SSAT effort was inadequate to determine the safety significance of the allegations, and (2) the SSAT relied on documents that are unreliable.

The Staff has completed its review of GAP's appeal and, based on its review, I have concluded there is no reason to alter my decision denying the GAP petition under 10 C.F.R. § 2.206. DD-88-3 fully responded to each issue raised, set forth an adequate basis for the conclusions reached, and is therefore not arbitrary and capricious. I have also determined that the NRC Staff's inspection effort was adequate to evaluate safety at the STP, and that documents used by the Staff in making its safety determination were reliable. It should be noted that the issue of documents used by the Staff was not raised in the original GAP petition, since the GAP petition preceded issuance of NUREG-1306 in which the Staff first identified the documents it used in making its safety determination. Nonetheless, this issue is responded to in the following discussion.

In sum, for reasons stated in this Decision, I find no basis to support GAP's request for reversal of DD-88-3. Accordingly, the request is denied.

Discussion

I. THE DIRECTOR'S DECISION IS NOT RESPONSIVE AND THEREFORE IS ARBITRARY AND CAPRICIOUS

In its appeal, GAP asserts that DD-88-3 is "arbitrary and capricious" because it is not responsive to the issues raised in GAP's January 26, 1988 petition. GAP has provided four specific examples of issues raised in its petition to which it claims the NRC has not been responsive. These four examples are discussed below.

A. The Petition Asserts a Programmatic Breakdown in the Quality Assurance Program

GAP states that its petition asserted that the information provided by the allegers indicated a major quality assurance breakdown at STP, and that it was impossible for the Staff to dispose of the generic concerns reflected in the allegations in a 4-day site visit.

A programmatic or generic issue is identified as a result of a sequence of events. When a deficiency is found in a component or hardware item, an investigation is conducted to determine first the immediate cause and then the root cause of the deficiency. If a root cause is found, the potential for programmatic or generic involvement is then investigated.

In order to identify a programmatic concern, it is imperative that there be findings of safety deficiencies. As set forth in DD-88-3, the GAP allegers were unable to provide the SSAT with specifics of safety issues, and the SSAT did not independently identify any safety deficiencies. The SSAT did find isolated instances of nonconforming conditions which required further analysis to determine their impact on safety. These isolated instances, which are identified in NUREG-1306, were reviewed for any programmatic implications. It was subsequently determined that these conditions had no impact on safety or programmatic implications. Therefore, the SSAT concluded, based on the absence of safety deficiencies, that there are no programmatic concerns at the STP.

While it may appear on the surface that the SSAT dispositioned a large number of allegations in a relatively short time period, the actual time spent by the SSAT in reviewing allegations was quite extensive. For approximately 2 months prior to the actual onsite inspection, the SSAT had access to the files that contained the concerns conveyed to GAP by the allegers. The SSAT found at a very early date that the allegations were deficient in terms of specific details. The SSAT attempted, through GAP, to interview allegers to obtain specifics. These attempts were unsuccessful until a few days prior to the SSAT inspection, when GAP made four allegers available for telephone interviews by the SSAT. These allegers did not provide any specifics during the interviews. Based on this lack of specificity, the SSAT developed a program for inspecting the allegations which included provisions to compensate for the general (as opposed to specific) nature of the allegations. An essential part of the SSAT program was the development of detailed inspection plans. These plans included all the steps necessary to thoroughly inspect the installed condition at STP and establish a bounding condition for the generalized concerns conveyed by the allegations. These plans were developed well ahead of the actual onsite inspection. As set forth in DD-88-3, while on site, the SSAT made optimal use of time by emphasizing physical inspections on site and making provisions to collect supporting data for subsequent review and evaluation off site. The SSAT was at the STP site from January 18 through January 22, 1988, or 4.5 calendar days. In actuality, the SSAT worked extremely long hours and put in the equivalent of 8 work days on site. Subsequent to the onsite inspection, the SSAT spent an even greater period of time reviewing and evaluating inspection results and supporting data. In total, the SSAT expended approximately 3000 staff hours in reviewing the allegations provided by GAP.

As stated above, the allegations provided by GAP were deficient in terms of specific reference to systems and components. Had there been specifics, and had the SSAT been able to substantiate any specific allegations, the time required to conduct a thorough allegation review might have been greater. The generic review did not reveal any safety issues. This inability of the SSAT, on its own, to find any safety deficiencies, when viewed in light of the lack of specifics in the allegations, has led to the conclusion that there has been no programmatic breakdown of quality assurance at the STP. Based on Staff experience at plants such as Zimmer and Midland, if a programmatic breakdown in quality assurance existed at the STP, a review of the magnitude of the SSAT review should have revealed numerous safety deficiencies requiring further investigation.

Several of the allegations were substantiated with regard to deficiencies that existed at some point in the construction history. For such substantiated allegations, the SSAT evaluated the root cause of the deficiencies and found that, except for a few isolated instances, STP's quality assurance program was successful in identifying the concerns and effecting corrective action. These isolated instances were not indicative of any programmatic breakdown in quality assurance. The SSAT did not find any uncorrected safety deficiencies and did not uncover any programmatic concerns that would have perhaps necessitated an expansion of both the scope and depth of the allegation review. Therefore, the time expended on review of allegations at the STP was adequate for an independent analysis.

B. The Petition Asserts That the Team Was Subject to Cost and Scheduling Pressure in Violation of Federal Regulations

GAP asserts that the SSAT effort was inadequate because of the time pressures and scheduling constraints placed on the SSAT in violation of 10 C.F.R. Part 50, Appendix B, Criterion I, which prohibits "cost and schedule" pressure to override quality review efforts. In support of this assertion, GAP notes that affidavits by SSAT members that their work was free of scheduling pressures were not included in the Decision.

There were no time pressures or scheduling constraints placed on the SSAT relative to completing the allegation review. The SSAT was at liberty to take whatever time was required to conduct a thorough review of all allegations. As discussed above and in DD-88-3, the SSAT spent extensive time in reviewing the allegations. The Petitioner has provided no information, nor am I aware of any, to support the assertion that time pressures or scheduling constraints were placed on the SSAT. Absent such information, further action with regard to this

concern is not warranted.[3] *See Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), DD-85-11, 22 NRC 149, 154 (1985).

C. The Numerical Treatment of the Allegations Is Misleading

GAP asserts that the SSAT employed some "bureaucratic sleight-of-hand" to reduce the number of allegations from approximately 700 allegations down to the 71 chosen for review. GAP further asserts that this reduction in number was necessary in order to accomplish the allegation review in the time allowed by NRC management.

Specifically, GAP criticizes the following aspects of the manner in which the number of allegations was reduced: (1) the SSAT deducted 120 of the allegations as duplicates, but never referred to the allegations or the allegation numbers claimed to be duplicative, so that there is no way to review its assessments; (2) after subtracting wrongdoing allegations, the SSAT deducted 140 allegations which it refers to as nonsafety-related, but does not define what is safety-related or identify the allegations in this category; (3) the SSAT reduced 200 allegations down to 71 by saying that they are "representative" of the original 200 but its reasoning lacks the specificity required to evaluate the basis upon which any allegation is eliminated from review; (4) GAP identified at least 333 distinct safety-related allegations for the SSAT to investigate, but the SSAT chose to actually investigate only 61 without providing enough information from which GAP could evaluate the SSAT's review process; and (5) the SSAT eliminated 639 of 700 allegations before even interviewing one alleger, despite the fact that GAP advised the SSAT that it should not rely solely on GAP's investigative files to determine if an allegation had merit.

At the beginning of the STP allegation review, the SSAT was dealing with approximately 700 listed allegations. This number subsequently was reduced to 71 allegations to be reviewed by the SSAT at the STP site. This reduction, which is described in NUREG-1306, came about not through some "bureaucratic sleight-of-hand," but because of the nature of the allegations themselves and the manner in which they were presented.

Prior to its inspection, the SSAT developed inspection plans which, in turn, required that the allegations be categorized by technical discipline and common characteristics. The development of detailed inspection plans was an essential

[3] Contrary to GAP's suggestion that Part 50, Appendix B, Criterion I in some way might apply to review efforts undertaken by the Staff, the provisions of Appendix B are requirements imposed on applicants and licensees and not on Staff activities. Also, GAP's notion that affidavits from the staff members of the SSAT are called for is unfounded. I have no reason to doubt that the SSAT members were in agreement on the findings contained in NUREG-1306, the report on the STP investigation. If any member was not in agreement with the findings, he could have filed a Differing Professional Opinion (DPO) in accordance with NRC Manual Chapter 4125. No DPOs were filed.

part of the SSAT program. These plans included all the steps necessary to thoroughly inspect the installed condition at STP and establish a bounding condition for the generalized concerns conveyed by the allegations.

Although the SSAT initially looked at approximately 700 numbered allegations, when these allegations were fed into a computer the Staff was able to identify approximately 120 duplicate allegations. When subtracted from the initial 700, there remained approximately 580 allegations. This number corresponds to the number of allegations on a computer listing of allegations by identifying number that GAP provided to the SSAT. The exact cause of the duplication is unclear, but what is important is that the actual number of allegations at the time of the SSAT review was approximately 580, and that the SSAT and GAP records were in agreement on this number.

Of the 580 allegations, the SSAT classified 140 allegations as being nonsafety-related. "Nonsafety-related" means that the specific concern addressed in the allegation would have no effect on the function of a safety-related system/component. Examples of this type of allegation would be allegations that address the cost of constructing a specific system/component, or those dealing with industrial safety, personnel practices, or management activities. If there was any doubt about a classification, the allegation was included in the safety-related list to be inspected. The nonsafety allegations were eliminated, thereby reducing the total number of allegations from 580 to 440.

An additional 240 allegations were classified as addressing issues of wrongdoing,[4] and were referred to the NRC Office of Investigations (OI) for review and evaluation. GAP does not take issue with this number, which further reduces the total number of allegations to approximately 200.

At the outset, the SSAT noted a distinct lack of specificity in the allegations. Of the 580 total allegations, only 16 included a reference to a specific component or location within a system. Consequently, the SSAT had to conduct its inspection and evaluation based on the very general nature of the allegations. The SSAT carefully reviewed the 200 safety-related allegations and selected the 10 allegations it considered to have the greatest potential for safety significance. These became primary allegations. The SSAT then reviewed the remaining 190 safety-related allegations and determined that there was similarity regarding the very general technical concerns described in the allegations. With this in mind, the SSAT selected an additional 61 allegations from the remaining 190 allegations which, when reviewed in accordance with the generic plans developed by the SSAT, would cover all the general concerns raised in the remaining 190 safety-related allegations. In this way, the SSAT was able to

[4]The SSAT classified as wrongdoing all allegations that addressed, in some manner, deliberate violations of NRC requirements, falsification of records, harassment and intimidation of workers or QC inspectors, or financial misrepresentation.

cover all the general concerns raised in some 200 safety-related allegations with a generic-type review of 71 selected allegations. The above determinations were made prior to interviewing any allegers. This approach was necessary because, despite repeated requests by the SSAT for interviews, GAP did not make any allegers available for telephone interviews until less than a week prior to the scheduled SSAT inspection. Therefore, the SSAT had to proceed with planning and scheduling the inspection based on available information, and the SSAT had to make provisions for modifying inspection plans should additional, more specific information be provided by any allegers. However, the interviews with allegers subsequent to the SSAT classification of allegations and development of inspection plans did not produce any significant additional specifics regarding safety concerns. Consequently, the established inspection plans required only minor adjustments following interviews with allegers.

In sum, it was the categorization of the allegations that resulted in the reduction of the total number of allegations to be reviewed, not time pressure or schedule constraints.

D. The Petition Asserts That Allegations of Wrongdoing Have Not Been Investigated

GAP asserts that no investigations of wrongdoing allegations have been commenced and that no other actions have been taken to determine if the wrongdoing issues could have an impact on the safety of the STP. GAP further asserts that the SSAT would not allow allegers to discuss wrongdoing allegations and therefore could not have assessed the safety significance of the wrongdoing allegations. Finally, GAP asserts that the OI's allegation that it (OI) had difficulty in attempting to gain access to the allegers and their information is "disingenuous, inaccurate, and irrelevant."

In February 1988, OI met with representatives of GAP and selected nine allegations of wrongdoing that came the closest to meeting threshold requirements for further investigation under NRC Manual, Chapter NRC-0517, Management of Allegations. Five allegers made the nine allegations selected. To date, GAP has identified to OI only one alleger, and GAP has made no arrangements for OI to interview this alleger or any of the other allegers. No investigation or further assessment of the safety significance of the wrongdoing allegations, beyond that discussed below, regardless of scope, can be made unless the allegers are identified, arrangements for interviews are made, and allegers' information is evaluated.

The GAP assertion that the SSAT would not "allow" allegers to discuss wrongdoing issues is, at best, a misrepresentation of the facts. Prior to conducting telephone interviews, the Office of Nuclear Reactor Regulation (NRR), OI, and GAP made an agreement not to discuss wrongdoing issues

during interviews with allegers in order to preclude any possible compromise of wrongdoing investigations that OI may conduct. This agreement was referenced in each of the interviews and is a part of the transcripts. GAP was a party to each alleger interview and raised no objection to the arrangement regarding wrongdoing issues in any of the interviews.

The SSAT reviewed all wrongdoing allegations in order to identify any safety-significant aspects that might be associated with them. The safety-significant aspects were included within the allegations assessed for licensing impact. The wrongdoing allegations were concerned with irregularities in costs associated with Heating, Ventilation, and Air Conditioning (HVAC), with inadequacies in N-5 Code Data Package preparation and with personal employee matters. None of these allegations included any specific reference to hardware and documentation deficiencies, but the SSAT reviewed the associated hardware and documentation for deficiencies nonetheless. The wrongdoing allegations lacked any specificity with regard to identifying components, systems, or location about which the allegation was concerned. As indicated in NUREG-1306, at the conclusion of OI's investigation of wrongdoing issues, the NRC technical staff will review the safety significance of any technical concerns that may be disclosed as a result of this investigation.

II. ANALYSIS OF THE RESULTS OF THE NRC'S INSPECTION EFFORT

GAP provides an "analysis" of the results of the NRC's inspection effort for the purpose of showing that the inspection effort was inadequate. In this connection, GAP makes two arguments: (1) the SSAT effort was inadequate to determine the safety significance of the allegations, and (2) the SSAT relied on documents that are unreliable.

A. The SSAT Effort Was Inadequate to Determine the Safety Significance of the Allegations

In making this argument, GAP again asserts that the SSAT effort was inadequate because of time constraints. In this connection, GAP asserts that the majority of the time spent by the Staff was spent in processing information, and that, as compared to other inspection efforts, the inspection effort expended was not significant. To emphasize this point, GAP draws a comparison between the SSAT effort at the STP and NRC undertakings at Zimmer, Comanche Peak, and Diablo Canyon. GAP further asserts that the SSAT focused on technical and hardware issues that had been used as examples of programmatic deficiencies, whereas the allegers (according to GAP) were concerned more with

the programmatic implications than the discrete hardware issues. As an example, GAP refers to a report that indicates that as many as 20% of certain valves were installed backwards, and states that the SSAT did not even look at the report. GAP also asserts that the SSAT inspection of the Reactor Makeup Water (RM) and Essential Cooling Water (ECW) systems was inadequate to determine if there was a programmatic breakdown with as-built drawings because the NRC only looked at a minute section of the startup system and because the section of pipe looked at had already been inspected. Finally, GAP asserts that the SSAT efforts were consistent with their charter of only performing a preliminary overview, not a comprehensive investigation.

As indicated above, the SSAT expended an extensive amount of time in reviewing the allegations prior to visiting the STP site. Contrary to GAP's assertion, once on site, the SSAT concentrated on the physical inspection of systems and components, and on collecting data for subsequent review and evaluation off site, not on processing information. The total onsite inspection was the equivalent of 8 working days. As previously discussed, the SSAT found no evidence of a programmatic breakdown in quality assurance at STP. Had such a breakdown existed at the STP, with attendant widespread deficiencies, an inspection of the magnitude of the SSAT inspection would have uncovered enough significant findings to warrant extensive additional inspections. The examples of Zimmer and Comanche Peak given by GAP are illustrative of this concept. In both cases, the inspections started out relatively small but expanded as negative findings were uncovered. At the STP, there were no substantive negative findings, despite a more concentrated initial inspection effort.

The Staff rejects the GAP assertion that the SSAT was in error when it focused on specific technical and hardware deficiencies that allegers had used as examples instead of the programmatic issues. If a programmatic breakdown in quality had existed at the STP, it would have manifested itself in hardware or documentation deficiencies. Conversely, programmatic concerns are uncovered as a consequence of investigating the cause of hardware and documentation deficiencies. These two items, hardware and documentation issues, and programmatic concerns (if they exist), are inextricably related, and the SSAT was correct to focus on specific issues in order to determine the existence of any programmatic concerns.[5]

With respect to the GAP assertion that allegers provided information on discrete issues only as a means of bringing attention to programmatic concerns, it is emphasized that the Staff looked for programmatic concerns based on the information provided. For example, the status report provided by GAP which shows 20% of certain valves installed backwards is a case in point. The report

[5] As indicated previously, GAP's allegers, almost categorically, were unable to provide specifics of hardware and documentation issues.

is a listing of construction deficiencies developed by Houston Lighting & Power Co. (HL&P) at a point in time prior to the SSAT inspection.[6] The listing did not identify questionable valves as to system, location, or valve number. It only identified the percentage of valves of a certain class with deficiencies. The SSAT, during its inspection of several safety-related systems, did not locate any safety-related valves installed backwards, including instrumentation valves.[7] Based on this, it may be concluded that the valve deficiencies covered in the report GAP provided were corrected. However, because the incorrectly installed valves were identified and subsequently corrected, it must also be concluded that the quality assurance program at the STP was and is working, and that there has not been a programmatic breakdown as GAP asserts.

The Staff also rejects the GAP assertion that the SSAT inspection of the RM and ECW systems included only a minute portion of the systems and therefore was inadequate to show the programmatic concerns of allegers regarding development and maintenance of as-built drawings. As stated previously, a programmatic issue, in the context of GAP's assertion, is something that affects all systems and components. Had there been a programmatic concern with as-built drawings, it is reasonable to conclude that the RM and ECW systems would have had some problems with their as-built documentation. The SSAT reviewed 10-15% of as-built drawings for the RM and ECW systems without finding any deficiencies. The RM and ECW systems are among the largest safety systems in the plant. Considering the size of these systems, the sample size represented by 10-15% was adequate to draw a conclusion that no programmatic concern exists and is not a minute section of the systems. GAP further asserts that the SSAT inspection of as-built documentation for the RM and ECW systems was not adequate because these systems had been inspected by HL&P and any deficiencies corrected. At the time of the SSAT inspection, the as-built documentation for all systems for STP Unit 1 had been completed and inspected, not just the RM and ECW systems. The purpose of the SSAT inspection, in part, was to reinspect the as-built documentation for systems that had already been inspected by HL&P. The assertion that deficiencies with as-built documentation for these systems had been corrected is further evidence that the quality assurance program at the STP is working. The GAP assertion that the SSAT inspection was not adequate to uncover programmatic concerns with as-built drawings at the STP cannot be supported.

[6] With regard to GAP's assertion that the SSAT "did not even look at" the report, contrary to GAP's view, it is noted that the report was not available at the time of the SSAT inspection.

[7] Instrumentation valves in and of themselves do not constitute a system — they are components of all safety systems.

Finally, GAP asserts that the SSAT did not reach an adequate conclusion regarding an alleger's concern that EBASCO[8] terminated the responsibility of the N5 group for determining the accuracy of as-built drawings. The SSAT investigated this issue and determined that the responsibility for accuracy of as-built drawings was not terminated, but was transferred to another group. The SSAT determined that as-built drawings in fact reflected the installed condition at STP.

B. The SSAT Relied on Documents That Are Unreliable

GAP asserts that the SSAT relied on certain documents that were unreliable in reaching its decision that the STP was safe to operate. These documents, according to GAP, are the work of SAFETEAM investigations, Quality Assurance inspections, and other investigations and documentation prepared by the site owner. GAP claims that such reliance by the Staff is misplaced in that workers who brought allegations to GAP in the first place did so as a result of their dissatisfaction with the results of these internal and external inspection efforts.

As stated in NUREG-1306, the SSAT utilized the results of previous inspections and evaluations that have been documented in safety evaluations as aids in reaching its overall conclusions relative to the adequacy of STP. The previous inspections included those conducted by SAFETEAM, NRC Region IV, and other special-purpose teams. In all cases, the SSAT used these inspection results to augment its own findings, and not as the primary rationale behind its conclusions. The SSAT conducted an audit of the inspection reports to determine if the report results were consistent with the SSAT's own findings. If they were consistent, the inspection reports were used as a means of expanding the scope of the SSAT inspection. On the other hand, if the results of these other reports disagreed with basic SSAT findings, the inspection results were discarded and conclusions were based on the SSAT inspection only. An example of this is the SAFETEAM investigation of concerns raised by John Corder. The SSAT evaluated the concerns raised by Mr. Corder relative to switchgear during his plant tour with the SSAT and concluded that all of his concerns were nonsafety-related. An audit of the SAFETEAM investigation of concerns raised by Mr. Corder prior to the SSAT inspection showed that, with only minor exceptions, these concerns were also nonsafety-related. Thus, the SAFETEAM report substantiated the SSAT findings.

To exemplify what it claims is the inadequacy of the SSAT inspections, GAP cites the case of Ronald Goldstein. GAP asserts that the SSAT did not address

[8] EBASCO is the contractor responsible for physical construction of STP.

the issues of falsification of records and harassment raised by Mr. Goldstein, but relied only on previous inadequate inspections by Region IV and SAFETEAM. Furthermore, GAP claims that the NRC did not permit Mr. Goldstein to expand his allegations "beyond the issue they instructed him to address," and did not seek access to any of the documents available in his Department of Labor (DOL) litigation file.

Contrary to GAP's assertion, the SSAT reviewed Mr. Goldstein's file at the GAP offices in Washington, D.C. This file consisted of transcripts of portions of Mr. Goldstein's § 210 complaint filed with the DOL. The SSAT was unable to identify any safety concerns relative to the STP in these files, and the SSAT identified no safety concerns during the telephone interview with Mr. Goldstein. Consequently, the SSAT did not have anything to inspect, and there was no need to seek confirmation of the SSAT finding from another inspection report. Moreover, a review of the transcript (by authorized SSAT members) of the telephone interview with Mr. Goldstein has shown that he was not restricted from stating his technical concerns in any way, as asserted by GAP.[9]

GAP also claims that neither the SSAT nor OI has probed the issue of harassment of certain paint coatings quality inspectors nor has the SSAT probed the specific allegations raised by these individuals. In addition, GAP alludes to the cases of three other employees who were allegedly terminated for refusing to "play ball" with a management that was sacrificing quality to satisfy personal financial gain. GAP asserts that one of these employees was terminated on the basis of a recommendation of the supervisor whom he had complained about, and that an internal EBASCO investigation confirmed that this supervisor was misusing funds. However, according to GAP, neither the EBASCO investigation nor the SAFETEAM investigation adequately investigated the quality aspects of the allegations. It is unclear whether the above issues cited by GAP were raised as allegations. If they were, they would have been classified as wrongdoing allegations and referred to OI for investigation. Before being referred to OI, however, all wrongdoing allegations were reviewed by the SSAT for any safety concerns. Any safety concerns identified by the SSAT during its review of wrongdoing allegations were included in the SSAT inspection. The Staff, however, will investigate fully any safety concerns not previously identified and which are disclosed as a result of OI investigations.

Finally, GAP asserts that the SSAT ignored the "broadbased concerns of quality and mismanagement" in conducting its inspection at the STP and did nothing about the allegations of intentional violations of procedures. The SSAT classified mismanagement in two categories, i.e., mismanagement involving wrongdoing and mismanagement affecting quality assurance. With respect to quality

[9] As discussed above, by agreement among GAP, OI, and NRR, wrongdoing issues were not discussed in order not to compromise any OI investigations that might be in progress.

assurance, the SSAT concluded that persistent mismanagement would have manifested itself in a programmatic breakdown in quality assurance and, had it existed, would have been revealed as a root cause of the programmatic breakdown. The SSAT did not find any programmatic breakdown in quality assurance and, based on this, the Staff concluded that there was no mismanagement affecting quality at STP. The Staff also did not find any instances of intentional violations of procedures. Allegations of mismanagement that addressed potential wrongdoing issues (excessive costs, double billing, improper use of manpower, etc.) were referred to OI for investigation.

As discussed earlier, the SSAT did not find any significant uncorrected safety deficiencies and did not identify any repetitive safety deficiencies. The NRC is satisfied that all concerns of quality assurance at the STP have been addressed, that no evidence of any quality assurance breakdown was found as a result of the SSAT inspection, and that the plant is constructed such that it can operate safely for its design life.

Conclusion

As discussed above, the Petitioner has provided no new information in its appeal of DD-88-3 that would warrant modifying the denial of its initial petition. Therefore, the Petitioner's request 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

James H. Sniezek, Acting Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 15th day of November 1988.

Cite as 28 NRC 557 (1988) DD-88-19

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

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, *et al.*
(Perry Nuclear Power Plant, Units 1 and 2) **November 29, 1988**

In a Final Decision, the Director of the Office of Nuclear Reactor Regulation denies in part a petition requesting that the Licensees correct certain alleged deficiencies in the emergency planning program for the Perry facility including various proposed corrections to the Perry public information brochure on emergency planning.

EMERGENCY PLANNING — THE LOCATION OF RECEIVING SCHOOLS

In response to a FEMA concern that receiving schools might have been located too close to the border of the 10-mile emergency planning zone, the Licensees committed to revising county emergency plans to ensure that monitoring and decontamination services would be performed on schoolchildren in the event of a radiological emergency.

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

I. INTRODUCTION

On September 16, 1988, I issued a Partial Director's Decision (DD-88-15, 28 NRC 401) based on a petition, filed pursuant to 10 C.F.R. § 2.206, by Ms. Connie Kline, Ms. Theresa Burling, Mr. Russ Bimber, and Mr. Ron O'Connell, on behalf of Concerned Citizens of Geauga County, Concerned Citizens of Lake County, and Concerned Citizens of Ashtabula County (Petitioners), postmarked September 22, 1987, and supplemented October 8, 1987, April 8, 1988, and July 25, 1988. The petition and the supplements expressed concerns regarding the emergency preparedness program for the Perry Nuclear Power Plant, primarily in the area of public information, and requested that the U.S. Nuclear Regulatory Commission (NRC) require the Cleveland Electric Illuminating Company, *et al.* (Licensees) to correct certain alleged deficiencies in that program.[1]

My Partial Director's Decision (DD-88-15) dealt with unresolved contentions raised by the Petitioners prior to their third supplement on July 25, 1988. This Final Director's Decision addresses their third supplement in which the Petitioners adopt, as contentions, recommendations made to the NRC by the Federal Emergency Management Agency (FEMA) and the Environmental Protection Agency (EPA) in letters and memoranda of February 26 and April 19, 1988.[2]

FEMA's February 26 and April 19, 1988 memoranda responded to an NRC request for FEMA's recommendations pertaining to the Petitioners' original contentions. For ten of these contentions, FEMA's recommendations were in the form of suggestions, rather than directives, regarding possible changes to the Perry emergency public information brochure. For these contentions, FEMA did not require the Licensees to immediately revise the 1988 brochure, but rather Licensees were advised that they should consider making certain revisions in their next brochure.[3] For five other contentions, FEMA affirmatively recommended that certain actions be undertaken by the Licensees, to include several changes in the next brochure and in the emergency preparedness program

[1] A detailed chronology of the submittals and responses associated with this 2.206 petition may be found in my Partial Director's Decision (DD-88-15) dated September 16, 1988.

[2] The original petition addressed the 1986 Emergency Preparedness Information Handbook (hereinafter referred to as the 1986 brochure) for the Perry Nuclear Power Plant. Shortly after the petition was filed, the Licensees revised this handbook and published and distributed a new brochure which was in the form of a calendar (hereinafter referred to as the 1988 brochure). The FEMA memorandum of February 26, 1988, evaluated both the 1986 and the 1988 brochures. The EPA portion of the February 26, 1988 memorandum dealt with the Petitioners' contentions regarding radiation and its health effects which FEMA had referred to EPA.

[3] In my opinion, the discretionary nature of FEMA's recommendations concerning these ten contentions was appropriate since these contentions involved, for the most part, matters of personal preference and were not of significant regulatory concern.

for the facility. EPA's recommendations, which were included as an attachment to FEMA's February 26, 1988 memorandum, suggested that changes be made in the Licensees' next brochure.

On August 31, 1988, the Licensees answered the Petitioners' third supplemental petition by denying the Petitioners' right to incorporate by reference the FEMA and EPA regulatory correspondence. Nevertheless, the Licensees agreed to comply with FEMA's recommendation to consider, in the next edition of the Perry brochure, the suggested revisions for the contentions designated by FEMA as being items that should be considered.

A discussion of the remaining contentions, FEMA's recommendations, and my decision follows.

II. DISCUSSION

A. Contentions Based on FEMA's Recommendations Concerning the Emergency Preparedness Brochure

1. Whether the Brochure Should Be Made Better Available to Blind Persons

The Petitioners requested that the emergency preparedness public information brochure be available in braille. In response, FEMA commended the Licensees for encouraging the reading of emergency material to blind persons, but also suggested that the Licensees may want to consider, at the next annual update of the handbook, other means of providing information to the visually handicapped, such as large print, braille materials, audio cassette tapes, and other audio media.

The Licensees have responded to this FEMA recommendation by pledging to hire an additional Public Information Officer who will develop additional methods of increasing the awareness of emergency information among those with disabilities. On the basis of the Licensees' commitment, I conclude that this concern is resolved and that no action by the NRC is warranted.

2. Whether the Nuclear Facility Should Be Referred to in the Brochure as the Perry Power Plant

The Petitioners claimed that the brochure is misleading because the introductory letter to the handbook merely referred to the "Perry Power Plant" with no mention of the word "nuclear." FEMA agreed with Petitioners that the facility could more appropriately be referred to as the "Perry Nuclear Power Plant." However, FEMA also stated that the Perry public information brochure already makes numerous references to establish that this facility is a nuclear power plant

and that this small improvement would not justify revising and redistributing a new brochure.

The Licensees have responded to FEMA's comments by pledging that preparation of the 1989 brochure will consider FEMA's recommendation that the Licensees ensure that Perry is recognized to be a nuclear power plant. On the basis of the Licensees' representation, I find that this issue is resolved.

3. *Whether the Addresses and Phone Numbers of Emergency Agencies Should Be Added to the Introductory Letter of the Brochure*

The Petitioners also contended that the introductory letter of the brochure should include the addresses and phone numbers of emergency management agencies. FEMA responded that this information does appear in various sections of the brochure, but recommended that in future editions it be included in the introductory letter.

The Licensees have stated that they will consider FEMA's recommendation. However, the Licensees note that all relevant information about the various emergency management agencies is already consolidated in one place in the 1988 brochure on the back cover, a location they believe to be even more prominent than the introductory letter. Based on the Licensees' representation that they will consider the FEMA recommendation and the fact that this information is already prominently displayed on the back cover of the calendar, I find that this issue is resolved.

4. *Whether the Operating Hours of Radio and TV Stations Should Be Graphically Highlighted in the Brochures*

The Petitioners claimed that certain words and footnotes in the text of the brochure listing radio and TV stations should be graphically highlighted by larger lettering or underlining to emphasize those stations that have 24-hour operation. FEMA responded that the calendar was sufficiently informative in this area, as written, but noted that this was a matter the Licensees could consider for their next annual brochure.

The Licensees have responded that they will give further consideration to this recommendation in the preparation of their 1989 brochure. This issue is accordingly resolved.

5. *Whether There Is a Need for Battery-Powered Radios During Radiological Emergencies*

The Petitioners further contended that the brochures should better emphasize the need for battery-powered radios during radiological emergencies. While recognizing that there is no federal requirement for the use of such radios during radiological emergencies, FEMA noted that emphasis in the brochures on the potential usefulness of a well-maintained battery-powered radio (in the event of a power failure during an emergency) is something that the authors of future public information publications could consider.

In accordance with FEMA's recommendation, the Licensees have stated that the preparation of the 1989 brochure will include consideration of Petitioners' request regarding battery-powered radios. Accordingly, this issue is resolved.

6. *Whether the Brochures Should Be More Descriptive Concerning the Level of Radioactive Material Developed in the Production of Electricity and Its Possible Health Effects on People*

The Petitioners objected to a statement in the brochure that members of the public have not been injured by nuclear power, and they requested that a statement be substituted indicating that nuclear power is potentially extremely dangerous. FEMA has recommended that the Petitioners' suggestion can be considered by the Licensees during the next annual revision of the brochure. The Licensees have agreed, and this issue is accordingly resolved.

7. *Whether the Brochure Should Be Corrected and Improved Concerning Its Advice on Evacuation*

The Petitioners also complained about inadequate evacuation advice in the brochures. With regard to this advice, FEMA had two recommendations. First, it recommended that instructions be more consistent, since on page 6 of the 1988 brochure residents are instructed to leave when advised and proceed to a care center, whereas on page 7 residents are told that they can go to a place of their choice, e.g., a friend or relative or a care center. Second, FEMA recommended that the next annual update of the brochure include a statement that hospitals and nursing homes can be contacted to learn where patients can be picked up in the event they are evacuated from these facilities.

Because these are FEMA recommendations, rather than just suggestions, that are needed to adequately instruct the public about appropriate actions in the event of an evacuation, the Licensees will be advised to make these corrections in the next annual update of the brochure.

8. *Whether the Brochure Should Include Better Instructions on the Care of Farm Livestock During a Radiological Emergency*

The Petitioners also claimed that the section of the 1986 brochure on the care of livestock in an emergency was deficient. In its review of the 1988 brochure, FEMA noted numerous changes from the 1986 brochure that it believed should have eliminated most of the Petitioners' contentions regarding the livestock section. Although FEMA did not specify any remaining issues, it noted that the exact wording of this section can be addressed by the utility and appropriate state and local governments during the next annual revision.

Pursuant to FEMA's comments, the Licensees have stated that consideration will be given to FEMA's views in the preparation of the 1989 brochure. This issue is thus resolved.

9. *Whether the Fold-Out Map in the Brochure Is Too Cumbersome*

Petitioners claimed that the fold-out map attached to the brochure is too cumbersome. FEMA disagreed, and concluded that the size of the map is a matter of personal preference. However, FEMA suggested that this issue could be examined by the authors of the brochure for their next annual revision.

Based on FEMA's recognition that the size of the map is a matter of personal preference, this contention is not a regulatory concern. Nevertheless, the Licensees have agreed to consider this issue in their preparation of the 1989 brochure. This contention is therefore resolved.

10. *Whether the Brochure Should Better Describe the Amount of Radioactive Material Developed in the Production of Electricity and the Possible Health Effects on People Near the Perry Facility in the Event of an Accident*

The Petitioners requested that several sentences be deleted from the 1986 brochure which stated that nuclear plants have been making electricity for over 25 years with no member of the public having been injured. Although FEMA did not agree that this text should be deleted, it noted that the Licensees can consider, during the next annual revision of their brochure, whether portions of the brochure "should better describe the level of radioactive material in the environment which is developed during the production of electricity and the possible health effects on people near the Perry facility if there is an accident at the facility."

The Licensees have responded that consideration will be given to FEMA's views in their preparation of the 1989 brochure. On the basis of the Licensees' representation, this contention is resolved.

11. Whether the Brochure Contains Words or Statements That Tend to Minimize the Danger of Nuclear Power

The Petitioners recommended that the use of the word "unlikely" in a section of the 1986 brochure (in reference to the likelihood of an accident at the Perry facility) should be eliminated on the basis that it tends to minimize the need for emergency preparedness. This word was subsequently removed by the Licensees from the 1988 brochure. In response to the Petitioners' contention, FEMA acknowledged that the 1988 brochure no longer used this word, but also advised that "the rewrite of this section should address the concern of the 2.206 petition."

Based on the Licensees' deletion of the word "unlikely" and the fact that FEMA has put the Licensees on notice that consideration be given to the use of this type of language (i.e., words that tend to minimize the need for emergency preparedness) in the Licensees' next brochure, I conclude that this contention has been adequately resolved.

B. Contentions Based on Other Emergency Preparedness Recommendations Made by FEMA

1. Whether Emergency Planning for the Perry Nuclear Power Plant Should Be Revised to Ensure That Receiving Schools Are Not Located Close to the 10-Mile Emergency Planning Zone (EPZ)

The Petitioners contended that it is unsafe to allow receiving schools to be located close to the border of the 10-mile EPZ. FEMA's February 26, 1988 response expressed concern with the proximity of receiving schools to the EPZ boundary, and its April 19, 1988 response recommended that the State of Ohio, local jurisdictions, and the Licensees should reexamine, within 4 months, this question with a goal of either arriving at a schedule for implementing plan changes or adopting a position on the issue. Subsequent discussions between officials from FEMA, the Licensees, and the NRC established that FEMA's underlying concern regarding this issue was that schoolchildren might not be properly monitored and decontaminated under the existing receiving school arrangement.

To remedy the possible neglect of schoolchildren, the Licensees have committed to revising county plans to ensure that monitoring and decontaminating services will be performed in the event of a radiological emergency. In addition, emergency procedures will be revised to ensure that parents will be promptly advised at the time of an emergency of the whereabouts of their children.

FEMA officials have advised the NRC Staff that these actions by the Licensees have resolved FEMA's concerns regarding this contention. No further action by the NRC is thus warranted.

2. *Whether Lake and Ashtabula Counties Should Be Required to Install Emergency Information Signs*

FEMA also recommended that emergency information signs should be installed in Lake and Ashtabula Counties within 4 months or a schedule should be provided for their installation. In response to FEMA's concerns, in the spring of 1988 the Licensees posted public information signs in parks, campgrounds, beaches, and marinas in these counties. FEMA subsequently confirmed these postings through spot checks, and it has advised the NRC Staff that its concerns are now satisfied.

3. *Whether Transients in the Vicinity of the Perry Facility Are Being Furnished Adequate Emergency Preparedness Information*

The Petitioners contend that transients in the vicinity of the Perry facility would not have adequate information because decals that were to be posted at hotels, motels, gasoline stations, and telephone booths were not widely in evidence during an inspection they made of the area. In response, FEMA has stated that proprietors of these businesses are free to refuse to post these decals or make other materials available despite a good-faith effort on the part of the Licensees to get the decals posted. FEMA nevertheless encouraged officials from the Perry facility and Ashtabula, Geauga, and Lake Counties to continue efforts with these proprietors so that more of them will make this information available.

Based on a pledge by Licensees that they and local officials will continue their efforts in this area, I conclude that this contention is resolved.

4. *Whether Telephone Directories in the Vicinity of the Perry Facility Contain Adequate Emergency Preparedness Information*

The Petitioners have reported that emergency preparedness information was inadvertently omitted from one of the telephone directories in the Perry area. FEMA has responded that this problem has been remedied by a special mailing that furnished this missing information to directory holders in the spring of 1988. In addition, FEMA recommended that efforts be made to ensure that this problem does not happen in the future.

The Licensees have responded to FEMA's concerns by stating that their internal procedures have been formalized to ensure coordination with the various telephone companies so that emergency information for the Perry facility is not omitted. They also specifically report that the 1988-89 Ohio Bell directory for the Painesville area has been distributed and that it includes all pages of

emergency information. Based upon these representations, I find that this issue is resolved and no action is warranted by this office.

C. Contentions Based upon EPA Recommendations Concerning the Emergency Preparedness Brochures

The Petitioners further contended that the Perry emergency preparedness brochures encourage the public to become complacent about nuclear power by failing to properly distinguish between ionizing and nonionizing radiation. They claimed, in this regard, that the 1986 brochure inappropriately compares the radiation that can be emitted during an accident at a nuclear power plant, which would be a form of ionizing radiation, with nondangerous, nonionizing radiation such as heat, light, and radio waves. They also contended that the brochure falsely asserts that radiation doses less than 25 rem are harmless.

Because of EPA's expertise in the area of radiation and its health effects, these contentions were referred by FEMA to EPA for reply. EPA subsequently recommended certain revisions to the brochure (*see* Attachment to FEMA's February 26, 1988 Memorandum), but concluded that no immediate revisions were necessary since the present brochure would not have compromised implementation of emergency plans.

The EPA's recommendations have been fully addressed in my September 16, 1988 Partial Director's Decision (DD-88-15). (*See* Decision, 28 NRC at 407-08 & n.6.) Based upon my findings and directives in that decision, the Petitioners' radiation contentions have been resolved.

III. CONCLUSION

The Petitioners seek certain specified improvements in the emergency preparedness program for the Perry Nuclear Power Plant. For the above-discussed reasons, I find no substantial basis for requiring most of these actions. However, the Licensees will be advised that for their next public information publication they should make the clarifications discussed in item A.7, above. To the extent this relief grants some of the Petitioners' requests, the petition is granted.

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

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 29th day of November 1988.

Cite as 28 NRC 567 (1988) CLI-88-9

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman
Thomas M. Roberts
Kenneth M. Carr
Kenneth C. Rogers
James R. Curtiss

In the Matter of

Docket No. 50-322-OL-5
(EP Exercise)

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

December 1, 1988

The Commission determines that the circumstances surrounding litigation of emergency planning exercises in this case warrant its intervention to accelerate the proceeding on the 1988 exercise. Accordingly, the Commission establishes an expedited schedule for the conduct of the proceeding on the 1988 emergency planning exercise for Shoreham.

NRC: SUPERVISORY AUTHORITY

The Commission's inherent supervisory authority over the conduct of NRC adjudications gives it the authority to intervene in a proceeding at any time. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 516-17 (1977); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), CLI-86-7, 23 NRC 233 (1986).

EMERGENCY PLANNING: FEMA FINDING (REBUTTABLE PRESUMPTION)

Under NRC regulations, FEMA's findings on the adequacy and implementation capability of emergency plans are entitled to presumptive validity. 10 C.F.R. § 50.47(a)(2).

EMERGENCY PLANNING: EXERCISE HEARINGS (EXPEDITED PROCEDURES)

Where it has become apparent that the interplay of the Commission's exercise scheduling requirement and the need to offer an opportunity to contest the results of an exercise will bring about an endless loop of litigation, despite efforts to expedite the proceeding within the context of the Commission's usual Rule of Practice in Subpart G of 10 C.F.R. Part 2, the Commission finds it necessary to take more specific measures to accelerate the litigation.

EMERGENCY PLANNING: EXERCISE HEARINGS (EXPEDITED PROCEDURES)

In recognition of its obligation under the Administrative Procedure Act to decide cases within a reasonable time, and consistent with the suggestion in *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984) that expedited procedures would be appropriate for exercise hearings, the Commission in taking steps to accelerate the litigation surrounding the 1988 emergency planning exercise, directs an approach that preserves the parties' rights under the Atomic Energy Act and the Administrative Procedure Act but which bypasses aspects of the Commission's usual procedures in 10 C.F.R. Part 2, Subpart G, which can contribute significant delay to a proceeding.

ORDER

This Order addresses the future course of the proceeding on the 1988 emergency planning exercise for the Shoreham Nuclear Power Station.[1] Although the Commission has under review the OL-3 Board's dismissal of the Intervenors from the *Shoreham* proceeding in LBP-88-24, 28 NRC 311 (1988), the Commission believes that it is prudent to establish procedures and go forward with

[1] Although this Order is issued under the OL-5 Docket and directed to that Presiding Board, we have not yet completed our action on petitions for review of ALAB 901, 28 NRC 302 (1988). This Order does not prejudice our review of that decision which we expect to complete expeditiously.

any necessary proceedings on the 1988 exercise, at least pending the Commission's decision on its review of LBP-88-24. For the reasons set forth below, the Commission has determined that the circumstances surrounding litigation of emergency planning exercises in this case warrant Commission intervention to establish expedited procedures for the conduct of the proceeding. This action is taken under the Commission's inherent supervisory authority over the conduct of adjudicatory proceedings. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 516-17 (1977); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), CLI-86-7, 23 NRC 233 (1986).

On February 13, 1986, the Federal Emergency Management Agency ("FEMA") conducted an exercise to test LILCO offsite emergency plans for Shoreham. In response to motions filed by Suffolk County, New York State, and the Town of Southampton ("Intervenors") requesting Commission direction on the parties' procedural responsibilities concerning any hearings on that exercise, the Commission on June 6, 1986, 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. We also directed the Board appointed to conduct the exercise proceeding to "expedite the hearing to the maximum extent consistent with fairness to the parties." *Id.* at 582.

Notwithstanding that direction from the Commission, and the efforts by the Licensing Board to carry it out, litigation of the 1986 Shoreham exercise through the first level of administrative hearings consumed nearly 2 years. Although contentions were filed on August 1, 1986, rulings on contentions did not conclude until December 11, 1986. Following several months of discovery, the hearings began on March 10, 1987, and concluded on June 18, 1987. The Licensing Board issued a Partial Initial Decision on December 7, 1987, LBP-87-32, 26 NRC 479, concluding that the scope of the February 13, 1986 exercise of the offsite emergency plan was insufficient to comply with NRC's emergency planning requirements. On February 1, 1988, the Board issued its Initial Decision, LBP-88-2, 27 NRC 85, finding that the 1986 exercise demonstrated fundamental flaws in the emergency plan. Before briefing on LILCO's appeal from that decision was even complete, the 2-year window for a prelicense exercise required by 10 C.F.R. Part 50, Appendix E, § IV.F.1, had expired. Various appeals and petitions relating to the litigation of the 1986 exercise are still pending.

Another emergency planning exercise was scheduled and conducted on June 7-9, 1988. FEMA issued its Post-Exercise Assessment of the June 7-9, 1988 exercise on September 2, 1988. In ALAB-901, *supra* note 1, the Atomic Safety and Licensing Appeal Board remanded litigation of issues associated with the 1988 exercise to the OL-5 Licensing Board for disposition as expeditiously as

possible, consistent with fairness to all the parties. On September 22, 1988, the OL-5 Licensing Board issued an order scheduling further proceedings on the 1988 exercise. Intervenors filed about 100 pages of contentions on October 21, 1988. Applicant and NRC Staff duly responded.

We now face the real prospect of another round of litigation on a prelicensing exercise with the potential for consuming as much time as the earlier round, despite efforts to expedite the proceeding within the context of the Commission's usual Rule of Practice in Subpart G of 10 C.F.R. Part 2. It has become apparent that if we are to avoid an endless loop of litigation brought about by the interplay of our exercise scheduling requirement and the need to offer an opportunity to contest the results of the exercise, more specific measures must be taken to accelerate this litigation. Accordingly, to fulfill our obligation under the Administrative Procedure Act to decide cases within a reasonable time, and consistent with the suggestion in *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), that expedited procedures would be appropriate for exercise hearings, we are directing an approach that preserves the parties' rights under the Atomic Energy Act and the Administrative Procedure Act but which bypasses aspects of our usual procedures in 10 C.F.R. Part 2, Subpart G, which can contribute significant delay to a proceeding. The procedures set forth below reflect our consideration of several important facts in this case: (1) the real prospect of literally endless litigation noted above; (2) the extensive involvement of the Intervenors as observers during the 1988 exercise which must have given them substantial knowledge of the activities that took place[2]; and (3) FEMA's detailed findings on the results of the 1988 exercise, described in the September 2, 1988 Post-Exercise Assessment, have been available to the parties now for about 2 months. Under our regulations these findings are entitled to presumptive validity. 10 C.F.R. § 50.47(a)(2).

In consideration of the above, the following schedule for the proceedings on the 1988 exercise is established:

1. The Licensing Board shall rule expeditiously on contentions filed in the proceeding. No requests to reconsider the Board's ruling on contentions shall be entertained. The Board, however, retains the authority to reconsider its ruling *sua sponte*.
2. There shall be no formal discovery, whether by deposition, document production, or otherwise. However, voluntary discovery among the parties is encouraged.

[2] *See* exchange of correspondence concerning arrangements for representatives of the Intervenors to monitor the 1988 exercise, *e.g.*, Letters dated May 31, 1988, and June 3, 1988, from Michael S. Miller on behalf of the Governments to Donald F. Irwin, Counsel for LILCO; Letter dated June 2, 1988, from Lawrence Coe Lanpher on behalf of the Governments to William R. Cumming, Associate General Counsel for FEMA. The detail in many of the 100 or so pages of contentions also confirms Intervenors' extensive knowledge of the exercise.

3. Within 30 days of the date of the Board's Order on contentions, the proponents of admitted contentions shall file and serve testimony in support of their contentions. There will be no motions for summary disposition, but any contentions for which testimony is not filed will be considered in default by virtue of the presumption of 10 C.F.R. § 50.47(a)(2).
4. Within 20 days of the service of testimony in support of contentions, LILCO may file and serve rebuttal testimony.
5. Within 25 days of the service of testimony in support of contentions, the NRC Staff may file and serve rebuttal testimony on any of the contentions. At a minimum, the Staff shall sponsor into evidence relevant portions of the FEMA report.
6. Within 7 days after the last testimony is filed, the Licensing Board will hold a prehearing conference to consider the matters specified in 10 C.F.R. § 2.752 and set the order for conduct of the hearing. The Board at this time should also entertain and hear argument on oral motions, if any, to strike irrelevant, immaterial, repetitive, or cumulative testimony. Rulings on such motions shall be made within 7 days of the conclusion of the argument.
7. Within 14 days after conclusion of the prehearing conference, the evidentiary hearing will begin.
8. Within 21 days of the start of the hearing, the hearing will end.
9. Within 20 days after the conclusion of the hearing, the parties will file and serve any proposed findings of fact and conclusions of law. Failure to file a proposed finding on a contention admitted for litigation will result in default on that contention. Reply to proposed findings may be filed within 10 days after service of proposed findings, if a party so desires.
10. While the proponent of a contention has the burden of going forward with evidence in support of that contention sufficient to rebut the presumption created by the FEMA findings on the June 1988 emergency exercise, once that burden is met LILCO bears the ultimate burden of persuasion.
11. Service shall be by hand delivery or express mail.
12. All provisions of 10 C.F.R. Part 2 remain applicable in accordance with their terms except to the extent they are inconsistent with this Order.

Any aspect of these procedures may be changed and the schedule extended if the parties unanimously agree and the Board approves. Moreover, the Board retains the authority to extend or reduce any of the time periods if this becomes essential for the conduct of a fair hearing; provided however, that the Commission shall be notified of any schedule extensions of more than 15 days.

The parties are encouraged to negotiate informally to reduce the actual number of issues that need to be litigated during the hearing.

Commissioner Curtiss did not participate in this matter.

It is so ORDERED.

For the Commission*

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 1st day of December 1988.

*Commissioner Curtiss was not present during the Affirmation of this Order.

Cite as 28 NRC 573 (1988) CLI-88-10

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman
Thomas M. Roberts
Kenneth M. Carr
Kenneth C. Rogers
James R. Curtiss

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)

December 21, 1988

The Commission determines that reasonable assurance that $72.1 million are available for decommissioning must be provided before licensing for low-power testing and specifies acceptable means to provide such assurance. The Commission denies petitions to waive its 1984 financial qualifications rule so as to require a financial qualifications review and finding before low power, since, with decommissioning expenses reasonably assured, there remain no significant financial safety problems to address. The Commission holds that a low-power testing license, restricted to specified power levels and duration, may be issued after Applicants have satisfied Staff that all decommissioning terms of this Decision have been met and any pending motion to litigate onsite emergency planning issues has been resolved.

ATOMIC ENERGY ACT: SCOPE OF INFORMATION REQUESTED FOR LICENSING (FINANCIAL QUALIFICATIONS)

FINANCIAL QUALIFICATIONS: APPLICABLE STANDARD

LOW-POWER LICENSE: STANDARD FOR ISSUANCE

FINANCIAL ISSUE: FUNDING FUTURE COSTS

OPERATING LICENSE(S): LOW-POWER LICENSE (PREREQUISITE FINDINGS); DECOMMISSIONING (FUNDING)

Reasonable assurance that funds are available for decommissioning must be provided for a sum of $72.1 million before licensing for low-power testing. Assurance in the form of a prepaid external account, surety, or other guarantee method would be acceptable. Also acceptable here is Applicants' proffered plan to fund, before receipt of a low-power license, a separate and segregated account held by its disbursing agent, provided that applicants comply with certain specified additional conditions.

EMERGENCY PLAN(S): LOW-POWER LICENSE (STANDARD FOR ISSUANCE)

FINANCIAL QUALIFICATIONS: APPLICABLE STANDARD

OPERATING LICENSE(S): DECOMMISSIONING (FUNDING); LOW-POWER LICENSE (PREREQUISITE FINDINGS)

With decommissioning expenses reasonably assured, there were no remaining significant financial safety problems that needed a rule waiver to be resolved. Thus, a waiver of the 1984 financial qualifications rule so as to require a financial qualifications review and finding before low power was unnecessary.

EMERGENCY PLANNING: CONTENTIONS (OPPORTUNITY TO LITIGATE)

OPERATING LICENSE(S): DECOMMISSIONING (FUNDING); LOW-POWER LICENSE (PREREQUISITE FINDINGS)

A low-power license can be issued after the Applicants have satisfied Staff that all decommissioning terms of this Decision have been met, subject to the following qualifications: (1) the license should be conditioned to allow Seabrook Unit 1 to operate at power levels not in excess of 5% and should permit no more than 0.75 effective full-power hours of such operation without additional Commission approval; (2) before a low-power license could be issued,

the Licensing Board must have resolved the pending motion to litigate additional onsite emergency planning issues and any litigation before it on such additional onsite issues; and (3) to accommodate any party that might wish to seek a stay, a low-power license could not issue until 10 days after notice by Staff that the decommissioning funding terms of this Decision had been satisfied or issuance of the Licensing Board decision disposing of additional onsite emergency planning issues, whichever should later occur.

FINANCIAL QUALIFICATIONS: PUBLIC HEALTH AND SAFETY CONCERNS

OPERATING LICENSE(S): DECOMMISSIONING (FUNDING); HEALTH AND SAFETY REGULATIONS (LOW POWER); LOW-POWER LICENSE (PREREQUISITE FINDINGS)

The decommissioning rule does not apply here. The hypothesized circumstances — low-power testing not followed by commercial operation — were not considered or contemplated in the decommissioning rulemaking. Notwithstanding, the Commission recognized and affirmed that the safety concern underlying the rule that there be adequate funds available for safe and timely decommissioning was fully applicable to this case.

ATOMIC ENERGY ACT: SCOPE OF INFORMATION REQUESTED (FINANCIAL AND TECHNICAL QUALIFICATIONS)

FINANCIAL QUALIFICATIONS: APPLICABLE STANDARDS

OPERATING LICENSE(S): DECOMMISSIONING (FUNDING); DISPOSAL OF SPENT FUEL; LOW-POWER LICENSE (PREREQUISITE FINDINGS)

The Commission had not determined that decommissioning would be required after low power but simply that in these unique circumstances *financial* protections should be in place to provide reasonable assurance of the availability of funds should commercial operation not occur. Thus the Commission did not require the details of the low-level waste disposal sites and disposal fees so long as the proposed plan contains reasonable cost estimates for these matters.

ATOMIC ENERGY ACT: LICENSING STANDARDS

OPERATING LICENSE(S): DECOMMISSIONING (FUNDING); LOW-POWER LICENSE (PREREQUISITE FINDINGS)

The plan for decommissioning Seabrook after low power need not be a final plan. Nonetheless, the plan must contain the essential elements sufficient to ensure that a reasonable estimate of decommissioning costs could be made.

ATOMIC ENERGY ACT: LICENSING STANDARDS

OPERATING LICENSE(S): DISPOSAL OF SPENT FUEL

Applicants' plan to ship spent fuel abroad for reprocessing was speculative and therefore not a reasonable basis for cost estimation.

ATOMIC ENERGY ACT: WASTE DISPOSAL

NUCLEAR WASTE POLICY ACT: FUNDING FOR DISPOSAL OF SPENT FUEL

OPERATING LICENSE(S): DISPOSAL OF SPENT FUEL

Since the record contained no estimate of when a disposal site would be available, and since the Commission's Waste Confidence Decision estimated that a repository would be available for waste emplacement during the period 2007-2026, a reasonable estimate of when the repository could accept Seabrook spent fuel would be in the mid-range of these dates.

APPEAL BOARD(S): STANDARD OF REVIEW

OPERATING LICENSE PROCEEDINGS: FINANCIAL QUALIFICATIONS

RULES OF PRACTICE: WAIVER OF RULES OR REGULATIONS

The Commission held that ALAB-895, 28 NRC 7 (1988), was clearly correct that a showing that a rate commission would not allow rate recovery of the cost of operation cannot be the only permissible ground for waiver of the 1984 financial qualifications rule.

APPEAL BOARD(S): STANDARD OF REVIEW

RULES OF PRACTICE: WAIVER OF RULES OR REGULATIONS

Special circumstances are present only if the petition properly pleads one or more facts, not common to a large class of applicants or facilities, that were not considered either explicitly or by necessary implication in the proceeding leading to the rule sought to be waived. Only with such a construction of the terms "special circumstances" is there assurance that safety matters will not be ignored. Safety matters will be examined either by rulemaking or in licensing adjudication, at least for the purpose of determining their materiality and threshold safety significance.

RULES OF PRACTICE: WAIVER OF RULES OR REGULATIONS

A rule waiver petition under 10 C.F.R. § 2.758 ought not to be certified unless the petition and other allowed papers indicate that a waiver is necessary to address, on the merits, a significant safety problem related to the rule sought to be waived. It would not be consistent with the Commission's statutorily mandated responsibilities to spend time and resources on matters that are of no substantive regulatory significance.

RULES OF PRACTICE: WAIVER OF RULES OR REGULATIONS

FINANCIAL QUALIFICATIONS: APPLICABLE STANDARDS; PUBLIC HEALTH AND SAFETY CONCERNS

OPERATING LICENSE(S): HEALTH AND SAFETY REGULATIONS (LOW POWER)

The PSNH bankruptcy, anti-CWIP statute, and delay or cessation of project payments by minority owners all present special circumstances, not considered when the 1984 waiver rule was adopted, and these circumstances, at least considered together, undercut the rationale of the 1984 rule. However, no significant safety problem was posed that needed a waiver to address the problem on its merits.

FINANCIAL QUALIFICATIONS: APPLICABLE STANDARD; PUBLIC HEALTH AND SAFETY CONCERNS

OPERATING LICENSE HEARING: ISSUES FOR CONSIDERATION (FINANCIAL QUALIFICATIONS)

The reason for conducting a financial qualifications review and requiring a finding of financial qualification was *solely* to provide some added assurance that a licensee would not, because of financial difficulties, be under pressure to take some safety shortcuts.

NUCLEAR WASTE POLICY ACT: FUNDING FOR DISPOSAL OF SPENT FUEL

OPERATING LICENSE(S): DECOMMISSIONING (FUNDING); DISPOSAL OF SPENT FUEL

The decommissioning rule excluded spent fuel costs from decommissioning expenses and classified them as operating expenses not because of a lack of safety significance but in reliance on fees and funding for spent fuel disposal required under the Nuclear Waste Policy Act of 1982.

NUCLEAR WASTE POLICY ACT: FUNDING FOR DISPOSAL OF SPENT FUEL

OPERATING LICENSE(S): DECOMMISSIONING (FUNDING); DISPOSAL OF SPENT FUEL

An evaluation of Applicants' plan can only fall back on the assumption that underlies the decommissioning rule that spent fuel will be stored on site until it can be shipped to a repository for disposal.

OPERATING LICENSE(S): DECOMMISSIONING (FUNDING)

There is no disagreement that the duration of operations significantly affects the extent of irradiation and thus decommissioning costs.

OPERATING LICENSE(S): DECOMMISSIONING (FUNDING)

It would be unduly onerous to require a totally prepaid external account beyond Applicants' control at this stage for so large a sum. Indeed, no similar requirement has been placed on any other licensee, and there are other means to provide reasonable assurance in the unique circumstances of this case.

ATOMIC ENERGY ACT: GRANDFATHERING CLAUSE

LICENSING DECISIONS: SCOPE

OPERATING LICENSE(S): LOW-POWER LICENSE (FUEL LOADING AND PRECRITICALITY TESTING)

REGULATIONS: INTERPRETATION

The Commission does not reach the question whether the rationale for the rule's "grandfathering" of holders of a license in 10 C.F.R. § 50.33(k)(2) would apply to the license to load fuel.

DECISION

I. SUMMARY

The Commission decides today all of the pending financial qualification questions that have been brought for its consideration in *Seabrook*. These questions have included matters of first impression presented in unprecedented factual circumstances. The Commission's lengthy deliberations have led it to a clear course that protects the health and safety of the public and allows this complicated litigation over financial qualifications for low-power testing to come to a close.

The Commission has determined, as will be explained more fully below, that reasonable assurance that funds are available for decommissioning must be provided for a sum of $72.1 million before licensing for low-power testing. Financial assurance for this amount in the form of a prepaid external account, surety, or other guarantee method would be acceptable. But, for reasons that are detailed below, the Commission will also accept Applicants' proffered plan to fund, before receipt of a license for low-power testing, a separate and segregated account held by its Disbursing Agent provided that the amount shall be $72.1 million rather than the $21.1 million suggested by Applicants, and provided further that no fewer than two of the Applicants, whose financial health has not here been called in question and who own substantial shares of Seabrook, shall each jointly and severally guarantee to make up any deficiency in the fund caused by disbursements for a nondecommissioning expense.

The Commission also has before it petitions to waive the Commission's 1984 financial qualifications rule so as to require a financial qualifications review and finding before low power. The Commission finds that with decommissioning expenses reasonably assured, as specified above, there are no remaining significant financial safety problems that need to be addressed. Since a rule waiver

is not needed to resolve any significant safety problem, the waiver petitions are denied.

A low-power testing license may be issued by the Director of the Office of Nuclear Reactor Regulation after the Applicants have satisfied Staff that all the decommissioning terms of this Decision are met, subject to the following qualifications. The license shall be conditioned to allow Seabrook Unit 1 to operate at power levels not in excess of 5% and shall permit no more than 0.75 effective full-power hours of such operation without additional Commission approval. In addition, before a low-power license may be issued, the Licensing Board must have resolved the pending motion to litigate additional onsite emergency planning issues and any litigation before it on such additional onsite issues. Finally, to accommodate any party that might wish to seek a stay, a low-power license may not issue until 10 days after notice by Staff to the Commission that the decommissioning funding terms of this Decision have been satisfied or issuance of the Licensing Board decision disposing of additional onsite emergency planning issues, whichever event shall later occur, but in any event not before January 6, 1989. Any motions for a stay or other relief from this order shall be brought to the Commission itself.

II. THE DECOMMISSIONING DECISION

A. Background

In ALAB-895, 28 NRC 7 (1988), the Appeal Board certified to the Commission a petition for waiver of the Commission's financial qualifications rules so as to require a review and finding whether the Applicants for a license to operate Seabrook Station (Applicants) are financially qualified to operate at low power. While the certification was pending, the Commission's final decommissioning rule became effective on July 27, 1988.[1] That rule established a regulatory framework for the purpose of establishing reasonable assurance that, at the time of termination of reactor operations, adequate funds would be available for safe and timely decommissioning. In light of the rule and the potential significance of the decommissioning financial assurance question, the Commission decided *sua sponte* to give initial consideration to the decommissioning issue and so advised the parties by order of September 22, 1988. CLI-88-7, 28 NRC 271 (1988).

[1] 53 Fed. Reg. 24,018 (June 27, 1988).

B. The Requirements Established by CLI-88-7

In CLI-88-7 the Commission stated its belief that the reasoning of the decommissioning rule

> when applied to the unique and unusual circumstances of this case, requires that before low power may be authorized, Applicants provide reasonable assurance that adequate funds will be available so that safe decommissioning will be reasonably assured in the event that low-power operation has occurred and a full-power license is not granted for Seabrook Unit 1.

28 NRC at 273. In that light, the Commission required Applicants to provide the basis on which a finding of such assurance might be made. Specifically, Applicants were to provide adequate documentation of their funding plan and appropriate commitments under that plan to support such a finding. The Commission also noted that the Seabrook record is closed for the consideration of new issues, but offered the parties an opportunity to move for reopening and to submit new contentions, and offered a subsequent opportunity for parties to file oppositions to such motions. The Commission said that it intended to resolve the matter on an expedited basis.

C. Responses to CLI-88-7

1. The Applicants' Submittal

Under cover letter dated October 20, 1988, the Applicants provided a notebook entitled "The Plan in Response to NRC Order CLI-88-7" (the Plan). The Plan contains Applicants' analysis of the steps necessary to decommission Seabrook in the event low-power testing has occurred and a full-power license is not granted (hereafter "the hypothesized circumstances"). The cover letter[2] summarizes the analysis, concludes that the necessary sum is $21.1 million, and provides the Applicants' discussion of its plan to fund decommissioning. No separate evidence of commitments under that plan was filed. However, the Applicants acknowledged their decommissioning responsibility, specifically stating that the joint owners were *severally* liable for decommissioning expenses under the joint owners agreement. The Applicants also told the Commission that they had voted to establish a separate and segregated "Pre-operation Decommissioning Account" in the control of a Disbursing Agent for the sole purpose of defraying expenditures incurred in implementing the plan and to fund

[2] Letter from Edward A. Brown, President and Chief Executive Officer of Public Service Company of New Hampshire (PSNH) to NRC, October 20, 1988, at 5 (hereafter October 20 Letter). PSNH is the lead applicant in this licensing proceeding.

that account promptly on issuance of a Commission order requiring them to do so. October 20 Letter at 7-10.

The Applicants' breakdown of the costs (in millions) includes:

Staff Operating and Decontamination Expense	$9.99
Dismantlement, Packaging, Shipment, and Disposal of Reactor Vessel and Internals	$4.79
NRC Fees and Insurance	$4.96
Contingency	$1.36
TOTAL	$21.10

Id. at 5.

Certain assumptions by the Applicants are key to the $21 million figure. We note particularly two assumptions: (1) that total low-power testing will be the equivalent of 0.75 of 1 effective full-power hour and (2) that the cost of spent fuel shipping, reprocessing, and disposal of any associated high-level waste was not required to be included. It is to be noted, however, that shipment to Europe for reprocessing was included in the plan and provides the basis for certain conclusions of the plan.

2. *Positions of the Parties*

a. Intervenors

On November 2, 1988, the Massachusetts Attorney General (MassAG), the New England Coalition on Nuclear Pollution (NECNP), the Seacoast Anti-Pollution League (SAPL), and the Town of Hampton (TOH) separately moved for reopening and admission of contentions related to decommissioning. MassAG also moved to reopen on financial qualifications and to admit a contention related to availability of funds to meet costs of spent fuel disposal. The titles of the motions are set forth in the margin.[3]

[3] Motion of Massachusetts Attorney General James M. Shannon Under 10 C.F.R. § 2.734 to Reopen the Record to Consider Evidence Concerning the Joint Applicants' Decommissioning Plan for the Seabrook Nuclear Power Station and to Admit the Attached Late Filed Contentions Concerning Said Decommissioning Plan, incorporating by reference MassAG's Petition under § 2.758 for a Waiver or an Exception from the Public Utility Exemption from the Requirement of a Demonstration of Financial Qualification. Town of Hampton Motion to Admit Late-Filed Contention and Reopen the Record on Applicants' Financial Qualification to Decommission Seabrook Station; New England Coalition on Nuclear Pollution's Contentions on Applicants' Decommissioning Plan, Motion for Stay of Low Power Operation, and Motion to Reopen the Record; and Seacoast Anti-Pollution League's Contentions on Applicants' Plan in Response to NRC Order CLI-88-7.

Each of the four Intervenors dispute that $21 million is a sufficient sum and argue some or all of the following: that it is deficient because Applicants have not complied with the provisions of the decommissioning rule; it fails to include adequate sums to cover the costs of low-level waste, spent fuel storage, spent fuel disposal, and other contingencies; and it is inadequate because the Applicants have not reasonably evaluated the decommissioning tasks to be completed and have relied on unrealistic assumptions. Moreover, they assert that the assurance of funding is inadequate because the assurances provided are speculative in nature and rely on good-faith promises and internal funds contrary to the Commission's decommissioning rule. However, in the main, the Intervenors rely on legal argument and argument based on undisputed facts, such as Public Service Company of New Hampshire's (PSNH's) bankruptcy. Very little by way of expert testimony was offered to refute Applicants' plan.

b. Applicants and Staff

The Applicants and Staff each filed in opposition to all of the Intervenors' motions.[4] Applicants' short answer was that even assuming the contentions had merit, and that the Applicants were short of funds to decommission the facility after low-power testing, there will not be any present threat to the health and safety of the public. They concluded that the motions could not therefore present a significant safety question and that all of them must fail for noncompliance with 10 C.F.R. § 2.734. Applicants' Response at 8. Applicants also ascribed to Intervenors a fundamental misunderstanding that the Commission wanted from them at this time a final decommissioning plan under the decommissioning rule, 10 C.F.R. § 50.82.

The Staff also maintained that Intervenors erred in relying on the rule, but unlike Applicants the Staff chose to address the merits of the plan by affidavits that supported the Applicants' $21 million figure. However, unlike Applicants, Staff suggested that the irradiated fuel (spent fuel) would not be reprocessed in Europe but rather could be sold to another domestic utility for use in a commercial nuclear power reactor.

[4] Applicants' Response to Motions to Reopen the Record to Consider Financial Qualification Issues Prior to Permitting Low Power Operations, Nov. 14, 1988 (Applicants' Response); NRC Staff Response to Intervenors' Motions to Reopen Record and Admit Late-Filed Decommissioning Contentions, Nov. 16, 1988 (Staff's Response).

c. *Other Papers*

Additional papers not directly authorized by the Commission have also been filed.[5] The Commission has considered all of these papers. In particular, the motion to accept the reply of the MassAG with accompanying affidavits is granted in light of the Staff's response which supports the Applicants on bases other than those put forward by the Applicants.

D. Applicability of the Decommissioning Rule

Intervenors, other than SAPL, argue or assume that the decommissioning rule is applicable and defines the terms of the Commission's order. SAPL, on the other hand, reads CLI-88-7 as creating a decommissioning funding requirement outside the context of the decommissioning rule, although SAPL finds that the rule provides requirements that are "generally applicable to a decommissioning plan" and at least one rule provision that by its terms would be inapplicable.

Both Applicants and Staff argue that the decommissioning rule is not applicable. Applicants argue that the decommissioning rule is applicable only to decommissioning in the context of an assumed period of routine full-power operation. Staff's position is that Applicants are already holders of a license and therefore are not required to file anything under the rule until July 26, 1990, and that the Commission therefore could not have intended that Applicants meet the rule requirements now. *See* 10 C.F.R. § 50.33(k)(2).

We agree with Applicants and Staff that the decommissioning rule does not apply here, although for somewhat different reasons. The decommissioning rule was issued to ensure that at the conclusion of the lengthy period in which reactors would be in commercial operation there would be funds available for safe and timely decommissioning. The hypothesized circumstances addressed in CLI-88-7 — low-power testing not followed by commercial operation — were not considered or contemplated in the decommissioning rulemaking. Thus the rule does not directly apply to the Commission's requirements in CLI-88-7.

The Commission considered and created an exception from the rule for shutdown reactors while declining to except research reactors. *See* 53 Fed. Reg. at 24,027, 24,021 (June 27, 1988). And the Commission also specifically noted the

[5] They include Applicants' Statement as to Status of Record as to PSNH Bankruptcy, November 14, 1988; Applicants' Advice to the Commission, November 16, 1988; Motion of Massachusetts Attorney General James M. Shannon for Leave to File a Document Not Authorized by the Commission's Rules of Practice, November 25, 1988, and Reply of Massachusetts Attorney General James M. Shannon to the Filings of the Staff and the Joint Applicants in Response to his November 2, 1988 Motions Under 10 C.F.R. § 2.734 to Reopen the Record, November 25, 1988; Applicants' Response to Motion of Massachusetts Attorney General James M. Shannon for Leave to File a Document Not Authorized by the Commission's Rules of Practice, December 1, 1988; NRC Staff Response to Massachusetts Attorney General's Request for Leave to File Reply to Responses of Applicants and NRC Staff, Dec. 1, 1988; and Intervenor's Advice to the Commission, Dec. 14, 1988.

financial difficulties of PSNH in its rule preamble and in that aspect contemplated PSNH's current financial difficulties. *Id.* at 24,032. But these considerations do not require construction of the rule so as to apply to the circumstances of this case. An examination of the rule reveals that it does not "fit" the hypothesized circumstances. First, the rule contemplated a step-by-step decommissioning funding assurance process over a long period of time with an initial certification of funding, periodic updates, a preliminary decommissioning plan at or about 5 years before projected end of operations, and a decommissioning plan submitted as part of the application for licensing termination. Here the hypothesized circumstances primarily present only a short-term problem, where the end of plant life is hypothesized to be only months after the initiation of operations. Next, the rule's formula which establishes the minimum sum required to be reasonably assured before operation includes an adjustment factor for reactor power level that is based on a substantial period of operation at full power. The minimum amount specified in the formula has no technical relevance to a very limited low-power testing. It is also significant that the rule permits accumulation of the required minimum sum over a lengthy period, and that provision has no relevance here. Thus the Commission concludes that the rule cannot reasonably be construed to apply to the hypothesized circumstances here. However, before full-power commercial operation, Applicants are expected to comply with applicable provisions of the rule.[6]

Notwithstanding its conclusion that the rule does not apply here, the Commission recognizes and affirms that the safety concern underlying the rule that there be adequate funds available for safe and timely decommissioning is fully applicable to this case. This concern was the impetus for the order in CLI-88-7.

E. Scope of the Plan

Intervenors claim that the plan for decommissioning is inadequate because it fails to include the designation of the waste disposal sites and disposal fees,[7] comparisons of other decommissioning cost estimates,[8] and specifics of the transportation, storage, and final dispositions of spent fuel,[9] such as would be submitted in a final decommissioning plan.

---

[6] The Staff takes the view that holders of a license to load fuel should be considered licensees for the purposes of the decommissioning rule requirements. On the other hand, even if they receive a low-power license, Applicants will still be "Applicants" for a full-power license. The Commission does not reach the question whether the rationale for the rule's "grandfathering" of holders of a license in 10 C.F.R § 50.33(k)(2) would apply to the license to load fuel.

[7] *See, e.g.*, NECNP Motion at 6, Contention 1, Basis b; TOH Motion at 2, Contention P-1, Basis A.

[8] *E.g*, MassAG Motion and Attachment — Contention 1, Basis d.

[9] *E.g.*, SAPL Motion at 9, Contention DC-1, Basis 2.

The Commission's order in CLI-88-7 did not require a *final* decommissioning plan. The Commission has not determined that decommissioning will be required after low power but simply that in these unique circumstances *financial* protections should be in place to provide reasonable assurance of the availability of funds should commercial operation not occur. In that light the Commission did not require or expect that the analysis of the costs of decommissioning would include precise information of the kind that Intervenors seek. The Commission expected approximate estimates of costs so that a reasonable minimum sum could be determined and then adequate assurance provided for its availability.

Thus the Commission does not require the details of the low-level waste disposal sites and disposal fees so long as the plan contains reasonable cost estimates for these matters. Applicants have estimated these costs and included them in their calculations. No contrary evidence has been offered. Richard I. Smith, of Battelle Laboratories, has in a sworn letter provided by Staff demonstrated that Applicants' low-level waste disposal cost estimate of $90 per cubic foot significantly exceeds his own estimate of approximately $60 per cubic foot based on disposal at Barnwell.[10]

Nor has the Commission required comparative decommissioning cost studies as a proof of reasonableness. The only requirement subsumed in the Commission's request is that the Applicants' estimate be a reasonable one.

However, the Commission agrees with Intervenors that reasonable estimates of the costs of spent fuel disposal are required under CLI-88-7. Nowhere in the decommissioning rule or its preamble is there a suggestion that adequate funding for spent fuel disposal is not a safety issue, and 10 C.F.R. § 50.54(bb) suggests to the contrary. The decommissioning rule excluded spent fuel costs from decommissioning expenses and classified them as operating expenses not because of a lack of safety significance but in reliance on fees and funding for spent fuel disposal required under the Nuclear Waste Policy Act of 1982. It is unclear how Applicants' plan relates to the provisions of that Act, perhaps because of the stated plans to ship the spent fuel abroad.[11]

---

[10] Suggestions that the Applicants need at this stage calculate availabilities of disposal capacity under limitations imposed by § 5 of the Low-Level Radioactive Waste Policy Act are also off the mark. That section *permits* but does not *require* disposal sites to impose limits; moreover, there is transferability of available capacity. Absent any *evidence* that waste disposal is unavailable the Commission need not embark on speculation of this nature.

[11] Under § 302(b) of that Act, no license for "use" of a nuclear power reactor may be issued unless the Applicants have concluded an agreement with the Secretary of Energy or the Secretary notifies the NRC that good-faith negotiations are in progress. *See also* 49 Fed. Reg. 34,688 (1984) (any new reactor operating license will require that the licensee have a contract in place with DOE for disposal of all spent fuel generated). This record does not reflect such an agreement or letter.

F. Insufficiencies in Applicants' Plan

The Commission has found that the plan for decommissioning need not be a final plan. Nonetheless, as Applicants recognize, the plan must contain essential elements sufficient to ensure that a reasonable estimate of decommissioning costs can be made. In addition to the scope questions discussed above, issues have also been raised with respect to the reasonableness of the assumed plan for disposal of spent fuel and also the duration of low-power testing or, stated somewhat differently, the extent of irradiation.

1. The Plan for Spent Fuel

The Commission finds that Applicants' plan to ship spent fuel abroad for reprocessing is speculative and therefore not a reasonable basis for cost estimation. The Commission agrees with Intervenors that the problems with this approach are many and significant, not the least of which is the possible return of the reprocessing products to the United States and perhaps the Seabrook site.

The Staff has virtually ignored Applicants' plan in this regard and has itself urged Commission approval on the basis of a plan whereby fuel would be sold to another domestic power reactor operator. Staff says this plan would be "[a] less expensive and *more likely* alternative."[12] But Staff does not specifically say that sale is reasonably likely, and Applicants say only that the Staff proposal is "feasible" and have not adopted it.[13] In any event, Intervenors have provided some evidence of various factors that would make such a sale unlikely and note that such a sale of already irradiated fuel for reuse in another domestic reactor has never occurred.[14]

In these circumstances the Commission believes that the record before it will not clearly support either shipment abroad or domestic sale.[15] Given this, an evaluation of Applicants' plan can only fall back on the assumption that underlies the decommissioning rule that spent fuel will be stored on site until it can be shipped to a repository for disposal. Table 2 of § 3 of the plan shows that costs associated with storing fuel on site after completion of decontamination and removal of the reactor vessel and associated equipment are approximately $110,000 per month, not including contingency. No evidence was offered to

---

[12] Staff Response, Affidavit of James C. Petersen, Peter B. Erickson, and Laurence L Kopp in Response to Joint Intervenors' Decommissioning Contentions at 4).

[13] Staff alludes to a statement in an October 28 letter from Edward A. Brown as a "supplement" to the plan. Were it such and had Applicants intended it as such, simple fairness would have required so stating and an allowance for Intervenors to respond.

[14] *See* MassAG November 25 Response, Affidavit of Peter M. Strauss at 2-3. *See also* Letter of R. Harrison, then President of PSNH, dated September 3, 1987, there cited.

[15] The Commission might have reached a different conclusion had Applicants submitted an affidavit from some other utility that it would take the irradiated fuel.

dispute this estimate and thus we accept it. The record contains no estimate of when a disposal site will be available. However, the Commission's Waste Confidence Decision, reached after a lengthy proceeding entailing a public hearing, estimated that a repository will be available for waste emplacement during the period 2007-2026. *See* 49 Fed. Reg. 34,658, Appendix § 2.2 (Aug. 31, 1984). A reasonable estimate of when the repository could accept Seabrook spent fuel would be in the mid-range of these dates, since at this time it is speculative to suppose that Seabrook spent fuel would be either the first or the last to arrive at the repository for disposal. Thus we conclude that the spent fuel will need to be stored on site until around 2017, or for a period of about 28 years.[16]

Next must be determined the amount that Applicants must set aside now to generate $110,000 per month for the next 28 years to pay for spent fuel storage. This is a relatively straightforward present-value annuity calculation, but depends on the real interest rate assumed. The real interest rate means the amount of interest that can be obtained after inflation is taken into account. Various analyses indicate that the historical real interest rate over many years has averaged 2-3%, depending in part on what investments are considered (i.e., U.S. Treasury securities or high-grade corporate bonds). Because real interest rates have been above the 2-3% range in the past few years, a 3% rate is used here. Calculations using 3% indicate that an amount of approximately $24,985,000 would be needed to be set aside by Applicants today to yield $110,000 per month for the next 28 years.[17]

The only evidence on record of the cost for disposal in the repository is $13 million (which does not include the costs of shipping and handling for which the Commission has been given no figure by any party). (*See* MassAG Waiver Petition, Appendix X, Affidavit of Dale G. Bridenbaugh at 15 and Affidavit of Peter Strauss, cited *supra* note 14, at 3). Therefore the only reasonable estimate of the costs for spent fuel storage and disposal based on the record before the Commission is as follows:

[16] We recognize in this regard that standard Department of Energy (DOE) contracts for acceptance of title and disposal of spent fuel, entered into pursuant to § 302 of the Nuclear Waste Policy Act, generally contemplate an earlier time for DOE acceptance of the spent fuel. Nevertheless, we have chosen the mid-range of 2007 to 2026 because it appears conservative and because the range is firmly rooted in a rulemaking proceeding which was conducted with extensive public participation. *See* 49 Fed. Reg. 34,658 (1984).

[17] A discussion of real interest rates that was part of the decommissioning rulemaking record may be found in NUREG-0584, Rev. 3, "Assuring the Availability of Funds for Decommissioning Nuclear Facilities," at 21. Cited at 53 Fed. Reg. 24,042.

Onsite Storage: Discounted Value (at 3%) $110,000 a Month for 28 years		$24,985,000
Repository Disposal		$13,000,000
	TOTAL	$37,985,000

2. *Extent of Irradiation*

Applicants recognize that their current estimate of the extent of irradiation is significantly less than earlier estimates that they or the NRC Staff have made. There is no disagreement that the duration of operations significantly affects the extent of irradiation and thus the decommissioning costs. The only evidence on the record is based on low-power testing limited to 0.75 effective full-power hours, and Staff's affiants are cautious in qualifying all of their estimates as based on the assumption of 0.75 effective full-power hours.

In these circumstances the Commission can avoid further dispute by providing that the low-power testing license be conditioned to allow no more than 0.75 effective full-power hours of operation without further Commission approval.

G. Costs of Decommissioning

The sole remaining issue regarding decommissioning costs, on which there appears to be some dispute, is the contingency factor selected for the plan. Applicants selected a contingency figure of 7% which is different from the 25% figure subsumed in the decommissioning rule; however, no explanation was provided as a basis for that percentage. MassAG has challenged the 7% and provided a factual basis for its disagreement and for the use of 25% from the customary usage of "AIF, DOE, Battelle and most other utilities" as well as from standard engineering practice.[18] Neither Applicants nor the Staff responded to this issue on the merits. Thus the Commission finds that the plan should include a contingency factor of 25%. For conservatism, this contingency is applied to the reactor decommissioning costs and spent fuel storage and disposal costs.

H. Conclusion on Cost Total for Funding

In light of the foregoing, the Commission concludes that the total amount required for decommissioning here, which includes spent fuel storage and disposal, is $72.1 million, calculated as follows:

[18] MassAG Response, Nov. 2, Affidavit of Peter M. Strauss at 5, ¶ 8.

(Amounts in Millions)		
Reactor Decommissioning		$19.7
Spent Fuel Storage		$25.0
Spent Fuel Disposal		$13.0
Contingency		$14.4
	TOTAL	$72.1

I. Reasonable Assurance of Funding

Having established the sum, the Commission turns now to the means of establishing reasonable assurance that funds are available in this amount. At the outset we recognize the uncontroverted fact that PSNH, the joint owner with the largest share of Seabrook, has entered Chapter 11 bankruptcy and that uncertainty remains with respect to its reorganization or, theoretically, liquidation. There is also no dispute that another joint owner, Massachusetts Municipal Wholesale Electric Company (MMWEC) with an 11.6% share, is not contributing to project costs, and it appears that MMWEC cannot reasonably be counted on to make available voluntarily additional funds for decommissioning if needed after low power.[19] EUA Power Corporation (EUA), owner of 12.1324%, is not currently generating operating revenues.[20] There are also difficulties with two other small-percentage owners. *See* discussion in Part III of this Decision.

In light of the above, Intervenors challenge the relevance of Applicants' assertion that decommissioning costs are small compared with the *joint* net revenues of the Applicants, since Applicant joint owners have agreed among themselves only to several liability. Moreover, the record includes a showing of some $320-$390 million of liabilities in the event of plant cancellation in the hypothesized circumstances. October 20 Letter at 6.

While, in sum, approximately 60% of the ownership shares have been subject to doubt with regard to their financial health or willingness to contribute further financially to Seabrook, no evidence has been presented of any financial problems with respect to the remaining 40% ownership shares (the joint owners other than PSNH, MMWEC, EUA, New Hampshire Electric Cooperative (NH Coop), and Vermont Electric Generation and Transmission Cooperative (Vt. Coop)).

[19] MMWEC's agreement with PSNH, which has not yet been formally presented to the Commission by PSNH and would in any event require further approvals before it becomes effective, represents that MMWEC agrees that in the event of cancellation before commercial operations MMWEC shall be liable for its share of decommissioning costs and the costs of cancellation (including property taxes and other payments) in an aggregate amount not exceeding $10 million.

[20] Applicants assert that EUA has a Decommissioning Costs Security Agreement into which $10 million of securities were deposited. It is unclear on the record whether payment is reserved for decommissioning as it is understood by this Commission, or whether it would include broader cancellation costs.

Clearly, the greatest assurance that funds would be available would be for Applicants to provide the total amount, prior to low-power testing, by one of the means authorized by the decommissioning rule (prepayment, external sinking fund, surety, issuance, or other guarantee — *see* 10 C.F.R. § 50.75(e)(1)). This would clearly obviate all of Intervenors' concerns since the money would be required to be prepaid or guaranteed by third parties. However, the Commission believes that it would be unduly onerous to require, for example, a totally prepaid external account beyond Applicants' control at this stage for so large a sum. Indeed, no similar requirement has been placed on any other reactor licensee, and there are other means to provide reasonable assurance in the unique circumstances of this case.

The Commission believes that the means chosen by the Applicants are suitable provided that the following conditions are met. The separate and segregated fund that Applicants will have created under the control of its Special Disbursing Agent must be funded to the amount of $72.1 million before licensing of low-power testing, and some of the large, financially secure joint owners must have fully, jointly, and severally guaranteed to make up promptly any deficiency in that amount that later occurs arising out of any payment other than in satisfaction of a decommissioning liability as understood in this order. We leave for Applicants to choose which joint owners shall participate in this guarantee, except that the participants *must* include at least two of the following utilities, the United Illuminating Company, the New England Power Company, and Connecticut Light and Power Company, which have relatively large ownership shares.

The foregoing requirement for a separate and segregated account in the amount of $72.1 million shall remain in place until Applicants receive a full-power license in compliance with the decommissioning rule (*see* note 6, *supra*), or until funds have been disbursed from the account for decommissioning in the amount guaranteed or decommissioning is completed, whichever shall earlier occur. In this fashion, the availability of funds will be reasonably assured. The guarantee removes the relevancy of any uncertainty regarding what the bankruptcy court will permit or what claims against PSNH, MMWEC, Vt. Coop, and NH Coop might take priority as a legal matter or in time over decommissioning costs.

J. ALARA and Related Issues

In various guises, for example SAPL's ALARA argument,[21] Intervenors have raised issues that in essence ask the Commission to ignore its rule

[21] *See* SAPL's Contentions in Response to CLI-88-7 at 20, *et seq.* *See also* SAPL's assertion of need for a NEPA statement for low power. *Id.*

providing for issuance of low-power licenses prior to decisions on full power. The short answer to these requests is that they are beyond the scope of the decommissioning funding matters the Commission authorized to be addressed pursuant to CLI-88-7.[22] Accordingly, the Commission summarily denies them.

K. Motions to Reopen the Record for a Hearing

The record considered in this Decision includes all motions, responses, and other documents referenced in this Decision on decommissioning. We need only now address whether there is any need to reopen the record for an evidentiary hearing. The Commission finds that this is not required as there is no remaining genuine issue of material fact on any significant safety question related to financial qualification for decommissioning following low-power operation.

III. PETITION FOR FINANCIAL QUALIFICATIONS RULE WAIVER

A. Background

Part II of this Decision resolves questions regarding the need for reasonable assurance of adequate funds for decommissioning of Seabrook in the event low-power operation has occurred and a full-power license is not granted. This resolves the most safety-significant financial qualifications matter pending before the Commission in this case. However, there remains the question whether one of the Commission's financial qualification rules should be waived. The rule sought to be waived was issued in 1984 (49 Fed. Reg. 35,747) and upheld on judicial review in *Coalition for the Environment v. NRC*, 795 F.2d 168 (D.C. Cir. 1986). It eliminates the need for case-by-case reviews of the financial qualifications of electric utility operating license applicants. If the 1984 rule were waived, the Commission's general financial qualifications requirements would become applicable. The effect would be to require review and permit litigation of Applicants' ability to pay the ordinary costs of low-power testing, decommissioning expenses aside.[23] We deal with this rule waiver question below.

---

[22] The Commission notes that the decommissioning rule does embody an ALARA concept which requires application of ALARA for all steps in decommissioning. The ALARA concept has no relevance to decommissioning funding.

[23] Section 50.57(a)(4) of 10 C.F.R. requires generally that an applicant be "financially qualified to engage in the activities authorized by the operating license . . . ." The rule goes on to except electric utility applicants from the requirement of a finding of financial qualification. It is this exception which was added in 1984, and similar conforming exceptions, that is the subject of the waiver petitions. When these petitions were filed, the rules required that an applicant who must establish financial qualification must also "submit information that demonstrates [it] possesses or has reasonable assurance of obtaining the funds necessary to cover . . . the estimated

(Continued)

Three parties to this proceeding, TOH, NECNP, and SAPL, filed on July 31, 1987, a petition to waive the Commission's 1984 financial qualifications rule to the extent necessary to require PSNH to demonstrate, prior to low-power operation, that it is financially qualified to operate the facility safely at low power and to decommission after low power. The factual predicate for this petition was PSNH's Form 8-K filing with the Securities & Exchange Commission in which it said that it had instituted strict cash conservation measures and was working to develop alternative financial plans. The filing stated that were an adequate plan not placed in effect before the end of 1987, it would be "difficult, if not impossible" for the company to avoid proceedings under the Bankruptcy Code. *See* PSNH Form 8-K, Sheet 2, July 22, 1987, attached as Exhibit A to the Petition.

The July 31 petition was opposed by Applicants and the Staff, and on August 20, 1987, was denied by the Licensing Board. Among the chief stated reasons for the denial were that the circumstance of impending bankruptcy was speculative and that there was no suggestion that other "applicant-members of the consortium are financially incapable of operating and safely maintaining the facility." Memorandum and Order (unpublished), August 20, 1987, at 10. The Licensing Board's order was appealed, briefed, and argued before the Appeal Board on December 8, 1987. On January 28, 1988, while the matter was pending, what had been treated as speculative became reality when PSNH filed in bankruptcy. Using an opportunity provided by the Appeal Board, the same parties filed an amended petition, and in addition MassAG petitioned for a like rule waiver and later filed three supplements to that petition.

In ALAB-895, *supra*, the Appeal Board decided that the MassAG had established a *prima facie* case for a limited waiver of the rules. The Appeal Board also decided in ALAB-895 that the other petitions for a waiver had failed to make a *prima facie* showing and, therefore, dismissed them.

The Appeal Board discussed what the Commission had said in the 1984 rulemaking about the circumstances that would establish that a waiver would be warranted. The Appeal Board recognized that the Commission had specified that a waiver would be appropriate to review an electric utility applicant's financial qualifications if it could be shown that a rate commission would not allow recovery of the cost of operating. But the Appeal Board emphasized that the Licensing Board had wrongly determined that this was the only means of making the showing. The Appeal Board held that the example was merely illustrative. This it found was clear from the context in which the Commission had used the words "for example." The Appeal Board said that its conclusion was reinforced

---

costs of permanently shutting the facility down and maintaining it in a safe condition. . . . 10 C.F.R. § 50.33(f)(2) (1988). This financial qualifications provision specific to decommissioning was deleted when the decommissioning rule became effective.

by the Commission itself, in that the Commission had elsewhere provided yet another example when it noted that a waiver would be appropriate if a nexus between the safe operation of the facility and the applicant's financial situation were shown. 28 NRC at 17, *citing* 49 Fed. Reg. at 35,751.

According to the Appeal Board, however, the initial TOH, NECNP, and SAPL petition failed because it relied on the lack of *certain* assurance of eventual rate allowances for operations at low power due to the alleged likelihood that Seabrook will never receive its full-power license and thus will not receive rate approval of costs of operation. The Appeal Board said that speculation on the full-power license was not warranted and in any event, *reasonable* assurance of funding was all that was required. The Appeal Board further found that reliance on the anti-CWIP law did not help Intervenors' case, because the anti-CWIP law did not bar recovery of costs for low-power operation, but simply prevented their recovery until full power, and moreover did not prevent other sources of revenue from being applied to low power. Thus the Appeal Board found that "absent a showing that the applicants have insufficient funds to cover the costs of low-power operation, this statute does nothing to advance their cause." 28 NRC at 18.

In the supplemental petition the same Intervenors focused on the need for a financial qualifications review to ensure that PSNH is qualified to operate Seabrook safely at low power, but the Appeal Board found that this too failed essentially because no showing had been made that the Applicants lacked resources to operate at low power because of bankruptcy. 28 NRC at 19.

Turning to the MassAG's petition and supplements, the Appeal Board found first that Staff's and Applicants' arguments that Applicants can recover low-power costs at some indeterminate time in the future when Seabrook is operating commercially does not respond to the MassAG's issue that Applicants currently lack sufficient funds to operate at low power safely. Initially MassAG relied on the unwillingness of other owners to be responsible beyond their own share for any costs. However, the Appeal Board held that MassAG only succeeded in meeting its burden to show without speculation that current funds were lacking when he asserted that MMWEC, an approximately 11.6% Seabrook owner, had halted its monthly pro rata share payments. 28 NRC at 20-26.

In sum, the Appeal Board found that in order to establish a *prima facie* case for a waiver, the MassAG needed to, and did to a limited extent, establish that Applicants lacked sufficient funds to operate safely at low power. The Appeal Board recognized that various possibilities could alter the situation, e.g., that other joint owners could meet the shortfall or MMWEC could change its mind. But, the Appeal Board said, just as the *prima facie* case could not be made by speculation, it could not be defeated by speculation.

The Commission promptly established a briefing schedule in response to ALAB-895. Among other things, the Commission specifically invited Appli-

cants and Staff to address any matters that they wished the Commission to consider in reviewing the Appeal Board's finding on the MassAG's petition and deciding whether a waiver is appropriate. Other parties were given an opportunity to reply. The briefing period concluded on August 2, 1988.

Intervenors TOH, NECNP, and SAPL have also timely petitioned the Commission for review of ALAB-895. They maintain that the Appeal Board misperceived the standard that applies to waiver of the rule. In addition, MassAG wrote to state on the record that he agreed with the other Intervenors that the Appeal Board opinion contained error, but did not appeal since the Appeal Board had found that his petition made a *prima facie* case for waiver.[24]

B. Analysis and Decision

As noted above, the Commission has before it both the Appeal Board's limited finding of a *prima facie* case for rule waiver premised on the cessation of project payments by one of the minority joint owners, MMWEC, and the petition for review of ALAB-895 by TOH, NECNP, and SAPL. We also take note of MassAG's assertion of error in ALAB-895. To reduce procedural complexity and to provide for a comprehensive resolution of the rule waiver issue, we will address all of the principal grounds asserted for a rule waiver: the bankruptcy of PSNH; the State of New Hampshire's anti-CWIP statute, and the MMWEC shortfall. We take account also of the undisputed fact that two of the smaller joint owners, Vt. Coop and NH Coop, are also behind in their project payments.

1. Grounds for Rule Waiver

a. The Waiver Rule

Rule waivers are addressed specifically in 10 C.F.R. § 2.758. Under this provision:

> The sole ground for petition for waiver or exception shall be that special circumstances with respect to the subject matter . . . are such that application of the rule . . . would not serve the purposes for which the rule or regulation was adopted . . . . [The petitioner] shall set forth with particularity the special circumstances alleged to justify the waiver or exception requested.

No case has been cited where the Commission has waived a rule under this section, nor are we aware of any. In *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-80-16, 11 NRC 674 (1980), the Commission took

[24] We have also considered MassAG's Fourth Supplement to Petition for Waiver, dated September 15, 1988, and the relevant papers referenced at *supra* note 5.

up a Licensing Board certification that a *prima facie* case for waiver of 10 C.F.R. § 50.44 had been made under § 2.758, but the Commission rejected the certification. The Commission stated that waiver was inappropriate because the petition presented no "special circumstances" peculiar to the case, but rather presented generic questions common to all light-water power reactors and best resolved by rulemaking. That decision is of limited usefulness to us here because, as will be discussed below, the special circumstances asserted as grounds for waiver here do *not* present generic questions.

The only other significant Commission discussion of § 2.758 appears in the 1985 rulemaking on the standards for specific exemptions in 10 C.F.R. § 50.12. At that time we said that special circumstances as those terms would be applied in § 50.12 would be consistent with the considerations the Commission expected parties to address in applying § 2.758. The rule in § 50.12 establishes that there is a special circumstance whenever, among other things, "[a]pplication of the regulation in the particular circumstances would not serve the underlying purpose of the rule . . ." (10 C.F.R. § 50.12(a)(2)(ii)), or "[t]here is present any other material circumstance not considered when the regulation was adopted for which it would be in the public interest to grant an exemption" (10 C.F.R. § 50.12(a)(2)(vi)).

Thus, while we take account of what we said in the § 50.12 rulemaking, the matter before us is essentially one of first impression. We must construe and apply our regulations in a manner that is in accord with public health and safety and general administrative law principles.

b. The Meaning of "Special Circumstances"

The Appeal Board was clearly correct in ALAB-895 when it held that a showing that a rate commission would not allow rate recovery of the cost of operation cannot be the only ground for waiver. The 1984 financial qualifications rulemaking is absolutely clear that this circumstance was offered for illustrative purpose only and arguments to the contrary by Applicants and Staff border on the frivolous. Moreover, even if we were to accept the proposition that what was once considered illustrative must now be taken as exclusive, this does not necessarily lead to denial of the waiver requests, because the anti-CWIP statute leads here to a circumstance that appears to fit the example cited in the rulemaking. Under anti-CWIP, the rate authority *cannot* grant rate relief specifically to pay in advance for the cost of low-power operation.

We believe that the 1984 financial qualifications rulemaking did not limit the "special circumstances" that could serve as grounds for waiver under § 2.758. And we believe further that the concept of "special circumstances" that is most in accord both with the general concept of rulemaking as "carving out" issues from adjudication for generic resolution, and with what we said about § 2.758

in the § 50.12 rulemaking is as follows. Special circumstances are present only if the petition properly pleads one or more facts, not common to a large class of applicants or facilities, that were not considered either explicitly or by necessary implication in the proceeding leading to the rule sought to be waived. Only with such a construction of the terms "special circumstances" is there assurance that safety matters will not be ignored. Safety matters will be examined either by rulemaking or in licensing adjudication, at least for the purpose of determining their materiality and threshold safety significance.

c. The Kind of Special Circumstances Justifying Rule Waiver

Under § 2.758, it is not just any "special circumstance" that satisfies the requirements for a *prima facie* showing, but only those special circumstances that "are such that application of the rule . . . would not serve the purposes for which the rule or regulation was adopted." We believe that this means, at a minimum, that the special circumstances must be such as to undercut the rationale for the rule sought to be waived.

The Commission also believes that a rule waiver petition under § 2.758 ought not to be certified unless the petition and other allowed papers indicate that a waiver is necessary to address, on the merits, a significant safety problem related to the rule sought to be waived. The Commission's agenda is crowded with significant regulatory matters, including new rules on nuclear plant maintenance, fitness for duty, and high-level waste repository licensing, and safety oversight of the over 100 nuclear power plants with operating licenses. It would not be consistent with the Commission's statutorily mandated responsibilities to spend time and resources on matters that are of no substantive regulatory significance.

2. The Petitions Before Us

As indicated above, we will take up all of the principal grounds that have been asserted as bases for § 2.758 rule waiver. These are the bankruptcy of PSNH, New Hampshire's anti-CWIP statute, and the cessation of or arrears in project payments by some of the minority joint owners, including MMWEC.

a. Special Circumstances

There is no question that the circumstance of PSNH's bankruptcy is unique to Seabrook. The PSNH bankruptcy is the first utility bankruptcy since the Great Depression. There is also no indication in the 1984 financial qualifications rulemaking that utility bankruptcy was a condition taken into account. Thus we

believe that the bankruptcy of PSNH does present a special circumstance within the meaning of § 2.758.

We reach the same result for the other rule waiver grounds. We do not believe that anti-CWIP statutes are the rule in the utility industry, and so we are not persuaded by the record before us that anti-CWIP statutes present generic, as opposed to case-specific issues. Moreover, there is no indication in the 1984 financial qualifications rulemaking that anti-CWIP statutes were considered. Finally, the delay and cessation of project payments by some of the minority owners also appear to be uncommon and a matter not considered in the financial qualifications rulemaking.

b. Other Requirements for Rule Waiver

Having decided that PSNH bankruptcy, anti-CWIP statutes, and delay and cessation of minority owner project payments do all present "special circumstances," the next critical issue is whether any of these special circumstances undercuts the rationale for the 1984 financial qualifications rule.

The essential rationale for the 1984 rule was that:

> case-by-case review of financial qualifications for all electric utilities at the operating license stage is unnecessary due to the ability of such utilities to recover, to a sufficient degree, all or a portion of the costs of construction and sufficient costs of safe operation through the ratemaking process.

49 Fed. Reg. at 35,748.

We think that it is apparent that PSNH bankruptcy and anti-CWIP, in combination, undercut this rationale. Under anti-CWIP the utility cannot, strictly speaking, specifically recover *any* portion of the costs of low-power testing. In most cases this may not be critical, given the fact that utilities generally have sufficient other funds derived through rates to carry them through temporary shortfalls and delays in rate recovery. Indeed the Commission recognized in its 1984 rulemaking that there could be phase-ins and other such delays in recovery of costs of construction or operation, and that such delays did not upset the rationale that rate setting would provide adequate funds.[25] But here the utility's bankruptcy clearly signals that something very unusual and serious has occurred because of a delay in rate increases — the utility is unable to meet all of its obligations to its creditors. We think that the combination of these two circumstances — bankruptcy and the anti-CWIP statute — does undercut the rationale for the 1984 rule.

[25] 49 Fed. Reg. at 35,749.

It is less clear that cessations of project payments undercut the logic of the rule. The record does not clearly suggest the reasons for cessations of payments, for example whether the cessations must be attributed to some ratemaking problem that would undercut the logic of the 1984 rule. But, in view of the discussion below, it is not critical to our decision to know whether delays or cessations of project payments undercut the logic of the rule, and we will assume for purposes of analysis that the minority owners' delay or cessation of project payments does indeed undercut the rule's rationale.

Having held that the PSNH bankruptcy, anti-CWIP statutes, and delay or cessation of project payments by minority owners all present special circumstances, not considered when the 1984 rule was adopted, and that these circumstances, at least considered together, undercut the rationale of the 1984 rule, we turn to the remaining critical issue: Is a waiver needed to address a significant safety problem on its merits? The record shows that PSNH's share of the additional costs of low-power testing is approximately $2,292,000.00 to be incurred over a 3-month period.[26] MMWEC is not paying its share of the monthly current operating budget, and its share of the additional low-power costs would be approximately one-third of those attributed to PSNH. The Vt. Coop and NH Coop shares would be even smaller.[27] If we assume that all of the contributions to the costs of low-power testing from PSNH, MMWEC, Vt. Coop, and NH Coop are in doubt, the total amount in question is on the order of $3.5 million. Thus, the critical issue left before us is whether a significant safety problem related to the 1984 financial qualifications rule is posed by doubts regarding the ability of Applicants to raise $3.5 million toward the cost of low-power testing.

We think that no significant safety problem is posed for the following reasons. The purpose of the 1984 rule sought to be waived is elimination of case-by-case financial qualifications reviews. If we go no further than the 1984 rule, no waiver could *ever* be granted because any waiver, by its nature, would defeat rather than advance the rule's purpose. Since the Commission clearly contemplated that there could be waivers, we must look further to determine the relevant "purposes" in applying § 2.758. At this point we depart somewhat from the analysis in ALAB-895. The Appeal Board held that a *prima facie* showing sufficient to certify the waiver request to the Commission could not be made unless the petitioner established, *prima facie*, that there would be a shortfall in funds to conduct low-power testing. *E.g.*, 28 NRC at 25. In essence, in applying § 2.758 the Appeal Board took reasonable assurance of financial qualifications as the purpose to be served by the rule. We think it is preferable to examine

[26] ALAB-895, *supra*, 28 NRC at 23.

[27] The joint owners' shares of operating expenses are in proportion to their ownership shares. PSNH's ownership share is approximately 35.57%; MMWEC's share is 11.59%; Vt. Coop's share is approximately 0.41%; and NH Coop's share is approximately 2.17%. *See, e.g.*, Third Supplement to MassAG's Petition, Appendix I.

the underlying purpose of the requirement that there *be* a financial qualifications review.

The reason for conducting a financial qualifications review and requiring a finding of financial qualifications is *solely* to provide some added assurance that a licensee would not, because of financial difficulties, be under pressure to take some safety shortcuts. Thus in the 1984 rulemaking we stated that:

> A financial disability is not a safety hazard per se because the licensee can and under the Commission's regulations would be obliged to simply cease operations if necessary funds to operate safely were not available. At most, the Atomic Energy Commission, in drafting the rule, must have intuitively concluded that a licensee in financially straitened circumstances would be under more pressure to commit safety violations or take safety "shortcuts" than one in good financial shape. Accordingly, the drafters of the rule sought to achieve some level of assurance, prior to licensing, that licensees would not be forced by financial circumstances to choose between shutting down or taking shortcuts while the license was in effect.[28]

Whatever may be the legitimacy of this safety purpose for full-power operation, it stretches reason to suppose that the safety rationale would have any bearing on a limited license for low-power testing. Shortcuts in safety at full power conceivably could avoid shutdowns or derating and thereby contribute to greater plant availability and revenue from power sales. But shortcuts in low-power testing safety will not lead to generation of more revenue that would benefit the plant owners. Low-power testing does not generate revenue from power sales. The *only* purpose of low-power testing is to further ensure plant safety by checking selected plant systems that cannot be checked without core criticality and confirming various operating parameters. There is every incentive to do the job well and no rational incentive to cut corners.

Second, the amount of money in question — $3.5 million dollars over a period of a few months — is relatively small. It is an insignificant fraction of the money already spent on the Seabrook project. It strains credibility to suppose that Applicants would jeopardize the billions already invested in Seabrook merely to save a few hundred thousand or even a few million dollars needed for safe low-power testing.

Finally, the safety risks of low-power testing are low. We have examined and reaffirmed this conclusion in a recent rulemaking[29] and nothing in any of the papers before us suggests otherwise. To be sure, low-power testing will contaminate some limited portions of the plant, and will irradiate the fuel, but these raise questions of proper decommissioning and spent fuel storage and disposal which are addressed separately in Part II of this Decision.

---

[28] 49 Fed. Reg. at 35,749.

[29] 53 Fed. Reg. 36,955, 36,956 (Sept. 23, 1988).

For these reasons, we conclude that the rule waiver petitions before us do not present a significant safety problem, and therefore must be denied.

IV. NECNP'S MOTION FOR A HOUSEKEEPING STAY

We have not up to now considered NECNP's motion for a stay of the low-power authorization to permit stay motions before us or before a United States Court of Appeals. This order requires Applicants to meet several conditions, and it appears to us that the time to fulfill those conditions could leave adequate time for the filing of any appropriate stay motion. Moreover, a pending motion to litigate new onsite emergency planning issues must be ruled upon prior to licensing of low-power testing. Against the possibility that Applicants and the Licensing Board may fulfill these conditions sooner than any party that wished to could seek a stay, we delay the effective date of this Decision until 10 days after the referenced Licensing Board decision or Staff notice to the Commission that Applicants have satisfied the decommissioning requirements of this order, whichever is later. In order not to unduly burden the parties, adjudicating boards, and reviewing courts during the upcoming holidays, no low-power testing license may be issued at least until January 6, 1989. Any motion for a stay or other relief from this order shall be brought to the Commission itself.

V. ADDITIONAL COMMENT

We are constrained to make a concluding comment about the Staff's position in this case. Staff has consistently opposed any rule waiver in pleadings before the Licensing Board, the Appeal Board, and the Commission. This means that the Staff's "bottom line" position in this formal adjudicatory proceeding is that *no* review of or finding on Applicants' financial qualifications for low-power testing is either needed or required. Yet in its response to the Commission's July 14, 1988 Order, and also in a belated filing on December 13, 1988,[30] the Staff has apparently advised Applicants that "we [Staff] have required the Applicants to demonstrate, prior to commencement of low-power operation, that there is reasonable assurance that they possess or can obtain the financial resources needed to conduct that activity in a manner that does not endanger the public health and safety." This is flatly inconsistent with Staff positions in this case. Only by obtaining a waiver of the rule, which the Staff has not sought

[30]The exact nature of the filing is unclear. To a large extent it bolsters, and in some respects modifies, the position the Staff espoused in its November 16, 1988 response to the Commission's Order CLI-88-7. It should have included, but did not, some motion for acceptance of an otherwise unauthorized pleading. Moreover, there is no good reason why the views set forth in the filing could not have been included in the response to CLI-88-7. We have given *no* consideration to the filing except in this concluding comment.

here, may Staff assert authority to deny or condition the low-power testing license because of a concern about financial qualifications. Staff cannot have it both ways — it cannot advise the Commission that there are no grounds for a rule waiver, and at the same time conduct its informal licensing review as if a waiver was in fact needed. *See Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), *cert. denied, Arkansas Power & Light Co. v. UCS*, 469 U.S. 1132 (1985).

We should note in this regard that this Decision does not hold that the waiver petitions present no significant safety problem because PSNH and other Applicants are financially qualified. We hold instead that, on the facts of the case, lack of financial qualifications does not pose a significant safety problem.

It is so ORDERED.

For the Commission

JOHN C. HOYLE
Assistant Secretary of the
Commission

Dated at Rockville, Maryland,
this 21st day of December 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman
Thomas M. Roberts
Kenneth M. Carr
Kenneth C. Rogers
James R. Curtiss

In the Matter of **Docket No. 50-322-OL-5**

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **December 21, 1988**

In declining to take review of two Appeal Board decisions (ALAB-900, 28 NRC 275, and ALAB-901, 28 NRC 302), and in observing that a third Appeal Board decision (ALAB-902, 28 NRC 423) appears to have been rendered essentially moot, the Commission also offers guidance, occasioned by the decision in ALAB-900, as to the course of action to be followed if a problem is found with the scope of an emergency exercise. To the extent that the scope of an exercise is found to be inadequate, the Commission comments, the applicant need not conduct an entirely new full-scale exercise but may conduct instead a remedial exercise of sufficient scope to address the particular deficiency found in the first exercise.

ORDER

The petitions for review of ALAB-900, 28 NRC 275, and ALAB-901, 28 NRC 302, are denied. In declining to take review of ALAB-900, and therefore letting stand the Appeal Board's determinations that questions on the scope of an exercise may be raised in licensing proceedings, the Commission also wants

to make clear what results if a problem is found with the scope of an exercise. To the extent an exercise was not of an adequate scope, the applicant need not conduct an entirely new full-scale exercise. The applicant may conduct a remedial exercise sufficient in scope to address the deficiency in the original scope of the exercise.

Because the Commission has taken up, by order of November 9, 1988 (unpublished), the issue of whether Intervenors' conduct merited expulsion from the entire proceeding or any other sanction, the issue presented in ALAB-902, 28 NRC 423, is essentially moot, and the petition for review of ALAB-902 is denied. The request for a stay of ALAB-902 is also denied.

Commissioner Curtiss did not participate in this Order.

The separate views of Commissioner Rogers are attached.

It is so ORDERED.

For the Commission

JOHN C. HOYLE
Assistant Secretary of the
Commission

Dated at Rockville, Maryland,
this 21st day of December 1988.

SEPARATE VIEWS OF COMMISSIONER ROGERS

I agree with the Commission's decision not to take review of ALAB-900, ALAB-901, and ALAB-902. I also believe that various aspects of the Commission's Emergency Planning Regulations may well warrant clarification and revision. I further believe that the Staff should review these regulations in their entirety and that the Commission should make whatever changes appear necessary. However, until that time, I would prefer that the Commission refrain from offering guidance on specific issues, such as the required scope of a remedial exercise, especially when the parties before us have neither raised nor briefed those issues fully. I urge the Commission to direct the Staff to promptly initiate a complete review of the Commission's Emergency Planning Regulations.

Cite as 28 NRC 605 (1988) CLI-88-12

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman
Thomas M. Roberts
Kenneth M. Carr
Kenneth C. Rogers
James R. Curtiss

In the Matter of **Docket Nos. 50-445-OL**
50-446-OL
50-445-CPA

TEXAS UTILITIES ELECTRIC COMPANY, *et al.*
(Comanche Peak Steam Electric Station, Units 1 and 2) **December 21, 1988**

The Commission itself elects to rule on a late intervention petition filed with the Licensing Board after the Board dismissed both cases in which the petitioner public interest group seeks to intervene. Upon review, the Commission finds that Intervenor has failed to satisfy the five-factor test for late-filed intervention petitions and it therefore denies the petition to intervene.

RULES OF PRACTICE: UNTIMELY INTERVENTION PETITIONS

In determining whether to grant an untimely intervention petition, the five factors found in 10 C.F.R. §2.714(a)(1)(i)-(v) must be balanced. Those five factors are: (1) the "good cause" for failure to file on time; (2) the availability of other means of protecting the petitioners' interests; (3) the extent to which the petitioners' participation may reasonably be expected to assist in developing a sound record; (4) the extent to which the petitioners' interest will be represented by existing parties; and (5) the extent to which the petitioners' participation will broaden the issues or delay the proceeding.

RULES OF PRACTICE: PETITIONS TO INTERVENE

The burden is on the petitioner to satisfy the Commission that a balancing of the five factors found in 10 C.F.R. § 2.714(a)(1) weighs in favor of granting the petition. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 331 (1983).

RULES OF PRACTICE: UNTIMELY INTERVENTION PETITIONS (GOOD CAUSE)

Longstanding and well-settled Commission precedent clearly holds that one party may not demonstrate "good cause" for late intervention by attempting to substitute itself for another party that has withdrawn from the proceeding. *See, e.g., Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 795-98 (1977).

RULES OF PRACTICE: UNTIMELY INTERVENTION PETITIONS

When an intervention is extremely untimely and the proceeding has been essentially completed and the petitioner utterly fails to demonstrate any "good cause" for late intervention, it must make a "compelling" case that the other four factors weigh in its favor. *See, e.g., Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-743, 18 NRC 387, 397 (1983) ("*Shoreham*"); *Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), ALAB-707, 16 NRC 1760, 1765 (1982); *South Carolina Electric and Gas Co.* (Virgil C. Summer Nuclear Station, Unit 1), ALAB-642, 13 NRC 881, 886 (1981), *aff'd sub nom. Fairfield United Action v. NRC*, 679 F.2d 261 (D.C. Cir. 1982) (Table).

RULES OF PRACTICE: UNTIMELY INTERVENTION PETITIONS (ASSISTANCE IN DEVELOPING A SOUND RECORD)

In addressing the third lateness factor of 10 C.F.R. § 2.714(a)(1) — the extent to which the petitioner's participation might reasonably be expected to assist in developing a sound record — a petitioner "should set out with as much particularity as possible the precise issues it plans to cover, identify its prospective witnesses, and summarize their proposed testimony." *Mississippi Power & Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-704, 16 NRC 1725, 1730 (1982); *Shoreham*, 18 NRC at 399.

RULES OF PRACTICE: UNTIMELY INTERVENTION PETITIONS (BROADENING OF ISSUES OR DELAY)

Allegations that applicant and attorneys for former intervenors have conspired to enter into "illegal settlement agreements" are new issues that would broaden the issues in dispute before the two proceedings. The settlement agreements, entered into between utility and attorneys for alleged whistleblowers, do not restrict access of the individuals to the NRC and therefore do not appear to violate federal law or NRC regulation.

MEMORANDUM AND ORDER

I. INTRODUCTION AND SUMMARY

On August 11, 1988, the organization Citizens for Fair Utility Regulation ("CFUR" or "Petitioners") filed a late petition before the Atomic Safety and Licensing Board seeking to intervene in the Comanche Peak Operating License ("OL") and Construction Permit Amendment ("CPA") proceedings. This filing presents a somewhat unusual situation because the Licensing Board that was conducting those proceedings dismissed both cases on July 13, 1988, approximately 4 weeks earlier, acting on a joint motion filed by all parties pursuant to a settlement agreement. The NRC Staff and the applicant, Texas Utilities Electric Company ("TUEC"), filed their responses with the Commission rather than with the Licensing Board, in the apparent belief that the Commission had sole jurisdiction over the petition. The Licensing Board has not acted on CFUR's petition — not even to the extent of ruling on the threshold question of whether it has jurisdiction to entertain the petition. In light of the Licensing Board's inaction, and in order to clarify any resulting confusion regarding the status of the Comanche Peak facility, the Commission has elected to rule on the petition itself.[1] Upon review, we find that the petition fails to satisfy the five-factor test for late-filed intervention petitions set forth in 10 C.F.R. § 2.714(a)(1)(i)-(v). Therefore, we deny the petition to intervene.

[1] Resolution of this question has been delayed by a series of questionable judgments by the parties and the Licensing Board. Initially, the Petitioners filed their petition before the Licensing Board that had been hearing both Comanche Peak proceedings despite the Licensing Board's clear statement during a public proceeding the day before it dismissed the case that any such petition should be directed to the Commission. *See* Tr. 25,202-08. Whether that advice was correct in this case is a question we need not reach in view of our decision to rule on the petition ourselves.

II. CFUR'S PETITION

CFUR was one of three original intervenors in this proceeding, having been admitted to the proceeding on June 27, 1979. CFUR and the second intervenor withdrew from the proceeding in 1982, leaving the Citizens Association for Sound Energy ("CASE") as the only party contesting the issuance of the operating license. In this petition, CFUR alleges that it withdrew from the proceeding on the assumptions that (1) it would support CASE's efforts and (2) CASE would diligently prosecute the proceeding against Comanche Peak.[2] CFUR further alleges that CASE does not intend to implement the oversight functions of the settlement agreement which allow a CASE representative: (1) to monitor construction and operation of the plant as a member of TUEC's Operations Review Committee; and (2) to report any perceived problems to the NRC as necessary. Accordingly, in CFUR's view, CASE cannot be relied upon to uphold the public's interest in a safe plant.

As a result, CFUR argues that it is now entitled to replace CASE as an intervenor in the proceeding because CASE has failed to carry out the above assumptions upon which CFUR acted, contrary to CFUR's wishes. According to the petition, if CFUR had known that CASE might withdraw from the proceeding, it would not have withdrawn. Therefore, argues CFUR, good cause exists to grant the late-filed petition to intervene.[3]

Furthermore, CFUR alleges that it has no alternative means other than intervention to protect its and the public's interests, that it can make important contributions to the record, that no other parties are available to represent CFUR's interests, and that allowing CFUR to intervene will not delay the proceedings which were dismissed by the Licensing Board on July 13, 1988.

III. ANALYSIS

A. The Applicable Standard

In order to prevail, CFUR must satisfy a balancing of the five requirements for an "untimely" or "late-filed" petition found in 10 C.F.R. § 2.714(a)(1)(i)-(v).[4] Those five factors are:

---

[2] CFUR alleges that its reliance upon CASE was "reasonable." We accept this characterization although, as we will demonstrate, it is irrelevant for our purposes.

[3] CFUR's allegations include: a breakdown of QA/QC procedures at the plant; the existence of unspecified life-threatening safety flaws; perjury by the applicant's employees or agents; falsification of documents and engineering calculations by the applicant; hazardous insulation used in the plant; invalid hydrostatic testing; poor-quality pipe coating; inadequate recordkeeping; and defective welds in the spent fuel pool liner.

[4] The NRC Staff concedes that CFUR satisfies the standing and interest requirements found in § 2.714. *See* NRC Staff Response at 7-8. We agree. Thus, we will confine our analysis to the five-factor lateness test.

(1) the "good cause" for failure to file on time; (2) the availability of other means of protecting the petitioners' interests; (3) the extent to which the petitioners' participation may reasonably be expected to assist in developing a sound record; (4) the extent to which the petitioners' interest will be represented by existing parties; and (5) the extent to which the petitioners' participation will broaden the issues or delay the proceeding.

The burden is on the petitioner to satisfy the Commission that a balancing of these factors weighs in favor of granting the petition. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 331 (1983).[5]

B. Factor (i): "Good Cause" for Late Intervention

Longstanding and well-settled Commission precedent clearly holds that one party may not demonstrate "good cause" for late intervention by attempting to substitute itself for another party that has withdrawn from the proceeding. *See, e.g., Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 795-98 (1977) ("*River Bend*"). In that case, the Union of Concerned Scientists attempted to replace the State of Louisiana after the State decided to withdraw from the proceeding, arguing that the organization and its members had been "lulled into inaction" by the State's previous participation. 6 NRC at 796. The Appeal Board rejected that argument, holding that the belated petitioners assumed the risk that the previous litigant's degree of involvement would not fulfill their expectations and that "a foreseeable consequence of the materialization of that risk was that it would no longer be possible to undertake [themselves] the vindication of [their] interests.'" 6 NRC at 797, *quoting Duke Power Co.* (Cherokee Nuclear Station, Units 1, 2, and 3), ALAB-440, 6 NRC 642, 645 (1977) ("*Cherokee*"). In essence, a potential intervenor may not rely upon an existing intervenor to present its views or represent its positions without assuming the risk that they will not do so.

Furthermore, the U.S. Court of Appeals for the District of Columbia Circuit has specifically upheld the Commission's denial of late intervention in similar circumstances. "We do not find in statute or case law any ground for accepting the premise that proceedings before administrative agencies are to be constituted as endurance contests modeled after relay races in which the baton of proceeding

[5] In preparing this order, we have reviewed both CFUR's initial petition and its "First Supplement" together with the responses to both documents filed by both the NRC Staff and the Applicant, TUEC. We have totally disregarded the letter filed by the Nuclear Management and Resources Council ("NUMARC"), dated October 7, 1988. NUMARC is not a party to this proceeding and has not sought to participate under Commission regulations. Organizations that wish to present their views on the record should properly seek leave to intervene or leave to participate as an *amicus*. *See* 10 C.F.R. § 2.715 (1988).

is passed on successively from one legally exhausted contestant to a newly arriving legal stranger." *Easton Utilities Commission v. AEC*, 424 F.2d 847, 852 (D.C. Cir. 1970).

Clearly, this case is analogous to the *River Bend*, *Cherokee*, and *Easton* cases. In each of these cases, the intervenors attempted to claim a "right" to substitute themselves for parties who had withdrawn from the proceedings. Obviously, however, a party has no "right" to substitute itself into a proceeding. Instead, each party must demonstrate that it is entitled to intervene on its own merits. Any previous reliance — however misplaced — on another party to assert its interests does not in and of itself constitute sufficient "good cause" to justify late intervention. Like the petitioners in *River Bend* and *Cherokee*, CFUR assumed the risk that CASE would not represent its interests to its complete satisfaction when it withdrew from the proceeding in 1982. It cannot now complain when that risk becomes reality.[6] Thus, the claim that CFUR relied upon CASE to represent its interests in the hearing does not constitute "good cause" for late intervention, and the first factor weighs against granting the petition.

C. Analysis of Factors (ii) through (v)

We now turn our attention to the remaining four factors against which we must weigh the petition. When the intervention is extremely untimely and the proceeding has been essentially completed, as is true in this case, and the petitioner utterly fails to demonstrate any "good cause" for late intervention, it must make a "compelling" case that the other four factors weigh in its favor. *See, e.g., Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-743, 18 NRC 387, 397 (1983) ("*Shoreham*"); *Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), ALAB-707, 16 NRC 1760, 1765 (1982); *South Carolina Electric and Gas Co.* (Virgil C. Summer Nuclear Station, Unit 1), ALAB-642, 13 NRC 881, 886 (1981), *aff'd sub nom. Fairfield United Action v. NRC*, 679 F.2d 261 (D.C. Cir. 1982) (Table). As we will demonstrate, we find no compelling case here.

The NRC Staff concedes that factors (ii) and (iv) weigh in favor of the Petitioner and we agree. Turning to the third factor, the ability to contribute to a sound record, we find that CFUR has been absent from the proceedings for six (6) years. There is no evidence that it has any knowledge of the nature of the factual background or specific issues involved in Contention 5 at issue in the

[6]The fact that various members of CASE may have disagreed with the course of action taken by the majority of CASE's membership or directors does not add any support to CFUR's petition. Obviously, in any organization, there can be as many points of view as there are members.

OL proceeding or Contention 2 at issue in the CPA proceeding.[7] Furthermore, and most importantly, it has identified no special expertise or experience that its members possess which would enable it to address those issues. The only factor cited is a vague reference to participation in the prior proceedings before it withdrew as a party. However, CFUR does not provide us with any specific accomplishment in those hearings that would demonstrate any significant expertise.

Moreover, CFUR has not identified any witnesses it intends to call at the hearings that it proposes, much less any experts in the areas that were at issue in either the OL or CPA proceeding. Additionally, CFUR's issues appear to be simple, unsupported disagreements with statements in various NRC documents such as inspection reports. *See* Petition at 14-15. The Appeal Board has repeatedly stressed the importance of providing specific and detailed information in support of factor (iii). "When a petitioner addresses this [third] criterion it should set out with as much particularity as possible the precise issues it plans to cover, identify its prospective witnesses, and summarize their proposed testimony." *Mississippi Power & Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-704, 16 NRC 1725, 1730 (1982); *Shoreham*, 18 NRC at 399. In the circumstances of this case, CFUR would need to be very precise and detailed regarding the issues it intends to raise and how it intends to address them. Having failed to do so, this factor weighs heavily against intervention.

Regarding factor (v), we find that there will be an inevitable delay while CFUR acquaints itself with the proceedings. Although CFUR alleges that it "is fully prepared to take the proceedings as it finds them," *see* Petition at 19, we find that promise of questionable value. CFUR's members have not been involved with the proceedings for over six (6) years. The petition indicates that CFUR apparently has no knowledge of the extensive proceedings that have occurred after 1982. For example, CFUR's primary reference to the extensive corrective programs undertaken by TUEC at Comanche Peak, such as the CPRT and the CAP, is a quote from a 1987 CASE newsletter. *See* Petition, Attach. G. Additionally, CFUR makes no reference to the extensive evaluations by the NRC Staff which have resulted in the various Project Status Reports and the Supplemental Safety Evaluation Reports. Obviously, evaluation of these documents (among many others) would be central to understanding the status of the plant's construction and the current posture of the licensing process. Yet the petition contains no evidence that CFUR has even commenced such a review.

[7] Throughout both the Petition and the "First Supplement," CFUR has repeatedly ignored the CPA proceeding and has failed to address Contention 2 admitted in that proceeding. While we will treat the petition as filed in both proceedings, we note that what little substance CFUR's submittals contain refer exclusively to the OL proceeding, not the CPA proceeding. Therefore, any showing in favor of CFUR's intervention in the OL proceeding is absent in the CPA proceeding.

Therefore, we find no evidence in the petition that CFUR could immediately step into both proceedings without a substantial delay.

Furthermore, CFUR appears to be attempting to broaden the issues in dispute before the two proceedings. Contention 5 at issue in the OL proceeding alleges that TUEC employed inadequate Quality Assurance/Quality Control ("QA/QC") procedures during plant construction. Contention 2 at issue in the CPA proceeding alleges that TUEC deliberately violated NRC regulations in order to speed construction. However, CFUR raises issues that appear to go beyond those two areas. *See* note 3, *supra*. Expansion of the hearings to cover these issues would undoubtedly delay the proceedings.

IV. CFUR'S SUPPLEMENTAL PLEADING

In its "First Supplement," CFUR alleges that TUEC and CASE have conspired to enter into "illegal settlement agreements" resolving at least one of the Department of Labor ("DOL") employment discrimination cases concerning retaliation against alleged "whistleblowers." CFUR seeks a hearing to explore these claims. In addition to widening the scope of the proceedings, *see* factor (v), *supra*, these allegations do not constitute grounds for ordering a hearing.[8] We read the agreement referenced in the CFUR's supplemental petition to allow the individual involved to bring any safety concerns he has directly to the NRC, either on his own behalf or on the behalf of organizations not referenced in the agreement, and to respond to an administrative subpoena if that subpoena is not quashed by the issuing officer. In its response, TUEC concedes as much. *See* Applicant's Response to CFUR's First Supplement at 8. Moreover, at the prehearing conference discussing the settlement agreement (at which CFUR was present), counsel for both CASE and TUEC pointed out that none of those individuals involved in settlement agreements before the DOL were barred from bringing concerns to the NRC. *See* Tr. 25,257, 25,268. The agreement referenced in the CFUR petition only restricts the individual's right to appear voluntarily as a *witness* or a *party* in certain NRC proceedings (and then only on behalf of the organizations and individuals listed in the agreement) and obligates the individual to take "reasonable" steps to resist a subpoena in such proceedings. As long as the individual's right to bring matters to the NRC in a reasonably

[8] CFUR's allegations in this regard appear directed not at CASE itself, the NRC, or even TUEC or its contractors, but at the attorneys who represented CASE before the NRC and, coincidently, the specific individual before the Department of Labor. These allegations concern actions performed in their role as a representative before the DOL. Therefore, the proper forum for these complaints is likely not the NRC. According to an exhibit attached to CFUR's "First Supplement," we understand that the individual involved is pursuing this question before the DOL.

convenient manner is not curtailed, we do not see a violation of federal law or NRC regulation.

V. SUMMARY

In summary, CFUR has failed to justify the lateness of the petition and has not carried its "compelling" burden of balancing the last four factors. Accordingly, the petition to intervene must be and hereby is denied.[9]

It is so ORDERED.

For the Commission,

JOHN C. HOYLE
Assistant Secretary for the
Commission

Dated at Rockville, Maryland,
this 21st day of December 1988.

[9] On the day before the Commission was to vote on this order, the Commission received a "Second Supplement" to the Petition to Intervene from CFUR. The Supplement alleges various inadequacies in the installation of Kapton insulation at the Comanche Peak facility. This extremely late pleading does not contain any evidence or information that would change our decision on the outcome of the petition to intervene.

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)

December 1, 1988

The Appeal Board dismisses, as premature, an intervenor's appeal from a Licensing Board's memorandum and order denying its motion to add new bases to a previously admitted contention.

RULES OF PRACTICE: INTERLOCUTORY APPEALS

The Commission's Rules of Practice contain a general proscription against interlocutory appeals. 10 C.F.R. 2.730(f); *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit No. 1), ALAB-625, 13 NRC 13, 15 (1981); *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2); ALAB-370, 5 NRC 131 (1977), and cases there cited. The single exception to the general proscription is found in 10 C.F.R. 2.714a.

RULES OF PRACTICE: APPELLATE PROCEDURE

Whether a licensing board's resolution of a contention is final for appellate purposes where other issues are still pending before it, hinges upon whether such resolution can reasonably be regarded as disposing of "a major segment of the case." *Toledo Edison Co.* (Davis-Besse Nuclear Power Station), ALAB-300, 2 NRC 752, 758 (1975).

RULES OF PRACTICE: APPELLATE PROCEDURE

The Appeal Board has the discretion to undertake interlocutory review of Licensing Board orders in the exercise of its directed certification authority. *See* 10 C.F.R. 2.718(i), 2.785(b)(1); ALAB-271, 1 NRC 478, 482-83 (1975). As a general rule, however, that authority will be invoked only if the ruling in question "either (1) threaten[s] the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated by a later appeal or (2) affect[s] the basic structure of the proceeding in a pervasive or unusual manner." *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977).

APPEARANCES

Stephen A. Jonas, Boston, Massachusetts, for intervenor James M. Shannon, Attorney General of Massachusetts.

Thomas G. Dignan, Jr., George H. Lewald, Kathryn A. Selleck, Jeffrey P. Trout, and **Jay Bradford Smith**, Boston, Massachusetts, for the applicants Public Service Company of New Hampshire, *et al.*

Gregory Alan Berry for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

1. Last February, in ALAB-883,[1] we granted the motion of the intervenor Attorney General of Massachusetts to reopen the record and to admit two additional contentions in the onsite emergency planning and safety issues phase

[1] 27 NRC 43.

of this operating license proceeding involving the Seabrook nuclear facility.[2] The contentions related to the adequacy of the applicants' arrangements for providing "early notification and clear instruction" to persons located within the Massachusetts portion of the Seabrook plume exposure pathway emergency planning zone (EPZ) in the event of a radiological emergency at the facility.[3] As a basis for the contentions, the Attorney General pointed to the removal of the fixed-position emergency notification sirens that were to serve that purpose within the Massachusetts part of the EPZ.

For reasons that were developed in ALAB-883, we concluded that, under then-existing Commission emergency planning regulations, the public notification issue would have to be resolved by the Licensing Board prior to the authorization of low-power operation of the Seabrook facility (i.e., operation at levels up to five percent of rated power). Thereafter, however, the Commission amended those regulations to permit such operation in advance of the resolution of any issues pertaining to the sufficiency of offsite public notification systems.[4] On the strength of the amendment, on October 7 the Commission vacated so much of ALAB-883 as had determined that an adequate system for prompt public notification in the event of an accident was a prerequisite to low-power operation.[5]

In taking this action, the Commission expressly left it to the Licensing Board Panel Chairman (i.e., the Chief Administrative Judge of that Panel) to decide whether the public notification issue should remain with the Licensing Board concerned with *onsite* emergency planning matters or, instead, should be transferred to the differently constituted Licensing Board having jurisdiction over all other emergency planning issues, including those concerned with the Massachusetts *offsite* emergency response plan.[6] (The question arose because, in general, the former Board was concerned with matters requiring resolution prior to low-power operation, while those matters relating to full-power operation alone were within the domain of the latter Board.) On October 12, the Acting Chief Administrative Judge issued a Notice of Clarification to the effect that the so-called "onsite" Board would continue to preside over the public notification matter.[7]

On the same day, that Board issued a memorandum and order addressed to the motion of the Attorney General to add certain new bases to an amended

---

[2] The motion was filed with us, rather than with the Licensing Board, because a partial initial decision disposing of all issues presented to it in that phase of the proceeding had already been rendered. *See id.* at 45 n.1. On the basis of our grant of the Attorney General's motion, we remanded the cause to the Licensing Board for litigation of the newly admitted contentions. *Id.* at 55.

[3] *See* 10 C.F.R. 50.47(b)(5).

[4] *See* 53 Fed. Reg. 36,955 (1988).

[5] *See* CLI-88-8, 28 NRC 419 (1988).

[6] *Id.* at 421.

[7] *See* 53 Fed. Reg. 40,804 (1988).

contention on the public notification system for Massachusetts that the Licensing Board had admitted earlier.[8] The Board denied the motion on the grounds that (1) in actuality the Attorney General was endeavoring to raise new issues; and (2) there was insufficient justification to permit the introduction of such issues through the vehicle of late-filed contentions.[9]

On October 21, the Attorney General filed a notice of appeal from this disposition of his motion. Accompanying the notice was a letter raising a question whether, in the particular circumstances of the case, the appeal was properly taken at this time or, rather, had to abide the event of a decision on the entitlement of the applicants to a full-power license for Seabrook.[10] We then solicited the views of the interested parties on this question.[11] Each of them — the Attorney General, the applicants, and the NRC staff — has provided us with the same answer: the appeal is premature. For the reasons that follow, we agree.

2. As we have often had occasion to observe, the Commission's Rules of Practice contain a general proscription against interlocutory appeals.[12] And that the Licensing Board's October 12 memorandum and order is wholly interlocutory in character is beyond dispute. It decided nothing other than that the Attorney General's amended contention is not now open to the assignment of the additional bases that that intervenor would append to it. The contention itself, with the bases previously assigned for it, still awaits Licensing Board disposition on the merits.

In suggesting that the October 12 memorandum and order nonetheless might be appealable at this time, the Attorney General's letter accompanying his notice of appeal alluded to the previous issuance by the same (i.e., the onsite) Licensing Board of a partial initial decision authorizing low-power operation.[13] In his most recent filing, however, the Attorney General appears implicitly to acknowledge that such a consideration cannot serve to attach some degree of finality to what

---

[8] *See* Memorandum and Order (October 12, 1988) (unpublished); Memorandum and Order (June 2, 1988) (unpublished).

[9] *See* Memorandum and Order (October 12, 1988) at 3-9.

[10] *See* Letter from Stephen A. Jonas to Alan S. Rosenthal (October 21, 1988).

[11] *See* Order (October 25, 1988) (unpublished).

[12] 10 C.F.R. 2.730(f); *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit No. 1), ALAB-625, 13 NRC 13, 15 (1981); *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-370, 5 NRC 131 (1977), and cases there cited. The single exception to the general proscription is found in 10 C.F.R. 2.714a and, because applicable solely to the grant or denial of intervention petitions, is of no present relevance.

[13] The Attorney General does not specifically identify the decision he has in mind. The Licensing Board's most recent pronouncement on the subject of low-power operation is its August 8, 1988 memorandum and order, LBP-88-20, 28 NRC 161. In that issuance, the Board concluded that it was not necessary to resolve prior to such operation a pending question pertaining to the environmental qualification of certain coaxial cable used in the Seabrook facility. *See* ALAB-891, 27 NRC 341 (1988). Earlier this week, we affirmed that conclusion. *See* ALAB-904, 28 NRC 509 (1988).

manifestly is an interlocutory order.[14] Such an acknowledgment is necessary. For, as the staff correctly observes, an authorization of low-power operation has no possible bearing upon the treatment of a public notification contention that, as matters currently stand, is relevant only to full-power operation.[15]

3. We need not now decide whether, assuming that he is dissatisfied with the onsite Licensing Board's eventual resolution of his amended public notification contention on the merits, the Attorney General will be entitled to appeal that resolution immediately, even if other issues are still pending before that Board or the offsite Licensing Board.[16] The answer to that question, should it come to the fore, obviously will hinge upon whether such resolution can reasonably be regarded as disposing of "a major segment of the case" and, thus, as satisfying the *Davis-Besse* test of "finality" for appeal purposes.[17] That inquiry is best left for such later date when and if it would no longer be simply conjectural. Suffice it to say at this juncture that, should the occasion arise, the Attorney General might be well-advised to follow the same course of filing a precautionary notice of appeal as was done in this instance.

The Attorney General's appeal from the Licensing Board's October 12, 1988 memorandum and order is *dismissed* as premature.[18]

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

---

[14] *See* Massachusetts Attorney General's Response to October 25, 1988 Appeal Board Order (November 8, 1988).

[15] *See* NRC Staff Supplemental Response to October 25, 1988 Appeal Board Order (November 4, 1988) at 3.

[16] At present, the onsite Board still has before it the issue of the environmental qualification of the coaxial cable. *See supra* note 13. For its part, the offsite Board is considering a wide variety of issues pertaining to the New Hampshire and Massachusetts emergency response plans.

[17] *See Toledo Edison Co.* (Davis-Besse Nuclear Power Station), ALAB-300, 2 NRC 752, 758 (1975).

[18] This Board does have the discretion to undertake the interlocutory review of Licensing Board orders in the exercise of its directed certification authority. *See* 10 C.F.R. 2.718(i), 2.785(b)(1); ALAB-271, 1 NRC 478, 482-83 (1975). As a general rule, however, that authority will be invoked only if the ruling in question "either (1) threaten[s] the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated by a later appeal or (2) affect[s] the basic structure of the proceeding in a pervasive or unusual manner." *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977). We are satisfied, and no party suggests otherwise, that neither of these tests is met here.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Christine N. Kohl, Chairman
Alan S. Rosenthal
Dr. W. Reed Johnson

In the Matter of **Docket No. 50-322-OL-6**
(25% Power)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **December 5, 1988**

On referral by the Licensing Board, the Appeal Board affirms the order of two of that Board's judges declining to recuse themselves from further participation in this operating license proceeding.

DISQUALIFICATION: STANDARDS

The rule for disqualification of a judge in Commission proceedings for alleged bias or prejudice is the same as that applicable in federal courts: "the alleged bias and prejudice must stem from an extrajudicial source and result in an opinion on the merits on some basis other than what the judge has learned from his participation in the case." *Houston Lighting and Power Co.* (South Texas Project, Units 1 & 2), CLI-82-9, 15 NRC 1363, 1365 (1982) (quoting *United States v. Grinnell Corp.*, 384 U.S. 563, 583 (1966)).

DISQUALIFICATION: STANDARDS

The parties in an adjudicatory proceeding have a right to an impartial adjudicator, both in reality and in appearance to a reasonable observer. However, they do not have a right to the judge of their choice. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-5, 21 NRC 566, 568 (1985).

DISQUALIFICATION: STANDARDS

The right to an impartial adjudicator does not mean that favorable rulings must be divided equally between the parties, or that a judge may not occasionally use strong language toward a party or in expressing his views on matters before him. *Id.* at 569.

DISQUALIFICATION: STANDARDS

To establish that a hearing was biased, something more must be shown that the presiding officials decided matters incorrectly; to be wrong is not necessarily to be partisan. *Dairyland Power Cooperative* (La Crosse Boiling Water Reactor), ALAB-614, 12 NRC 347, 349 (1980) (quoting *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), ALAB-224, 8 AEC 244, 246 (1974)).

APPEARANCES

E. Thomas Boyle, Hauppauge, New York, **Herbert H. Brown, Lawrence Coe Lanpher, Karla J. Letsche,** and **David T. Case**, Washington, D.C., **Fabian G. Palomino**, Albany, New York, and **Stephen B. Latham**, Riverhead, New York, for the intervenors Suffolk County, the State of New York, and the Town of Southampton.

Donald P. Irwin and **Charles L. Ingebretson**, Richmond, Virginia, for the applicant Long Island Lighting Company.

Mitzi A. Young for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

On October 31, 1988, the intervenors Suffolk County, State of New York and Town of Southampton (Governments) filed a motion under 10 C.F.R. § 2.704(c) calling upon Administrative Judges James P. Gleason and Jerry R. Kline to recuse themselves from presiding, as members of the Licensing Board, over a pending request by the Long Island Lighting Company (LILCO) for immediate authorization to operate its Shoreham facility at 25 percent of rated power. Both LILCO and the NRC staff opposed the motion. On November 21, 1988, Judges Gleason and Kline entered an order in which they announced their decision not to step aside.[1] As required by section 2.704(c), the order went on to refer the recusal motion to us for a determination of "the sufficiency of the grounds alleged." Our examination of the papers filed below persuades us that the Governments have not assigned an adequate basis for the disqualification of either judge.[2]

1. The recusal motion itself is very brief. Both it and the requisite supporting affidavit of counsel do little more than refer the reader to section II of the Governments' contemporaneously filed response to LILCO's request for authorization to operate at 25 percent power.[3] More particularly, counsel's affidavit alludes to the citation in that section of the response to certain statements that had been made by Judges Gleason and Kline in the Board's September 23, 1988 decision purporting to dismiss (over the dissent of the third member of the Board) the Governments from the entire *Shoreham* operating license proceeding.[4] We set forth those statements in an appendix to this opinion. According to the Governments, they reflect a bias that would lead a reasonable person to conclude that those judges could not rule upon the LILCO request fairly and impartially.[5]

2. Neither the recusal motion nor the Governments' filing incorporated by reference therein makes any mention of the Commission's jurisprudence

---

[1] LBP-88-29, 28 NRC 637. On the same date, the full Licensing Board issued a memorandum and order in which it essentially granted (with a dissent by the third judge) the LILCO request for authorization to operate at 25 percent power. LBP-88-30, 28 NRC 644.

[2] In our November 22, 1988 memorandum and order (unpublished), we noted (at 4) that, in accordance with our customary practice, we would review the matter on the basis of the filings below. *See Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-748, 18 NRC 1184, 1186-87 (1983); *id.*, ALAB-749, 18 NRC 1195, 1198 (1983). We therefore have not received further briefs from the parties.

[3] *See* Governments' Motion to Disqualify Administrative Judges Gleason and Kline (October 31, 1988) and appended October 31, 1988 affidavit of Karla J. Letsche. Section II of the Governments' Response to LILCO's Request for Immediate Authorization to Operate at 25% Power (October 31, 1988) [hereafter "Governments' Response"] is captioned "Judges Gleason and Kline Are Disqualified from Acting on the Request."

[4] *See* LBP-88-24, 28 NRC 311. In ALAB-902, 28 NRC 423 (1988), *petition for Commission review pending*, we entertained so much of the Governments' appeal as challenged the power of the Licensing Board to dismiss those parties from a portion of the proceeding pending before a different Licensing Board. We agreed with the Governments that such power was lacking.

[5] Governments' Response at 5-6.

respecting the disqualification of Licensing Board members on the basis of statements made by them in the performance of their adjudicatory duties. Given the assigned foundation for the claim that Judges Gleason and Kline must step aside, this omission is highly significant.

In its *South Texas* decision, the Commission held squarely (adopting the rule applicable in the federal courts) that " 'the alleged bias and prejudice to be disqualifying must stem from an extrajudicial source and result in an opinion on the merits on some basis other than what the judge has learned from his participation in the case.' "[6] Although acknowledging that an exception to the general rule might exist in the case of pervasive bias, the Commission went on to note that the "courts have been hesitant to invoke that exception except in the most extreme cases."[7] On the strength of these determinations, the Commission reinstated a Licensing Board member who had been disqualified by us from further participation in the *South Texas* proceeding by reason of a separate statement that he had issued in connection with the Licensing Board's denial of a motion filed by an intervenor.[8]

The holding of *South Texas* was at the root of our rulings the following year on a series of motions seeking the disqualification of the then-Chairman of the *Seabrook* Licensing Board. Finding that the asserted instances of hostility towards the intervenors both (1) involved rulings, conduct or remarks by the Chairman in response to matters that arose during the administrative proceeding and (2) did not reflect pervasive bias, we affirmed her refusal to recuse herself.[9] And in thereafter upholding the denial of a recusal motion directed to a Licensing Board member in the *Three Mile Island 1* restart proceeding, the Commission refined the *South Texas* holding with this general observation regarding the legitimate expectations of litigants:

> The parties in an adjudicatory proceeding have a right to an impartial adjudicator, both in reality and in appearance to a reasonable observer. However, they do not have a right to the judge of their choice. Moreover, the right to an impartial adjudicator does not mean that favorable rulings must be divided equally between the parties, or that a judge may not occasionally use strong language toward a party or in expressing his views on matters before him. Nor does the fact that a judge's actions may be controversial or may provoke strong reactions by the parties provide grounds for disqualification.[10]

---

[6] *Houston Lighting and Power Co.* (South Texas Project, Units 1 & 2), CLI-82-9, 15 NRC 1363, 1365 (1982) (quoting *United States v. Grinnell Corp.*, 384 U.S. 563, 583 (1966)).

[7] *Id.* at 1366. In this connection, the Commission referred to the notation in a then-recent opinion of the Court of Appeals for the Second Circuit to the effect that that court had never disqualified a judge on the basis of *judicial* conduct. *See In Re International Business Machines Corp.*, 618 F.2d 923, 928 n.6 (2d Cir. 1980).

[8] *See* ALAB-672, 15 NRC 677, 681-83 (1982). We had concluded that the statement could have been taken by a disinterested observer as reflecting a personal animus against that intervenor.

[9] *See Seabrook*, ALAB-748, 18 NRC at 1188-89; ALAB-749, 18 NRC at 1199-1200; ALAB-751, 18 NRC 1313, 1314-15, *reconsideration denied*, ALAB-757, 18 NRC 1356 (1983).

[10] *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-5, 21 NRC 566, 568-69 (1985).

3. In this case, as in *South Texas* and *Seabrook*, the recusal motion does not rest to any extent upon extrajudicial conduct. To the contrary, as we have seen, the sole underpinnings of the motion are statements contained in the September 23 decision authored by Judges Gleason and Kline.

We are entirely satisfied that those statements do not reflect any disqualifying bias against the Governments, in particular the pervasive bias that must be established where no extrajudicial conduct is involved. To be sure, the September 23 decision uses strong language in condemning what Judges Gleason and Kline deemed to be misconduct on the Governments' part during the course of the proceeding. But it was both the right and the duty of the Licensing Board members to pass judgment on the propriety of the Governments' actions and to couch their opinion in terms that appropriately reflected the conclusions they reached.

On this score, it is of no present moment that, as demonstrated by the appeal they have taken from the September 23 decision, the Governments believe those conclusions to be erroneous and that their dismissal from any portion of the proceeding was unwarranted.[11] Nor, as the Commission pointed out in *Three Mile Island*, is it significant that, in commenting on the Governments' actions, the Board majority invoked such phrases as "taken in bad faith" and "reveal a sustained and willful strategy of disobedience and disrespect."[12] It is readily understandable that the Governments are displeased by such characterizations — the accuracy of which has been challenged on their pending appeal from the September 23 decision. But it is equally plain that there would be an intolerable threat to the independence of Licensing Board members — and adjudicators generally — were litigants in a position to employ recusal motions for the purpose of dictating the content of the adjudicators' decisions on the matters coming before them.[13]

---

[11] Needless to say, we express no opinion here on the warrant for any such belief. That matter will be determined by the Commission, which in an unpublished November 9, 1988 order directed the certification to it of so much of the Governments' appeal from the September 23 decision as addressed their dismissal from the proceeding. It is enough for present purposes to repeat our previous observation:

> it is long settled that "[t]o establish that a hearing was biased, something more must be shown than that the presiding officials decided matters incorrectly; to be wrong is not necessarily to be partisan." *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear-1), ALAB-224, 8 AEC 244, 246 (1974), citing *Tennessee Valley Authority* (Bellefonte Nuclear Plant, Units 1 and 2), ALAB-164, 6 AEC 1143 (1973).

Dairyland Power Cooperative (La Crosse Boiling Water Reactor), ALAB-614, 12 NRC 347, 349 (1980) (footnote omitted).

We also find no need, given our judgment that the Governments have not established any basis for disqualification, to review the independent, alternative conclusion of Judges Gleason and Kline that the Governments have no standing to seek their disqualification. *See* LBP-88-29, 28 NRC at 638.

[12] *See* Appendix *infra* p. 625.

[13] As earlier noted, *supra* note 1, on November 21 the Licensing Board essentially granted the LILCO request for authorization to operate at 25 percent power. It is worthy of passing observation that, whether that result is correct or not (a matter that need not be now considered), there is nothing in the Board's opinion that suggests that it was influenced by or harbored any bias against the Governments.

The November 21, 1988 order of Judges Gleason and Kline, LBP-88-29, 28 NRC 637, declining to recuse themselves from further participation in this proceeding is *affirmed.*

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

APPENDIX

Excerpts from LBP-88-24, 28 NRC 311, relied upon at page 6 of the Governments' Response to LILCO's Request for Immediate Authorization to Operate at 25% Power:

"[the Governments' actions] were willful, taken in bad faith, and were prejudicial to LILCO and the integrity of the Commission's adjudicatory process" (28 NRC at 376);

"[the Governments' actions] reveal a sustained and willful strategy of disobedience and disrespect for the Commission's adjudicatory processes" (*ibid.*);

"[t]he [Governments'] strategy of noncooperation and obstruction was deeply entwined with legitimate practice" (*ibid.*).

"[the Governments] have actively sought to frustrate the Commission's efforts to arrive at an informed judgment" (*id.* at 368);

"[the Governments' actions] represent a pattern of substantial and continual actions to . . . frustrate federal review" (*ibid.*);

"procedural mechanisms have been consistently utilized [by the Governments] in delaying the Board and Commission in carrying out its [sic] licensing responsibilities" (*id.* at 367);

"[the Governments have] an overall plan to thwart [the NRC's] inquiry and subvert the Commission's process, for political ends" (*id.* at 363);

"[t]here are no redeeming features in [the Governments' conduct]" (*id.* at 369 n.38); and

"the only appropriate penalty [is for the Governments to be dismissed from all *Shoreham* proceedings]" (*id.* at 377).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Christine N. Kohl, Chairman
Alan S. Rosenthal
Dr. W. Reed Johnson

In the Matter of **Docket No. 50-322-OL-6**
(25% Power)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **December 9, 1988**

The Appeal Board certifies to the Commission a Licensing Board's memorandum and order, LBP-88-30, 28 NRC 644, authorizing the issuance of a 25% power license to the applicant, together with the Appeal Board's related rulings and other matters.

RULES OF PRACTICE: APPEALABLE ORDERS

A licensing board decision authorizing the issuance of a license for operation at less than full power is a final, appealable order that cannot be "referred" to either an appeal board or the Commission.

RULES OF PRACTICE: CERTIFICATION OF ISSUES TO THE COMMISSION

An appeal board is authorized in its discretion, or on direction of the Commission, to certify to the Commission for its determination major or novel

questions of policy, law, or procedure. 10 C.F.R. § 2.785(d). The appeal board, however, has long held that such authority should be exercised sparingly. *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-421, 6 NRC 25, 27 (1977).

RULES OF PRACTICE: CERTIFICATION OF ISSUES TO THE COMMISSION

When compelling circumstances warrant it, the appeal board will not hesitate to certify to the Commission either specified issues or the entirety of a matter, with or without the board's views on the questions involved. *See, e.g.*, ALAB-769, 19 NRC 995 (1984) (certification of three specific questions concerning the interpretation of NRC regulations, accompanied by extensive discussion of the involved provisions); *General Public Utilities Nuclear Corp.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-881, 26 NRC 465 (1987) (certification of discrete jurisdictional question, along with discussion of proposed outcome); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-681, 16 NRC 146 (1982) (certification of questions involving interpretation of Commission enforcement order, characterized as significant legal and policy matters likely to recur); *Offshore Power Systems* (Floating Nuclear Power Plants), ALAB-500, 8 NRC 323 (1978) (certification of Appeal Board decision involving a major and novel environmental policy question).

RULES OF PRACTICE: CERTIFICATION OF ISSUES TO THE COMMISSION

A motion for certification of a matter to the Commission that fails to discuss the requirements of 10 C.F.R. § 2.785(d) or to cite any NRC decision discussing the standard for such certification is subject to summary dismissal.

RULES OF PRACTICE: SANCTIONS (PROCEDURE FOR OBTAINING IN MULTIPLE-BOARD PROCEEDING)

In multiple-board proceedings, a party seeking sanctions is not precluded from arguing before one board that an opposing party's conduct — though above reproach before that board — was so contumacious and prejudicial before another board as to warrant dismissal from the proceeding within the purview of the first board as well. ALAB-902, 28 NRC 423, 429 (1988).

ADJUDICATORY PROCEEDINGS: DUE PROCESS

A party has a fundamental right to be judged by each decisionmaker before whom it appears. *Ibid.*

REGULATIONS: INTERPRETATION (10 C.F.R. § 50.57(c))

10 C.F.R. § 50.57(c) requires a licensing board to give due regard to the rights of the parties to the proceedings, including the right of any party to be heard to the extent that its contentions are relevant to the activity to be authorized. *See generally Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-892, 27 NRC 485, 489-93 (1988).

ADJUDICATORY PROCEEDINGS: ROLE OF NRC STAFF

It is inappropriate for the Director of the Office of Nuclear Reactor Regulation — which itself is a party to a proceeding, appearing as the NRC staff — to make findings with regard to any issue whose litigation status (as contested or uncontested) is in doubt.

RULES OF PRACTICE: MULTIPLE-BOARD PROCEEDINGS (PARTY RIGHTS)

A party that has been dismissed from one part of a proceeding (concerned with an applicant's request under 10 C.F.R. § 50.57(c) for authorization to operate at less than full power), but continues to enjoy party status in another part, is entitled to be heard in the former phase only to the extent that contentions admitted in the latter may be relevant thereto.

APPEARANCES

E. Thomas Boyle, Hauppauge, New York, **Lawrence Coe Lanpher, Karla J. Letsche**, and **David T. Case**, Washington, D.C., **Fabian G. Palomino** and **Richard J. Zahnleuter**, Albany, New York, and **Stephen B. Latham**, Riverhead, New York, for intervenors Suffolk County, the State of New York, and the Town of Southampton.

Donald P. Irwin, Scott D. Matchett, and **David S. Harlow**, Richmond, Virginia, for applicant Long Island Lighting Company.

Mitzi A. Young and Edwin J. Reis for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

Two motions are pending before us in connection with the Licensing Board's November 21, 1988, memorandum and order that authorized the Director of the Office of Nuclear Reactor Regulation (NRR), after making certain findings, to issue a license permitting applicant Long Island Lighting Company (LILCO) to operate its Shoreham facility at 25% power. *See* LBP-88-30, 28 NRC 644. The intervening Governments (Suffolk County, the State of New York, and the Town of Southampton) have moved for a stay of LBP-88-30 pending appellate review of that decision *and* an earlier Licensing Board decision in this proceeding, namely, LBP-88-24, 28 NRC 311 (1988). *See* Governments' Motion for Stay (November 23, 1988) at 1-2. Pursuant to 10 C.F.R. § 2.785(d), LILCO requests us to certify the Licensing Board's November 21 memorandum and order to the Commission. *See* LILCO's Motion for Certification (November 23, 1988).

As explained below, in our view the Licensing Board's 25% power license authorization does not comply with pertinent NRC regulations. Because a novel question of procedure is involved, however, we grant LILCO's motion and certify to the Commission the Licensing Board's November 21 memorandum and order, along with our rulings here, the Governments' appeals from LBP-88-30, and the Governments' motion for a stay.

A. Before addressing the pleadings before us, it is necessary to set forth the tortuous path this proceeding has taken over the last 11 weeks.

On September 23, 1988, the Licensing Board designated to preside over issues in the so-called "OL-3" phase or sub-docket of this operating license proceeding rendered what it termed its "Concluding Initial Decision on Emergency Planning," LBP-88-24. In that decision, the Board resolved several remaining contentions in LILCO's favor and, as especially pertinent here, dismissed the Governments from the entire proceeding for assertedly improper conduct concerning a discovery matter. Thus finding no more issues in controversy, the Board authorized the Director of NRR to issue a full-power operating license for Shoreham. 28 NRC at 317, 357-77, 385-86. One Board member, however, dissented in part. *Id.* at 386-93. The Governments appealed immediately and sought separate, expeditious review of a narrow jurisdictional issue, i.e., whether the OL-3 Licensing Board had authority to dismiss them as parties from another phase of the proceeding (the "OL-5" sub-docket) pending before a different

Licensing Board.[1] (In the OL-5 sub-docket, the Governments seek to litigate issues relating to LILCO's compliance with certain pre-license emergency preparedness exercise requirements.) After expedited briefing of that discrete jurisdictional issue, we concluded that the Licensing Board exceeded its authority in dismissing the Governments from a portion of the proceeding pending before another Licensing Board. ALAB-902, 28 NRC 423, 428 (1988).[2] Because all outstanding emergency planning issues had thus not been resolved, we necessarily had to vacate the Board's full-power license authorization. *Id.* at 434.

The remainder of the Governments' appeal from LBP-88-24 is pending, as is LILCO's petition for Commission review of ALAB-902. In an unpublished order issued November 9, 1988, however, the Commission announced that it would decide itself

> whether [the] Governments' conduct was such as to warrant their dismissal from the entire proceeding and whether, if dismissal from the entire proceeding is not warranted, what other sanction, if any, is appropriate. Other matters decided in LBP-88-24 (role conflict of bus drivers, emergency broadcast system) remain before the Appeal Board.

Neither LBP-88-24 nor ALAB-902, however, has been stayed. As a consequence, at this point the Governments are dismissed as parties from all aspects of the OL-3 proceeding,[3] but they continue to enjoy party status in the ongoing OL-5 proceeding. In addition, a full-power operating license may not be issued on the basis stated in LBP-88-24 (i.e., that no more issues remain in controversy).

In the meantime, LILCO renewed before the Licensing Board its earlier request for a license to operate at 25% power.[4] Documents relating to LILCO's 25% power motion have been filed in yet another sub-docket ("OL-6") established by the Licensing Board in October 1987 for case management purposes. The members of the OL-6 Licensing Board, however, are the same as those on the OL-3 Board.

The Governments opposed LILCO's 25% power request. In the memorandum and order now before us, the Licensing Board held, with a dissent, that the Governments' filing in opposition to LILCO's request was unauthorized because they have been dismissed from the proceeding. The Board noted that it was composed of the same decisionmakers as the OL-3 Board that dismissed the Governments in LBP-88-24, and that, except as to the OL-5 proceeding, LBP-

---

[1] One of the same judges sits on both the OL-3 and OL-5 Licensing Boards; otherwise the Board membership is different.

[2] We expressed no view on the merits of the Licensing Board's imposition of sanctions against the Governments, but rather assumed *arguendo* that they were warranted. ALAB-902, 28 NRC at 428 & n.7.

[3] They are, of course, entitled to pursue their appeals from LBP-88-24 before us and the Commission.

[4] LILCO originally moved for a 25% power license authorization in April 1987. Eventually that matter became dormant, as the proceeding focused on the requirements for a full-power license.

88-24 remains binding. LBP-88-30, 28 NRC at 645-46. It also reaffirmed, in any event, its conclusion in LBP-88-24 that the Governments' conduct in the OL-3 proceeding was "so 'contumacious and prejudicial . . . as to warrant [their] dismissal from (the 25% power) proceeding as well.'" *Id.* at 646. The Board acknowledged that the Governments "remain as parties to the OL-5 portion of the case," where "possibly relevant contentions" are awaiting a ruling from that Licensing Board. *Id.* at 647. *See also id.* at 648. The Board nonetheless concluded that, due to its dismissal of the Governments from this part of the proceeding, LILCO's motion for 25% power was unopposed. *Ibid.* It stated: "LILCO's application is uncontested before us and Intervenors are not entitled to participate in any proceeding before us whether or not any possibly relevant contentions might be admitted before another Board." *Id.* at 648-49.

The Board, however, declined to make any findings on the merits of LILCO's proposal. Instead, it referred to 10 C.F.R. § 50.57(c) — the regulation applicable to requests for a license authorization to operate at less than full power — and concluded from its reading of that section that it is the responsibility of the Director of NRR to make any necessary safety findings in connection with LILCO's request. *Id.* at 648. The Board therefore granted LILCO's motion in part and authorized the Director to issue a 25% power license to LILCO after making such findings. *Id.* at 649.

Despite the license authorization, the Licensing Board viewed its decision as an interlocutory ruling and sought to refer it directly to the Commission, pursuant to 10 C.F.R. §§ 2.730(f) and 2.785(b)(1). The Board concluded that it would be in the public interest for the Commission to consider the Board's most recent order along with the issues before it in connection with the Board's sanctions ruling in LBP-88-24. *Ibid.* In an unpublished memorandum and order issued November 22, 1988, we observed that, under the Commission's Rules of Practice and case law, the Licensing Board's decision was a final, appealable order that could not be "referred" to either the Appeal Board or the Commission. We therefore directed any appeals to be filed with us. The Governments promptly did so, along with their motion for a stay, followed by LILCO's motion for certification on the same day. LILCO and the Governments oppose each other's motion. The NRC staff supports LILCO's motion and argues that the Governments' request for a stay should be denied. Logic and concerns for judicial economy suggest that we address LILCO's motion for certification first.

B. Section 2.785(d) of 10 C.F.R. authorizes an appeal board "in its discretion or on direction of the Commission, [to] certify to the Commission for its determination major or novel questions of policy, law or procedure." We have long held that "'such authority should be exercised sparingly.'" *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-421, 6 NRC 25, 27 (1977). But when compelling circumstances warrant it, we will not

hesitate to certify to the Commission either specified issues or the entirety of a matter, with or without our views on the question involved. *See, e.g.*, ALAB-769, 19 NRC 995 (1984) (certification of three specific questions concerning the interpretation of NRC regulations, accompanied by extensive discussion of the involved provisions); *General Public Utilities Nuclear Corp.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-881, 26 NRC 465 (1987) (certification of discrete jurisdictional question, along with discussion of proposed outcome); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-681, 16 NRC 146 (1982) (certification of questions involving interpretation of Commission enforcement order, characterized as significant legal and policy matters likely to recur); *Offshore Power Systems* (Floating Nuclear Power Plants), ALAB-500, 8 NRC 323 (1978) (certification of Appeal Board decision involving a major and novel environmental policy question).

Although LILCO's motion invokes 10 C.F.R. § 2.785(d), it fails to discuss what that provision requires or to cite a single NRC decision discussing the standard for certification of a matter to the Commission.[5] Instead, LILCO contends that certification of the Licensing Board's memorandum and order authorizing a 25% power license is "both appropriate and necessary" in light of the Commission's November 9 order certifying to itself that portion of the Governments' appeals from LBP-88-24 involving the imposition of sanctions. LILCO Motion at 1. In LILCO's view, the Licensing Board's 25% power ruling "was predicated solely on the Board's *confirmation* that Intervenors had, *with the issuance of LBP-88-24*, been dismissed from the OL-6 subdocket." *Id.* at 4 (emphasis in original). Because LILCO's motion for 25% power was therefore unopposed, LILCO contends that "the Board was *required*, pursuant to 10 C.F.R. § 50.57(c), to issue an order authorizing the 25% power license." *Ibid.* (emphasis in original). LILCO acknowledges, however, that the Governments are entitled to appeal the Board's confirmatory dismissal of them on the basis of the Board's earlier decision in LBP-88-24. *Ibid.* LILCO argues that certification is therefore necessary "to avoid potentially duplicative and contradictory simultaneous review of this matter by both the Commission and the Appeal Board." *Id.* at 5.

We agree with LILCO that, insofar as it reaffirms the Board's imposition of sanctions against the Governments and dismisses them from the OL-6 proceeding, the Licensing Board's November 21 order in LBP-88-30 must be certified to the Commission for disposition with the other sanctions issues pending there as a result of the Commission's November 9 order. Obviously, we could express no view on the merits of that determination without improperly interfering

[5] Ordinarily that would give us cause to dismiss LILCO's motion summarily. But in light of the unusual posture of this complicated, controversial proceeding and the fact that we may direct certification on our own motion, we will overlook this inadequacy in LILCO's filing.

with the Commission's consideration of the Board's original dismissal decision, LBP-88-24.

The Governments argue, however, that the Licensing Board based its November 21 dismissal ruling on our decision in ALAB-902, and that therefore it is appropriate for us to review LBP-88-30 in the first instance. Governments' Response (December 5, 1988) at 2-3. Although we recognize that the Governments have not yet had the opportunity to brief the issue fully, we agree that there is value in expressing our view now on whether the Licensing Board acted in accordance with our own earlier ruling in ALAB-902.

We believe that the Board's action fully comports with the procedures set forth in that decision. We specifically held in ALAB-902 that a "party seeking sanctions would not be precluded from arguing to 'Board B' that an opposing party's conduct — though above reproach before 'Board B' — was so contumacious and prejudicial before 'Board A' as to warrant dismissal from the 'Board B' proceeding as well." 28 NRC at 429. We also expressed a concern for "a party's fundamental right to be judged by each decisionmaker before whom it appears." *Ibid.* Here, the OL-6 Licensing Board is composed of the same members as the OL-3 Licensing Board that intended in LBP-88-24 to dismiss the Governments from the entirety of this operating license proceeding. The Board was obviously familiar with the record and the underlying basis of its decision in LBP-88-24. Thus, it is neither surprising nor inconsistent with ALAB-902 for the Licensing Board here to have reaffirmed its earlier dismissal of the Governments in the context of the OL-6 sub-docket involving LILCO's 25% power request.[6]

As for LILCO's argument and the Licensing Board's holding that 10 C.F.R. § 50.57(c) required the Board to issue an order authorizing the 25% power license, we believe that the regulation in question is at best ambiguous. Although again LILCO does not discuss the regulation, we presume that it relies on the following final sentence from section 50.57(c):

> If no party opposes the motion, the presiding officer will issue an order pursuant to § 2.730(e) of this chapter, authorizing the Director of Nuclear Reactor Regulation to make appropriate findings on the matters specified in paragraph (a) of this section and to issue a license for the requested operation.

The immediately preceding part of section 50.57(c) provides, however, that

> [a]ction on . . . a motion [for less than full-power operation] by the presiding officer shall be taken *with due regard to the rights of the parties to the proceedings, including the right of any party to be heard to the extent that [its] contentions are relevant to the activity to*

[6] It bears repeating here that, except to the limited extent it was reversed by ALAB-902, LBP-88-24 has not been stayed.

> *be authorized.* Prior to taking any action on such a motion which any party opposes, *the presiding officer shall make findings on the matters* specified in paragraph (a) of this section *as to which there is a controversy,* in the form of an initial decision with respect to the contested activity sought to be authorized. The Director of Nuclear Reactor Regulation will make findings on all other matters specified in paragraph (a) of this section. [Emphasis added.]

See generally Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-892, 27 NRC 485, 489-93 (1988).

As noted earlier, the Licensing Board recognized that the Governments "remain as parties to the OL-5 portion of the case where contentions on the 1988 emergency exercise have been filed before the OL-5 Board," and that "contentions that could be relevant to LILCO's request [for a 25% power license authorization] might subsequently be admitted before another Board." LBP-88-30, 28 NRC at 647, 648. Nonetheless, the Board decided that LILCO's motion was unopposed before it and that it was therefore the responsibility of the Director of NRR to review and "to make appropriate findings" with regard to "any important matter pertaining to public health and safety." *Id.* at 648. Thus, the Board implicitly and necessarily has left it up to the Director of NRR to decide if any contentions that might be admitted in the proceeding pending before the OL-5 Board have a bearing on operation at a 25% power level.

In our view, there are several problems with that approach. First, section 50.57(c) clearly requires the Board to give "due regard to the rights of the parties to the proceedings, including the right of any party to be heard to the extent that [its] contentions are relevant to the activity to be authorized" (emphasis added). Although the Governments have been dismissed from the OL-3/OL-6 part of this proceeding, they still retain full party status in the OL-5 phase, and thus under section 50.57(c) they have a right to be heard to the extent that any of their contentions that might be admitted in the OL-5 proceeding are relevant to LILCO's 25% power request. Moreover, the Governments actively, albeit unsuccessfully due to the dismissal order, have sought to oppose LILCO's motion for a 25% power authorization. In these circumstances, the Licensing Board's determination that LILCO's motion is "uncontested" and that it is therefore the NRR Director's responsibility to make the requisite safety findings does not accord "due regard" to the Governments' rights as a party in the OL-5 portion of this proceeding. LILCO's motion for a 25% power authorization is not truly uncontested, and thus it would be inappropriate for the Director of NRR — which itself is a party to this proceeding, appearing as the NRC staff — to make findings with regard to any issue whose litigation status (as contested or uncontested) is in doubt.

To be sure, as long as the Governments' dismissal from proceedings before the OL-3/OL-6 Licensing Board stands, they may not seek to raise any entirely new "25% power" issues. But section 50.57(c) seemingly entitles the

Governments to the opportunity to be heard on LILCO's request for 25% power to the extent any other contentions that may be admitted in the OL-5 phase may be relevant thereto. In other words, at this point the Governments' continued participation in this overall proceeding is necessarily and inextricably linked to the litigation of their so-called 1988 exercise contentions.[7] Thus, we believe that the Licensing Board should have waited for the OL-5 Board's ruling on the Governments' numerous pending exercise contentions.[8] If any such contentions are found to be admissible, the OL-6 Licensing Board must afford the Governments a reasonable opportunity to be heard as to whether those contentions are relevant to LILCO's 25% power request. We therefore conclude that the Board's authorization of a 25% power operating license for LILCO is not in compliance with 10 C.F.R. § 50.57(c) and is premature.

We recognize, however, that we are charting new waters with this interpretation and application of section 50.57(c), in a proceeding that is already inundated with procedural complexities and anomalies. A novel question of procedure is surely at issue here, warranting the exercise of our certification discretion under 10 C.F.R. § 2.785(d). And, as we previously discussed *supra* pp. 632-33, because the sanctions/dismissal aspect of the Licensing Board's ruling in LBP-88-30 is essentially already before the Commission in the context of its review of a portion of LBP-88-24, certification of that part of the Board's ruling is justified as well.[9]

We therefore *grant* LILCO's November 23 motion. We *certify* to the Commission (1) the OL-6 Licensing Board's memorandum and order authorizing the issuance of a 25% power license to LILCO (LBP-88-30); (2) our rulings here; (3) the Governments' appeals (filed on November 23, 1988) from LBP-88-30; and (4) the Governments' motion for a stay of LBP-88-30 pending appellate review of that decision and LBP-88-24.[10]

---

[7] In ALAB-905, 28 NRC 515 (1988), which ruled on the Governments' appeal from the OL-3 Licensing Board's decision on the suitability of certain reception centers for use in the event of a radiological emergency at Shoreham, we remanded two matters to the Board for further consideration. Because the Governments' dismissal from that part of the proceeding now stands, our interpretation of section 50.57(c) would thus preclude them from raising objections to LILCO's 25% power request based on the matters remanded in ALAB-905.

[8] The Commission recently established expedited procedures for the proceeding under the OL-5 sub-docket, including an expeditious ruling by the Board on the Governments' contentions. CLI-88-9, 28 NRC 567 (1988). Thus, waiting for the OL-5 Board's decision would not add significant delay to this proceeding.

[9] The Governments' Response to LILCO's Motion (at 1-2) suggests that, through our November 22 memorandum and order (*see supra* p. 631), we have already effectively rejected LILCO's request for certification, by having thwarted the Licensing Board's attempt to "refer" its ruling directly to the Commission. Our November 22 order, however, was concerned solely with fealty to the Commission's Rules of Practice. As we noted there, the Licensing Board mischaracterized its ruling as an interlocutory order and then purported to exercise discretion that is within the province of the Appeal Board and the Commission under 10 C.F.R. § 2.785(d).

[10] Given our determination to certify LBP-88-30 to the Commission, we decline to rule on the Governments' motion for a stay. We note, however, that if our reading and application of 10 C.F.R. § 50.57(c) is correct, the Governments will have prevailed on the merits and the 25% power authorization will therefore have to be vacated.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

Cite as 28 NRC 637 (1988) LBP-88-29

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

James P. Gleason, Chairman
Dr. Jerry R. Kline
Mr. Frederick J. Shon

In the Matter of **Docket No. 50-322-OL-3**
(Emergency Planning)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **November 21, 1988**

ORDER

I. INTRODUCTION

Intervenors filed a motion with the Licensing Board requesting that Administrative Judges Gleason and Kline be disqualified from presiding over proceedings relating to LILCO's Request for Immediate Authorization to Operate at 25% Power. Intervenors submitted the Affidavit of Karla J. Letsche in support of their motion. The affidavit stated that the bases for the motion are statements in LBP-84-22 (*sic* LBP-88-24, 28 NRC 311 (1988)) made by Judges Gleason and Kline which statements are referenced in § II to the Governments' Response to LILCO's Request for Immediate Authorization to Operate at 25% Power.

The Governments' Response to LILCO's Request for Immediate Authorization to Operate at 25% Power was dated October 31, 1988, and received by the Board at the same time as the request for disqualification. Among the reasons given for denying LILCO's motion, Intervenors allege that "two members

of the Board are disqualified from acting on the request." Section II of the Governments' response alleges that Judges Gleason and Kline have shown bias against the Governments and cannot act fairly and impartially in this matter. In support of this view, Governments allege that LBP-88-24 is replete with invective directed toward the Governments. Seven statements drawn from LBP-88-24 are set forth verbatim as evidence of our bias and impartiality. Intervenors state that, given our previous ruling that Intervenors should be dismissed from the *Shoreham* proceeding, we cannot now fairly or objectively resolve the issue of their continued participation in the OL-6 proceeding. In support thereof, Intervenors cite an Appeal Board ruling stating that "a [party has a] right to be judged independently and fairly by each board before which it appears." ALAB-902, 28 NRC 423, 430 (1988).

Intervenors cite five cases from the federal courts as bases for the propositions that parties are entitled to a fair hearing before an impartial tribunal and that a judge must disqualify himself in any proceeding in which his impartiality might reasonably be questioned. (Governments' Response at 5.) Notably absent from Governments' response was any reference to NRC case law that establishes precedent for how the general principles governing disqualification of judges have been applied in NRC adjudicatory proceedings.

LILCO responded in opposition to Intervenors' motion on November 12, 1988. The Staff responded in opposition on November 21, 1988. Applicant and Staff thoroughly reviewed the legal standards governing disqualification of judges.

II. LEGAL STANDARDS FOR DISQUALIFICATION OF LICENSING BOARD JUDGES

We note at the outset that the OL-3 Board in LBP-88-24 dismissed Intervenors from the *Shoreham* case. That decision was partly reversed on jurisdictional grounds as it applied to the pending OL-5 proceeding which is before a board composed of different decisionmakers than the ones herein. ALAB-902, *supra*, 28 NRC at 427. The OL-6 portion of the case, however, pends before the same decisionmakers that rendered the decision in LBP-88-24. There has been no jurisdictional question raised, and the Appeal Board has not reversed our decision as it applied to the OL-6 part of the case. LBP-88-24 is currently binding on the parties except for the parts that have been reversed. We individually conclude that, as a result of our decision in LBP-88-24, Intervenors have no current standing to file a motion for disqualification before the decisionmakers who rendered that decision. However, any motion to disqualify a judge is a serious matter not to be taken lightly. The existence of the motion itself may cast a cloud on the integrity of NRC proceedings if

permitted to stand unanswered. We jointly conclude, therefore, that we will not rest on our procedural prerogative to dismiss summarily Intervenors' request as we are entitled to do in these circumstances. We address the motion on the merits instead as a matter of our discretion.

Judges requested to disqualify themselves from participation in NRC proceedings must decide the matter as individuals and not as a full board. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-748, 18 NRC 1184 (1983). In the case before us, Intervenors' motion does not distinguish between alleged bias shown by Judges Kline or Gleason. Disqualification is sought for essentially identical reasons, and the bases alleged are equally applicable to both. We therefore choose to prepare this single statement solely as a matter of convenience. This statement presents findings and opinions that we each adopt fully and individually and it is not to be construed as the ruling of a quorum of the OL-3 Board.

The standards applicable to requests for disqualification of NRC judges have been discussed repeatedly by the Appeal Board and the Commission. Together the cluster of NRC cases on this subject presents a clear and unambiguous basis for deciding such motions. An administrative trier of fact is subject to disqualification if he or she has a direct, personal, substantial pecuniary interest in a result; if he or she has had a personal bias against a participant; if he or she has served in a prosecutive or investigative role with regard to the same facts as are at issue; if he or she has prejudged factual — as distinguished from legal or policy — issues; or if he or she has engaged in conduct that gives the appearance of personal bias or prejudgment of factual issues. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-777, 20 NRC 21 (1984). A judge should disqualify himself in any proceeding in which his impartiality may reasonably be questioned. Disqualification should follow if a reasonable man, cognizant of all the circumstances, would harbor doubts about the judge's impartiality. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-84-20, 20 NRC 1061, 1078 n.46 (1984). An administrative trier of fact is subject to disqualification for the appearance of bias or prejudgment of the factual issues as well as for actual bias or prejudgment. *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), ALAB-672, 15 NRC 677 (1982).

In the federal courts, disqualifying bias or prejudice of a trial judge must generally be extrajudicial. As the Supreme Court has held, "the alleged bias and prejudice to be disqualifying must stem from an extrajudicial source and result in an opinion on the merits on some basis other than what the judge has learned from his participation in the case." *United States v. Grinnell Corp.*, 383 U.S. 563, 583 (1966). *See also In Re International Business Machines Corp.*, 618 F.2d 923, 927 (2d Cir. 1980) ("IBM"). The same standard applies to presiding officers in administrative proceedings. *Duffield v. Charleston Area*

Medical Center, Inc., 503 F.2d 512 (4th Cir. 1974). Indeed the Commission has expressly adopted this rule, holding that "[p]reliminary assessments, made on the record, during the course of an adjudicatory proceeding — based solely upon application of the decision-makers' judgment to material properly before him in the proceeding" do not compel disqualification as a matter of law. *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), CLI-82-9, 15 NRC 1363, 1365 (1982) (citations omitted). Other NRC cases dealing with motions to disqualify an NRC judge hold unambiguously that to be disqualifying, bias must stem from an extrajudicial source. It must be based on something other than what the adjudicator has learned from participating in the case. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681 (1985); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-748, 18 NRC 1184 (1983). Matters cannot be deemed extrajudicial even if they are unnecessary, inappropriate, erroneous, superfluous, or improvident. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-749, 18 NRC 1195 (1983).

Disqualification of an administrative judge may also be required if judicial conduct demonstrates a pervasive bias or prejudice. *South Texas*, CLI-82-9, *supra*. However, disqualifying bias or prejudice cannot be shown by unfavorable rulings, use of strong language, or by the expression of the judge's views on pending matters. Inadvertent and possibly inaccurate statements by the adjudicator do not establish bias. *Limerick*, ALAB-819, *supra*. The fact that a judge's actions may be controversial or may provoke strong reactions by the parties does not provide grounds for disqualification. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-5, 21 NRC 566 (1985). The fact that a judge may have a crystallized point of view on questions of law or policy is not a basis for his or her disqualification. *Shoreham*, ALAB-777, *supra*. Even the appearance of bias cannot be shown by adverse rulings on the merits. *Id.*

II. DECISION

Intervenors did not allege that any actions or writings of Judge Kline or Judge Gleason in the *Shoreham* case or in LBP-88-24 stem from an extrajudicial source. This criterion for disqualification is not relied on in Intervenors' motion. Judges Gleason and Kline each individually affirm that all findings of fact and opinions and inferences drawn therefrom in LBP-88-24 were based upon the judicial record before us and that no extrajudicial information was relied upon in that decision.

Intervenors do not allege that Judges Gleason and Kline exhibited pervasive bias or prejudice in LBP-88-24. Indeed it would have been fruitless to do so

based on seven statements drawn from an initial decision, because it is settled that adverse rulings by an administrative board do not show pervasive bias. While Intervenors might object to our choice of language in those statements, it is equally well settled that disqualifying bias or prejudice cannot be shown by a judge's use of strong language. If we understand Intervenors' concern correctly, it appears to be that since the Board majority dismissed them from the proceeding in LBP-88-24, we are too biased to fairly consider anything they have to say in their opposition to Applicant's request for immediate authorization for 25% power. However, the law is clear that bias or prejudice cannot be shown where a judge holds crystallized views on matters of law or policy. Our statements, cited by Intervenors, accurately reflect our deliberative view that Intervenors were properly dismissed from the *Shoreham* case; however, that view is based on a judicial record, and it is not a basis for disqualification even if erroneous, superfluous, or improvident.

As we noted earlier, Intervenors have not cited any NRC authority that supports their view that we should be disqualified. Our review reveals that there is no basis for our disqualification as a matter of law (*supra*).

However, we consider separately whether we should disqualify ourselves as a matter of discretion, although Intervenors have not requested us to do so. Such disqualification could be required if there is even the appearance of bias or prejudgment of facts resulting from our judicial conduct or writings. The test is whether a disinterested reasonable observer might conclude that we have in some measure adjudged the facts as well as the law in advance of hearing it. However, there are no factual issues before us for decision. The only matters pending before us are LILCO's request and Intervenors' response in which Intervenors seek the opportunity as a matter of law to litigate LILCO's request for authorization to operate at 25% power. While a reasonable person, similarly situated, might well prefer to have his request decided by someone other than the judges who had previously imposed a sanction against him, the test is whether a disinterested person knowing all the circumstances would question the judge's impartiality. We cannot conclude that a reasonable person knowing all the circumstances surrounding our issuance of a sanction in this case could harbor doubts about our impartiality even if he disagreed with our decision. The record of this proceeding establishes that our action was based on reason even if it is later adjudged to be erroneous. We believe that discretionary disqualification of ourselves in this instance would be objectively harmful to the integrity of NRC's proceedings and the public confidence in them because it would give the appearance that Intervenors' assertions against us were in some sense meritorious, and it would tend to undermine judges' freedom to make the independent analyses required for decisionmaking.

For all of the foregoing reasons, we conclude that we should not disqualify ourselves from considering matters in the OL-6 portion of the *Shoreham* case and that Intervenors' request for our disqualification should be denied.

Two matters related to this motion require additional comment. We find it unacceptable for Intervenors to have filed such a request with us without having cited a single NRC authority that could have a direct bearing on the disposition of the request. Even a cursory review of that authority would have revealed, prior to filing, that such a request was frivolous since we found that there is not a single NRC case supporting disqualification of judges in the circumstances complained of by Intervenors.

We also find the timing of this motion unacceptable because of its possible impact on the integrity of NRC proceedings. It is settled that motions for disqualification must be filed in a timely fashion, i.e., once the information giving rise to such a claim is available to the movant. *Seabrook*, ALAB-749, *supra*. Any delay in filing casts a cloud over the proceeding and increases the likelihood of delay. *Id.* Insistence on timeliness is not merely a procedural technicality but a matter of preserving the integrity of the adjudicatory process because litigants should not be permitted to use disqualification motions to manipulate the outcome of the judicial or administrative process. *Shoreham*, CLI-84-20, *supra*.

The latter reason for insistence on timely filings is what concerns us here. Intervenors were in possession of LBP-88-24, which forms the basis for their claim, since September 23, 1988, but their request was filed October 31, 1988, as part of a response to a motion by LILCO for authorization to operate at 25% power. Intervenors' opposition to LILCO's motion was premised in part on disqualification of Judges Gleason and Kline. Thus the disqualification request and its timing are reasonably interpretable as being simply another strategy of litigation that could have the effect of preventing or delaying a decision on LILCO's motion. A genuine concern for judicial bias merits a prompt filing; a party may not attempt to manipulate the adjudicatory process by waiting until there is risk of an adverse decision before making a charge of bias. It is immaterial that there was nothing pending before us for several weeks after LBP-88-24 was issued or that the total elapsed time taken by Intervenors does not, at first blush, seem egregious. If a genuine concern for judicial bias existed, the motion should have been filed as soon as a basis was perceived to exist. Waiting until there was a risk of adverse ruling before filing a serious charge, particularly where, as here, the claim was poorly supported and therefore frivolous, was more an attempt to delay or prevent our decision on LILCO's motion than a genuine effort to disqualify biased judges.

Intervenors' request for the disqualification of Judges Gleason and Kline in the OL-6 proceeding is individually denied by each of us. In accordance with 10 C.F.R. § 2.704(c), this decision is referred to the Appeal Board.

James P. Gleason, Chairman
ADMINISTRATIVE JUDGE

Dr. Jerry R. Kline
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 21st day of November 1988.

Cite as 28 NRC 644 (1988) LBP-88-30

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

James P. Gleason, Chairman
Dr. Jerry R. Kline
Mr. Frederick J. Shon

In the Matter of **Docket No. 50-322-OL-3/OL-6**
(Emergency Planning)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **November 21, 1988**

The Licensing Board dismisses, without consideration, Intervenors' opposition to Applicant's request for 25% power operation and authorizes the Director of Nuclear Reactor Regulation to make findings and to issue a license under 10 C.F.R. § 50.57(c).

OPERATING LICENSE: LIMITED-POWER AUTHORIZATION

When parties are dismissed from participation in a proceeding, resulting in no party opposing a motion for limited-power operation, the Director of Nuclear Reactor Regulation shall be authorized to make appropriate findings on specified matters and to issue a license for the requested operation of a facility. 10 C.F.R. § 50.57(c).

MEMORANDUM AND ORDER
(Granting in Part and Denying in Part LILCO's Request for Immediate Authorization to Operate at 25% Power)

I. INTRODUCTION

On October 21, 1988, LILCO filed "LILCO's Request for Immediate Authorization to Operate at 25% Power." The NRC Staff responded in support of LILCO's motion on October 31, 1988. The Intervenors filed a response opposing LILCO's request on October 31, 1988. On November 12, 1988, LILCO filed a Motion for Leave to File Answer to Intervenors' October 31 Response. LILCO's Answer to Intervenors' October 31 Response accompanied its motion for leave to file.

II. CLARIFICATION OF THE PROCEDURAL STATUS OF THE 25% POWER CASE

We hold at the outset that Intervenors' response in this matter is an unauthorized filing because they have been previously dismissed from the *Shoreham* case. LBP-88-24, 28 NRC 311, 376-77 (1988). The Board holds this to be the case even though one aspect of LBP-88-24 as it applied to the OL-5 phase of the case was reversed on jurisdictional grounds shortly after our decision was issued. The Appeal Board held that we exceeded our authority in dismissing Intervenors from a part of the proceeding that was pending before different decisionmakers. ALAB-902, 28 NRC 423, 428 (1988). The OL-6 part of the *Shoreham* proceeding, however, pends before the same decisionmakers as the OL-3 proceeding, and the Appeal Board acknowledged our jurisdiction to sanction Intervenors in that circumstance. Further, the OL-6 proceeding is not a separate proceeding within the meaning of ALAB-902, because it was not initiated by an order reconstituting the Board, and this Board expressly retained jurisdiction to decide the issues in controversy surrounding LILCO's original request to us to authorize 25% power operation. Memorandum and Order (In Re: LILCO's Request for Authorization to Operate at 25% of Full Power), January 7, 1988, LBP-88-1, 27 NRC 7, 17. Order Appointing Alternate Board Member, February 26, 1988 (unpublished), at 2. The OL-6 designation was a management mechanism to promote the orderly filing of papers, since at the time of our orders on the matter we were simultaneously considering voluminous filings from all parties related to the full-power application. Our authority to dismiss Intervenors from the OL-6 subdocket has not been reversed and our

order in LBP-88-24 remains binding on the parties and former parties in this case pending appellate review.

The OL-6 subdocket is itself in an unusual procedural posture because of the complex events that unfolded in the days following the issuance of LBP-88-24. In that decision the Board ruled that the case before it pertaining to LILCO's application for a full-power operating license was effectively resolved, and authorization for full-power operation was ordered. That order, if affirmed, would necessarily have been applicable as well to operation at intermediate power levels short of full power, and LILCO's separate request for authorization for 25% power operation would with equal necessity have been moot. As events unfolded, however, our order authorizing full-power operation was vacated. This had the effect of reviving LILCO's pending request for 25% power operation. Although LBP-88-24 resulted in dismissal of Intervenors from the *Shoreham* case (except as modified on appeal) and resolution of all contentions pending before us, it did not separately address the issue of authorization for 25% power. That issue therefore remains before this Board until a separate decision is rendered.

To summarize the current procedural status, we conclude that: (1) This Board has jurisdiction to decide LILCO's motion for 25% power operation; (2) LBP-88-24 is binding on the parties and former parties on all matters that have not been reversed or vacated on appeal; (3) as a consequence, LILCO's motion lies before us unopposed, and there are no matters remaining in controversy related to 25% power except to the extent that there is disagreement between the NRC Staff and LILCO.

For the foregoing reasons, Intervenors' response of October 31, 1988, is dismissed without further consideration herein[1] and LILCO's Motion for Leave to File a Response to Intervenors' Response is denied. In our ruling here, the sanction of dismissal of Intervenors as parties in LBP-88-24 reaches to disqualify their participation in the 25% power request proceeding. However, even if it were to be concluded that the 25% proceeding was considered a separate proceeding with the necessity of making additional findings involving Intervenors' participation, this Board would conclude that their conduct in the original proceeding would have been so "contumacious and prejudicial . . . as to warrant dismissal from (the 25% power) proceeding as well." (*See* ALAB-902, *supra*, 28 NRC at 429.)

Additionally, since we made manifest in LBP-88-24 that, except for the sanction, the Applicant was entitled to a decision on the merits authorizing

[1] Judges Gleason and Kline reviewed portions of Intervenors' response before rendering their decision on Intervenors' companion request that we be disqualified from participating in this decision. *See* Order, November 21, 1988, LBP-88-29, 28 NRC 635 (in which we deny Intervenors' motion for disqualification of Judges Gleason and Kline).

an operating license at 100% power, we certainly would conclude that it was entitled to a license at a 25% power level.

III. LILCO'S REQUEST

LILCO urges the Board to immediately grant authorization for 25% power operation on the grounds that: (1) Intervenors, being dismissed as parties, can no longer contest LILCO's 25% power motion; (2) there are no emergency planning contentions now pending before this Board and therefore they cannot have any substantive relevance to LILCO's request for 25% power; and (3) the Staff's technical review of LILCO's 25% power request confirms LILCO's position that any unresolved issues related to the full-participation exercise of the LERO emergency plan conducted on June 7-9, 1988, are not significant for operation of *Shoreham* restricted to this power level. Therefore, according to LILCO the Board should find that LILCO has demonstrated compliance with 10 C.F.R. § 50.47(c)(1) and on that basis the Board should rule under 10 C.F.R. § 50.57(a)(3) and, in turn, 10 C.F.R. § 50.57(c) that existing emergency planning for Shoreham provides reasonable assurance that public health and safety will be protected if Shoreham is permitted to operate at 25% power.

IV. NRC STAFF POSITION

The NRC Staff agrees with LILCO that Intervenors can no longer contest the 25% power application and that this Board has jurisdiction to decide LILCO's motion for authorization for 25% power. Staff Response at 6-7. The Staff disagrees with LILCO's assertion that there are no remaining contentions relevant to LILCO's request to operate at 25% power. The Staff correctly asserts that Intervenors remain as parties to the OL-5 portion of the case where contentions on the 1988 emergency exercise have been filed before the OL-5 Board. The Staff correctly perceives that we are faced again with an apparent situation of split jurisdiction between two Licensing Boards operating in different subdockets of the same case. On the one hand the OL-3/OL-6 Board has jurisdiction to decide LILCO's motion, and on the other the only possibly relevant contentions lie before the OL-5 Board. The Staff argues that if Intervenors were entitled to participate before the OL-3 Board they could raise objections based on contentions before the OL-5 Board and that this Board would be required to consider such matters in making the findings required by § 50.57(c). However, in Staff's view, Intervenors are not permitted to participate further before this Board, and LILCO's motion is therefore unopposed before us. The Staff therefore advises that we should grant LILCO's motion as unopposed

without making findings on the matters specified in 10 C.F.R. § 50.57(a). Such order should authorize the Director of Nuclear Reactor Regulation to issue a license authorizing operation at up to 25% power upon making findings that activities authorized can be conducted with reasonable assurance of the protection of the health and safety of the public and in compliance with the regulations.[2]

V. DECISION

The Board agrees with Staff and Applicant that we have jurisdiction to decide LILCO's motion and that Intervenors are prohibited by the terms of LBP-88-24 from participating in this aspect of the case. We also confirm that in the present posture of the case LILCO's application is unopposed. We disagree with LILCO, however, that we should rely upon the Staff technical assessment of LILCO's proposal to make a reasonable-assurance finding on the merits because the Staff itself has made no such finding on 25% power operation in its technical assessment.[3]

The Board agrees with Staff that the provisions of § 50.57(c) are controlling in these circumstances and that we are required by its provisions to issue an order authorizing the Director of Nuclear Reactor Regulation to make appropriate findings on LILCO's application and to issue the license requested. Such authorization must necessarily be without a reasonable-assurance finding from this Board since under the circumstances of this case and the regulation (§ 50.57(c)) that is the Director's responsibility. In reaching this conclusion we harbor no concern that any important matter pertaining to public health and safety will go unreviewed because the provision of the regulation requiring the Director to make appropriate findings in cases such as this is not a *pro forma* requirement. Where no such findings have been made by the Licensing Board having initial jurisdiction, we are confident that the Director's review will be substantive and thorough.

Even though we concluded in LBP-88-24 that there was no merit to any existing contentions, we are mindful that contentions that could be relevant to LILCO's request might subsequently be admitted before another Board. The controlling factors for our decision, however, are that LILCO's application is uncontested before us and Intervenors are not entitled to participate in any

[2] Section 50.57(c) states: "If no party opposes the motion, the presiding officer will issue an order . . . authorizing the Director of Nuclear Reactor Regulation to make appropriate findings . . . and to issue a license for the requested operation."

[3] The NRC Staff's Technical Review of a Request from Long Island Lighting Company for Authorization to Operate the Shoreham Nuclear Power Station at a Power Level Up to Twenty-Five Percent of Full Rated Power. October 6, 1988. *See* Scope of Staff's Review at 2.

proceeding before us whether or not any possibly relevant contentions might be admitted before another Board.

We are aware that the Commission has taken jurisdiction over the question of whether the sanction we ordered in LBP-88-24 was warranted. Commission Order, November 9, 1988 (unpublished). LILCO's request for expedited consideration, however, has been pending since 1987. This case has had a complex procedural history, and no public benefit would follow if additional complexity were to develop now. It would clearly be in the public interest to ensure that all issues related to sanctions are resolved in coordinated fashion by the decisionmakers with jurisdiction to do so. For these reasons we conclude that this is a case where prompt decision is necessary to prevent detriment to the public and to prevent unusual delay and expense. The Board therefore concludes that it should refer this decision to the Commission through the Appeal Board as provided in 10 C.F.R. §§ 2.730(f) and 2.785(b)(1). This is intended to provide an opportunity for the Commission to consider this decision in conjunction with its review of LBP-88-24 before it reaches any final disposition of the *Shoreham* case.

VI. ORDER

For all of the reasons considered herein, it is hereby ORDERED:

1. LILCO's motion for authorization to operate at 25% power is granted in part and denied in part. The motion is granted insofar as it requests the Board to find that its motion is unopposed and that there are no contentions relevant to its request before this Board. The motion is denied insofar as it requests this Board to find in its favor on the merits of its request.

2. Pursuant to 10 C.F.R. § 50.57(c), the Director of Nuclear Reactor Regulation is authorized to make appropriate findings on matters specified in § 50.57(a) as they relate to LILCO's motion and to issue a license for the requested operation.

3. Pursuant to 10 C.F.R. §§ 2.730(f) and 2.785(b)(1), this decision is referred to the Commission through the Appeal Board because prompt decision

is necessary to prevent detriment to the public interest and unusual delay and expense.[4]

THE ATOMIC SAFETY AND
LICENSING BOARD

James P. Gleason, Chairman
ADMINISTRATIVE JUDGE

Dr. Jerry R. Kline
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 21st day of November 1988.

JUDGE SHON, DISSENTING

I must, once more, respectfully differ with my colleagues. In LBP-88-24, 28 NRC 311 (1988), the Concluding Initial Decision on Emergency Planning (CID), my colleagues dismissed the Governments as intervenors, and I dissented from that action. My reasons for dissenting here are fundamentally the same, and I shall not repeat the details of the logic supporting my dissent. I feel, however, that I owe my colleagues, the Commission, and the public at large some clarification of the way in which I think those reasons compel the same result in the present phase of the case. In the brief apologia below, I set forth each of my reasons for not dismissing the Governments and describe the way in which each bears upon the issue of operation at 25% of power.

My first reason for not dismissing the Governments was my unwillingness to extent the sanction of dismissal beyond the ambit of the contentions on which the Governments had resisted discovery. I felt that their obduracy was neither so flagrant nor so pervasive as to justify their dismissal from other aspects of the case. That reason applies with even greater force here, where the matters at issue have not even been precisely defined, let alone been the subject of contumacious behavior.

My second reason was more complex: I felt that the intergovernmental comity exemplified by 10 C.F.R. § 2.715(c) and the deference to local governments shown in our emergency planning regulations (10 C.F.R. § 50.47 and Part 50, Appendix E) combined to give a special status to state and local

[4] Judge Shon dissents from the majority opinion. His separate opinion is attached hereto.

governments. I believed (and still believe) that we should be even more reluctant to dismiss them than to dismiss other intervenors. The matter of special expertise in emergency planning may not seem to bear immediately on the 25% power issue, but it is well established in this case that the request for that power level has been made under 10 C.F.R. § 50.57(c). That section of the regulations specifically mandates an opportunity for a party to be heard "to the extent that his contentions are relevant to the activity to be authorized," and the only contentions still extant (the potential contentions that may arise in the exercise hearing, OL-5) clearly involve emergency planning matters.

My third reason for limiting the dismissal to the contentions involved in the parties misbehavior was my observance that matters still pended in which the Governments' participation might be beneficial. I specifically mentioned the emergency planning exercise phase of the case, but this 25% power issue is obviously a matter in a similar posture. I did not mention 25% power in my previous dissent since my colleagues had authorized full power in the CID and, as a matter of engineering necessity, full power subsumes quarter power. Since the issuance of the Appeal Board decision ALAB-902, which vacated my colleagues' authorization of full power, the matter of 25% power has been resurrected. It is now surely one of the matters on which the Governments could make a contribution, and I think it unwise to bar them from doing so.

I wholeheartedly agree with my colleagues, however, that, in view of the Commission's Order of November 10, 1988, we must refer any action here taken to the Commission forthwith.

Mr. Frederick J. Shon
ADMINISTRATIVE JUDGE

Cite as 28 NRC 652 (1988) LBP-88-31

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Sheldon J. Wolfe, Chairman
Emmeth A. Luebke
Dr. Jerry Harbour

In the Matter of

Docket Nos. 50-443-OL-1
50-444-OL-1
(ASLBP No. 88-558-01-OLR)
(Onsite Emergency Planning and Safety Issues)

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, *et al.*
(Seabrook Station, Units 1 and 2)

December 7, 1988

The Licensing Board grants the Applicants' motion for summary disposition and dismisses the coaxial cable issue.

RULES OF PRACTICE: SUMMARY DISPOSITION

The summary disposition procedure should be utilized on issues where there is no genuine issue of material fact to be heard so that evidentiary hearing time is not wasted on such issues. *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 457 (1981); *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 1), ALAB-696, 16 NRC 1245, 1263 (1982); *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 550 (1980).

RULES OF PRACTICE: SUMMARY DISPOSITION

It is the movant, not the opposing party, which has the burden of showing the absence of a genuine issue as to any material fact. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753 (1977). Since the moving party has the burden to show initially the absence of a genuine issue concerning any material fact, where the evidentiary matter in support of the motion does not establish the absence of a genuine issue, summary judgment must be denied even if no opposing evidentiary matter is presented. *Adickes v. Kress & Co.*, 398 U.S. 144, 160 (1970). However, if the motion for summary disposition is properly supported, the opposition may not rest upon "mere allegations or denials"; rather, the answer "must set forth specific facts showing that there is a genuine issue of fact." *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 453 (1980).

REGULATIONS: INTERPRETATION

Section 50.49 of 10 C.F.R. provides for two classes of electric equipment important to safety that must be environmentally qualified if located in a harsh environment — (1) safety-related equipment, and (2) nonsafety-related equipment whose failure under accident conditions could endanger the operation of safety-related equipment — as well as (3) certain post-accident monitoring equipment, which is not asserted to be at issue here. Environmental qualification is not required unless the equipment is both important to safety (either class) and located in a harsh environment. Testing methods required by § 50.49 include testing of an identical item of electrical equipment, or testing of a similar item with a supporting analysis to show that the equipment to be qualified by similarity is acceptable.

TECHNICAL ISSUE DISCUSSED

Environmental qualification of electrical equipment.

MEMORANDUM AND ORDER
(Ruling upon Applicants' Motion for Summary Disposition)

Memorandum

I. BACKGROUND[1]

In ALAB-875, 26 NRC 251, 270-71 (1987), the Appeal Board observed that, as litigated, New England Coalition on Nuclear Pollution (NECNP) Contention I.B.2 focused upon the capability of equipment subject to General Design Criterion 4 to continue to perform its intended function for such period after the accident as might be necessary — i.e., whether the equipment was environmentally qualified. Therein, the Appeal Board decided that there was no apparent basis for the Licensing Board's conclusion in its Partial Initial Decision (PID)[2] that the environmental qualification of RG-58 cable was adequately documented in the Applicants' equipment qualification file (EQF) because the vendor's letter in that file merely stated that the RG-59 and RG-58 cables had "similar construction details," with the consequence that the vendor was "confident" that the RG-58 cable would have been approved "had it been tested." The Appeal Board remanded this segment of the environmental qualification issue to this Board because it found nothing in the EQF that could possibly provide any additional support for a conclusion that the RG-58 cable was environmentally qualified.

Ultimately, after a second remand,[3] in ALAB-891, *supra*, 27 NRC at 351-52, the Appeal Board again concluded that no evidence of record had been brought to light which might adequately support this Board's finding that the environmental qualification of the RG-58 cable had been established. It vacated that finding, and to the extent dependent upon that finding, reversed the PID. In remanding the matter for development of an adequate record, the Appeal Board provided the following guidance:

> First, does the RG58 cable have an accident mitigation function in its intended use as part of the facility's computer system? Second, if the RG58 cable has no such function, does it follow that the RG59 cable high-potential test results establish that the cable is environmentally qualified so long as it is used exclusively for data transmission in the computer system?

Id. at 352.

---

[1] The procedural background surrounding the litigation of NECNP Contention I.B.2 was described in detail in ALAB-891, 27 NRC 341, 342-50 (1988).
[2] LBP-87-10, 25 NRC 177 (1987).
[3] ALAB-882, 27 NRC 1 (1988).

In a submission captioned "Suggestion of Mootness," dated May 19, 1988 (as revised on May 27), Applicants requested that an order be entered finding that the issue regarding environmental qualification of RG-58 coaxial cable had been mooted. They stated that, of the 126 nonsafety-related cables installed at the Seabrook Station, only 12 were routed at least partially through a harsh environment within the nuclear island and thus had to meet the environmental qualifications set forth in 10 C.F.R. § 50.49. Since they had proceeded to replace these twelve RG-58 cables with twelve RG-59 cables, Applicants urged that the issue had been mooted. After reviewing submissions by the parties, in a telephonic conference on June 23, 1988,[4] the Board rejected the Suggestion of Mootness and stated that:[5]

> it must be established by the Applicants that a total of 126 RG-58 cables have been installed at Seabrook, and it also must be established by the Applicants how it was determined that a particular RG-58 cable belonged in one of the five groupings or categories. And further in so shifting their position [from previously asserting that all RG-58 cables had to be and were environmentally qualified to now arguing that only 12 RG-58 cables had to be environmentally qualified], the Applicants must prove that the RG-59 cable is a technically acceptable replacement for the RG-58 coaxial cable . . . [additional issues are] the applications of the RG-58, which included the circuits, that is what's attached to each end of it, and . . . why the operability code that was assigned did not seem to apply to the use for which the cable was being made.

The Board also directed that discovery should be initiated immediately and be completed by August 15, 1988, and that any motions for summary disposition should be served on or before September 12.

On August 4, 1988, Applicants furnished copies to the Board, NECNP, and the NRC Staff of an environmental qualification test report on RG-58 cable used at Seabrook, which had been completed by an independent contractor on July 22. The test report was also submitted as Attachment B to the Affidavit of Newell K. Woodward, dated September 9, 1988 (*infra*).

On September 9, 1988, Applicants filed a motion for summary disposition. On October 3, NECNP filed its opposition, and the NRC Staff filed its response in support of Applicants' motion.

[4] Tr. 1159-86.
[5] Tr. 1178-79.

II. DISCUSSION

A. Regulations and Case Law Re Summary Disposition

Section 2.749(a) of 10 C.F.R. provides that once a motion for summary disposition has been filed, the opposing party, with or without affidavits, may file an answer. Paragraph (a) states that:

> There shall be annexed to any answer opposing the motion a separate, short and concise statement of the material facts as to which it is contended that there exists a genuine issue to be heard. 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.
>
> * * *

Section 2.749(b) states that:

> Affidavits shall set forth such facts as would be admissible in evidence and shall show affirmatively that the affiant is competent to testify to the matters stated therein. . . . When a motion for summary decision is made and supported as provided in this section, a party opposing the motion may not rest upon the mere allegations or denials of his answer; his answer by affidavits or as otherwise provided in this section must set forth specific facts showing that there is a genuine issue of fact. If no such answer is filed, the decision sought, if appropriate, shall be rendered.

Section 2.749(d) states that:

> The presiding officer shall render the decision sought if the filings in the proceeding, depositions, answers to interrogatories, and admissions on file, together with the statements of the parties and the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law. . . .
>
> * * *

The summary disposition procedure should be utilized on issues where there is no genuine issue of material fact to be heard so that evidentiary hearing time is not wasted on such issues. *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 457 (1981); *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 1), ALAB-696, 16 NRC 1245, 1263 (1982); *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 550 (1980). It is the movant, not the opposing party, which has the burden of showing the absence of a genuine issue as to any material fact. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753 (1977). Since the moving party has the burden to show initially the absence of a genuine issue concerning any material fact, where the evidentiary matter in support of the

motion does not establish the absence of a genuine issue, summary judgment must be denied even if no opposing evidentiary matter is presented. *Adickes v. Kress & Co.*, 398 U.S. 144, 160 (1970). However, if the motion for summary disposition is properly supported, the opposition may not rest upon "mere allegations or denials"; rather, the answer "must set forth specific facts showing that there is a genuine issue of fact." *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 453 (1980).

B. Regulations Re Environmental Qualification of Electrical Equipment and the Board's Interpretation

Sections 50.49(a) through (c) provide, in pertinent part, that:

> (a) Each holder of or each applicant for a license to operate a nuclear power plant shall establish a program for qualifying the electric equipment defined in paragraph (b) of this section.
>
> (b) Electric equipment important to safety covered by this section is:
>
> (1) Safety-related electric equipment:[footnote omitted] This equipment is that relied upon to remain functional during and following design basis events to ensure (i) the integrity of the reactor coolant pressure boundary, (ii) the capability to shut down the reactor and maintain it in a safe shutdown condition, and (iii) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the 10 CFR Part 100 guidelines. . . .
>
> (2) Nonsafety-related electric equipment whose failure under postulated environmental conditions could prevent the satisfactory accomplishment of safety functions specified in subparagraphs (i) through (iii) [above] of this section by the safety-related equipment.
>
> (3) Certain post-accident monitoring equipment [footnote omitted].
>
> (c) Requirements for . . . (3) environmental qualification of electric equipment important to safety located in a mild environment are not included within the scope of this section. A mild environment is an environment that would at no time be significantly more severe than the environment that would occur during normal plant operation, including anticipated operational occurrences.
>
> * * *

Section 50.49(f), in pertinent part, states:

> (f) Each item of electric equipment important to safety must be qualified by one of the following methods:
>
> (1) Testing 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.
>
> (2) Testing a similar item of equipment with a supporting analysis to show that the equipment to be qualified is acceptable. . . .
>
> * * *

In summary, § 50.49 provides for two classes of electric equipment *important to safety* that must be environmentally qualified if located in a harsh environment

— (1) safety-related equipment, and (2) nonsafety-related equipment whose failure under accident conditions could endanger the operation of safety-related equipment — as well as (3) certain post-accident monitoring equipment, which is not asserted to be at issue here. Environmental qualification is not required unless the equipment is both *important to safety* (either class) and *located in a harsh environment.* Testing methods required by § 50.49 include testing of an identical item of electric equipment, or testing of a similar item with a supporting analysis to show that the equipment to be qualified by similarity is acceptable.

C. Applicants' Motion for Summary Disposition and the Staff's Support Thereof

In support of their motion for summary disposition, the Applicants relied upon the affidavits of three individuals. Mr. Newell K. Woodward, currently employed by TENERA Engineering Services as a Senior Project Manager, is an independent consultant retained by the Applicants. For over 18 years he has been associated with the commercial and naval nuclear power industry and has managed and performed technical work on various multidisciplinary issues including equipment qualification. Mr. Gerald A. Kotkowski, Applicants' Electrical Engineering Supervisor at Seabrook Station, has 14 years' experience in the electrical design and testing of nuclear power plants. Mr. Richard Bergeron is the Instrumentation and Controls Engineering Supervisor for New Hampshire Yankee (NHY). He has 16 years' experience in instrumentation and control engineering, including equipment qualification. For the past 6 years he has served as the Station Staff Representative on the Equipment Qualification Task Force. We are satisfied that these individuals are qualified to express their expert opinions on the matters addressed in their affidavits.

The following material facts not in dispute as to which Applicants assert there is no genuine issue to be heard are as follows:

> LOCATIONS AND APPLICATIONS OF RG-58 COAXIAL CABLES:[6]
>
> 1. The Cable Schedule Program (CASP) is the primary design document for configuration control at Seabrook Station. Bergeron, ¶ 8.
>
> 2. A review was conducted by NHY using CASP to identify all RG-58 coaxial applications. *Id.*, ¶ 7. This review identified 126 RG-58 coaxial cable runs, all nonsafety-related. *Id.*, ¶ 9.

[6] The subheadings in this section are the Board's. Because our organization of the discussion in this Memorandum differs somewhat from the organization used by the Applicants, we have not used the subheadings provided in the Applicants' motion.

3. At Seabrook Station, the electrical schematic drawing packages contain the electrical schematic drawings and other information that enables one to identify RG-58 coaxial cable applications. *Id.*, ¶ 10.

4. A review was conducted by NHY of the electrical schematic drawing packages to identify all RG-58 coaxial cable applications. *Id.*, ¶ 9. This review identified 126 RG-58 coaxial cable runs, all nonsafety-related. These 126 cable runs identified were the same as the 126 cable runs identified using CASP. *Id.*, ¶ 12.

5. The routes of each of the 126 identified RG-58 coaxial cables were determined from the Seabrook Station cable raceway drawings. The environmental zones through which each of these 126 cables passed were then determined using Environment Zone Maps. *Id.*, ¶¶ 13, 14. By this means, the 126 RG-58 cables were correctly grouped into five categories. *Id.*, ¶ 16.

6. This process determined that twelve RG-58 cables were routed at least partially through a harsh environment within the nuclear island and, therefore, may have required environmental qualification in accordance with § 50.49. Bergeron, ¶¶ 16, 24. All other RG-58 cables are either spares, located in mild environments within the nuclear island, or routed with other nonsafety-related cables outside the nuclear island and do not need to comply with § 50.49. Bergeron, ¶¶ 20-23.

7. The RG-58 cables that were determined to be routed at least partially through a harsh environment have been completely disconnected from their terminations and designated as spares. (*See* Applicants' Response to "New England Coalition on Nuclear Pollution's First Set of Interrogatories and Request for the Production of Documents to Applicants on NECNP Contention I.B.2" at 8-9, 16 (July 13, 1988).)

8. The twelve RG-58 cables have been replaced with RG-59 cables. Bergeron, ¶ 24.

TECHNICAL ADEQUACY OF RG-59 COAXIAL CABLE AS A SUBSTITUTE FOR THE APPLICATIONS OF THE TWELVE RG-58 CABLES LOCATED AT LEAST PARTIALLY IN HARSH ENVIRONMENTS[7]

9. The primary specifications that determine the wave propagation characteristics of transmission lines are attenuation and variation in

[7] NECNP states that it "does not dispute the technical acceptability of the RG-59 cable to operate in a normal environment" (NECNP Brief at 8), which we understand to mean that it does not dispute Applicants' Statement of Material Facts Not in Issue, ¶¶ 9-12, recited here. Also, NECNP in referring to the designation of RG-58 cable as Operability Code A (*see* next section, *infra*), apparently does so with respect to the qualification of RG-58 cable by similarity to RG-59, not as a challenge to the technical acceptability of RG-59 in the normal applications of the replaced RG-58 cables. (*See* NECNP Statement, ¶ 7.)

response time due to the change in velocity of propagation. Kotkowski, ¶ 4.

10. Factory test results show that attenuation for the RG-59 cable is less than that for the RG-58 cable. *Id.*, ¶ 6.

11. A review of the typical factory test results for the RG-58 and RG-59 cable in conjunction with a comparison of the actual field cable lengths for the twelve applications in question shows that the difference in the velocity of propagation between the RG-58 and RG-59 cable is insignificant and will not noticeably affect the rate of signal transmission. *Id.*, ¶ 5.

12. The compatibility of an RG-59 cable with the device or instrument to which it was connected when it replaced the twelve RG-58 cables was evaluated. In both applications, characteristic impedance of the RG-59 cable is compatible. *Id.*, ¶¶ 3, 7.

13. The vendors of the equipment connected to the RG-59 cable that replaced the twelve RG-58 cables in question confirmed that the use of RG-59 cable was acceptable. *Id.*, ¶ 7.

ASSIGNMENT OF OPERABILITY CODE A TO RG-58 COAXIAL CABLE

14. Components that meet the requirements of Operability Code A may be used in safety-related applications. Bergeron, ¶ 5.

15. During the initial development of the Environmental Qualification program at Seabrook Station, the RG-58 coaxial cable was assigned Operability Code A in order that it might be used in the most restrictive plant applications. This approach was taken to eliminate the necessity for implementation of special programmable controls restricting cable usage. *Id.*, ¶ 5.

16. The RG-58 coaxial cable was conservatively assigned Operability Code A. The RG-58 cable, however, does not perform any safety functions (*see* ¶¶ 2 and 4, above). Bergeron, ¶ 5. The actual performance specifications to which the RG-58 cable must be qualified were originally specified in EQF 113-19-01 (NECNP Exh. 4; Woodward, ¶ 4) and are now specified in EQF 113-19-02 (Attach. B to the Newell K. Woodward Affidavit of September 9, 1988). Woodward, ¶ 7.

ENVIRONMENTAL QUALIFICATION TESTING OF RG-58 COAXIAL CABLE

17. An environmental qualification test was conducted of the RG-58 coaxial cable for NHY by NTS/Acton. The test was completed on July 22, 1988. Woodward, ¶ 7. The cable tested was manufactured by ITT Suprenant and is the same cable supplied to Seabrook Station under

Purchase Order No. 9763-006-113-19 and was cut from a reel of cable stored in the Seabrook Station warehouse. *Id.*, ¶ 3.

18. The performance specification for the tested cable was the same as had been previously defined in EQF No. 113-19-01 (NECNP Exh. 4) which included documentation on the environmental qualification of RG-59 coaxial cable and on the environmental qualification of RG-58 cable by similarity with RG-59 cable. Woodward, ¶ 4.

19. The environmental parameters to which the RG-59, and by similarity, the RG-58 cable had been subjected in the original test were more severe than those both the RG-59 and RG-58 cable would experience under worst-case accident conditions. NECNP Exh. 4.

20. The environmental parameters to which the RG-58 cable has recently been tested as reported in Attachment B of the Affidavit of Newell K. Woodward, dated September 9, 1988, are the same or more severe than those applied in the original test (NECNP Exh. 4, Ref. 2). Woodward, ¶ 8.

21. The RG-58 cable passed all tests, met established performance specifications and will perform its function as required and not fail in a manner detrimental to plant safety when exposed to environmental conditions occurring subsequent to design-basis accidents. Woodward, ¶ 10.

The NRC Staff's response supporting Applicants' motion relies upon the joint affidavit of two individuals. Mr. Harold Walker is a Senior Reactor Systems Engineer and Mr. Amritpal S. Gill is a Senior Electrical Engineer in the Commission's Office of Nuclear Reactor Regulation. We find that both individuals are qualified to comment on the Applicants' motion and the contention in issue. The Staff either agrees with each of Applicants' statements of material facts not in dispute or has no basis for disagreeing with them. Joint Affidavit, A.4. The following summarizes the Staff's support of the Applicants' motion:

1. For purposes of 10 C.F.R. § 50.49(f)(2), the RG-58 cable is sufficiently similar to RG-59 cable, which was tested, in terms of the cables' materials, construction, cable type, and (the same) manufacturer to enable it to be qualified by its similarity to RG-59.

2. Results of the recent environmental qualification tests (completed July 22, 1988) of the RG-58 cable clearly establish that the cable meets all applicable environmental qualification requirements.

3. The record establishes that only twelve of 126 RG-58 cables at Seabrook Station are located in harsh environments, and these twelve cables have been replaced with RG-59 cable, which is environmentally qualified. Because the other RG-58 cables are in mild environments, they

are not required to be environmentally qualified. It is permissible to use RG-58 cable for the twelve applications in harsh environments, because of the satisfactory environmental qualification test. Joint Affidavit, A.5.

D. NECNP's Opposition

NECNP attached to its opposing brief a Statement of Material Facts in Dispute, but did not attach any affidavits of experts. Drawing down from its Statement of Material Facts in Dispute, NECNP asserts that there are two major issues that are unresolved and thus that Applicants' motion for summary disposition must be denied.[8] The two major issues that NECNP asserts are in dispute and must be heard are as follows:

1. Applicants have not demonstrated that the RG-58 cable is environmentally qualified, either (a) by virtue of the recent environmental testing or (b) by similarity to the RG-59 cable (which previously was environmentally qualified by testing). NECNP Brief at 2-6; Statement, ¶¶ 1-9, at 1-3.
2. While Applicants have replaced twelve of the RG-58 cables located in a harsh environment, there remains a dispute as to whether the Applicants have identified all cables that should be replaced. NECNP Brief at 6-7; Statement, ¶¶ 10-13, at 3-4.

With respect to the first alleged triable issue of fact, NECNP argues that the recently supplied report on environmental qualification testing of RG-58 cable does *not* support a conclusion that the cable is qualified. Citing sections of the Woodward Affidavit (at 6-7) and its Attachment B (the NTS/Acton Test Report at 10-10; 6/13/88 Data Sheet) NECNP points to difficulties encountered during the early (margin transient) tests, which led to an interruption in the test. After the *test circuitry and monitoring equipment* were moved into an air-conditioned space, Applicants claim that repeated failure of the in-line 1-ampere fuse that measures leaking/charging current did not occur. NECNP Statement, ¶ 1. NECNP asserts that the Applicants' claim that the subsequent LOCA test transient was "more than adequate to demonstrate cable qualification for specific plant conditions" is not supported, because the test procedures were not restarted and the margin transient test was not repeated after the test "setup"[9] was moved

[8] NECNP also asserts that there is a third major issue — viz, that the RG-59 cable is not environmentally qualified for the twelve applications in which it is to be substituted for the RG-58 cable. Recognizing that twice we have ruled that we will not either allow or give any consideration to any arguments or efforts to contend that the RG-59 cable is not environmentally qualified (Tr. 1178-79; unpublished Order of August 1, 1988) and that thus NECNP is precluded from litigating this issue, NECNP repeated its position on the issue only for the purposes of preserving its appellate rights.

[9] In the Board's view, NECNP confuses, or mixes, the environment of the test circuitry and monitoring equipment, where measurements are made, with that of the cable test specimens in the autoclave, where the actual environmental qualification test conditions occur. In particular, *see* NECNP's conclusion (Brief at 4)

(Continued)

to an air-conditioned space. *Id.*, ¶ 2. However, Applicants' statement was based on its expert's affidavit. Moreover, while Applicants do not dispute the fact that the margin transient test was not repeated, NECNP fails to illuminate its reason for asserting that not restarting the test procedures and not repeating the margin transient test are material to our determinations.

Based on its reading of the NTS Report (Data Sheet, dated 6/15/88, t = 17.4 hours), NECNP asserts that even after moving the test setup to an air-conditioned space, insulation resistance readings of zero were again recorded for three out of four test specimens, which would belie Applicants' claim that "all IR measurements stabilized" after the test setup was moved to the air-conditioned space (Woodward at 7). NECNP Statement, ¶¶ 3-4. However, we attach no significance to this and other unsupported interpretations of entries found by NECNP in the NTS Report Data Sheets as indicating zero insulation resistance during the tests. Lacking any expert support, these simply are naked technical assertions to which we accord no weight as contrasted to the technical averments and conclusions attested to by Applicants' qualified expert[10] (Woodward, ¶ 9.c).

By relying on statements in the Applicants' affidavits and attachments thereto, NECNP is only arguing, without expert support, as to the conclusions it draws from its own interpretations of certain events and test data sheet entries in the Applicants' submittal. In some cases NECNP relies upon facts as to which there is no apparent disagreement, e.g., Applicants do not dispute that, because of the interruption of the test, the cable did not carry continuous voltage throughout the test; neither do they disagree that the 1-ampere fuse in the test circuit repeatedly blew when the test monitoring and measurement equipment was at ambient temperature (125°F). Woodward, ¶ 9.c, at 6-7. NECNP fails to explain how these undisputed facts are material to our determination of the adequacy of the RG-58 cable's environmental qualification tests.

We note that, in regard to its allegation of insulation failures during the early margin transient test, NECNP does not challenge (and indeed ignores) affiant Woodward's attestation (¶ 5, at 3) that should cable insulation degrade to the point of failure during an environmental qualification test, the insulation degradation is permanent and irreversible. Thus, NECNP's "manifest" argument[11] that insulation failure occurred during the early tests is not credible because it fails

---

that "the demonstrated margin of safety is obviously very slim" because of the effect of "small" temperature differences on the outcome of the tests. Clearly, responses to differences of temperature of the externally located test instrumentation have no bearing on the safety margin of specimens inside the autoclave environment.

[10] If NECNP's claim, *supra*, as to the materiality of not repeating the margin transient test hinges on its interpretations of these entries in the Data Sheets, then its materiality claim also fails for the same reason.

[11] In its Statement of Material Facts in Dispute (¶ 5, at 2), NECNP concludes from the statements in ¶¶ 1-4 that it is "manifest" from Applicants' submissions that cable insulation failure did occur during the test, that it is clear that a short to ground did occur, that the RG-58 cable did not carry continuous voltage throughout the test, and that the leaking/charging current *did* exceed 1 ampere (the in-line 1-amp fuse that measured these parameters repeatedly blew when the test setup was at ambient temperature).

to provide an explanation of how, if the cables had already suffered permanent and irreversible insulation degradation, it would be possible to achieve any subsequent successful tests on the allegedly damaged cables. *Id.*, ¶ 9.d, at 7-8. This is particularly true with regard to successful completion of the high-potential withstand test performed after environmental testing (*id.*, ¶ 6, at 3-4; ¶ 9.e, at 8-9). This last test could not have been successfully completed had the cable's insulation already been permanently and irreversibly degraded, and NECNP does not allege that the high-potential withstand test was unsuccessful.

NECNP apparently mistakes failure of the test monitoring circuitry or equipment during the first transient portion of the test with insulation degradation and failure of the test specimens in the autoclave.[12] Thus, we find merit in Applicants' attestations that at no time during the second transient test did any shorts to ground occur, and that no insulation failure occurred, and that the leaking/charging current did not exceed 1 ampere. Further, we find no reason to doubt the attestation that the second, or LOCA test transient by itself was more than adequate to demonstrate cable qualification for specific plant conditions (*id.*, ¶ 9.c, at 7).

As to whether RG-58 coaxial cable is environmentally qualified by similarity to RG-59 coaxial cable, NECNP asserts that four material facts are in dispute. NECNP Statement, ¶¶ 6-9.[13] However, we need not reach this issue, since it is clear from our discussion, *supra*, that Applicants have shown that results of the recent environmental qualification tests demonstrate that the RG-58 coaxial cable is environmentally qualified.[14]

With respect to the second alleged triable issue of fact, NECNP argues that Applicants thus far have confirmed the in-plant locations only of the ends of the "spare" cables, and that Applicants should establish the actual routing of each RG-58 cable by physical walkdowns. NECNP Brief at 6; Statement, ¶¶ 10, 13, at 3-4. NECNP further makes the general argument that "[t]he history of nuclear power plant construction is replete with countless instances of plants not being built in conformity with their documentation." Statement, ¶ 11, at 3. Offered in support of this allegation is the NRC IE Information Notice No. 85-66, entitled "Discrepancies Between As-Built Construction Drawings and Equipment Installations." The document alerts holders of an operating license

---

[12] *See* note 9, *supra*.

[13] We note that, contrary to NECNP's allegation (Brief at 5-6). it is NECNP, not the Applicants, that misconstrues NRC regulations (*i.e.*, 10 C.F.R. § 50.49(a)-(c); *see* Part II.B, *supra*). Applicants correctly consider the twelve RG-58 cables originally installed in harsh environments, and the twelve runs of RG-59 now installed as substitutes, to be "important to safety" and "nonsafety-related," while, so far as we can tell, NECNP fails to recognize consistently the distinction between the two classes of equipment "important to safety" designated in 10 C.F.R. § 50.49(b)(1) and (2). Also, our reading of ¶ 9 of NECNP's Statement suggests that it fails to understand the significance of 10 C.F.R. § 50.49(c) which, in effect, exempts items in *both* classes of equipment "important to safety" from environmental qualification requirements, if and when the equipment is located in a mild environment.

[14] In remanding this issue to this Board, the Appeal Board noted that there was nothing in its decision that would preclude the Applicants from calling for the testing of RG-58 cable. ALAB-891, *supra*, 27 NRC at 353 n.63.

or construction permit for nuclear power facilities to a potentially significant generic safety problem arising from circumstances at the Fermi Unit 2 and Rancho Seco power plants and from Construction Appraisal Team inspections at ten unnamed facilities. However, the Information Notice expressly states that it does not constitute an NRC requirement, and requires no specific action or written response of recipients. Moreover, NECNP does not allege that it is based on, nor that it refers to, inspections or specific circumstances at the Seabrook Station. In the absence of a concrete showing of a nexus between the conditions and circumstances recited in the Information Bulletin and specific conditions at Seabrook, this very generalized allegation cannot be material to the issue before us.

Finally, with respect to NECNP's argument (NECNP Brief at 7; Statement, ¶ 12, at 4) that "the possibility that some of the unreplaced RG-58 cables could actually be routed other than as indicated on 'as built' drawings cannot be considered remote," such argument is nothing more than speculation and a naked assertion unworthy of extended consideration.

III. CONCLUSION

We conclude that Applicants, as supported by the Staff, have sustained their burden of showing that there is no genuine issue as to any material fact, that the Intervenor has failed to show that there is a genuine issue of material fact which requires a hearing, and that Applicants' motion for summary disposition should be granted. Applicants have shown, by testing, that the RG-58 coaxial cable is environmentally qualified as required under the provisions of § 50.49, and that subissues raised by this Board and the Appeal Board in its remand are satisfactorily resolved. In this regard, they have shown that the RG-58 cable has no accident mitigation function. (Because the RG-58 cable was successfully tested, we do not address the second subissue raised by the Appeal Board in ALAB-891 — whether the RG-59 cable test demonstrated the environmental qualification of the RG-58 cable.) Applicants have further demonstrated that there are 126 RG-58 cables installed at Seabrook, all of which have been properly categorized as to their applications, locations, and requirements for environmental qualification testing. Applicants' showing that RG-59 cable is a technically acceptable substitute for RG-58 in those applications where it has replaced the RG-58 cables is undisputed. The Board is satisfied with Applicants' explanation, that for conservative purposes, the RG-58 cable was initially designated as Operability Code A (suitable for safety-related applications), even though none of the cables was used in safety-related applications.

Order

Applicants' motion for summary disposition, as supported by the Staff, is granted, and NECNP Contention I.B.2 is dismissed.

THE ATOMIC SAFETY AND
LICENSING BOARD

Sheldon J. Wolfe, Chairman
ADMINISTRATIVE JUDGE

Jerry Harbour
ADMINISTRATIVE JUDGE

Emmeth A. Luebke
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 7th day of December 1988.

Cite as 28 NRC 667 (1988) LBP-88-32

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ivan W. Smith, Chairman
Gustave A. Linenberger, Jr.
Dr. Jerry Harbour

In the Matter of

Docket Nos. 50-443-OL
50-444-OL
(ASLBP No. 82-471-02-OL)
(Offsite Emergency Planning)

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, *et al.*
(Seabrook Station, Units 1 and 2)

December 30, 1988

TABLE OF CONTENTS

PARTIAL INITIAL DECISION

(New Hampshire Radiological Emergency Response Plan)

1. INTRODUCTION

Background

1.1. This Decision addresses all contentions in this proceeding with respect to radiological emergency response planning for that portion of the emergency planning zone (EPZ) for the Seabrook Station (Seabrook) which lies within the State of New Hampshire. Seabrook is a nuclear power facility located in the Town of Seabrook, New Hampshire, constructed, and to be operated, by the New Hampshire Yankee division (NHY) of Public Service Company of New Hampshire, the lead owner of Seabrook.

1.2. The emergency plan litigated in this phase of the hearings is known as Revision 2 of the "State of New Hampshire Radiological Emergency Response Plan" (hereafter NHRERP).

1.3. Of some 122 contentions proffered by Intervenors for litigation in the NHRERP phase of the hearings, various prior rulings of the Atomic Safety and Licensing Board on objections made to admission and motions for summary disposition had, prior to the start of the evidentiary hearings, reduced the number of contentions remaining for litigation to a total of twenty-six. These contentions were prosecuted by the Attorney General of Massachusetts and Intervenors New England Coalition on Nuclear Pollution (NECNP), Seacoast Anti-Pollution League (SAPL), Town of Hampton (TOH), Town of Hampton Falls (TOHF), Town of South Hampton (TOSH), and Town of Kensington (TOK).

1.4. The other active parties to the proceeding are the Applicants, the Staff of the U.S. Nuclear Regulatory Commission, the Town of Rye, the Town of Amesbury, and the Attorney General of the State of New Hampshire. In addition, although not a party as such, the Federal Emergency Management Agency

(FEMA) filed testimony and participated in the hearing as contemplated by the Memorandum of Understanding between the Nuclear Regulatory Commission (NRC) and FEMA. 50 Fed. Reg. 15,485, 15,487 (Apr. 18, 1985).

1.5. The parties agreed to a classification of the matters to be litigated into eight categories, as follows:

Letters of Agreement
Response Personnel Adequacy
Transportation Availability and Emergency Support Services
Reception Centers
Notification and Communications
Human Behavior in Emergencies
Sheltering
Evacuation Time Estimates

1.6. This Decision follows the categorization agreed to by the parties. Hearings were held in Concord, New Hampshire, on the following dates: Oct. 5-9, 1987; Oct. 19-23, 1987; Nov. 2-6, 1987; Nov. 16-20, 1987; Nov. 30–Dec. 4, 1987; Dec. 14-17, 1987; Jan. 11-13, 1988; May 2-6, 1988; May 15-29, 1988; May 24-26, 1988; and June 14-16, 1988. Hearings were held in Boston, Massachusetts, on Feb. 8-10, 1988. In addition, limited appearance statements were received from a number of elected and appointed governmental officials and members of the public residing in the 10-mile plume exposure EPZ.

Comments on Decision

1.7. The primary responsibility of the Licensing Board in finding facts and arriving at conclusions in an NRC operating license proceeding is to decide the issues advanced by the parties. We must also explain our decision in detail and with citations to the record so that our reasoning may be fully understood and reviewed on appeal. Unfortunately, in meeting those responsibilities, the decision below becomes too lengthy and complex for the casual reader; it is intended for those who will work with it. In this section, therefore, we describe in general terms what the decision is about, and how it concludes. This is not a part of our findings, or even a summary of them.

1.8. In § 2, Letters of Agreement, the Board concludes that such arrangements with the providers of services during emergencies need not be formal contractual agreements, nor need there be letters of agreement with all who will be active in an emergency. For example, the telephone company has no special responsibilities. Federal agencies, such as the Coast Guard, will regularly respond and are covered, as required, by memorandums of understanding. Not all letters of agreement have been approved by FEMA, but the Board finds assurance that FEMA will complete its review, and that the product will be incorporated into the New Hampshire emergency plans.

1.9. In § 3, Response Personnel Adequacy, the Board rejected claims by six New Hampshire towns that their respective policies not to participate in the implementation of the NHRERP would prevent their response in an actual radiological emergency. The issue turned, therefore, on whether there were adequate personnel in public and private organizations to respond to an emergency at Seabrook. We find reasonable assurance that there are sufficient personnel available to carry out needed protective actions.

1.10. In § 4, Transportation Availability and Support Services, the Board concluded that there will be adequate transportation and respective support services available to evacuate persons, such as hospital patients, who must depend upon others for transportation in an evacuation.

1.11. In § 5, Decontamination and Reception Centers, the Board imposed specific conditions regarding personnel call and roster lists, special-facility monitors, and extended operating hours for the Manchester secondary decontamination center. With those conditions, we find that the NHRERP provides reasonable assurance of adequate care of evacuees following an accident. In arriving at this conclusion, the Board rejected a standard urged by SAPL that the reception centers must accommodate the vast majority of the EPZ population. In so doing, the Board distinguished the evidentiary record in this proceeding with similar evidence discussed in *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-905, 28 NRC 515 (1988). We conclude below, as a matter of evidentiary presumption, that FEMA's guidance calling for a minimum planning basis of 20% of the EPZ population is both adequate and appropriately applied to the Seabrook EPZ. The presumption has not been rebutted.

1.12. Section 6, Notification and Communications, contains the conclusion that, while a heavier-than-normal level of telephone usage is to be expected in the event of an emergency, computerized telephone switching equipment ensures sufficient telephone lines for needed communications. There might be a short delay in telephone use to a particular individual, but not a denial of telephone service. Priorities will be maintained.

1.13. Section 7, Human Behavior in Emergencies, discusses whether, as contended by Intervenors, trusted community leaders would abandon their responsibilities during an actual emergency at Seabrook. We received the testimony of teachers, public officials, even a police chief, to the effect that they would in fact abandon those in their care to seek safety for themselves and their intimates in an emergency at Seabrook. We recognize that such testimony was offered with the knowledge that the licensing of Seabrook may still be prevented. The testimony was perplexing and does not represent traditional American values and history. Our decision below emphasizes the fact that emergency worker role-certainty plays an important part in radiological emergency planning. Where those relied upon to respond in an emergency know that they have a role, and are trained to that role, as a group they will not fail their communities.

1.14. Section 8, Sheltering of Beach Population, and § 9, Evacuation Time Estimates, should be read as a single discussion. In a serious rapidly developing radiological emergency, the protective action decisionmaker has only two choices of any practical value — either shelter the population, or remove it from the area of radiation exposure. At Seabrook, sheltering would probably never be the protective action choice. Too many circumstances would have to be present before sheltering would afford radiation dose savings over evacuation. Some of the circumstances are: First, no earlier action such as precautionary beach closure would have been taken. Second, there would have to be a peak or close-to-peak beach population present before sheltering would make sense, because, to choose sheltering, the estimated evacuation times must be significantly longer than the duration of the predicted release. Third, the release would not only have to be of short duration, but it must be gaseous (without particulates) in part because a delayed evacuation through ground-deposited particulates would obviate, at least, any benefit from sheltering. Fourth, the release must be projected to arrive at the beach area in short time, otherwise the better choice would be to remove people before its arrival. Fifth, the timing and duration of the release is very difficult to predict. While it might turn out after an accident that sheltering would have avoided some exposure, to know that in advance is quite another matter.

1.15. In addition, the uncertainties attendant to a decision to shelter exceed the potential benefits to be gained from sheltering. The unwinterized houses at the beaches do not provide the best sheltering, and their sheltering effectiveness degrades rather quickly with particulate releases. Of course it would take time to first move the population to shelter in a delayed evacuation, and that time would be lost in evacuating them. We discuss these and other reasons why sheltering is rarely a good choice as a protective action in our findings below.

Evacuation times estimates for the summer weekend beach population would range from about 7 hours and 30 minutes to about 8 hours and 30 minutes when the summer weekend beach population is close to peak or at peak. This assumes that the evacuation begins at the brief peak hour of the day. Given the fact that sheltering would rarely be the better protective action, and would even more rarely be known in advance as the better action, the decisionmaker would select evacuation even if the time estimates were significantly longer than the evidence indicates. In effect, evacuation time estimates differing in the narrow range litigated by the parties are not material to a protective action decision. Nevertheless, the Applicants are required to provide evacuation time estimates as accurately as the state of the art can reasonably produce. The Board has therefore retained jurisdiction of the evacuation time estimate issue so that we may consult with the parties about greater accuracy.

1.16. In general the findings and conclusions below favor the full-power licensing of Seabrook with respect to the issues in contention and decided. Other

contentions, relating to the Seabrook Plan for the Massachusetts Communities (SPMC), and the June 1988 general exercise conducted by FEMA, remain to be adjudicated.

2. LETTERS OF AGREEMENT

2.1. Letters of Agreement (LOAs) are statements of interest of the parties signing the agreements, obtained to provide assurance that an organization has been notified and has agreed in principle to provide a support function. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), LBP-85-14, 21 NRC 1219, 1367 (1985). The Board does not regard LOAs as necessarily constituting contractual agreements.

2.2. The Board ruled in its Memorandum and Order of May 21, 1986 (unpublished), that no letters of agreement are required for the local communities in the EPZ or with the host communities.

2.3. The Board also ruled that the Applicants do not need to sign LOAs with schools, school personnel, day-care centers, and nursing homes because they are "recipients" of services; LOAs are required only for "providers" of services.

2.4. The Board further ruled in its Memorandum and Order of May 18, 1987 (unpublished), that LOAs are not required for individuals who collectively supply a labor force or activity.

2.5. SAPL Contention 15 as admitted for litigation raises a number of specific matters with respect to the LOAs aspect of the New Hampshire Radiological Emergency Response Plan (NHRERP). In particular, it is alleged that agreements were required, but were either unsigned or not included in the plan for the Rockingham County Dispatch Center, New England Telephone Co., towing companies, reception centers, mass-care facilities, host health care facilities (Goodwin's of Exeter, Eventide Home, and Seacoast Health Care Center), the Air Force (Pease Air Force Base), the Navy (Portsmouth Naval Shipyard), and the New England Interstate Radiation Assistance Compact. SAPL further alleged that the New England State Police Compact is out of date, that there are letters missing for ambulance and bus companies, and that the letter included for the Omne Mall staging area is signed by an owner who has since gone bankrupt. *See* Seacoast Anti-Pollution League's Contentions on Revision 2 of the NHRERP (Nov. 26, 1986) at 22-24.

2.6. TOSH Contention 3 raises the issue of whether there are sufficient LOAs from employers of Teamsters' Union drivers indicating a willingness to make such drivers available in an emergency. Similarly, TOK Contention 6 addresses whether bus drivers would be made available by their employers.

2.7. We note with interest that neither SAPL nor any of the other Intervenors addresses all the entities identified in SAPL Contention 15 in their respective proposed findings. However, for the sake of completeness, we will briefly address each of the named entities as they have been set forth above. ¶ 2.5, *supra.*

2.8. The Applicants presented a panel of expert witnesses to testify concerning NHRERP LOAs. The panel consisted of Anthony M. Callendrello, Manager, Emergency Planning for New Hampshire Yankee (NHY) (Qualifications, ff. Tr. 2790); Paul R. Frechette, Jr., Senior Emergency Planner, NHY (Qualifications, ff. Tr. 2791); and Richard H. Strome, Director of the New Hampshire Office of Emergency Management (NHOEM or OEM) (Qualifications, ff. Tr. 2792). A panel of Federal Emergency Management Agency officials also testified as to the LOAs. FEMA's panel consisted of Edward A. Thomas, Chief, Natural and Technological Hazards Division, FEMA Region I (Qualifications, ff. Tr. 3088, at 8); and Edward A. Tanzman, Energy and Environmental Programs Attorney, Energy and Environmental Systems Division, Argonne National Laboratory (Qualifications, ff. Tr. 3088, at 13). The Board finds that these witnesses have sufficient training and experience to have qualified them to testify with respect to LOAs.

2.9. Under previous Board rulings (¶¶ 2.2–2.4, *supra*), and on the basis of testimony provided by Applicants' panel (Appl. Dir. No. 1, ff. Tr. 2795, *passim*) and FEMA's panel (FEMA Dir., ff. Tr. 3088, *passim*), we find the following facilities do not require LOAs — the Rockingham County Dispatch Center, all reception centers identified in the Host Community Plans (Vols. 33, 35, 36, and 38 of the NHRERP), and all mass-care facilities in Manchester.

2.10. The U.S. Coast Guard will respond to a radiological emergency under a Memorandum of Understanding executed with the State on November 6, 1986. Appl. Dir. No. 1, ff. Tr. 2795, at 3 and Attach. 2.

2.11. Since New England Telephone is not assigned any specific responsibilities in the NHRERP, no LOA is required with that entity. *Id.* at 4; FEMA Dir., ff. Tr. 3088, at 84.

2.12. The New Hampshire Towing Association has signed an LOA with the State. Appl. Dir. No. 1, ff. Tr. 2795, at 2. In all, nineteen LOAs have been signed with towing companies to provide fifty trucks with drivers and crews. *Id.* We find these agreements to provide towing resources in excess of that required by § 12 of the NHRERP. *Id.*

2.13. SAPL has raised an issue in its proposed findings concerning whether communications with tow trucks are sufficient in light of the fact that the LOAs do not specify that in all cases the tow trucks have radios. SAPL PF 2.1.14, *citing* Tr. 2894. The LOAs do not verify that there is radio communication capability with tow trucks, and a number of LOAs with towing company operators do not indicate that they have communication capability with their trucks. Tr. 2896,

2898. Volume 6 of the NHRERP states at 12-4 that "[t]hese tow trucks should all have communication equipment linked either directly or indirectly with EOC (Emergency Operations Center)." Tr. 2893-94. Although, it is true that not all the tow trucks covered by the LOAs have radios, it is anticipated that an "indirect" link by telephone between the Emergency Operations Center and the tow trucks will be adequate. The EOC will be able to contact towing companies by telephone to dispatch their vehicles. Tr. 2896-98. The tow trucks will be dispatched by the State Police from provider company locations on the periphery of the EPZ by means of telephone calls to their places of business. Tr. 3029-30. Those companies, in turn, will maintain contact with them by two-way radio if the trucks are so equipped. Tr. 3030. Three towing company LOAs to date have not been sent to FEMA for review. Tr. 2989-90.

2.14. The American Red Cross (ARC) is responsible for providing mass care to those evacuated from the plume exposure EPZ. A written agreement between the ARC and the State of New Hampshire is included in Volume 5 of the NHRERP. The December 1986 Regional Assistance Committee (RAC) review of the plan found that the ARC LOA adequately demonstrates an ability to open and staff planned mass-care facilities. Appl. Dir. No. 1, ff. Tr. 2795, at 4-5; FEMA Dir., ff. Tr. 3088, at 83.

2.15. The December 1986 FEMA RAC review found the LOAs for mass-care facilities to be inadequate because no letters of agreement were present in Volume 5 of the State plan for a number of private organizations including New Hampshire College, Notre Dame College and Parochial School, District Nursing Association, Rochester Catholic School, and Rochester Day Care Center. However, testimony indicates to the Board that Applicants are in the process of obtaining LOAs from private facilities designated for mass care. Most recently, LOAs with the Salem Boys' and Girls' Club and Squamscott Home Health, Inc., Dover, have been obtained, although neither of these LOAs was submitted to FEMA for review. Tr. 2989-90; Appl. Dir. No. 1, ff. Tr. 2795, at 5 and Attach. 3.

2.16. The American Red Cross is currently working to obtain LOAs with Rochester Catholic High School in Rochester and St. Thomas Aquinas High School in Dover. *Id.* at 5. All required LOAs with regard to host-center facilities in Salem have been signed. *Id.* The Salvation Army building is listed as a mass-care facility in the Rochester Host Plan (Vol. 35). Its use is ensured through a national "Statement of Understanding Between the Salvation Army and the American National Red Cross" (9/75). *Id.* at 5 and Attach. 4.

2.17. The Federal Aviation Administration has executed a Memorandum of Understanding with the State pertaining to its assistance in the event of an emergency. *Id.* at 4; FEMA Dir., ff. Tr. 3088, at 84.

2.18. We find that LOAs with host health care facilities have been obtained by the Applicants for all special facilities in the EPZ. LOAs with the following

host health care facilities have been obtained since Revision 2 of the NHRERP: Clipper Home of Wolfeboro (for Goodwin's of Exeter); Clipper Home of Rochester (for Clipper Home of Portsmouth); McKerley Health Care Center–Derry, Inc. (for Eventide Home); Maple Leaf Healthcare, Villa Crest, and Maple Leaf, Inc. (for Seacoast Health Care, Inc.). Appl. Dir. No. 1, ff. Tr. 2795, at 5-6 and Attach. 5. Applicants produced an LOA from Frisbie Memorial Hospital showing that Frisbie agrees to accept the residents from the Wentworth Home in the event of an evacuation due to Seabrook Station. Tr. 2972-74, *also appearing*, ff. Tr. 2974. No other host health care facility letters are outstanding. Appl. Dir. No. 1, ff. Tr. 2795, at 5-6.

2.19. New Hampshire can request federal assistance through FEMA. FEMA will then allocate resources as necessary under the Federal Radiological Emergency Response Plan (FRERP) (50 Fed. Reg. 46,542 (Nov. 6, 1985)). Since Pease Air Force Base and Portsmouth Naval Shipyard are federal (Department of Defense) establishments, FRERP obviates the need for any specific military and federal governmental facility agreements. Appl. Dir. No. 1, ff. Tr. 2795, at 3-4; FEMA Dir., ff. Tr. 3088, at 83. A copy of the FRERP is provided in Volume 5 of the NHRERP. FEMA Dir., ff. Tr. 3088, at 83.

2.20. We find that the New England Interstate Radiation Assistance Plan (NEIRAP) is a legislative act which has been approved by the legislatures and governors of the respective party states. Appl. Dir. No. 1, ff. Tr. 2795, at 2-3. The fact that NEIRAP contains no signature page in Volume 5 of the NHRERP in no way invalidates this compact. Similarly, the New England State Police Compact is a ratified compact enacted into law by the appropriate legislative bodies and is in effect as defined in the Compact. *Id.* at 3.

2.21. The availability of buses, bus drivers, and ambulances under LOAs are issues the Board addresses in its sections on Response Personnel Adequacy, and on Transportation Availability and Support Services. §§ 3 and 4, *infra*. We need not address those issues here.

2.22. A new LOA has been obtained for use of the Omne Mall as a staging area from the new owner and was sent to FEMA as an addendum subsequent to the submittal of Revision 0 of the NHRERP. Tr. 3031-32, 3032-33; Appl. Exh. 6, ff. Tr. 3033.

2.23. A LOA between NHY Division of Public Service Company of New Hampshire and the State of New Hampshire has been executed and is also found in Volume 5 of the New Hampshire Plan. Appl. Dir. No. 1, ff. Tr. 2795, at 3.

2.24. SAPL contends that since the Commonwealth of Massachusetts has not signed an agreement with New Hampshire Yankee no emergency response by or coordination with the Commonwealth is assured. SAPL PFs 2.1.6, 2.3.10. However, Mr. Strome testified that his agency (NHOEM) works in concert with Massachusetts for the Vermont Yankee Nuclear Power Plant and that there is a

well-established relationship between the two agencies. Appl. Exh. 5, Vol. 5; Tr. 2859-61.

2.25. SAPL argues in its proposed findings that to ensure the adequacy of letters of agreement, there must be a clear definition of the availability of personnel and resources during a radiological emergency and there must also be assurance that signatories of LOAs have been clearly informed of the responsibilities they are assuming by signing the letters. SAPL PF 2.2.1. SAPL contends that the NHOEM did not have a sufficiently well-managed program to ensure that letters of agreement were properly obtained and in conformance with regulatory requirements and the NUREG-0654 guidance. *Id.*, 2.3.1. SAPL raises questions concerning the quality of the NHOEM program for obtaining LOAs and the quality of the agreements obtained thereby. As evidence, SAPL points to the following points: Mr. Strome certified to FEMA that the Revision 0 version of the plan was adequate even when there were no LOAs. Tr. 2851, 2854-56; NH Exh. 5; Tr. 4140-41; SAPL PF 2.3.2. A school bus company that was out of business, Jan-Car, was included among the bus providers under the plans. Tr. 2930; SAPL PF 2.3.5. An agreement was not obtained for the Mark H. Wentworth Home in the plan. SAPL PF 2.3.8.

2.26. SAPL further supports its argument with testimony showing that the LOAs from the Salem Boys' and Girls' Club and the Squamscott Home Health, Inc., of Dover make no reference to a radiological emergency at Seabrook. Appl. Dir. No. 1, ff. Tr. 2795, at 5 and Attach. 3; Tr. 2899; SAPL PF 2.1.12. SAPL asserts that Mr. Strome could not state directly that either of these two facilities were apprised of the fact that a radiological emergency at Seabrook was among the emergencies for which they were being asked to make their facilities available. Tr. 2899-2901; SAPL PF 2.1.12.

2.27. The record shows that the LOAs sent out by the State of New Hampshire for signature were form letters developed through the state agency's management process to cover a large variety of emergencies. Tr. 2837-39. The LOAs refer to technological incidents and accidents at locations including the Seabrook Nuclear Power Station, but do not specifically refer to a radiological emergency. Tr. 2843-46, 2864.

2.28. Evidence was offered to establish that a number of the LOAs recited that Seabrook was one of the facilities involved in the agreement, as well as Vermont Yankee, a nuclear power plant located in Vermont. *E.g.*, Appl. Dir. No. 1, ff. Tr. 2795, Attachs. 1, 2, 5, 6. The LOAs themselves point out what is expected of the signatories. Tr. 2801. In addition, state officials pursuing LOAs were candid in response to questions by prospective signatories, and there was no attempt by the state officials involved to mislead anyone on this subject. Tr. 2800, 2841. The cited evidence seems to meet SAPL's concern at least in part. However, the possibility that some LOAs do not clearly indicate that involvement in a radiological emergency is anticipated was not

eliminated. This possibility, however, is not viewed by the Board as a fatal flaw to the adequacy of the NHRERP. We believe that a radiological emergency can reasonably be assumed to be included within the scope of the LOAs.

2.29. SAPL asserts that those seeking the LOAs on behalf of the State may not have been adequately informed to convey the responsibilities and obligations sought by the State from the various signatories. Counsel for SAPL asked whether the persons seeking the LOAs were familiar with the requirements of NUREG-0654. Tr. 2827, 2829. Applicants' witnesses responded that these individuals were drawn from the State's Technological Hazards Division, other parts of the agency, or from professional planning consultants (Tr. 2834-35, 2850), and that all of these persons are emergency planning professionals. Tr. 2835, 2851. Many of these professional planners have had FEMA training. Tr. 2829. Again, while the possibility remains that some of the persons soliciting LOAs may not have been familiar with the requirements of NUREG-0654, we fail to see this fact, in itself, as a fatal flaw in the plan.

2.30. Intervenor arguments regarding the lack of FEMA review of the LOAs signed since NHRERP Revision 2 do not carry weight with this Board. Applicants testified that new LOAs will be submitted to FEMA for review and that they are intended by the State to be incorporated in the plans. Tr. 2986, 2989, 2995, 3024-25.

2.31. The Board has addressed all facets of the LOA issues raised by admitted contentions and presented in proposed findings. We conclude that all Intervenor concerns were effectively dealt with. This is not to say that the contents of all LOAs and the process for obtaining them were in all instances above reproach. Rather, we conclude that sufficient and necessary Letters of Agreement have been obtained and that they provide reasonable assurance that they are adequate for their intended purposes.

3. RESPONSE PERSONNEL ADEQUACY

3.1. A total of seven contentions were admitted for litigation which raised issues regarding the adequacy of response personnel as they relate to the NHRERP. Four of these contentions, TOH-VI, TOSH-2, TOHF-2, and TOK-1, address staffing sufficiency of response personnel in specific towns for continuous 24-hour operation. The remaining three contentions, NECNP/NHLP-2, SAPL-8, and SAPL-8A, address staffing capability for all local municipalities and the State of New Hampshire with respect to the capability of state response personnel to compensate for inadequacies or deficiencies in local response organizations.

3.2. Six New Hampshire towns have expressed an intention, or policy, not to participate in emergency planning and implementation of NHRERP for these

localities. These are the Towns of Hampton, South Hampton, Hampton Falls, Kensington, Rye, and North Hampton. *Inter alia*, each of these towns also takes the position that there are an inadequate number of competent local personnel to carry out the tasks assigned to the town by the NHRERP.

3.3. In its case in chief, the Applicants sponsored a panel of six witnesses. Appl. Dir. No. 3, ff. Tr. 3228. The panel consisted of Messrs. Strome, Callendrello, and Frechette (Qualifications described in § 2, *supra*), joined by John D. Bonds, Assistant Director for Planning, Division of Public Health Services, New Hampshire Department of Health and Human Services (Qualifications, ff. Tr. 3184); William F. Renz, Emergency Planning Specialist, Aidikoff Associates (Qualifications, ff. Tr. 3185); and William T. Wallace, Jr., M.D., M.P.H., Director, Division of Public Health Services, New Hampshire Department of Health and Human Services (Qualifications, ff. Tr. 3183).

3.4. The Board finds these witnesses to be competent to serve as witnesses on the subject of response personnel adequacy.

3.5. The Applicants' panel presented a Personnel Resources Assessment Summary. Appl. Exh. 1, *as corrected by* Appl. Exh. 1A, ff. Tr. 4685 (hereinafter "the survey").

3.6. The survey identified, by position and functional responsibility, all tasks required to be performed in fulfilling the emergency response functions, and the specific staffing requirements to implement the plan, including the staffing needs for 24-hour operations. Appl. Dir. No. 3, ff. Tr. 3228, at 3.

3.7. The survey sets forth how many people it takes to perform each of the response functions and who can be made available to carry them out. The survey does not attempt to address the availability of people at a specific point in time. Tr. 3283-87.

3.8. The survey assumes that staffing for 24-hour operations is covered in two 12-hour shifts, which is a usual and acceptable practice in emergency planning. Tr. 3294-95, 4065.

3.9. The staffing availability numbers that appear in the survey may not be totally accurate at any given point in time because of ongoing personnel turnovers. Tr. 3336.

3.10. After identification of response positions, functions, and staffing requirements, the survey identified available personnel resources to fill the emergency response positions for each municipality. Such identification was carried out through analysis of data sources including Town Plan Appendices, Town Annual Reports, the New Hampshire Police Standards and Training Commission records, the New Hampshire Fire Standards and Training Commission records, the Bureau of Emergency Medical Service records, and the New Hampshire Firemen's Association records. Interviews were also conducted with persons knowledgeable about the specific communities to verify and adjust the numbers of required and available personnel. These included interviews of Town Select-

men, Town Managers, Civil Defense Directors, Police Chiefs, Fire Chiefs, and Health officials within the local municipalities who were contacted by representatives of the New Hampshire Emergency Management Agency and NHY. Appl. Dir. No. 3, ff. Tr. 3228, at 4.

3.11. In contrast to the specific assignment of available personnel to response positions in the eleven participating towns, officials in the six nonparticipating towns have not assigned available personnel to response positions. As a result, the survey included an Organization Chart for the nonparticipating communities which depicted personnel needs, personnel availability, and a matrix of how the available personnel might be assigned to response positions in each of these towns. Appl. Dir. No. 3, ff. Tr. 3228, at 5; Appl. Exh. 1, § 2.2.

3.12. The survey also addressed the issue of state resources to carry out the various tasks assigned to the State under the NHRERP, and the State's ability to supply necessary assistance to the local municipalities that requested assistance. Appl. Exh. 1, § 3.

3.13. In survey procedures similar to those carried out for local municipalities, the survey identified all response responsibilities assigned to the State. Appl. Dir. No. 3, ff. Tr. 3228, at 9. The survey's analysis identified by agency, position, and functional responsibility all tasks required to be performed on both primary and support (secondary) levels. *Id.*

3.14. The survey process next identified personnel resources available to fill the emergency response positions assigned under the NHRERP. To do so, assessment worksheets were developed specifically for each state agency. The worksheets were designed to elicit pertinent agency-specific data by a review of the agency's assigned responsibility. *Id.*

3.15. Interviews were conducted under the auspices of the New Hampshire Emergency Management Agency with the principal emergency response personnel in each New Hampshire agency with assigned responsibilities. The assessment worksheets were completed during the interviews, and the number, location, and type of personnel available to perform response functions were documented. *Id.* at 9-10; Appl. Exh. 1, Fig 3.1-1.

The Adequacy of the Survey

3.16. Intervenors offered the testimony of Clifford J. Earl regarding the survey. Earl Dir., ff. Tr. 3776; Earl Reb., ff. Tr. 8915. Mr. Earl is a qualified expert in the field of personnel resource planning. Mr. Earl is not experienced in emergency planning. Qualifications, ff. Tr. 3776, Resume following p. 6.

3.17. Mr. Earl testified that he found four serious weaknesses in the survey which bring into question the reliability of the data collected by the survey: (1) failure to provide definition of the key term "available"; (2) the ambiguity of the survey "walk-through" procedures performed to assess staffing requirements;

(3) failure to quantify the "workload" for each position to be filled; and (4) the apparent lack of consideration of potentially critical variables, such as the amount of time required to implement protective actions. NECNP PF 3.1.5; Earl Dir., ff. Tr. 3776, at 2-6.

3.18. Mr. Earl also testified that the survey suffered from the lack of consistent data sources and a weak managerial and supervisory structure for conduct of the survey. Earl Reb., ff. Tr. 8915, at 3.

3.19. Much of Mr. Earl's testimony addressed what Intervenors perceive as ambiguity in the survey's definition of "available." Mr. Earl testified that there is significant room for variation in the interpretation of the terms used by Applicants' panel. Earl Reb., ff. Tr. 8915, at 9-10. He found that the survey nowhere defined "available," although it is used extensively throughout the data-gathering forms used to conduct the survey. He claims that there is no indication that the interviewers who used the forms, or the people that they interviewed, shared a common, clear, and consistent understanding of the term; or that the planners who analyzed the data obtained by the interviews had the same understanding as the interviewers and the interviewees. *Id.* The importance of this testimony to the Intervenors is that it tends to support Intervenors' argument that the survey addresses potential availability of response personnel rather than actual availability. NECNP PF 3.1.13; TOH PF 3.1.1.

3.20. Intervenors' argument stresses this distinction between potential availability and actual availability to show that the survey does not support Applicants' claim that sufficient numbers of personnel are available to respond to a Seabrook emergency. Intervenors assert that in addition to a "body count," the concept of availability also entails considerations such as the effects of full- or part-time employment, availability during work shift or off-shift hours, the capability of reaching individuals in off-shift hours, whether they have transportation and whether they have other responsibilities to prevent them from responding. According to Mr. Earl, the concept of availability should include a clear understanding of which people will respond to a Seabrook accident, how they will become available, and how and when they will appear at their duty stations. NECNP PFs 3.1.14, 3.3.3; TOH PF 3.1.8; Earl Dir., ff. Tr. 3776, at 3.

3.21. We do not find the Intervenors' argument to be convincing. It would require us to find a misunderstanding or varied interpretation of the word in its application by those conducting and interpreting the survey, and by those being surveyed. The Board cannot probe the minds of those who have not made contributions on the record. However, Applicants' panel provided a definition of the term "available" as understood by the panel and used in the survey forms during cross-examination. Tr. 3254, 3314, 3317, 3323, 3332. Without semantic arguments, the definition can reasonably be read to mean the pool of resources that will be relied upon to carry out the responsibilities assigned under the NHRERP.

3.22. Intervenors' argument inherently infers that the Applicants' attempt to identify available personnel would fail unless all response personnel are available at every moment of the day or night to respond to a radiological emergency. In a clear reading of this argument, if a person is not immediately able to respond to an emergency, even though he or she is part of a resource pool, he or she could not be counted as being available. This is an unrealistic demand under any emergency planning standard.

3.23. There is no requirement under 10 C.F.R. § 50.47 or NUREG-0654, or any other emergency planning guide, that requires all emergency responders to be available at all times of the day and night every day of the year. Circumstances involving personnel who normally provide support to a given community on a volunteer, part-time, or seasonal basis, or who have residences or regular employment locations in or out of the area, are not unique to radiological or other emergency response planning. The availability of emergency response personnel to respond to an emergency does not necessarily depend upon their living or working in the affected community. Appl. Dir. No. 3, ff. Tr. 3228, at 17; FEMA Dir., ff. Tr. 4051, at 52.

3.24. The NHRERP is held to no higher standard than emergency plans for hazardous chemical accidents, earthquakes, hurricanes, or tornados. These plans assume that some individuals, in the ordinary course of their lives, will be absent during an emergency. They are flexible enough to make contingencies with regard to absentees, either explicitly or presumptively. They are predictive in nature and can only provide a reasonable assurance that adequate measures can be taken in the event of an unpredictable emergency. The Commission has applied the same reasonable-assurance standard to radiological emergency planning. *See* 10 C.F.R. § 50.47.

3.25. The Intervenors' argument further misses the point since the Applicants' survey does not address response personnel availability in the temporal sense; the survey assumes that people will be available when they are needed. The survey only identifies how many people it takes to perform each of the various plan functions and the pool of people who can be made available to fulfill them. It is implementation of the plan that is designed to ensure that people are at hand to perform their functions when they need to be performed. *See* Tr. 4088-89, 4096-97. The issue of whether and when people will be there is an issue of planning and implementation, not personnel resources. Tr. 3283-87.

3.26. Intervenors next argue that little reliance should be placed on the survey because it did not quantify the "workload" involved for each position due to an inadequate understanding of "walk-through" procedures among the personnel designing and implementing the survey. NECNP PF 3.1.21; Earl Dir., ff. Tr. 3776, at 3.

3.27. The Applicants' Summary asserts their completion of a "walk-through" of each implementing procedure to identify, by position and func-

tional responsibility, all of the tasks required to be performed in fulfilling the contemplated emergency response functions. Appl. Exh. 1, *as corrected by* Appl. Exh. 1A, ff. Tr. 4685, at 2-1. However, Mr. Earl testified that the authors of the Summary had not defined the term "walk-through" clearly enough for him to determine if they actually calculated the amount of work involved in each task and position, or merely matched up tasks to responsibilities and responsibilities to positions. Earl Dir., ff. Tr. 3776, at 4-5; NECNP PF 3.1.22.

3.28. Intervenors assert that Applicants' panel members demonstrated varying interpretations of what is required of emergency planners in a "walk-through." They specifically cite Mr. Callendrello for his statement "all somebody needs to do is read the step and evaluate whether the person whose procedure it is can perform that step alone" (Tr. 3277), and Mr. Renz for his statement that in a walk-through, "one goes through the procedure to see if it works" (Tr. 3252). NECNP PFs 3.1.32, 3.1.33. To emphasize their point, the Intervenors make an analogy between one who reads about baking a cake and one who actually bakes a cake. They find the second approach yields a far more reliable result. NECNP PF 3.1.33; *see also* SAPL PF 3.1.34.

3.29. We do not find Intervenors' analogy to be applicable to the facts at hand. Mr. Renz's statement was a stand-alone statement, made in cross-examination without further qualification as to the exact definition of a "walk-through" in the context used by emergency planners. However, Mr. Callendrello's testimony on cross-examination did qualify the term. He stated that

> it was the understanding, at least to the people that performed this study, that the walk-through was a reading of the procedure, an analysis of each step, and a determination against objective criteria as to whether there was one person, more than one people [*sic*], whatever the number needed to perform this step.

Tr. 3278. On the basis of the record, we do not see any conceptual difference between Mr. Renz's and Mr. Callendrello's understanding of the term "walk-through."

3.30. Furthermore, we find adequate support in the record to find that Applicants' witnesses demonstrated that "workloads," as the term is commonly defined by emergency planners, were fully taken into account in the walk-throughs performed. Tr. 3271-75, 3280-83, 3287.

3.31. Intervenors also fault the Applicants' survey because they say the methodology employed fails to show consideration of potentially critical variables, such as time needed to contact personnel, travel time, and time to implement response procedures. Earl Dir., ff. Tr. 3776, at 6. In Mr. Earl's opinion, mobilization times are critical factors which would affect the quantification of workload and, therefore, personnel needs in an emergency response. NECNP PF 3.1.5, *citing* Earl Reb., ff. Tr. 8915, at 2; *see also* TOH PF 3.1.3.

3.32. As we have already stated (*see* ¶¶ 3.22–3.26, *supra*), we do not understand the survey to be an attempt to fix the methods and procedures to implement the emergency response functions called for under the NHRERP. Rather, the survey was conducted to demonstrate that a sufficient resource pool is available to provide the manpower necessary to carry out the specific functions of the plan at the time of an emergency.

3.33. Finally, Intervenors' argue that the survey is unreliable due to inadequate methodology employed in the conduct of the survey. SAPL PFs 3.1.32, 3.1.37, 3.1.38; TOK PF 3.1.3; NECNP PFs 3.1.7, 3.1.28, 3.1.40.

3.34. NECNP asserts that the techniques used by the Applicants to determine staff requirements are "rudimentary and subjective when compared to the techniques which could have been used." NECNP PF 3.1.40. Mr. Earl testified that Applicants failed to (1) ensure a common understanding of key terms used in the survey, (2) ensure the appropriateness and consistency of data sources used for all organizations, (3) ensure that personnel are sufficiently experienced in staff assessments, (4) ensure that staff conducting the study are effectively supervised, (5) ensure that the analysis and interpretation of the data are consistent and that the results are objectively verifiable. Earl Reb., ff. Tr. 8915, at 17. In Mr. Earl's opinion, Applicants' testimony showed that none of these important steps were taken. Therefore, the Intervenors assert that there is no assurance that staff availability data produced by the survey are reliable. NECNP PF 3.1.41.

3.35. Our reading of the record leads to a different conclusion. We have the reasoned opinions of the panel members that the survey was designed and managed properly (Tr. 3198-3200, 3230, 3233, 3248); that it was accurate (Tr. 3259-60); that the data were verified (Tr. 3229, 3240-43); that there was supervision of data gathering (Tr. 3244-46); and that the panel members agreed with the conclusions reached by the survey (Tr. 3195, 3239). They offered testimony explaining survey methodology, data collection techniques, and data sources. Tr. 3198-3208. We find Mr. Earl's objections to the survey, when stripped of arguments pertaining to the definitions of "available," "walk-throughs," and "workloads," and the lack of mobilization considerations, to be nothing more than a statement of how the survey would have been conducted if Mr. Earl had been in charge. The Board need not find a right and wrong way to conduct a survey; we leave that to the experts. Here we have a sufficient showing on the record to support a finding that the survey was adequate for identifying the pool of response personnel needed under the NHRERP, and we do so.

3.36. Mr. Earl's testimony demonstrated his expertise in personnel resource management in a relatively static and predictable business and administrative environment. In emergency planning, personnel resources must be identified as available in a situation as different from the regular business or administrative environment as night is from day. A radiological emergency cannot be scheduled

nor can it be predicted even by year or decade. The emergency response, thus the response personnel required, will vary by type of emergency, severity, location, season, time of day, and weather, to name the more obvious variables. The rank and file of emergency responders cannot be budgeted for or held in reserve. Identification of the personnel resource pool is the most useful, and in the last analysis, the most reliable approach. Emergency planning, as we understand it, is a dynamic, flexible process and this is no less true for personnel resources than for other aspects. Mr. Earl's approach, sound enough for regular, ongoing endeavors, has an unacceptable rigidity when applied to emergency planning. His excessive reliance upon analysis employed in statistical surveys assumes a more precise quantification of emergency response needs than is realistic or useful.

The Adequacy of Local and State Response

3.37. Much of the NHRERP hearing was devoted to the issue of whether there are adequate local personnel to carry out the assigned duties of the EPZ towns under the plan and whether the State would be able to compensate for this lack of personnel. *See generally* NECNP PFs 3.1.10, 3.1.11; SAPL PFs 3.1.3, 3.1.5, 3.1.11; TOH PF 3.1.2.

3.38. The Intervenors' arguments are based on three generally definable assertions. First, given the number of response positions to be filled, it would take too long for state resources to adequately respond to an emergency to make up for inadequacies in the staffing or training of local resources. DeMarco and Lally Dir., ff. Tr. 3659, at 3-13; Janetos Dir., ff. Tr. 3597, at 5-6. Second, local resources would not be available in an emergency due to other commitments. Christie Dir., ff. Tr. 3741, at 1-2; Breiseth Dir., ff. Tr. 3739, at 3; Ingram Dir., ff. Tr. 4479, at 4, 6. And, third, even if they were available, many would not respond by choice. Breiseth Dir., ff. Tr. 3739, at 3 and Tr. 3766-67; D. MacDonald Dir., ff. Tr. 3867, at 4.

3.39. As to the third assumption, we address the issue of local government nonparticipation in § 7 on Human Behavior in Emergencies. *Infra.* There we reject the concept that government officials will choose not to respond to radiological emergencies.

3.40. Intervenors assert that the nonparticipating municipalities are too understaffed, or their personnel are too inadequately trained, to meet the response requirements imposed by the NHRERP, and that the State would be unable to compensate for this lack of personnel. The Town of Hampton offered the testimony of two police officers, Sergeant Victor DeMarco and Detective William Lally (DeMarco and Lally Dir., ff. Tr. 3659), and the Chairman of the Board of Selectmen, Dona Janetos (Janetos Dir., ff. Tr. 3597), to support this position.

3.41. Based on their view of the traffic control plan for the NHRERP, Sergeant DeMarco and Detective Lally testified that the Hampton Police Association voted unanimously that the NHRERP is unrealistic, unworkable, and unsupportable. DeMarco and Lally Dir., ff. Tr. 3659, at 19; Tr. 3688-91.

3.42. The police officers stated that there are a total of twenty-seven full-time police officers in the Town plus the Chief, two deputies, four dispatchers, five support staff, and approximately fifty special officers. DeMarco and Lally Dir., ff. Tr. 3659, at 2. Special officers are hired on a seasonal basis for 12 weeks during the summer months. *Id.* They testified that this was an insufficient number of police to man necessary traffic control positions while at the same time staffing necessary security and Emergency Operations Center functions. *Id.* at 11.

3.43. The officers testified that there would be substantial delay before off-duty Town officers could be located, notified, and brought in to augment the typically on-duty staff of 15. *Id.* at 11, 16. They stated that so many lived so far away as to make them unreachable and unavailable if off duty for a lengthy period of time. *Id.; see also* Christie Dir., ff. Tr. 3741, at 1-2.

3.44. Although the State may provide as many as twenty-eight of the thirty-five State Police officers from Troop A in Epping for traffic control in the Town, the officers stated that there would not be sufficient officers from Troop A available to carry out the traffic control duties assigned them in the Town and, at the same time, compensate for lack of Town personnel. They further stated that it would take 3 to 4 hours to deploy State Police from other Troops. DeMarco and Lally Dir., ff. Tr. 3659, at 12.

3.45. The officers testified that special officers receive 2 to 3 hours of traffic control training as part of 100-110 hours of training before they are hired, as well as 5 hours of practical experience under the supervision of more experienced officers. It is the police department's practice to team new and veteran officers together so that new officers can have on-the-job training. Tr. 3669, 3724. Full-time officers, in contrast, receive 2 or 3 days of training on traffic and crowd control as part of their 6- to 10-week basic police officer's school. Tr. 3661, 3724.

3.46. The officers stated their belief that the special officers employed by the Town in the summer months were too inexperienced and inadequately trained in traffic and crowd control to carry out emergency duties without supervision of full-time officers. DeMarco and Lally Dir., ff. Tr. 3659, at 13.

3.47. Applicants' witnesses testified that in cases where sufficient personnel were not available to perform a required function, State Police or other personnel have been assigned the task. Appl. Dir. No. 3, ff. Tr. 3228, at 6-7. Captain Sullivan, a State Police Division Commander, testified that the State Police had the manpower to carry out these assignments (ff. Tr. 4687-88) even in the nonparticipating towns. Tr. 4721-23, *and see* Tr. 4696-99.

3.48. FEMA witnesses testified that broad-scale mobilization of State Police Troops at the ALERT level is planned under the NHRERP. Tr. 4099-4100. Troop A will be staffing traffic control points at the ALERT level, and the need for additional State Police will result in mobilization of other barracks. *Id.*

3.49. In addition to the New Hampshire State Police, the New England State Police Compact makes available a pool of trained officers. The maximum number of troopers in New England states is approximately 3300 (Tr. 4731), more than 3000 troopers in addition to the 247 in New Hampshire. Tr. 4696.

3.50. FEMA witnesses also testified that with proper training, the fifty special officers should be able to function adequately in their emergency response duties. FEMA Dir., ff. Tr. 4051, at 45.

3.51. We do not find meritorious Intervenors' arguments pertaining to mobilization, as we have discounted these arguments previously. *See* 3.22–3.26, *supra*. Furthermore, the Board does not give any weight to the vote of the Police Officers Association; it contains almost every infirmity possible in an item of evidence. We have no record of the assumptions made by the Association members; no record of the actual question proposed for vote; no record of the tally of the vote; and no record of the individual or collective expertise of the Association's membership in emergency planning. As evidence proffered by the Intervenors, we find particularly intriguing the notion that factual merit could possibly be determined by voting. Would one put to a vote, for example, the freezing temperature of water? We do find, however, substantial evidence in the record to support a conclusion that adequate police resources are available to meet the needs of the Town of Hampton and the other EPZ communities. Appl. Dir. No. 3, ff. Tr. 3228, at 6; Appl. Exh. 1, § 2.

3.52. Dona Janetos, Chairman of Hampton's Board of Selectmen, testified that Hampton could not maintain accessibility of evacuation routes because twenty-four of the Public Works Department's sixty employees were approximately 17 years of age, and another nineteen are wastewater technicians who have no experience in road clearance or traffic control. Janetos Dir., ff. Tr. 3597, at 5-6.

3.53. Ms. Janetos further asserted that the Town Manager had been assigned pivotal emergency roles by the NHRERP which could not be realistically carried out by that one individual. Janetos Dir., ff. Tr. 3597, at 5-6; TOH PF 3.1.11, *citing* Tr. 3342-43.

3.54. FEMA testified that, with proper training, Department of Public Works personnel (both full- and part-time) should be able to function adequately in their emergency response duties. FEMA Dir., ff Tr. 4051, at 47.

3.55. As to the burdens of the Hampton Town Manager and others like him, Intervenors would have us weigh a problem that they themselves have created. Hampton is one of the nonparticipating towns that has failed to cooperate with planning authorities in their attempt to assess and define the staffing needs and

burdens of the EPZ communities. If they had participated, unrealistic demands on personnel could have been identified. Applicants' witnesses stated that they would make necessary changes in the NHRERP personnel assignments if they were told by Hampton authorities that such changes were needed. Tr. 3344-47. We find reasonable assurance that local and state response personnel are capable of responding to the needs of the local EPZ communities under the NHRERP. Appl. Dir. No. 3, ff. Tr. 3228, at 6, 10-12; Appl. Exh. 1, § 2 and Tables 3.1-2, 3.1-4.

3.56. Intervenors' second assertion again returns to a variation of an implementation argument by stating that locational and occupational responsibilities will keep local personnel from responding either in a timely fashion or not at all. Breiseth Dir., ff. Tr. 3739, at 3, and Tr. 3766-67; D. MacDonald Dir., ff. Tr. 3867, at 3-5; Ingram Dir., ff. Tr. 4479, at 4, 6; Shivik Dir., ff. Tr. 3780, *passim.* We do not find these arguments to be persuasive. *See* ¶¶ 3.22–3.26, *supra.*

3.57. Before we depart from issues pertaining to the adequacy of local response personnel, we address an argument by SAPL which asserts that response personnel resources will be inadequate because they will be exposed to radiation in doses requiring their withdrawal from emergency response. SAPL PF 3.1.18. SAPL cites the testimony of Dr. Donald L. Herzberg that a 5-Roentgen dose could be delivered to a large number of the 1300 state and local emergency workers relatively quickly under certain scenarios. Herzberg Dir., ff. Tr. 5012, at 2. SAPL states that there has been no showing that there are sufficient backup personnel should 5-Roentgen or greater radiation exposures be quickly incurred.

3.58. Radiation exposure limits for emergency workers are specified in the NHRERP. That limit is 5 Roentgens for local emergency workers. Appl. Dir. No. 3, ff. Tr. 3228, at 14. Proper reporting and tracking procedures for emergency worker exposures are in place to ensure that exposure levels are maintained within the prescribed limits. *Id.*

3.59. Management of emergency worker exposure would include rotation of assignments among members of the local emergency organization or removal from assignments and replacement of those emergency workers whose individual radiation exposures indicate a trend toward the established limit. *Id.* The 5-Roentgen exposure limit prescribed by the plan corresponds to the highest value for whole-body dose established by the U.S. Environmental Protection Agency (EPA) Protective Action Guidelines (PAGs) as a trigger level for protective actions for the general population, even though the EPA PAGs contemplate an exposure of 25 Roentgens for emergency workers. *See id.* at 14-15.

3.60. Once protective action measures have been completed in a given area, local emergency workers would be withdrawn from the area. It is the goal of the Division of Public Health Services to limit exposure to emergency workers

to the same level incurred by the general public. *Id.* at 15. We find reasonable assurance that local and state response personnel exist to meet the demands of such an emergency.

3.61. SAPL, alone among the Intervenors, points to the testimony of Dr. William T. Wallace, Jr., Director of the Division of Public Health Services, to support an argument that state resources are barely adequate to carry out their own emergency response functions much less to supplement local responses. SAPL PF 3.1.27. Dr. Wallace testified concerning the resistance of state health workers to participate in the NHRERP on a voluntary basis. Tr. 3403. SAPL introduced into the record twenty-five letters from department personnel declining to participate on such a voluntary basis. SAPL 3, ff. Tr. 3433. For the reasoning set forth in our opinion addressing Human Behavior in Emergencies, § 7, *infra*, we do not find this evidence to be indicative of inadequate state response resources. We must view these responses in the context of an emotionally charged licensing proceeding where such statements of predicted behavior can be used in an effort to defeat such licensing or for the purposes of pressuring one's peers. We therefore give them little weight in our deliberations.

FEMA Findings

3.62. We finally turn our attention to FEMA testimony, as it has been used extensively by the Intervenors to make their case. In its December 1986 review of NHRERP Revision 2, FEMA and the Regional Assistance Committee identified numerous deficiencies in various local plans, concerning the availability of sufficient numbers of primary and backup personnel for 24-hour continuous operation for a protracted period as provided in NUREG-0654 (A)(4). *See, e.g.*, FEMA Dir., ff. Tr. 4051, at 21, 43, 51.

3.63. FEMA testified that, based on its review of the NHRERP, the State of New Hampshire has not demonstrated that it has sufficient personnel resources to compensate for the nonparticipation of local governments in emergency planning for Seabrook. FEMA Dir., ff. Tr. 4051, at 25, 61; NECNP PF 3.1.59.

3.64. SAPL quotes FEMA as requiring the State of New Hampshire to compensate fully for the six communities who have indicated they will not participate in the planning process. SAPL PF 3.1.17; FEMA Dir., ff. Tr. 4051, at 81.

3.65. Our reading of FEMA's testimony does not support a finding of inadequate response personnel resources. FEMA's testimony was filed prior to the State's submission of the Personnel Resources Assessment Summary prepared by the Applicants. Tr. 4053. At the time the FEMA panel testified, it was unable to comment in depth upon the Summary inasmuch as FEMA's testimony was directed only to the NHRERP and did not reflect any review of the Summary. Tr. 4053.

3.66. In its December 1986 review of New Hampshire's Compensatory Plan, intended to be implemented when local response organizations are unwilling or unable to perform their assigned functions, FEMA found that the State had not yet sufficiently identified the compensatory personnel resources to be relied upon by the State. FEMA indicated that it needed staffing rosters before it could conclude the plan to be adequate. Tr. 4056. If the rosters showed the plan to be adequate, the deficiencies FEMA cited in its 1986 review would no longer be material. This showing by the State was specifically anticipated by FEMA, and we expect that the State has provided the information. *See, e.g.*, FEMA Dir., ff. Tr. 4051, at 21, 25, 51, 81.

3.67. The FEMA panel viewed the Summary as being a document that represented significant progress in the resolution of FEMA's preliminary findings of inadequacy with respect to personnel resources. Tr. 4098, 4109, 4165-66. However, FEMA testified that it could not change its determination that the State had not demonstrated adequate personnel resources to compensate for the nonparticipation or supplemental needs of the EPZ communities until the State develops the Summary information as a part of its planning base.

3.68. Our review of the record discloses that Applicants have made a strong showing that adequate response personnel resources exist to man the positions assigned by the NHRERP. For the most part, the towns participating in emergency planning have made assignments of available personnel to emergency response positions. As of July 1987, 370 of the 378 local emergency positions had been filled by the eleven municipalities. Local officials have indicated that they will continue to make assignments using available personnel. Appl. Dir. No. 3, ff. Tr. 3228, at 6.

3.69. In the case of the six nonparticipating towns, no assignment of personnel had been completed by municipal officials. However, Applicants' survey of available local and state personnel reveals that the number of available personnel to staff response positions in local municipalities exceeds the personnel required (Appl. Dir. No. 3, ff. Tr. 3228, at 6; Appl. Exh. 1, § 2), especially in the nonparticipating towns. Appl. Exh. 1, § 2.2. We find this latter point to take on greater significance in light of the promulgation of 10 C.F.R. § 50.47(c)(1). There is a conclusive presumption that town officials will respond with their best efforts in a radiological emergency, and a rebuttable presumption, in the absence of a plan of their own, that local officials will follow the NHRERP.

3.70. The survey demonstrates that there is reasonable assurance that sufficient state personnel are available to carry out the functions assigned to the State. Appl. Exh. 1, Table 3.1-1 (*as corrected* Appl. Exh. 1A, ff. Tr. 4685).

3.71. We also find the same reasonable assurance with regard to the State's ability to assist both nonparticipating towns and those towns which the plan assumes are unable to mount a full response from local resources. Appl. Dir. No. 3, ff. Tr. 3228, at 10-12; Appl. Exh. 1, Tables 3.1-2–3.1-4.

Decision

3.72. We find that the Applicants have demonstrated that there is reasonable assurance that there are sufficient response personnel to carry out the protective action responses as required for each of the New Hampshire towns located in the Seabrook EPZ and for the State, both as to its direct and compensatory responsibilities in the event of a radiological emergency arising at Seabrook Station.

4. TRANSPORTATION AVAILABILITY AND SUPPORT SERVICES

4.1. Eight contentions were admitted for litigation raising issues as to the availability of transportation and emergency support services, including transportation of persons with special needs: TOSH-3, TOSH-8, TOK-6, TOH-IV, SAPL-18, SAPL-25, SAPL-37, and NECNP/NHLP-6.

4.2. In its case in chief, Applicants presented a panel of four witnesses: Anthony M. Callendrello, Paul R. Frechette, and Richard H. Strome, all of whom have been described in § 2 (*supra*), and Michael C. Sinclair, an Emergency Planning Specialist from Aidikoff Associates (Qualifications, ff. Tr. 4222). Appl. Dir. No. 2, ff. Tr. 4228, *passim*.

4.3. The Board finds these witnesses to be qualified and competent to give testimony on this subject matter.

4.4. The Applicants' panel first described the four categories of the "transit-dependent population," those requiring transportation assistance in the event of an emergency in the EPZ: (1) schoolchildren (when school is in session); (2) persons confined to institutions, i.e., hospitals, nursing homes, day-care centers, and jails; (3) the homebound, physically impaired; and (4) those individuals who indicate they are likely to be without transportation during an emergency. Appl. Dir. No. 2, ff. Tr. 4228, at 2. The individuals in categories (3) and (4) are generally defined as those who have "special transportation needs" in the New Hampshire Civil Defense Agency's (NHCDA) Special Needs Survey. *Id.* at 8.

4.5. The testimony of Applicants' panel focused on the transportation needs for each of the listed categories. *See id.* at 3 (category (1); *id.* at 4-5 (category (2); *id.* at 8-10 (categories (3) and (4)). The resources required to assist those in each of the transit-dependent categories are calculated separately by vehicle type and listed in the appropriate sections of the state and town RERPs. *Id.* at 16-17.

4.6. According to figures established in NHRERP Revision 2 and the subsequently conducted NHCDA Special Needs Survey, a total of 539 buses are required to evacuate the identified transportation-dependent population of the

entire New Hampshire EPZ. This figure includes the need for approximately 435 regular school buses, 15 coach buses, and 71 "special needs" (i.e., conversion bed) buses for hospitals, nursing homes, the jail, and homebound mobility-impaired individuals. The plan also identifies the potential need for thirty vans for small facilities that have less than fifteen students or occupants. *Id.* at 13.

4.7. Applicants' panel testified that 709 standard school buses and 19 coach buses are available under LOAs either present in the NHRERP or obtained since Revision 2 to the plan. In addition, sixty-seven vans are available with a capacity ranging from five to twenty passengers each. *Id.* at 13 and Attach. 4.

4.8. The special-needs buses will be drawn from the pool of 709 standard school buses and equipped with the conversion bed kits, as required. The coach buses (with reclining seats) are designated for evacuating hospitals and nursing homes. *Id.* at 13. The Applicants' panel testified that the 100 buses allocated to the special-needs population is approximately 50% greater than the number of buses required to adequately evacuate those individuals. *Id.* at 10.

4.9. Applicants' LOAs, as of August 26, 1987, reflect the availability of approximately 796 drivers from the bus provider companies. *Id.* at 13-14. The panel testified that any deficiencies in driver availability would be met from the Emergency Driver Pool which the New Hampshire Office of Emergency Management has established in case there is a need to supplement bus provider drivers at the time of the emergency. This pool consists of approximately 168 New Hampshire Department of Transportation personnel, 196 New Hampshire National Guard personnel, and 48 Teamster personnel. *Id.*

4.10. The Applicants' panel testified that there is reasonable assurance that there are sufficient buses and bus drivers to effectuate a complete evacuation of the New Hampshire EPZ in an emergency, even when school is in session. *Id.* at 14.

4.11. Volume 5 of the NHRERP contains LOAs which make available approximately forty-eight ambulances. LOAs commit approximately 126 Emergency Medial Technicians to be available for emergency response. Applicants' panel testified that available Emergency Medical Service or ambulance service vehicles are sufficient to respond to all identified New Hampshire EPZ needs. Appl. Dir. No. 2, ff. Tr. 4228, at 14-15.

4.12. Intervenors' rebuttal to Applicants' assertion that adequate transportation is available to evacuate the EPZ is mounted in a very narrow, anecdotal, and often unsubstantiated four-pronged attack. First, Intervenors present the testimony of Ann Hutchison, Division Manager of the Berry Division of the National School Bus Service, Inc., to rebut Applicants' finding of adequate bus driver availability. SAPL PF 4.1.18; TOH PFs 4.1.1–4.1.6, *citing* Hutchison Dir., ff. Tr. 4562.

4.13. Ms. Hutchison testified that on the basis of a survey she conducted among the fifty-seven drivers employed by her Bus Company during the 1986

plan exercise, only six drivers, or approximately 10% of those surveyed, agreed to drive in an emergency. Hutchison Dir., ff. Tr. 4562, at 4. Ms. Hutchison's testimony included a bold assertion that, on the basis of her survey and a discussion with the owner/manager of one other bus company, any company responding to an emergency at Seabrook might be unable to produce the number of drivers recited in the Applicants' LOAs. *Id.* at 4-6.

4.14. Our review of the record shows that only nine drivers were required under the terms of the LOA with Berry Division extant at the time of the witness's testimony. Tr. 4568. The witness deflates her own testimony by admitting that the nine drivers reasonably approximate the number who would actually be available in an emergency. Tr. 4577. That number is 100% of the number of drivers sought from Berry Division under the existing LOA. Furthermore, the survey Ms. Hutchison conducted among her own drivers is without probative value since evidence of the survey itself has not been proffered. Moreover, she has not conducted research to substantiate her opinion as to the other companies. *See* Tr. 4573-74.

4.15. SAPL sponsored the testimony of Sal Guadagna to further support an assertion that the Applicants' LOAs do not accurately reflect the actual availability of drivers in an emergency. Mr. Guadagna testified that he could not remember directly providing for 300 bus drivers under the LOAs he signed with the State, and that in his opinion, he did not feel that his drivers would respond in great numbers to a radiological emergency. SAPL PF 4.1.18, *citing* Guadagna Reb., ff. Tr. 8117, at 1-3.

4.16. Mr. Guadagna's testimony presents the Board with an interesting problem. Mr. Guadagna signed three LOAs with the State of New Hampshire. Those LOAs committed 300 drivers to respond in an emergency. Yet at the time of the hearing, he could not remember if he had committed the 300 drivers listed in the LOAs he signed. More succinctly stated, he could not remember if he wrote in the figures that appear in the LOAs. Guadagna Reb., ff. Tr. 8117, at 3. We are therefore unsure whether the Applicants may rely on these 300 drivers. However, Mr. Guadagna further stated that he could not predict the response among his drivers. *Id.* Any assessment he could offer regarding his drivers' response would therefore be an unsubstantiated opinion. However, we do not find Mr. Guadagna's testimony to support a finding that driver response will be inadequate. He testified that he was in the process of revising his LOA with the State to more accurately reflect availability. Tr. 8127-29. The State has demonstrated to the Board that it is willing to revise its dependence on certain drivers if the State is made aware of their unavailability. *Compare* Appl. Exh. 5, Vol. 5, *and* Appl. Dir. No. 1, ff. Tr. 2795, at 7; *see* Tr. 4285, 4567-68. We expect that they will do the same with regard to the availability of bus drivers from National School Bus Service, Inc., and that deficiencies in the driver pool

will be provided for through utilization of other resources identified or to be identified by the State.

4.17. In general, we give little weight to any of SAPL's comparisons involving revisions of bus and driver figures coming to light at the time of Applicants' testimony, including those of Teamster Union drivers. *See* SAPL PFs 4.1.13, 4.1.15, 4.1.18. SAPL would have us infer that changes in the numbers between those relied upon in NHRERP Revision 2 and those relied upon at the time of the hearings show some evidence of overestimation by the Applicants. As was pointed out in the previous paragraph (*id.*), they do just the opposite. The revisions demonstrate to the Board that Applicants have taken the necessary measures to correct their estimates in response to better and more current information. Emergency planning is an ongoing process that does not lay dormant at any time. Constant revisions are necessary and Applicants have stated as much in their testimony. *See* Tr. 2981, 2984, 4285.

4.18. SAPL also asserts that the National Guard cannot be relied upon for the emergency pool since only a small cadre of National Guard personnel are on duty at any one time and the bulk of the personnel have full-time jobs. SAPL PF 4.1.16. We do not see the logic in this argument. The very nature of the National Guard is to have citizens, who are in the full pursuit of their civilian occupations, available at a given moment to respond to a call to duty, regardless of their occupational roles. Just because there may be a small cadre on "active" duty does not mean that other National Guard personnel are unavailable to respond when called. While some Guard personnel may not be available when an emergency arose, those who could be contacted would be required to report to duty. Others would report as they could be notified. This is the same type of response anticipated in any emergency plan, and nothing more can be expected here. Moreover, Mr. Strome of Applicants' panel testified that the National Guard could be expected to respond to an emergency since they are already committed under the Federal Emergency Response Plan as part of the resources of the U.S. Department of Defense. *See* Tr. 2996.

4.19. In the second prong of the Intervenors' rebuttal to Applicants' showing of adequacy, SAPL and NECNP argue that transients without transportation in the Town of Hampton, including the beach area, are not adequately provided for under the NHRERP. *See* SAPL PF 4.1.12; NECNPPF 4.1.10. Applicants' Special Needs Survey did not identify individuals who may be dropped off by bus or who hitchhiked to the beach, unless they were associated with a hotel responding to the survey. Tr. 4245-48. Intervenors further argue that the Board should find Applicants' showing to be inadequate because FEMA is unable to evaluate the adequacy of Applicants' provision for protecting transportation-dependent transients without first having an exact estimate of that population. Tr. 4591-92.

4.20. Applicants have testified that the number of transients without transportation is small based upon the work of KLD Associates, the preparer of the ETE for Seabrook. Tr. 4252-53, 4935-37. Based on KLD's discussions with facility operators, and the observations of those conducting the ETE surveys for Hampton and the beach, they assert that there is a high degree of mobility for transients, and that few transients would require transit assistance. *Id.* Applicants testified that they had added nine buses to the beach area to address the uncertainties in the number of individuals in this population and that they had specifically routed buses along the beach area. Tr. 4244-48. Applicants' allocation of transportation resources in excess of that identified as being needed under its Special Needs Survey also supports a finding that there is reasonable assurance that a small population of transit-dependent transients can be adequately evacuated. *See* Appl. Dir. No. 2, ff. Tr. 4228, at 10; Tr. 4248. Based on the number of buses and drivers Applicants identify as being available for evacuation purposes, we also find reasonable assurance that any increase in the estimate of the population of transport-dependent transients can be addressed without major revisions to the plan.

4.21. SAPL argues that the plan's expectation that persons needing transportation will stand for indeterminate periods of time along predesignated bus routes is not a reasonable means of protecting transport-dependent populations in the EPZ. SAPL claims that this method fails to account for possible severe weather conditions and the fact that a radiation plume may be overhead. *See* SAPL PFs 4.1.11, 4.3.4. We disagree with SAPL's assumption.

4.22. We find that Applicants' testimony shows that they have designed the evacuation bus routes to be completed within 15 to 30 minutes. Tr. 4235. This is far from being an "indeterminate" period of time. SAPL's claim that individuals may have to wait outside in severe weather conditions adds nothing to its argument. Any evacuation — tornado, earthquake, hurricane, or chemical hazard related — may require evacuees to brave adverse weather conditions. Tr. 4238-39.

4.23. On cross-examination, Applicants' panel was asked by counsel for NECNP whether the NHRERP anticipated any situations wherein a decision to shelter people would be made after evacuation has been ordered. Tr. 4237. Intervenors' counsel was inferring that if an accident was progressing more rapidly than "originally thought," people waiting for buses would not know that they should take shelter. Tr. 4238-39. SAPL's radiation plume argument was derived from this line of questioning. *See* SAPL PF 4.3.4.

4.24. Mr. Strome of Applicants' panel answered that there was no such provision in the NHRERP, but such a decision to shelter could be made on an *ad hoc* basis. However, he stressed that it would be unlikely that emergency response officials would suspend an evacuation and go to a sheltering mode in the hypothetical situation posed by Intervenors' counsel. He stated that you

would accelerate the evacuation instead. *Id.* We understand Mr. Strome to say that while the NHRERP provides evacuation as the preferred alternative for the EPZ, *ad hoc* decisions could be made to respond to unpredictable conditions present at the time of the emergency; emergency response officials would not take measures that would fly in the face of reason if they knew *ad hoc* changes were necessary to provide the greatest protection to the population at risk.

4.25. The third prong of Intervenors' rebuttal argues the inadequacy of mobilization capability and efforts regarding emergency transportation resources. NECNP takes exception to the plan on the basis of what it finds as discrepancies in instructions, or misleading and unclear instructions, to the various individuals coordinating the evacuation. FEMA Dir., ff. Tr. 4583, at 67 (dispatching to schools); Tr. 4262-64 (destination of buses); Tr. 4265 (references to appendices in plan); Tr. 4269-70 (unclear communication procedures).

4.26. FEMA concluded that the logistics for mobilizing evacuation buses to the schools need to be clarified and made consistent in the state and local plans and procedures. FEMA Dir., ff. Tr. 4583, at 67-68.

4.27. NECNP further cites what it defines as "cumbersome communication steps" required of emergency coordinators in order to determine the need for buses which, in NECNP's opinion, have the potential to lead to confusion. NECNP PF 4.1.6, *citing* Tr. 4269-79.

4.28. NECNP's assertions, collectively, infer that emergency coordinators will be viewing the plan in first impression and at a time of great activity. There is a prevailing overtone in these assertions that those responsible for implementing the plan may not be able to do their job because they do not understand the plan. However, the Applicants' panel testified that emergency coordinators receive training in those portions of the plans they are expected to implement. Tr. 4266. The fact that written instructions may require prior training to be correctly understood is of no actual value to NECNP's argument. From life's experience, we have found the same notion to be applicable to many types of written instructions. Moreover, NECNP's assertion that steps in the chain of command or implementing procedures may lead to confusion is an opinion of someone who neither trained in emergency planning nor is familiar with the nuances of the NHRERP. The record simply does not support Intervenors' assertion that the plan's procedures are confusing or incapable of being implemented.

4.29. NECNP cites FEMA testimony to the effect that if there is some doubt or dispute about the adequacy of the procedures for mobilization of buses, they should be tested during the course of a drill or exercise. NECNP PF 4.1.5, *citing* Tr. 4601. This testimony goes on to state that even if revisions to the paper plans appear to address the problems and resolve them, it would nevertheless be necessary to conduct walk-throughs, drills, training sessions, table-top exercises, and finally a full-scale exercise in order to fully evaluate whether that had been

accomplished. *Id.* NECNP argues that the Board must await FEMA's testimony regarding these further evaluations before it can reach any conclusion as to the adequacy of the procedures and the plan itself. NECNP PFs 4.3.4, 4.2.6, *citing Cincinnati Gas & Electric Co.* (William H. Zimmer Nuclear Power Station, Unit 1), ALAB-727, 17 NRC 760, 775 (1983).

4.30. NECNP misinterprets the Appeal Board's ruling in ALAB-727. The Board does not need to await FEMA's issuance of final findings on a plan before it can make a ruling on the adequacy of a plan. Commission rules contemplate "a licensing decision based on the best available current information on emergency preparedness." *Id.* at 775. Whether or not a plan is "sufficiently developed" to support a conclusion that the state of emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken is a decision "to be made by the Licensing Board upon hearing all of the evidence . . . on the then current state of the plans." *Id.*

4.31. In the case at bar, FEMA's testimony regarding the NHRERP was generally limited to its evaluation of the plan as it was exercised in 1986. However, the greatest share of the record has been devoted to corrective measures taken by the Applicants subsequent to the 1986 exercise in direct response to FEMA criticisms evolving from their review of that exercise. We find that Applicants' testimony has outweighed any need for this Board to await FEMA's findings on the Applicants' corrective measures. The record of this proceeding provides the best evidence of the current state of the NHRERP. It is upon this evidence that the Board will predicate its ruling in regard to the adequacy of the plan.

4.32. SAPL next argues that there are not sufficient numbers of sheriff's deputies from Rockingham County to coordinate the dispatch of the emergency vehicles from state and local staging areas. SAPL PFs 4.1.19–4.1.21, 4.3.10. It further argues that NHOEM local liaisons identified by the plan are inadequate to provide the resource needs of the first shift of the Incident Field Office because it would take some of them an hour to reach their assigned destinations. SAPL PF 4.1.14.

4.33. SAPL's assertion with regard to sheriff's personnel is not supported by the record. Applicants' panel testified that twelve personnel would be needed to man six local staging areas, two at each location, assuming nonparticipation by six communities. Tr. 4371. Applicants have stated that one Rockingham Sheriff's Deputy would man each local staging area, and an additional twelve personnel would be available from surrounding sheriffs' departments to meet additional staffing requirements. Tr. 3471. Applicants further testified that twenty-nine personnel would be needed to man two state staging areas, at least two Rockingham Sheriff's Deputies per location. Tr. 3469-70. After staffing needs for the local areas have been met, we find on the basis of the testimony that the Rockingham Sheriff's Department has seven Sheriff's Deputies and thirty-

four other personnel available to fill state staging area staffing requirements. Tr. 3470. SAPL's calculation, which yields a "7.9 personnel per staging area in an optimistic scenario," neither addresses nor rebuts the Applicants' testimony concerning the staging area personnel requirements of the NHRERP. *See* SAPL PF 4.1.21.

4.34. SAPL's assertion concerning the time it takes for some members of the NHOEM local liaisons to reach the Incident Field Office is not a defect in the plan. Applicants' panel has testified that those closest to the Field Office will be the first called. Tr. 3492. Furthermore, liaisons will be called at the Alert level to allow additional travel time before they are needed. *Id.* Those living farther from the Field Office would be called to fill in remaining positions or to carry on second-shift duties as they arrive. Tr. 3491.

4.35. Intervenors' last rebuttal arguments focus on the adequacy of the transportation assistance for health care facilities in the EPZ. Maureen Barrows, a Rockingham County Commissioner, testified that there is not sufficient staffing at the Rockingham County Nursing Home to assist with sheltering or evacuation in the event of a radiological emergency. Barrows Dir., ff. Tr. 4405, at 2, 4. She claimed that she did not believe the County Nursing Home could be evacuated in a safe and timely manner because the plan had incorrectly estimated the time needed to move a patient from room to evacuation vehicle. *Id.*

4.36. Daniel Trahan, Director of the Seacoast Health Center in Hampton, testified that his patients would be placed under extreme stress and that they would need ambulances instead of buses to be properly evacuated. Tr. 7827. He stated that his bedfast patients would need monitoring equipment and various other medical support arrangements in an evacuation. Trahan Dir., ff. Tr. 7806, at 6. Mr. Trahan testified that it would take a minimum of 1 minute each to load his patients and that four people would be needed for each patient since ramps and lifts were unavailable. Tr. 7828-29, 7833-34. He also stated that the Seacoast Health Care facility did not have adequate staffing to evacuate his patients. Trahan Dir., ff. Tr. 7806, at 5-7.

4.37. Dr. Joseph Degulis, Director of the Emergency Department of Catholic Medical Center in Manchester, testified that he did not believe that his hospital had the staffing to handle incoming patients from evacuated facilities. Degulis Reb., ff. Tr. 8749, at 1-2. More specifically, Dr. Degulis stated his belief that his hospital could not provide temporary shelter for Class III Exeter patients beyond 48 hours. Tr. 8757. SAPL asserts that there is no record evidence that Catholic Medical Center administration officials disagree with Dr. Degulis' position.

4.38. Our review of the record finds several defects in the Intervenors' arguments concerning EPZ health care facilities. First, testimony claiming the inadequacy of the staffing of the nursing homes to handle emergency evacuations is suspect. Common sense dictates that such considerations are part of a

nursing home's licensing requirements. Regardless, we note direct and cross-examination testimony to the effect that both the Rockingham County Nursing Home and Seacoast Health Center have complete evacuation and disaster plans. Appl. Exh. 11; Tr. 4426-31, 4434; Appl. Exh. 25; Tr. 7810, 7821-22. It was also established that both facilities have either initiated or carried out evacuations in the past. Appl. Exh. 12; Tr. 7843-44. This showing clearly supports a finding that adequate staffing for emergency evacuation does exist within both facilities.

4.39. Second, we reject assertions that there are inadequate transportation resources allocated to the nursing homes. Applicants testified that the needs of the Seacoast Health Center, just as the needs of other medical facilities, were determined based on discussions with the administrators of the institutions. Tr. 4398. Mr. Trahan admitted in his testimony that he himself had provided this information to the New Hampshire Civil Defense Agency. Tr. 7824-25. Applicants have testified that in the event of an emergency, *ad hoc* changes in the plan could be instituted to accommodate the need for wheelchair vehicles, ambulances, and medical support vehicles. Tr. 4399. Intervenors' cross-examination testimony also showed that its witnesses were unaware that doctors and nurses would decide what transportation would be appropriate for their patients in an emergency situation. Tr. 7678-80.

4.40. Third, Intervenors' assumptions concerning evacuation times for each nursing home patient fail to adequately reflect the evacuation time assumptions of the NHRERP. The plan assumes that patients are at the loading point when transportation arrives (NHRERP, Vol. 6, at 11-12), not in their beds awaiting pickup as Intervenors argue. Barrows Dir., ff. Tr. 4405, at 2-3.

4.41. Finally, with regard to Dr. Degulis' testimony, we find that there is no evidence in the record that the administration of the Catholic Medical Center agrees with his position. Tr. 8773-74. The Hospital is requested only to provide temporary food and shelter, not patient care, for up to sixteen Exeter patients. We do not find this in itself to be a predicament a working hospital could not cope with during an emergency.

4.42. On the basis of the record testimony and exhibits, we find that Applicants have provided reasonable assurance that adequate transportation and support services will be available to evacuate the transport-dependent population of the EPZ in the event of a radiological emergency at Seabrook Station.

5. DECONTAMINATION AND RECEPTION CENTERS

5.1. Two contentions focusing on Decontamination and Reception Centers, SAPL-7 and SAPL-33, were admitted for litigation.

5.2. In a memorandum and order issued November 4, 1986, this Board granted partial summary disposition of SAPL-7, and limited further litigation

of it to "the adequacy of personnel and equipment (including that for collection and storage of radioactively contaminated water) to accomplish the monitoring and decontamination of the numbers of emergency workers and general public expected at the decontamination centers located at the host community reception centers." In response, SAPL submitted revised bases for this contention, and, in an order issued May 18, 1987, this Board admitted two of the proffered additional bases for litigation.

5.3. The new bases admitted for SAPL-7 were:

> (3) the number of host community primary reception centers is now fewer than previously planned because of the deletion of Nashua and Durham centers, which will increase the burden of monitoring and decontamination at the remaining centers. SAPL further questions the capability to decontaminate the decontamination centers and alleges (4) that dilution of the waste water generated at these centers, rather than storage and disposal of radiological wastes, could lead to a public risk.

As framed by its direct case and proposed findings, SAPL focused this contention on the ability of the remaining four host communities to provide adequate services to evacuees, abandoning, in our view, any argument that more than four host communities are required.

5.4. SAPL-33 reads:

> Contrary to the requirements of 10 CFR 50.47(a)(1), 50.47(b)(8), 50.47(b)(9), 50.47(b)(10) and NUREG-0654 II.J.12, there is no showing that NHRERP Rev. 2 provides adequately for the registering and monitoring of evacuees at reception centers within about a 12-hour period.

Applicants' Case

5.5. Applicants presented as its direct case on these issues the testimony of a panel of seven witnesses including: Messrs. Callendrello and Frechette, Director Strome, Mr. Bonds, and Dr. Wallace (previously identified), who were joined by William N. Colburn, Coordinator of Emergency Services, Division of Human Services, New Hampshire Department of Health and Human Services (Qualifications, ff. Tr. 4737), and James A. MacDonald, Radiological Assessment Manager, NHY (Qualifications, ff. Tr. 4736). Appl. Dir. No. 4, ff. Tr. 4740.

5.6. Because the direction of any plume that might result from a future incident is unknown at present, the planning basis provides for the simultaneous operation of all the host community centers. *Id.* at 2.

5.7. Therefore, for the purpose of estimating the staffing and equipment requirements for registration, monitoring, and decontamination operations, it was assumed that all segments of the EPZ would be affected by a contaminating, par-

ticulate release. This is a very broad, theoretical, and conservative assumption. First, not all severe accidents would involve the release of particulate materials. NUREG-0654/FEMA-REP-1, at p. 15, states:

> [T]he potential for releases to the environment decreases dramatically in this order: (a) gaseous materials; (b) volatile solids, and (c) non-volatile solids. For this reason, guidance for source terms representing hypothetical fission product activity within a nuclear power plant containment structure emphasizes the development of plans relating to the release of noble gases and/or volatiles such as iodine. Consideration of particulate materials, however, should not be completely neglected. For example, capability to determine the presence or absence of key particulate radionuclides will be needed to identify requirements for additional resources.

Appl. Dir. No. 4, ff. Tr. 4740, at 2-3.

5.8. Second, plume dispersion would limit the affected segment of the population to areas in a downwind direction from the plant. Moreover, the less concentrated the plume dispersion, the less will be the potential concentration of contaminants. The accident assessment model utilized by State of New Hampshire emergency response personnel, described in NHRERP, Volume 1, § 2.5.2, allows the State to determine the concentration and dispersion of an actual plume and, consequently, that segment of the EPZ population which potentially could be affected by a contaminating release. Appl. Dir. No. 4, ff. Tr. 4740, at 3.

5.9. FEMA guidance suggests the use of a minimum of 20% of the total evacuees as a planning basis for estimating the number of persons arriving at reception centers. *Id.* at 4; Tr. 4767-68. This is the basis used by the Applicants; however, there is a good deal of conservatism built into their use of the 20% figure. First, Applicants assumed that 100%, not 20%, of the transit-dependent population would arrive at a reception center. Second, the largest number of evacuees expected at any one center was used as a planning basis for all centers. Tr. 4768-69. As a result, the planning basis works out to be about 25% of all evacuees. Tr. 4769. Further, the planning basis uses the larger summer population, providing considerable additional conservatism in winter months. Tr. 4770.

5.10. Four cities are identified as host communities for registration centers and radiation monitoring and decontamination facilities: Manchester, Dover, Salem, and Rochester. NHRERP Rev. 2, Vol. 1, 2.4.2, at 2.4-1. Each host community has one registration area and two monitoring and decontamination facility centers, all located at a senior or junior high school facility. Under the plan, the primary monitoring and decontamination center ("primary center") of each host community, operating alone, is staffed and equipped to meet the planning basis of 20% of total evacuees within its assigned area. In addition, a secondary monitoring and decontamination center ("secondary center") in each

community is available to be activated if it is required. Appl. Dir. No. 4, ff. Tr. 4740, at 11. Besides acting as a backup, the Manchester secondary center will be used as the primary monitoring and decontamination facility for all emergency workers. *See* ¶ 5.46, *infra*.

5.11. The primary monitoring and decontamination center is co-located with the reception center in Manchester and Dover. In Salem and Rochester, the primary monitoring and decontamination center is in a separate building near the reception center. The registration area for the host community is located in the reception area. Tr. 4471-72. The facility layouts and traffic flows for each monitoring and decontamination facility are presented in the NHRERP, Volume 4A, Appendix F1. Appl. Dir. No. 4, ff. Tr. 4740, at 11-12.

5.12. Middle and secondary schools are used for decontamination centers as they provide sinks and showers. Each of the two decontamination centers per host community makes use of the school's gymnasium as a waiting area for control-point monitoring and its locker rooms and showers as decontamination areas. *Id.* at 14-15.

5.13. Initial monitoring of evacuees arriving at reception centers will begin with the monitoring of vehicles as they arrive at the reception centers. Initial vehicle monitoring will consist of a scan of each vehicle's grill and a wheel well; this can be completed in approximately 50 seconds per vehicle and covers vehicle areas that would most likely be contaminated if a vehicle encountered a contaminating plume. *Id.* at 12.

5.14. If the initial vehicle monitoring reveals no contamination, the vehicles will be directed to a parking area designated for noncontaminated vehicles, and evacuees arriving in these vehicles will proceed to the registration area monitoring point. *Id.*

5.15. If initial vehicle monitoring reveals contamination, the vehicles will be directed to a parking area set aside for contaminated vehicles. Evacuees arriving in these vehicles will be directed to the control-point monitoring area within the decontamination center where they will receive a more extensive, full-body, personal monitoring. This more extensive monitoring, called "control-point monitoring" is described in Appendix F5, Volume 4A of the NHRERP. Additionally, if an evacuee is found to be contaminated at the registration area monitoring point, the person is immediately referred to the control-point monitoring area for more extensive monitoring. In this manner, evacuee monitoring provides for the immediate segregation of potentially contaminated persons from noncontaminated persons. *Id.* at 12-13.

5.16. Once contamination is pinpointed and recorded at the control point, the evacuee is referred for decontamination. Each evacuee is labeled "clean," "contaminated," or "potentially contaminated" through the use of a special tag which is given to all evacuees at the vehicle monitoring area. The tag has body diagrams and identifying numbers used for tracking evacuees and belongings

through the monitoring and decontamination process. Reception center staff will not allow an evacuee into registration until the tag shows the evacuee has been declared "clean." *Id.* at 13-14.

5.17. As described in NHRERP, Volume 4A, Appendix F6, the initial step in the personal decontamination process would be the identification and isolation of any contaminated clothing or personal items. Where necessary, replacement clothing will be available. NHRERP Rev. 2, Vol. 4A, Appendix F5 at F5.14, and Appendix F6 at F6-4. The contaminated items would be inventoried (*see* Vol. 4A, Appendix F5–Form 7), and placed in a personally identified plastic bag. Appl. Dir. No. 4, ff. Tr. 4740, at 14. Contaminated items so inventoried will be ultimately decontaminated if possible and returned to their owner. NHRERP Rev. 2, Vol. 4A, Appendix F8, at F8-3–F8-4.

5.18. Decontamination of a person may be provided by three methods: local, general, and a combination of local and general decontamination. Local decontamination could be carried out in either a sink or shower when only isolated parts of the body are contaminated. Direct washing of the area with a soft brush and soap is employed, with care being exercised so as not to spread local areas of contamination to other parts of the body. General decontamination consists of a full-body shower and used when an evacuee is contaminated over a large portion of the body. A combination of local and general decontamination is employed when an evacuee is contaminated over a large portion of the body with localized areas of higher contamination. In this case, those areas of the body with higher levels of contamination would be washed using local decontamination procedures prior to the full-body shower. Appl. Dir. No. 4, ff. Tr. 4740, at 14.

5.19. The mathematical model for determining each host-community load is:

$$\text{Evacuee Load} = [0.20 \times (PP - SFP - TDP)] + TDP,$$

where PP = Sum of Peak Population for Assigned Communities;
SFP = Special-Facility Populations for Assigned Communities;
and TDP = Transit-Dependent Population for Assigned Communities.

See id. at 5. Evacuees from special facilities, not considered in determining a host community's evacuee load, are to be monitored at their host facilities by monitors assigned from the host-community staff, and if necessary, are then to be decontaminated at the host facility. Tr. 4942.

5.20. In estimating the peak summer population, Applicants used estimates for the permanent EPZ population described in the NHRERP, and an estimate of summertime transient population based on aerial photographs of beach areas taken on July 18, 1987. Tr. 4933-34.

5.21. Performing the calculations, as described in the model above, equates to 9667 evacuees arriving at the reception and decontamination centers at Manchester, 6829 evacuees at Rochester, 9621 at Dover, and 6416 at Salem. However, as noted in ¶ 5.9, *supra*, the staffing plan level to fulfill the registration, monitoring, and decontamination function for each of the four host communities was based on the staffing needs of the community (Manchester) that is anticipated to receive the largest number of evacuees (9667). Appl. Dir. No. 4, ff. Tr. 4740, at 5.

5.22. Using the Manchester number of 9667 evacuees for each host community and the 2.6 vehicle occupancy assumption developed with respect to Evacuation Time Estimates (ETEs), the planning basis for vehicle load at each host community was obtained by the following calculation:

9667/2.6 = 3719 vehicles

By rounding the answer, 3800 vehicles was established as the individual vehicle load planning basis for all host community centers. *Id.* at 7.

5.23. The New Hampshire Department of Health and Human Services Emergency Services Units (DHHS/ESUs) are responsible for establishing and administering reception and registration of evacuees at host-community reception centers. Each center will be served by these ESUs, which are made up of staff from DHHS Divisions of Human Services, Children and Youth Services, and Elderly and Adult Services. These units will function as trained cadres of department personnel who will provide registration services as well as operational supervision to volunteers in the provision of evacuee registration, message exchange and locating service, information/recreation services, mass-care referral, and student pickup coordination. NHRERP, Volume 4B, Division of Human Services procedures provide a detailed description of what constitutes these various services. Appl. Dir. No. 4, ff. Tr. 4740, at 7-8.

5.24. An analysis of registration processing has been conducted by the Division of Human Services (DHS) to determine the number of staff required to provide registration services under the most pressing circumstances. DHS assumed that one registrar could process a "registration unit" every 10 minutes (6 units per hour or 72 units per 12 hours), and treated each "registration unit" as 2.6 people, the assumed vehicle occupancy rate. *Id.* at 8-9.

5.25. The formula that follows determines the maximum number of registrars needed at each location for a 12-hour period:

[Projected Arrivals/Vehicle Occupancy Rate]/[12-Hour Registrar Load] =
Number of Registrars Needed

For the four designated reception centers, this translates to the following:

Town	Registrars Needed	Registrars Planned
Rochester	[6829/2.6]/72 = 37	52
Dover	[9621/2.6]/72 = 52	52
Salem	[6416/2.6]/72 = 35	52
Manchester	[9667/2.6]/72 = 52	52
Total Registrars:	176	208

Id. at 9.

5.26. In addition to the 208 registrars, NHRERP Revision 2 provides for an additional 220 reception center staff as follows:

Message Exchange and Locating Service	4 × 16 = 64
Coordination of Volunteers	4 × 3 = 12
Information and Recreation Workers	4 × 10 = 40
Sorters and Receivers	4 × 6 = 24
Student Processors (schools in session)	4 × 20 = 80
Total:	220

Appl. Dir. No. 4, ff. Tr. 4740, at 10.

5.27. Thus, the total personnel needed to carry out all registration functions would be 428. In addition to the 90 (or, currently, 95) ESU personnel, there is estimated to be another 471 personnel from the three DHHS Divisions who could be called upon to staff the four reception centers. Moreover, volunteers from the host and adjacent communities could be used to augment DHHS staff. *Id.* at 10; Tr. 4822.

5.28. The number of personnel required to staff the monitoring and decontamination centers by functional area in each host community is:

Functional Area	Primary	Secondary
Decontamination Admin. (DPHS)	3	3
Buffer Zone Advisor	2	2
Interior-Monitoring	6	6
Interior-Decontamination	6	6
Exterior-Control Point and Reg. Area Monitoring	41	6
Exterior-Vehicle Monitoring	11	
Total/Center:	69	23
Total/Host Community:		92

Appl. Dir. No. 4, ff. Tr. 4740, at 15-16. The staffing charts contained in Appendix F4, Volume 4A, of the NHRERP will be amended to reflect these numbers. *Id.*

5.29. The staffing levels for the positions of Decontamination Administrator (3), Buffer Zone Advisors (2), and Interior Decontamination (6), were derived from a careful review of procedures and experience gained through walk-through demonstrations, drills, and an exercise. *Id.* at 16.

5.30. The positions of Control-Point and Registration Area Monitors are responsible for the monitoring of individuals to detect contamination. The personnel who staff these positions can be moved between the two positions, as necessary, to optimize the center's operation. Given an average monitoring time of 3 minutes per individual, one monitor could evaluate 20 individuals in 1 hour, and 240 individuals in 12 hours. *Id.* at 17. Thus, the planned staffing level for this functional area of forty-one monitors for each primary center and six monitors for each secondary centers permits the monitoring of 9840 and 1440 evacuees, respectively, within a 12-hour period.

5.31. The personnel assigned to the position of interior monitoring are responsible for monitoring individuals after they shower. Using the same average monitoring time as that applied to the initial control-point monitoring, the staffing level of six would provide the capability to remonitor approximately 1440 individuals in a 12-hour period. *Id.* However, the Board believes that such an average is extremely conservative. While the initial monitoring is intended to identify and locate areas of individual contamination (*see* ¶¶ 5.15, 5.16, *supra*), thereby requiring a full-body evaluation, remonitoring is intended to ensure that the decontamination process accomplished its goal. At this stage in the decontamination process, only spot monitoring of the previously identified and tagged areas of contamination should be required. Because of this, we believe that the six interior monitors could, in fact, adequately evaluate far more than the projected 1440 evacuees.

5.32. Given that one monitor is able to survey a vehicle every minute (which equates to 720 vehicles in a 12-hour period), the staffing level of eleven monitors provides a capability of surveying 7920 vehicles in a 12-hour period. This far exceeds the anticipated 3800 vehicle arrivals for peak summer months at each center including Manchester, where upward to an additional 1300 vehicles are anticipated due to emergency worker arrivals. Appl. Dir. No. 4, ff. Tr. 4740, at 17-18.

5.33. The Division of Public Health Services (DPHS) will provide personnel to staff the twenty-four decontamination administrative positions in the four host communities. Revision 2 of the NHRERP does not reflect current DPHS decontamination administrative staffing. Currently eighteen individuals are identified to fill these positions. However, since satisfaction of the planning basis requires only the operation of the four primary centers and the secondary

center in Manchester, which in turn require only fifteen such positions, the current list of eighteen is sufficient. Nonetheless, DPHS will continue its efforts to identify individuals to staff the remaining six positions needed to operate the additional three secondary centers. Appl. Dir. No. 4, ff. Tr. 4740, at 17-18.

5.34. In addition to the DPHS-provided administrative staff, each primary center will require sixty-six personnel, and each secondary center will require twenty personnel to staff monitoring and decontamination positions. Thus, for the purposes of compliance with the applicable planning standard, the simultaneous operation of all primary centers and the Manchester secondary center will require 284 individuals. Operation of all four primary and four secondary centers will require 344 individuals. *Id.* at 19-20.

5.35. Based on arrangements with officials of the four host-community fire departments, monitoring and decontamination positions will be filled using available local firefighters. To provide additional resources, fire departments from nearby communities that could or do provide mutual-aid fire services to host towns have indicated that they will provide personnel to support monitoring and decontamination operations. *Id.* at 19.

5.36. The chart below lists fire personnel availability for all four host communities:

	Host Fire Personnel Available	**Other Community Fire Personnel Available**	**Total Available**
Dover	37	88	125
Salem	47	68	115
Rochester	68	32	100
Manchester	176	83	259
Totals	328	271	599

Id. at 20.

5.37. As the chart above shows, sufficient firefighters are available from the host community's own fire department or in conjunction with other fire departments to fully staff that community's primary and secondary centers. *Id.*

5.38. The Office of Emergency Management has initiated a training program in monitoring and decontamination operations. Training has been provided to date to 162 personnel of host-community fire departments. This training is ongoing and will continue to be provided regularly to ensure that sufficient personnel are trained to meet the requirements for maximum staffing of these operations. *Id.* at 18-19.

5.39. The decontamination procedure in Appendix F6, Volume 4A of the NHRERP indicates an average of approximately 10 minutes per decontamination

shower. *Id.* The chart below reflects the number of showers available at each primary and secondary center.

Host Community	Primary Center	Secondary Center	Total
Rochester	28	24	52
Salem	29	25	54
Dover	40	34	74
Manchester	25	31	56
Totals:	122	114	236

Id. at 20-21.

5.40. Given the 10-minute shower assumption, the number of showers shown above for primary centers provides sufficient capability to handle within about 12 hours approximately 27% of the projected number of evacuees; 35% if the showers available at the secondary centers (excluding the emergency worker center at Manchester) are counted. Similarly, the Salem, Rochester, and Dover primary centers can handle in excess of 30% of their projected evacuees; in excess of 50% if the secondary center showers are counted. The Manchester primary center showers are capable of handling approximately 19% of that community's projected evacuees with its secondary center essentially committed to providing decontamination services to emergency workers. Thus, if large numbers of evacuees require decontamination showers, the decontamination process could exceed 12 hours. Tr. 4889.

5.41. A minimum of 40,000 copies of Form 1050, used for registering persons entering a reception center, will be acquired and stored at Division of Human Services district and state offices. Other equipment, such as office supplies and 300 directional signs, is maintained at district and state offices and is ready for delivery to reception centers. Tables and chairs are readily available at the reception facilities. Crowd management material, such as rope and crowd tape, will be available as needed for reception centers from the decontamination center supplies that will be provided to each host community. Appl. Dir. No. 4, ff. Tr. 4740, at 8, 11.

5.42. The planning basis for equipment for Manchester, used for all host communities, is that there be sufficient equipment to monitor 9840 evacuees and 1440 emergency workers and decontaminate those workers and selected equipment; the equipment will be stored at designated areas and maintained by the Fire Chief or his designee. Equipment required for monitoring and decontamination operations is listed in NHRERP, Volume 4A, Appendix F9; a revision of Appendix F9, reflecting revised supply inventories, was provided

with Applicants' direct testimony. These materials indicate that more than the required supplies are available. Appl. Dir. No. 4, ff. Tr. 4740, at 21-22.

5.43. The principal item of equipment required for monitoring operations is the CDV-700 survey meter. This instrument is to be used by monitoring personnel to screen vehicles and persons for potential contaminants. A total of seventy of these instruments is required to equip all of the described monitoring positions in both the primary and secondary monitoring and decontamination centers for each host community. A total of eighty of these instruments will be acquired and maintained in each host community, specifically for these monitoring positions. This provides greater than a 10% surplus to allow for possible equipment failure. *Id.* at 22.

5.44. These instruments will be subject to the same inventory and operational verification schedule prescribed for all radiological equipment by the NHRERP, Volume 1, § 2.4.5. These will be added to the equipment list in Appendix C of Volume 2 of NHRERP Revision 2. Appl. Dir. No. 4, ff. Tr. 4740, at 22, *as corrected at* Tr. 5084-85. The State also committed to make certain revisions to Appendix F9, Volume 4A, NHRERP, to reflect revised supply needs and provisions. Tr. 4994-95, 4997.

5.45. The current information from the New Hampshire personnel resource assessment program indicates that there will be approximately 1300 state and local emergency workers who may potentially require monitoring and decontamination services at host-community facilities. Appl. Dir. No. 4, ff. Tr. 4740, at 5.

5.46. In order to eliminate the need to assign emergency workers to one of four facilities at the time of the emergency and to facilitate the tracking of emergency workers and their exposure records, the NHRERP will be amended to establish the Manchester secondary monitoring and decontamination center at the Hillside Junior High School as the emergency worker monitoring and decontamination center for all stages of an emergency. The secondary center in Manchester will be capable of handling 1440 individuals within about a 12-hour period. *See, e.g.*, ¶¶ 5.30, 5.32, 5.39, *supra*. Therefore, it will have the capability to provide monitoring and decontamination services to the approximately 1300 emergency workers. Appl. Dir. No. 4, ff. Tr. 4740, at 6.

5.47. Emergency workers with wounds that require medical attention would be referred directly to a medical facility. NHRERP Volume 1, § 2.7.5 and Volume 4A, Appendix F will be amended to clarify this policy . The medical facilities to which emergency workers may be referred, and their capabilities, are listed in Table 2.8-1, Volume 1, of the NHRERP. Appl. Dir. No. 4, ff. Tr. 4740, at 15.

5.48. The use of Hillside Junior High School in Manchester as both a secondary reception center for the general public and as the principal decontamination center for the estimated 1300 emergency workers could potentially mix

uncontaminated members of the general public with contaminated individuals, and could strain that facility's shower capability. Tr. 4885, 4982-83. In order to ameliorate this situation, the Board recommends that the Hillside Junior High School should not be used as a secondary reception center for the general public except to the extent such use is actually found to be necessary during an emergency. The Board also recommends that further consideration be given to identifying and using such other facilities that could be available on an *ad hoc* basis to provide additional shower capability. *See* Tr. 4884-85, 4887, 4892, 4897-98.

5.49. In general, the philosophy of the New Hampshire RERP is to plan for sufficient resources to implement the emergency response efforts without reentry of emergency workers or reuse of their equipment once outside of the plume exposure pathway EPZ. This approach obviates the need to plan for extensive capability for decontamination of emergency worker equipment, vehicles, and supplies during the initial response phase of an emergency. Appl. Dir. No. 4, ff. Tr. 4740, at 6.

5.50. Contaminated emergency worker equipment, vehicles, and supplies would be identified and isolated until such time as the DPHS can evaluate the safest and most efficient method to accomplish its decontamination. However, DPHS supervisors may direct the decontamination of selected items as deemed appropriate, based on the need for the item, time, staff available, and other conditions that are unique to a particular emergency. Appendix F9, Volume 4A, of the NHRERP identifies the appropriate equipment to conduct decontamination of the selected items. Appl. Dir. No. 4, ff. Tr. 4740, at 7.

5.51. Contaminated water from decontamination activities will be flushed into ordinary drains. Applicants explained the measures to be implemented to ensure compliance with the New Hampshire Rules for Control of Radiation. Faucets and shower heads will be left open to provide dilution. Sampling will be performed at the discharge points of the host communities at those locations specified in the procedures and other points that may be identified by DPHS. If deemed appropriate by DPHS, a New Hampshire monitoring team could be assigned to collect and screen water samples prior to the samples being sent to the laboratory. In any case, a laboratory analysis of these samples will take place in the DPHS Laboratory in Concord, New Hampshire. *Id.* at 23-24. Moreover, Applicants' witnesses testified that contaminated discharge water can be held up in the sewage treatment system if it is too highly contaminated to permit sufficient dilution from subsequent showering activities. Tr. 4911-14.

5.52. The procedures and equipment list for the sampling of the discharge water are contained in the NHRERP Volume 4A, Appendix F10. Appl. Dir. No. 4, ff. Tr. 4740, at 23.

5.53. The current procedures of the NHRERP establish that state personnel will provide the resources to accomplish environmental sampling. *Id.* at 23.

Specifically, the responsibility for environmental sampling will be under the control of the DPHS. The Water Supply and Pollution Control Division of the Department of Environmental Services will assist in collecting samples. *Id.* The sampling personnel would be supervised by the EOC Radiological Health Technical Advisor (RHTA) or another member of the EOC. Tr. 4907.

5.54. The Water Supply and Pollution Control Division maintains a roster of a minimum of eleven persons available to support special environmental sampling. Appl. Dir. No. 4, ff. Tr. 4740, at 24. Actual sampling is something those individuals do on a daily basis. Tr. 4906.

5.55. The Field Monitoring Procedures contained in the NHRERP, Volume 4A, Appendix C, will refer to Volume 4A, Appendix F8, § D, to reflect monitoring and sampling of host-community decontamination-center discharge water as part of the Special Environmental Sampling Procedures; the latter will be added to Volume 4B of the NHRERP. Appl. Dir. No. 4, ff. Tr. 4740, at 23-24.

5.56. The equipment required to perform environmental sampling has been identified. *Id.* at 24 and Attach. 4. This equipment is in the process of being acquired, and it will be maintained by DPHS. *Id.* at 24.

5.57. Decontamination center close-down procedures are contained in Appendix F. Volume 4A and Appendix B of Host Community RERPs address shutdown and removal of contaminated material and contaminated waste. Contaminated waste will be disposed of by the State through established contractual procedures with qualified radioactive waste handlers, and in conformance with rules promulgated by the DPHS Radiological Health Program for control of radiation. Contaminated materials will be handled by NHY according to the provisions of the letter from George S. Thomas, Vice-President for Nuclear Production, dated May 1, 1986, included in NHRERP, Volume 5. Appl. Dir. No. 4, ff. Tr. 4740, at 25.

Intervenor's Objections

5.58. In furtherance of its two contentions on decontamination and reception centers, SAPL attempts to establish that the decontamination and reception center portion of NHRERP Revision 2 is inadequate in the areas of staffing, evacuee decontamination rates, and contaminated waste disposal. In direct support of its contentions, SAPL proffered the testimony of Donald L. Herzberg, M.D., Director of the Division of Nuclear Medicine at the Dartmouth-Hitchcock Medical Center in Hanover, New Hampshire. Qualifications, ff. Tr. 5011.

5.59. As focused by its proposed findings, SAPL's principal attack on the adequacy of NHRERP Revision 2 is in the area of staffing. Specifically, through its evidence and proposed findings, SAPL asserts that the number, availability, and training of decontamination and reception center staff under the plan are

insufficient to provide a reasonable assurance of adequate emergency services to anticipated evacuee arrivals.

5.60. In SAPL's view, the number of staff provided for in the plan is inadequate because they are based on evacuee load figures that are too low, and because they are insufficient to permit operation of the decontamination and reception centers beyond 12 hours. SAPL's staffing critique has two alternative parts. First, it faults the use of a 20% of total evacuees formula as a planning basis. Dr. Herzberg testified that most individuals in the area of potential radiation exposure will have no way of knowing whether or not they have been contaminated. Based on his experience in observing human reaction to information about radiation, Dr. Herzberg stated his belief that the vast majority of evacuees would report to reception centers to be checked. Herzberg Supplemental, ff. Tr. 5012, at 2.

5.61. Second, SAPL asserts that Applicants failed to properly determine the number of expected evacuee arrivals even using the 20% planning basis. SAPL argues that July 18, 1987, the date on which the aerial photographs of the beach areas used in part to determine the peak summer population were taken, was not a peak day for beach attendance (Fallon *et al.* Reb., ff. Tr. 8608, at 3); that Applicant's vehicle counts based on the July 18 photographs were too low and should be increased by 52% (High *et al.* Dir., ff. Tr. 6849, at 5); and that the staffing plan provides for only a 12-hour period of operation in contradiction to the requirement of NUREG-0654 that principal response organizations be capable of operation for a 24-hour period. Focusing on the Manchester center, SAPL further argues that the center's capacity is inadequate because its evacuee load does not include any portion of the transient transit-dependent (daytripper) population that might make use of the Manchester center (Tr. 4935-36), yet the Hampton Beach evacuees, a principal source of daytrippers, are among those directed to go to the Manchester reception center (Applicants' Exh. 5, Public Information Calendar, at 4).

5.62. SAPL's attack, founded entirely on the testimony of Dr. Herzberg, on the plan's assumed host-community evacuee load appears to question the fundamental planning basis underlying the plan's provisions on decontamination and reception centers. In its proposed findings, SAPL points to the testimony of Dr. Herzberg for the proposition that the "vast majority" of evacuees would report to reception centers to be checked for radiation. SAPL PF 5.1.8. Based on this statement, SAPL urges the Board to conclude that the 20% planning basis used by NHRERP Revision 2 is unreasonable in that "all evacuees must be afforded a reasonable opportunity to be monitored. . . ." *Id.* at 5.3.2.

5.63. At the outset, the Board notes that all evacuees are given an opportunity to be monitored under the plan. They need only go to the appropriate host-community facility. The critical question for emergency planners is estimating the number of evacuees that will, in the case of an actual emergency, take advan-

tage of that opportunity. Similarly, the sole question before us at this juncture is whether the estimate of the number used in NHRERP Revision 2 is reasonable. As noted in ¶5.9, *supra*, Applicants' use of the 20% formula was based on general recommendations developed by FEMA, the expert federal agency on emergency planning. Dr. Herzberg's observation, based on his experience in nuclear medicine and perhaps six small decontamination exercises at medical facilities involving less than twenty people (Tr. 5019-23), was that a "vast majority" of evacuees would seek monitoring. Herzberg Suppl., ff. Tr. 5011, at 2. In arriving at this view for the Seabrook EPZ, however, Dr. Herzberg did not review or even know of the plans or planning standards developed with respect to other nuclear facilities (Tr. 5063, 5065), did not review all parts of NHRERP Revision 2 (Tr. 5062-63), and could not quantify his proposed "vast majority" approach (Tr. 5025). Moreover, Dr. Herzberg testified that his only experience with implementing a nuclear power reactor emergency plan was as a participant in, rather than planner or evaluator of, a medical facility's portion of a 1978 or 1979 emergency drill in the Midwest. Tr. 5019-22.

5.64. Notwithstanding his expertise in the areas of diagnostic radiology and nuclear medicine, Dr. Herzberg himself acknowledged that he was not "the perfect expert witness." Tr. 5058. Indeed, based on his limited experience with radiation emergency plans, we find that Dr. Herzberg is no expert at all in the area of large-scale emergency planning or the prediction of populace response in the case of an emergency. Thus his observations about the possible response of evacuees in the face of an emergency at Seabrook, while genuinely held and forcefully expressed, are but speculations entitled to little, if any, weight. SAPL has offered no other evidence warranting the rejection of the FEMA-based planning standard used by NHRERP Revision 2 in favor of Herzberg's proposed "vast majority" standard.

5.65. Notwithstanding the apparent contradictory holding on facially similar facts by the Appeal Board in *Shoreham*, ALAB-905, *supra*, we believe that continued reliance upon the FEMA-based 20% guidance of the Seabrook EPZ is appropriate. In *Shoreham*, the Appeal Board was faced with a direct and specific challenge to the FEMA analysis underlying its guidance and the application of that guidance to the Shoreham EPZ. In support of that challenge, the intervenors in the Shoreham proceeding sought unsuccessfully to learn from FEMA's witnesses the basis for FEMA's guidance. Finding the testimony of the parties unresponsive to the intervenors' specific concerns, the Appeal Board turned to the FEMA guidance document itself to determine whether, on its face, it offers sufficient support for the application of the FEMA guidance to the Shoreham EPZ. Concluding that it did not, the Appeal Board remanded the issue back to the Licensing Board for further analysis. However, SAPL fails to mount a similar challenge in this proceeding. Other than advancing a wholly unsupported alternative formula, SAPL has failed to offer and we are unable to identify any

competent evidence in the record supporting its ultimate position that the 20% planning basis is inappropriate for the EPZ surrounding the Seabrook facility. The testimony of Dr. Herzberg certainly offers SAPL no refuge on this score. For in addition to his limited value as an expert, a close reading of his testimony reveals that he did not assert that the 20% planning standard was based on a flawed analytical basis but rather, simply expressed an interest in learning about the empirical basis for the 20% standard. Herzberg Suppl., ff. Tr. 5011, at 2. Such interest, standing alone, does not amount to competent evidence questioning the use of the 20% planning basis. Nor, in our view, does the impression of a nonexpert that "the numbers that are being prepared for are inadequate" (Tr. 5026) rise to that level. The absence of any basis in the record to question the 20% planning basis used by NHRERP Revision 2 is all the more remarkable since, notwithstanding the avowed "interest" of its only witnesses, SAPL made no attempt to explore with FEMA the basis for its 20% guidance despite an opportunity to do so. *See* Tr. 5089-5140.

5.66. From the above, it becomes clear that SAPL's purported challenge to NHRERP Revision 2 evacuee load estimates is at best indirect. That is, rather than probe and question the analytical basis supporting FEMA's recommended general 20% standard or the plan's use of that standard for the Seabrook EPZ, as was the case with respect to Shoreham in ALAB-905, SAPL simply proffers a vague "vast majority" alternative. Having rejected SAPL's alternative as unworthy of consideration, and in light of Dr. Herzberg's failure to raise any questions specifically regarding the 20% standard, the planning basis used by NHRERP Revision 2 to estimate host-community evacuee loads is in fact unchallenged by any competent evidence in the record. Under the Commission's regulations, a FEMA finding constitutes a rebuttable presumption. 10 C.F.R. § 50.47(a)(2). In practice, this has been construed to mean that in the absence of contrary evidence, the FEMA finding carries the day. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), ALAB-698, 16 NRC 1290, 1298 (1982), *aff'g* LBP-81-59, 14 NRC 1211, 1460-66 (1981); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-88-2, 27 NRC 85 (1988); *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-86-11, 23 NRC 294, 365 (1986). Here, witnesses for FEMA testified that it was FEMA's position that "provisions for monitoring must address at least 20% of the total EPZ population." Thomas *et al.*, ff. Tr. 5091, at 80; Tr. 5093-94. Those same witnesses testified that, *inter alia*, "the State Plan contained adequate provisions for the registration and monitoring of evacuees. . . ." *Id.* Logically, FEMA's finding as to the adequacy of the registration and monitoring provisions of NHRERP Revision 2 is implicitly based on a subsidiary conclusion that FEMA's generally recommended minimum 20% planning basis was appropriately applied to the Seabrook EPZ. In this circumstance, we find that the 20% planning basis

used by NHRERP Revision 2 is both reasonable and adequately supported in the record.

5.67. SAPL's argument that the decontamination and reception centers for evacuees must be capable of operation for a 24-hour period is similarly without merit. NUREG-0654, Item II.A.4, cited by SAPL as support for the 24-hour operation requirement, applies to "principal response organizations." Decontamination and reception centers are not such organizations. The applicable planning standard, and that used by the Applicants (Tr. 4880), provides that "the personnel and equipment available should be capable of monitoring within about a 12-hour period all residents and transients in the plume exposure EPZ arriving at relocation centers." NUREG-0654, Item II.J.12.

5.68. However, we find that the plan's provisions for a 12-hour period of operation are inadequate in an area unchallenged by SAPL. As presently set out in the plan, all primary and secondary centers are to begin operation at about the same time and presumably close about the same time — 12 hours later. Following closure of the centers, emergency workers are to decontaminate the centers and then fall back to the Manchester secondary center for possible personal decontamination. Thus, at least some emergency workers will arrive at the Manchester secondary center after that center's 12-hour period of operation. We are unable to discover any provision in NHRERP Revision 2 that provides staffing for the Manchester secondary center beyond the initial 12-hour period to provide monitoring and decontamination services to these late-arriving workers. In order to ensure that adequate provisions are made to provide emergency workers necessary monitoring and decontamination, the period of operation of the Manchester secondary center must reasonably coincide with the period within which workers might need such services. NHRERP Revision 2 should be revised either to delay the opening of the Manchester secondary center in order to extend its operating hours beyond the initial 12 hours of the emergency or to provide additional staff for a second shift at the center.

5.69. SAPL's arguments regarding the determination of the peak population and vehicle counts will be addressed in connection with NHRERP Revision 2 evacuation time estimates. *See* § 9, *infra*. As to its concern regarding the counting of transient transit-dependent population (i.e., daytrippers), SAPL is correct to the extent that it asserts that a portion of that number may not have been considered in determining each host community's evacuee load. During cross-examination by counsel for FEMA, Mr. Callendrello, a witness for the Applicants, testified that transient transit-dependent populations were based on the results of a 1986 survey of hotel operators indicating the number of their patrons requiring transportation. Tr. 4934. Callendrello went on to acknowledge that daytrippers may not have been, and more than likely were not, considered by hotel operators in responding to the 1986 survey (Tr. 4936), resulting in a possible undercount in host-community evacuee loads by 80% of the number

of daytrippers. Tr. 4937. While acknowledging that the number of transit-dependent daytrippers "[b]y all counts . . . is a small segment of the total population," because the majority of this group would be directed to the center having the highest projected number of arrivals (Manchester), counsel for FEMA expressed concern because no "systematic counting" of that population was undertaken to determine just how small a group was involved. Tr. 4945.

5.70. We find the possible undercount of stranded daytrippers to be of no moment for two reasons. First, 20% of the stranded daytrippers have been counted as part of the estimated nontransit-dependent peak population. *See* Tr. 4937. That is the number that the applicable planning standard requires the plan to provide for, and is the minimum number against which we must evaluate the plan. Second, we do not believe that the Commission's emergency planning standards require the level of mathematical precision that SAPL appears to demand. In large measure, emergency planning is the qualitative end product of a series of predictions about future unknowns quantified through the use of several assumptions about the time, place, and scope of a possible emergency and the number and reaction of the population potentially involved. Our function, in turn, is to determine whether a proffered emergency plan is based on reasonable and rational predictions based on appropriate assumptions which, when viewed as a whole, provide reasonable assurances that evacuees from an EPZ will be provided with sufficient emergency monitoring and decontamination services. Thus, we are tasked with the responsibility to make a prediction regarding the emergency planners' predictions. In this context, an emergency plan is not inadequate simply because some small percentage of potential evacuees might not have been counted with mathematical precision. It is enough where, as here, the number of potential evacuees has been reasonably and rationally estimated and the class of possibly uncounted evacuees is so small as to be insignificant in assessing the plan's overall adequacy.

5.71. SAPL also questioned the adequacy of staffing levels for certain decontamination and reception center positions. With respect to registrars, SAPL points to testimony by Mr. Callendrello, a witness for the Applicants, that he (Callendrello) did not know whether the phenomenon of ride-sharing was factored into the underlying calculation (Tr. 4764), but that without ride-sharing factored in, 10% more staff (i.e., registrars) would be needed at the Manchester reception center and possibly also at the Dover reception center. Tr. 4763.

5.72. The basis for quantifying the number of necessary registrars — the 2.6/vehicle figure — was taken from the work done by the Applicants' experts who performed the evacuation time estimates for Seabrook (Tr. 4743) and will be discussed in more detail in connection with the Board's treatment of that subject at § 9, *infra*. Nonetheless, it should be noted here that SAPL mischaracterizes Mr. Callendrello's testimony. SAPL, not Mr. Callendrello,

proffered the observation that if ride-sharing results in each vehicle yielding 1.1 registration units, then 10% more registrars would be needed. Without concurring in its underlying assumption, Mr. Callendrello simply agreed with SAPL's arithmetic. Tr. 4763-64. In addition, while the "registration unit" concept relies in part on family groupings, the existence of ride-sharing by nonmembers of the family is not likely to affect significantly the amount of time required for registration. Tr. 4761, 4763. Finally, in determining registrar staffing needs, the State assumed that 10 minutes would be required to fill out each registration form when in fact only 5 minutes is actually required. Tr. 4848-49. Given that the registrars could, in fact, process twice as many "registration units" as is expected, this conservatism allows not only for breaks and rest periods (Tr. 4849); it also establishes in our view that the number of registrars provided for under NHRERP Revision 2 is adequate even if 10% more "registration units" than expected arrived at the reception centers due to ride-sharing.

5.73. With respect to DPHS-provided Decontamination Administrative positions at the four primary and four secondary centers, SAPL points to Applicants' admission that occupants for only eighteen of the twenty-four positions required to staff the centers for one 12-hour shift are identified (Tr. 3443), and notes that even that roster of names is dated September 11, 1987 (SAPL-4; Tr. 3440). Further, Mr. Bond, Applicants' witness on the staffing of these positions, acknowledged that the eighteen individuals would suffice to staff only the primary center in each host community and one secondary center for all four host communities (Tr. 3442-44); that as of the date of his testimony the search for the six additional personnel had not been actively pursued for the last couple months (Tr. 4898); and that more than twenty-four individuals were desirable to account for vacations, sickness, or other contingencies (Tr. 3410).

5.74. While SAPL is correct that only eighteen of the twenty-four or more individuals desired to staff the Decontamination Administrative positions have been identified, as noted above, the shortfall is one of little significance. Satisfaction of the applicable planning standard requires only fifteen such positions, and the currently identified eighteen individuals is sufficient for that purpose. However, the Board recommends that DPHS periodically ensure that sufficient individuals necessary to staff the requisite fifteen positions are in fact available.

5.75. With respect to the two individuals tasked to staff the Radiological Health Technical Advisor (RHTA) position for a 24-hour period in two consecutive 12-hour shifts (Tr. 4862-63), Dr. Herzberg testified that the tasks designated to the RHTA under NHRERP Revision 2 were too extensive for one person to function effectively. Herzberg Dir., ff Tr. 5011, at 3; Tr. 5040. Here, as in other areas, the Board finds Dr. Herzberg's testimony to be outside his area of expertise and entitled to little weight. In view of SAPL's failure to provide any

probative evidence supporting Dr. Herzberg's belief in this regard, the Board rejects its challenge to the number of tasks assigned to the RHTA.

5.76. With respect to individuals assigned to perform monitoring and decontamination services, SAPL points out that evacuees from special facilities are to be monitored and, if necessary, decontaminated at their host facility by monitors assigned from the host-community staff. Tr. 4942. Yet, no additional host-community personnel are identified in either NHRERP Revision 2 or Applicants' testimony to perform these monitoring and decontamination services for special-facility evacuees beyond those committed to providing onsite services at the centers. Tr. 4943.

5.77. SAPL's argument that the number of staff assigned to perform monitoring functions is inadequate is well taken, at least with respect to special-facility evacuees in the Manchester and Dover host communities. NHRERP Revision 2 identifies the host community's primary-center staff as the source of monitors responsible for special-facility populations (e.g., hospitals, nursing homes). NHRERP Rev. 2, Vol. 4A, Appendix F at F2-F3 and Appendix F4, at F4-1 (Table 1) and F4-6. To accomplish this, each primary center staffing plan originally identified four monitors specifically assigned functional responsibility for such duties. *See, e.g.*, NHRERP Rev. 2, Vol. 36, Appendix B, at B-3 and Appendix B3 at B3-1. However, in amending the staffing plans for the decontamination centers to provide for forty-one "Exterior-Control Point and Registration Area" monitors capable of serving 9667 evacuees (*see* ¶¶ 5.28, 5.30, *supra*), the separate functional area of "Health Care Facility" was eliminated.

5.78. Because the higher Manchester evacuee load was applied to all host communities, there appears to be sufficient excess numbers of monitors at the Salem and Rochester centers to provide necessary monitoring services to special-facility populations. However, such is not the case with respect to the Manchester and Dover centers, where all available monitors are required to provide onsite services to projected evacuees. The shortfall in monitors for these two host communities could be eliminated either through an alternative source of personnel (perhaps based on or in conjunction with the host facility's own existing monitoring capabilities), or through an increase in the number of monitors at both Manchester and Dover by four, the number originally assigned responsibility for special-facility populations. Whatever the source of this additional monitoring capability, the Board finds that this oversight must be corrected to ensure an adequate level of monitoring services to special-facility populations expected to arrive at host facilities in the Manchester and Dover areas.

5.79. SAPL questions Applicants' reliance upon state and local government employees and nonhost-community firefighters to satisfy NHRERP Revision 2 staffing requirements. Participation by state workers in the ESUs is voluntary. Tr. 4779. Except for those employees who are in the ESUs, Mr. Colburn, the

Coordinator of Emergency Services for DHS and Applicants' witness on this pool of potential volunteers, testified that DHHS employees have not been asked for a commitment to serve in a Seabrook emergency response. Tr. 4798.

5.80. SAPL introduced three exhibits — SAPL Exhibits 3, 4, and 5 — that were the results of a survey taken by Mr. Colburn to determine why more employees of DHHS were not signing up to serve on ESUs. Tr. 4780. Even though Chart A-2 in Volume 4-B of the NHRERP shows nine ESU staff from Nashua, and forty supplemental staff, only one response to the survey was received from that office, and that person was not an ESU member. Similarly, Chart A-2 shows fifty-four supplemental staff from Portsmouth but only fourteen surveys were returned from that location, four of which were from ESU members. Appl. Exh. 5, Vol. 4B, DHS at A-2; SAPL Exh. 5, Tr. 4809, 4846-48. The survey results indicated that some 28.1% of those responding would be unwilling to respond to an emergency at Seabrook, and some 42.8% would be unwilling to respond to any emergency, including one at Seabrook. Tr. 4784-85.

5.81. While none of the ninety-five persons in the ESUs were in that group (Tr. 4788-89), Mr. Colburn acknowledged that the 471 figure was not a guaranteed figure. Tr. 4803. However, the Board notes that the 471 figure includes 80 student processors during periods when schools are in session (*see* ¶ 5.26, *supra*), a pool of staff that would not necessarily be needed during the summer vacation months. More importantly, as Mr. Colburn testified, if one assumes the survey can accurately be projected to all workers in DHHS, this means a reduction of the total number of employees by 28.1% (unwilling to respond to a Seabrook emergency) or even by 42.8% (unwilling to join an ESU for any reason, including Seabrook). However, in his view, there are still sufficient personnel among the pool of 979 workers to supply the needed 471 workers. Tr. 4800, 4802. For this reason Mr. Colburn testified that, if anything, the survey enhanced his confidence that DHHS would be able to respond and fulfill its obligations under NHRERP. Tr. 4798-99. Dr. Herzberg reached a different conclusion, testifying that in light of the survey results, Applicants' testimony that there were 471 personnel who "could be called upon" provides no assurance that adequate staffing can or will actually be put in place. Herzberg Suppl., ff. Tr. 5012, at 1.

5.82. Notwithstanding Colburn's confidence that sufficient numbers of DHHS workers would be available to respond to an emergency at Seabrook, the Board believes that SAPL's concerns regarding the availability of DHHS volunteers have merit. The Board finds that further efforts should be made by state officials to develop a list of workers who, in fact, may reliably be called upon to staff the reception centers regardless of the time of day. The Board also notes that the FEMA witnesses indicated that call-list rosters for local personnel should be made available. FEMA Dir., ff. Tr. 5091, at 80. The Board finds that

similar rosters should be prepared for the DHHS workers who are depended upon for reception center duty.

5.83. Even assuming that the expected 471 DHHS employees are available, SAPL challenges their availability during the early stages of the emergency. DHHS employees are in district offices all over the State of New Hampshire including Berlin, Keene, Claremont, Laconia, and Littleton. Tr. 4802. The time in which DHHS volunteers could be on duty in the reception centers following their activation would vary. Tr. 4843-44. In assembling the necessary ESU personnel, NHRERP Revision 2 projects that forty-nine of seventy-six DHS volunteers will originate from district offices outside the host communities. The geographic dispersal of planned-for DHS volunteers is most acute with respect to the Rochester reception center, where the staffing plan calls for seven ESU staff members from Berlin, and four each from Conway and Littleton. Appl. Exh. 5, Vol. 4B, DHS at A-2 and Tr. 4840-41. It is possibly a 2-hour ride from Berlin to the reception center in Rochester. Tr. 4846.

5.84. Common sense dictates that an adequate emergency plan must take into account the geographic dispersal of planned-for volunteers in assessing emergency response capabilities. By the same token, that assessment cannot be made without a realistic appraisal of the emergency those volunteers are expected to confront. SAPL argues the former but ignores the latter. The primary DHS ESU staff all originate in DHS district offices serving the host communities, with the geographically dispersed volunteers assigned to support ESU units. Appl. Exh. 5, Vol. 4B, DHS at A-2. In addition, while the expected evacuee load for the Rochester reception center is less than 7000, it is staffed to handle over 9500 evacuees. *See* ¶ 5.21, *supra*. Moreover, a staggered arrival of fresh volunteers in the early hours of an emergency is likely to correspond to a similar increase in the volume of evacuee arrivals at the same time. Thus, the delayed arrival of some support ESU staff in the early hours of an emergency should not and, in the Board's view, will not impair the ability of each reception center to serve its respective evacuee load.

5.85. SAPL further questions whether sufficient numbers of firefighters will be available to staff the 344 positions necessary to provide monitoring and decontamination services in the host communities. As set out at ¶ 5.34, *supra*, staffing the monitoring and decontamination positions of each primary and secondary center requires sixty-six and twenty firefighters, respectively — 344 in total. Appl. Dir. No. 4, ff Tr. 4740, at 19-20; Tr. 4900. For the purpose of satisfying the applicable planning standard, only 284 firefighters (i.e., the number necessary to staff the four primary centers and the Manchester secondary center) are necessary. *Id.* As a group, the host communities have 328 firefighters available within their own departments *Id.* However, except for Manchester, none of the host communities' fire departments have sufficient firefighters to staff both their primary and secondary centers. *See* ¶ 5.36, *supra*. While Applicants'

claim that an additional 271 firefighters are available from other community fire departments (Appl. Dir., ff Tr. 4740, at 20), SAPL claims that such reliance is inadequate since no reference to those other firefighters appears in NHRERP Revision 2. Tr. 4902-03.

5.86. SAPL does not assert that reliance on fire departments outside the host communities is improper. Nor does SAPL advance any reason to believe that such fire departments would not respond to a request for support during an emergency. Rather, the essence of SAPL's position, a quibble at best, is that NHRERP Revision 2 does not explicitly document the availability of firefighters from nonhost-community fire departments. While we find based on the plan and direct testimony that the host communities may reasonably rely on outside fire departments for necessary supplemental staff, the Board suggests but does not require that NHRERP Revision 2 be amended to document the availability of such personnel.

5.87. With respect to its challenge to the adequacy of training provided to the multitude of volunteers counted on by NHRERP Revision 2 to staff the reception, primary, and secondary centers, SAPL maintains that the current level of training is inadequate. Only the ninety-five DHHS employees in ESUs are being trained in what to do. Tr. 4822, 4839. Other DHHS employees are not receiving specific emergency response training. Tr. 4804-05. Of the pool of 599 firefighters available to staff the 264 primary center and 80 secondary center monitoring and decontamination positions, only 162 have had training. Appl. Dir., ff. Tr. 4740, at 19. Of that number, none of Applicants' witnesses could state how many had completed the training (Tr. 4898-99), how many firefighters had been involved in drills (Tr. 4849), and whether firefighters were tested to ensure the efficacy of the training (Tr. 4899). Dr. Herzberg testified that in his experience, no plan for decontamination can be adequately carried out without including the full staff in careful training in the procedures and in actual exercises. Herzberg Dir., ff Tr. 5012, at 1-2; Tr. 5027, 5036, 5039, 5049.

5.88. SAPL's argument that inadequate numbers of emergency workers have been trained to date misses the mark. All emergency workers eligible for training need not receive that training before the plan may be deemed adequate. For the plan to be found adequate at this juncture, all that is required is that the necessary training for appropriate emergency response staff and the procedure for providing that training be described. 10 C.F.R. Part 50, Appendix E, Item F. SAPL interposes no objection to the training described in the plan.

5.89. In connection with the decontamination process for contaminated individuals, SAPL's sole challenge focuses on showering capacity at the primary center in Manchester. As SAPL casts its position, given the primary center's twenty-five showers and the Applicants' testimony assuming 10 minutes per shower, it would take in excess of 64 hours to decontaminate the number of planned-for evacuees (9667) if all required decontamination. Tr. 4884, 4886,

4889. Opening the secondary centers would have to be an *ad hoc* response. Tr. 4887. No other showers are documented in NHRERP Revision 2. Tr. 4893. Moreover, no calculations are provided as to the supplies of warm water (*id.*), and none of the Applicants' witnesses knew if there was a backup generator to power the water heater (Tr. 4894).

5.90. SAPL's argument regarding the Manchester center's limited shower capacity, while correct, is no impediment to a finding that NHRERP Revision 2 is adequate in this area. While the applicable planning standard requires sufficient staff and equipment to monitor the projected evacuee load in about 12 hours (*see* ¶ 5.67, *supra*), there is no time limit applicable to decontamination of such evacuees. Moreover, we believe that the 10-minute shower assumption is extremely conservative. While not necessary to resolve this issue, we believe that in most cases, the decontamination shower will take a significantly shorter time than the allotted 10 minutes. Nor do we believe that it is necessary or even reasonable to require emergency plans to assume that every evacuee will require a full decontamination shower. Indeed, SAPL itself implicitly accepts this proposition since it fails to raise any objection to the shower capacities of the other primary centers, where only 30% of the projected evacuees could receive showers within about 12 hours. We find that the shower capacity of the Manchester primary center, albeit limited, is adequate. However, given the use of the Manchester secondary center as the primary center for emergency workers, this concern further underscores our recommendation in ¶ 5.48, *supra*, regarding the identification of additional shower capacity in the Manchester host community.

5.91. The merits of SAPL's concerns regarding the need to ensure that adequate quantities of warm water are difficult to discern. During the summer months, when the projected numbers of evacuees are at their highest, the absence of warm shower water, if that eventuality should come to pass, should not impose any real obstacle to decontamination. After all, a significant number of the projected evacuees will arrive from the beach areas where, one can assume, they have acclimated themselves to unheated ocean water. And in the winter months, the numbers of projected evacuees is dramatically less, thereby significantly reducing the demand for shower water. Moreover, while the lack of warm water would certainly be at a very minimum an inconvenience, this Board cannot believe that evacuees would in an emergency chose continued contamination over a cold shower.

5.92. With respect to NHRERP Revision 2 procedures for identifying and handling potentially contaminated discharge water, SAPL abandons the second base for SAPL-7, which challenged the proposal to dilute and release rather than collect and store discharge decontamination water. *See* ¶ 5.3, *supra*. Indeed, SAPL's proposed findings of fact are devoid of any reference to the possible storage of contaminated discharge water. Instead, SAPL argues that

while Applicants' witnesses testified that water could be held up in the sewage treatment system if it is too highly contaminated (Tr. 4910), no calculation of the impoundment capacity of water treatment systems in any of the host communities has been made to ensure that water can be held back until it is properly diluted for the purpose of discharge or analysis. Tr. 4911-14.

5.93. In connection with the disposal of contaminated solid waste, including vehicles that cannot be decontaminated (Tr. 4917-18), the Applicants' Radiological Assessment Manager testified that any waste from the external environment would be added to the onsite waste at the Seabrook facility. Tr. 4919, 4922, 4923. Because no details as to how this is to be handled logistically appear in either NHRERP Revision 2 or Applicants' testimony, SAPL argues that there is no reasonable demonstration that there are adequate means of disposing of such contaminated waste.

5.94. SAPL's concern with respect to contaminated liquid and solid wastes generated during an emergency does not, in the Board's view, focus on the absence of a procedure or process to identify and maintain, on an interim basis, such wastes but rather, on the ultimate disposal of such wastes. Such matters are beyond the scope of this proceeding. NHRERP Revision 2 contains procedures for the monitoring, decontamination, and, if necessary, storage of contaminated waste, and SAPL does not challenge the adequacy of those procedures. To the extent questions exist with respect to whether the ultimate disposal of wastes are or will be consistent with other, nonemergency planning requirements of the NRC, such questions are properly directed to the NRC Staff.

FEMA's Position

5.95. Witnesses for FEMA testified that Appendix F of the DPHS procedures specifies appropriate criteria for decontamination and that the facilities for conducting decontamination are acceptable. FEMA Dir., ff. Tr. 5091, at 80.

5.96. Based on its review of NHRERP Revision 2, FEMA witnesses further testified that the NHRERP contained adequate provisions for the registration and monitoring of evacuees, but that the host plans do not adequately describe the equipment and personnel resources required for monitoring and decontamination of evacuees arriving at the reception centers in about a 12-hour period. Further, FEMA indicated that it was unclear if an adequate number of positions had been assigned for these tasks, or if sufficient numbers of trained personnel are available locally to fill the required number of positions. In particular, FEMA indicated that call-list rosters for local personnel are not yet available; that the equipment inventory lists should specify the quantity of survey meters and dosimeters on hand; and that the State should clarify its staffing assumptions by specifying the assumed number of evacuees expected to arrive at reception centers. FEMA Dir., ff. Tr. 5091, at 80.

Board Findings

5.97. The Board finds that FEMA's concerns, identified prior to the submission of Applicants' testimony, have in general been adequately addressed by Applicants' testimony and by the proposed plan revisions identified therein, with one exception: The State has not yet satisfied FEMA's concerns with respect to the provision of call-list rosters for local personnel. In addition, as discussed *supra*, rosters should be developed for DHHS workers depended upon for reception center duty. In this connection, we note that Applicants have committed to submit revised procedures for the NHRERP (at Volume 4A, Appendix F, and Volume 4B, Division of Human Services) to reflect the results of their analyses of the evacuee processing loads anticipated to be placed on host-community centers. Appl. Dir. No. 4, ff. Tr. 4740, at 2.

5.98. The Board finds that the incorporation of FEMA's general guidance requiring emergency plans to preplan for at least 20% of the total EPZ population by NHRERP Revision 2 is reasonable for the Seabrook EPZ.

5.99. Subject to the satisfaction of requirements imposed by ¶¶ 5.68, 5.82, and 5.97, *supra*, the Board finds that there is reasonable assurance that the four primary centers in conjunction with the secondary center in Manchester will be able to provide registration and monitoring services to anticipated evacuees, emergency workers, and vehicle arrivals at each center. Appl. Dir. No. 4, ff. Tr. 4740, at 22 and Attach. 3.

5.100. Subject to satisfaction of requirements imposed by ¶ 5.78, *supra*, the Board finds that there is reasonable assurance that adequate monitoring and decontamination services will be provided at host facilities to evacuees from EPZ special-facility populations.

5.101. The Board finds that there are in place sufficient procedures, personnel, and equipment so as to provide reasonable assurance that wastewater from the decontamination facilities can and will be disposed of in a manner that does not endanger the public health and safety.

5.102. The Board finds that adequate provisions have been made for the disposal of solid waste from the decontamination centers.

5.103. The Board concludes and rules that subject to the specific conditions specified above, there is reasonable assurance that adequate reception centers for the purpose of registration, monitoring, decontamination, and waste handling can and will be made available in the event of a radiological emergency at Seabrook Station.

6. NOTIFICATION AND COMMUNICATIONS

6.1. Three contentions raise issues related to Notification and Communications: Town of Hampton Falls (TOHF) 4, New England Coalition on Nu-

clear Pollution (NECNP) NHLP-4, and NECNP/NHLP-6. NECNP/NHLP-4 was withdrawn by stipulation (ff. Tr. 8853).

6.2. TOHF Contention 4 concerned the adequacy of compensatory measures regarding the notification of response organizations and the alleged lack of communications equipment. NECNP Contention NHLP-6, in pertinent part concerned the alleged inadequacy of telephone systems, in the event of an emergency, for those without private transportation. Both contentions are in reference to Revision 2 of the NHRERP.

6.3. SAPL submitted the only proposed findings for this section. It placed primary emphasis on its assumptions pertaining to the extraordinary number of people who would actually make calls during an emergency and the resulting effect of such a demand on the telephone switching network.

6.4. Section 50.47(b)(6) of 10 C.F.R. sets out the requirement that provisions exist for prompt communications among principal response organizations and to emergency personnel and to the public. SAPL urges the Board to interpret this to mean that there should be communication provisions so that members of the public can reliably and promptly request assistance should such need arise. SAPL PF 8.2. The Board finds that this analysis is inconsistent with the plain language of the regulation. However, as a matter of fact, we need not reach this issue because we find that Mr. Nelson's testimony, discussed below, has adequately addressed the issue of communication by the public.

6.5. The Applicants presented a panel of witnesses on this portion of the proceeding consisting of Messrs. Callendrello, Frechette, Sinclair, and Strome, previously identified. They were accompanied by Messrs. Gary J. Catapano, President of Allcom, Inc. (Qualifications, ff. Tr. 8917); and Robert O. Nelson, District Manager of Network Operations for New Hampshire and Vermont for the New England Telephone Company (Qualifications, ff. Tr. 8918). This portion of Applicants' direct testimony (Appl. Dir. No. 5) appears following Tr. 8920. The Board finds that the qualifications and work experience of Applicants' witnesses are appropriate for their testimony in this area of concern.

6.6. SAPL states that Applicants' witnesses claimed that people needing transportation would not attempt to call for assistance because bus routes are in the Emergency Plan Information Calendar which depicts the routes and instructs them to tune to an Emergency Broadcast Station (EBS) for bus information. Appl. Dir. No. 5, ff. Tr. 8920, at 4. However, SAPL points out that Mr. Callendrello, the Manager of Emergency Planning for NHY, had not consulted Dr. Mileti, Applicants' human behavior expert, on the human behavior issue of whether those people who had heard the EBS message concerning buses but who had not seen the buses arriving promptly would attempt to telephone. Tr. 8938; SAPL PF 8.1.2.

6.7. Dr. Mileti also testified that, in regard to the issue of ride-sharing, people do check on the safety of friends, neighbors, and intimates. Appl. Dir. No. 7,

ff. Tr. 5622, at 5-6. SAPL reasonably believes that much of this contact would be via the telephone system. SAPL PFs 8.1.3, 8.3.2. *See* ¶ 8.19, *infra.*

6.8. SAPL further states that emergency response workers will have to call people who need special help to verify their transportation needs during an emergency. Appl. Dir. No. 5, ff. Tr. 8920, at 5-6; SAPL PF 8.1.4.

6.9. Normally it is the function of the community's Emergency Operations Center (EOC) to contact facilities for the verification of transportation needs and to contact people who need special transportation. In the event a community is not participating, the local liaison is to perform these functions. Tr. 6926; SAPL PF 8.1.5.

6.10. SAPL would have the Board conclude that emergency response workers at either the state or local level will have to place many telephone calls to verify transportation needs of those who have indicated such needs in order to avoid needless deployment of transportation resources. SAPL PF 8.3.3.

6.11. SAPL points out that the public information calendar states that people who need special help should call their local EOC. No explanation is provided to let people know that "special help" does not mean a need for transportation assistance. Thus, SAPL concludes that people needing transportation assistance will likely try to call the EOC. SAPL PF 8.3.1.

6.12. The pre-prepared EBS messages found in Appendix G, Volume 4, of the NHRERP state that persons requiring relocation assistance will receive transport to Reception Centers via buses traveling along emergency routes or pickup points in their area. The bus routes and/or pickup points are predesignated and are depicted on the Emergency Plan Information Calendar mailed to every household in the EPZ. The calendar also instructs residents to tune to an Emergency Broadcast System station for the latest evacuation bus information. Appl. Dir. No. 5, ff. Tr. 8920, at 4.

6.13. Further, Applicants state that the EBS messages also advise people to refrain from all use of telephones unless absolutely necessary. The only persons who are specifically instructed to call local EOCs or the listed NHOEM number for transportation assistance are those requiring special assistance. In Exeter this includes the homebound and disabled, who have not made previous arrangements with local emergency response officials, and persons who cannot walk to a bus or bus pickup point. In Rye, this includes only the homebound and disabled, since buses will pick up persons at any point along the predesignated bus routes. Since the State has preidentified and registered those individuals requiring special transportation through the Special Emergency Help Survey, calls from individuals who have failed to inform officials of their special needs are not expected to overload the telephone systems designated to handle them. *Id.* at 4-5.

6.14. Currently, emergency communications can be provided by the fifteen telephone lines in the Exeter EOC. Three telephone lines are set aside at the

IFO to receive calls from individuals requiring transportation assistance. These telephone lines will provide adequate communications capabilities to implement the RERPs in each of the communities, including any communications necessary to provide relocation assistance in the event of an evacuation. *Id.* at 5-6.

6.15. People whose special transportation requirements have been preidentified through the Special Emergency Help Survey have specific resources allocated for them, and such persons will be contacted to verify their transportation needs at the time of an emergency. As a result, these individuals are not expected to call their local EOC. *Id.* However, the Board is unaware of any procedure to inform such people that they will be so contacted (*see* ¶ 6.11, *supra*). Considering the foregoing, and, considering our view of the probable behavior of the public at large in any emergency, we see a potentially heavier-than-normal use of telephones in the event of an emergency at Seabrook. This potential heavier-than-normal telephone usage does not, in our view, render the provisions for prompt communication inadequate. As noted above, most of those needing special transportation have already been identified and will be contacted directly by emergency workers. And as noted below, the telephone switching equipment now in use in the Seabrook area ensures priority telephone service to the Exeter EOC, and will delay, not deny, for a very short period of minutes at worst, service to other telephone users.

6.16. According to SAPL, Applicants' witness Robert Nelson (New England Telephone Company) explained the reason that the EBS messages advise people to refrain from all use of telephones unless absolutely necessary. *See* ¶ 6.13, *supra*. He stated that "[t]he worst case scenario would occur if everyone *in* an office picked up the telephone simultaneously to originate a call" (emphasis added). Appl. Dir. No. 5, ff. Tr. 8920, at 6. If in fact this situation occurred he concluded that "it [would be] extremely serious and that there would be a large demand placed on the telephone switching network." Tr. 8928. The word "office" refers to a central-office telephone switching exchange. Tr. 8943; SAPL PF 8.1.6. The above sentence in Applicants' Direct Testimony was corrected to read "if everyone *served by* an office picked up the telephone simultaneously" (emphasis added). Tr. 8945.

6.17. Mr. Nelson testified that in a heavy-load condition, if all the people on the seacoast attempted to call out of that area at the same time, it would probably be a lot busier than Mothers' Day. Tr. 8932; SAPL PF 8.1.8. He further testified that, to his knowledge, in previous emergency conditions involving present technologies, the delay in accessing a dial tone was minutes. Tr. 8933.

6.18. SAPL, in Mr. Nelson's cross-examination, raised concern over problems with phone service in Portsmouth, New Hampshire, associated with an airplane crash. Tr. 8932; SAPL PF 8.1.7. Mr. Nelson pointed out that the telephone system accessing problems experienced previously in the Portsmouth area (in conjunction with the plane incident) involved an older technology that

has been replaced by a newer computerized technology which is much quicker and more versatile. Tr. 8932, 8946-47.

6.19. By a method of "Line Load Control," New England Telephone Company's policy is to serve customers and provide access to the network. When this network becomes overloaded, priority is given to essential services. This feature, called "Dynamic Service Protection," is designed to protect certain lines with priority status during extended overloads. Dynamic Service Protection does not deny service to any line. It merely gives essential customers such as fire, police, and medical providers priority service while other customers are served as rapidly as equipment becomes available. Appl. Dir. No. 5, ff. Tr. 8920, at 7.

6.20. The Board finds that, while proposed notification and communication matters have been addressed in detail in NHRERP Revision 2, some amount of heavier-than-anticipated telephone usage may occur during a Seabrook emergency. The seriousness of this possible occurrence cannot be quantified but, in our judgment, it does not invalidate the implementability of the NHRERP.

6.21. The Board concludes and rules that notification and communications aspects of the pertinent regulations, within the scope of these contentions, have been satisfied.

7. HUMAN BEHAVIOR IN EMERGENCIES

7.1. The aggregation of Human Behavior contentions raises issues concerning role abandonment by emergency workers, policemen, and teachers; aberrant driving by motorists; altruistic community conduct; and, in general, the public's predicted response to their perceptions of radiological danger.

7.2. Turning first to the perplexing questions of role abandonment, we have heard respected community leaders testify that they would abandon their official duties in the event of an emergency at Seabrook and look to the safety of themselves and their intimates. Most often, these statements have been made with apparent conviction. Nevertheless, we must recognize that these claims were made with the knowledge that Seabrook has yet to be licensed, and that its licensing may still be prevented.

7.3. An essential part of the Commission's emergency planning requirement is an assumption that the Seabrook plant will lawfully reside and operate at full power within the EPZ community. Under this assumption we must also assume that a severe accident can develop at Seabrook. We must, therefore, predict the probable actions of officials, not only during an actual radiological emergency, but during normal operations of the plant.

7.4. To address this issue in the "realism" modifications to the emergency planning rule, the Commission looked back on 200 years of American history

demonstrating the principle that public officials do their utmost to protect the public in emergencies. 52 Fed. Reg. 42,078, 42,082. Similarly, American jurisprudence has long presumed that, even in mundane affairs, public officials faithfully discharge their public duties. 29 Am. Jur. 2d *Evidence* § 171.

7.5. The Commission has directed licensing boards not to hesitate to reject any claim by local officials that they would refuse to act in the event of an actual radiological emergency. Notice of Final Rule, Evaluation of the Adequacy of Off-Site Emergency Planning for Nuclear Power Plants at the Operating License Review Stage Where State and/or Local Governments Decline to Participate in Off-Site Emergency Planning, 52 Fed. Reg. 42,078 (Nov. 3, 1987). *See also Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-86-13, 24 NRC 22, 29 n.9 (1986); *id.*, CLI-86-14, 24 NRC 36, 40 n.1 (1986).

7.6. Similarly, we reject any ungrounded claim by public officials that they would refuse to plan for radiological emergencies if the Seabrook plant is licensed. The administrative record of the emergency planning rule includes the uncontested fact that state and local officials believe a planned response is preferable to an *ad hoc* response. *Massachusetts v. United States*, ___ F.2d ___, No. 87-2032 (1st Cir. Sept. 6, 1988), *citing* 52 Fed. Reg. 42,082. The notion that public officials would not or could not cooperate with a utility "either before or even during an emergency" (52 Fed. Reg. 42,082), and its implication that a government would tolerate an official who would refuse to respond to an actual emergency, has been viewed with skepticism by this Board.

School Teachers

7.7. The Town of Hampton presented a panel of thirteen school teachers from communities in the emergency planning zone who testified in very certain terms that, in the event of a radiological emergency at Seabrook, the teachers would promptly leave the schools and their pupils in order to care for their own children and other dependents. Based upon surveys, attendance at meetings and conversations with other teachers, the panel predicted that almost all of the teachers in the Seabrook EPZ would also promptly leave their charges in the event of a radiological emergency. Pennington, *et al.*, ff. Tr. 3945, *passim.*

7.8. Moreover, the teachers state that they would leave their pupils even though they perceive that their pupils would be left unsupervised, in chaotic conditions, and in danger. *Id.* at 4-5, 8-9. As a consequence, the teachers believe that early dismissal and evacuation of the schoolchildren, as contemplated under the NHRERP, is not a workable protective option. *Id.* at 3-5, 9.

7.9. In general terms, the teachers would have very simple responsibilities in the event of an emergency requiring early dismissal and evacuation. They would be responsible for accounting for the children under their direct care, taking them

to a central place in the school (cafeteria, for example) for accountability, and going with them on school buses to their evacuation destination. *E.g.*, Tr. 4014.

7.10. According to Applicants, teachers are not being called upon to do anything under the plan that they would not normally do in any emergency, or for that matter, on any regular day; they are viewed by the planners as recipients of services rather than as emergency workers or providers of services. Tr. 3356-57; *see* FEMA Dir., ff. Tr. 4501, at 48. However, we believe that, to the extent that teachers would be expected to accompany pupils in an evacuation rather than leaving in their own transportation, the teachers should be regarded as service providers.

7.11. Even though the teachers avowed that they would leave their pupils in danger, they rejected the idea that they would thereby be "abandoning" them. *E.g.*, Tr. 3947-49. Appearing before the Board with such testimony was not a pleasant experience for the teachers. They were very uncomfortable in stating that they would leave their charges in danger. The most important reason for taking that position is that they believed that in the event of an actual radiological emergency at Seabrook, their own children and dependents would be in danger, would not be cared for under the NHRERP, and would therefore require the attention of the testifying teachers. Tr. 3947-4046, *passim.*

7.12. The survey report and petition signed by 597 teachers in the 10-mile EPZ states that they "do NOT accept the conflict of duty which the Emergency Response (Evacuation) Plan assigns us." The petition says nothing about leaving schoolchildren in danger. No effort was made to determine whether this was their understanding. Tr. 3986-88. The teachers signing the petitions were required to accept the proposition that in a nuclear accident their own families would be in danger. Pennington, *et al.*, ff. Tr. 3945, at 5; TOH Exh. 10. We give the petition no weight for the proposition that in an actual emergency, teachers in the EPZ would abandon their pupils. The petitions demonstrate, however, that many teachers are concerned about having a role in the school emergency plans.

7.13. The panel acquiesced in the testimony of its spokesperson, that *if* he had confidence that the people that developed the plan for Seabrook had done so with the safety and security of the public in mind, and *if* his family were shown to be safe, and *if* he could trust the information he was receiving, then "conceivably" he would stay at his post — but then only *if* he had a feeling that it would help provide for the security of his students. Tr. 4015-17 (Moyer). It was clear, however, that the panel did not accept those propositions and rejected the overall hypothesis. Tr. 4015-17, 4028-40.

7.14. As we discuss below, Applicants presented expert testimony that predictions of role abandonment by the teachers are not reliable. Appl. Dir. No. 7, ff. Tr. 5622. Experts for the Massachusetts Attorney General contend just as strongly that role abandonment is to be expected and that such predictions are

to be believed. Zeigler *et al.*, ff. Tr. 7849. For now, however, we ponder the testimony of the teachers on our own, free from the advice of the experts.

7.15. Ms. Dunfey, a testifying teacher from a junior high school near the Seabrook Station, is a strident anti-Seabrook demonstrator, who, as an official of the Clamshell Alliance, attempted to disrupt the hearings. Her views are hopelessly biased and her testimony has no value. We do not, however, impute such bias to the entire panel.

7.16. The other twelve teachers seem to be serious, fair-minded, and, we believe, sincere. We have no reason to believe that the teachers appearing before us have any less commitment to their pupils than do other teachers.

7.17. The presumption that officials will exercise their best efforts to protect their charges should apply to teachers as well as to other government leaders. Some of their testimony is simply to the effect that the teachers reject any role in the NHRERP. The testifying teachers seem to resent the assumption that they have been assigned a role in the NHRERP without first being consulted. *E.g.*, Tr. 4031, 4037. One teacher came to testify because she wishes the parents of the community to know where the teachers stand. Tr. 4032. There is a suggestion in the testimony that the teachers are using their avowed intent to leave their pupils as an instrument for preventing the licensing of Seabrook. *E.g.*, Tr. 3989 (Shepard); Tr. 4033 (Knapp). We have rejected the implication of such testimony that the teachers will fail to perform their natural and traditional duties in the event of a radiological emergency at Seabrook in accordance with the presumption of the emergency planning rule.

7.18. However, we accept the central theme of the teachers' testimony. We find that the teachers on the panel now believe that in a radiological emergency at Seabrook — any radiological emergency, they don't distinguish among possibilities — there will be chaos; there will be an unworkable plan in effect, protective information will be unreliable, and their pupils will be in danger. Most important, essential to their prediction that they will abandon their pupils, is the belief that their own children and dependents will simultaneously be in danger — their children's teachers having also abandoned their pupils. This finding is not inconsistent with the "best-efforts" presumption of the emergency planning rule because the teachers *see* themselves in conflicting roles. They believe that they will select the role of parent rather than that of emergency worker, having rejected the latter status. Applicants' expert, Dr. Mileti, acknowledges that role conflict is not generally a concept applied critically to one forced to choose between more than one role. Appl. Dir. No. 7, ff. Tr. 5622, at 105.

7.19. As to the 597 other teachers signing the petition (TOH Exh. 10), it is possible that many of them would also abandon their pupils if they believed that their children were simultaneously in danger and needed them. However, the Board has no basis to find that the 597 or so other teachers actually believe that

their families would be in danger in the event of any radiological emergency at Seabrook. As noted, those signing the petition, and those surveyed by the testifying teachers were required to assume that their role as a teacher under the NHRERP was in conflict with their role as parents. The concept of abandoning their pupils was not expressed to them when their signatures were gathered. They were required to assume that a nuclear accident at Seabrook would place their families simultaneously in danger. *Id.*

7.20. We do not find that the testifying teachers are representative of teachers at large. Each had his or her own reasons for volunteering to appear at the hearing. Tr. 4030-47. Hundreds of teachers did not volunteer to testify.

7.21. The teachers do not claim to be experts on emergency planning. The basis for their assumption that the Seabrook radiological emergency plan for schools is unworkable is not apparent on the record. Tr. 4041. It appears to have a philosophical basis — that people will panic in any radiological emergency. They assume that chaotic conditions will prevail immediately following any radiological emergency at Seabrook, but they claim no expertise on human behavior in emergencies and provide no reasoned basis for their assumption. *E.g.*, Tr. 4042 (Moyer).

7.22. The Board does not accept the implied conclusion of the teachers' testimony that virtually all of the teachers in the EPZ will abruptly abandon their pupils without even pausing to account for them and seeing them to a school bus. Perhaps some, a few we would expect, might panic. Others would perceive no danger to their own families and would accept evacuation with their pupils. Still others might first assure themselves that their families are safe and remain with their pupils (we rejected the proposition that telephone service would be disrupted in § 6, *supra*). Others might not be satisfied that their families are safe, but would remain long enough to *see* their pupils to the school buses. While we would not expect heroic behavior from all of the teachers, neither would we expect panic from all of them. Their reactions will be as mixed as are their normal temperaments, personalities and experiences. Dr. Mileti testified the most likely situation in an emergency is a continuum ranging from totally fearful people to totally fearless people. Tr. 6342. We agree, but we would expect teachers to perform better than the general population in an emergency.

Local Officials

7.23. SAPL cites the testimony of several other witnesses to the effect that a perception of role conflict would prevent them from responding in an emergency. SAPL PF 7.1.20. The witnesses referred to by SAPL were presented primarily to address the issue of response personnel adequacy which we have considered under § 3, *supra*. The issue of role conflict and role abandonment was only incidentally addressed in most of the testimony now cited by SAPL. *Id.*

7.24. For example, Sandra Mitchell, Director of Emergency Management for the Town of Kensington, addressed the issue of personnel availability. She testified that town officials may not be available because of out-of-town employment, for example. Ms. Mitchell's testimony to the extent that it implies that town officials will not, as a matter of policy, implement the NHRERP, is not credible and is inconsistent with the "best-efforts" presumption of the emergency planning rule. Mitchell, ff. Tr. 3805, at 1-3. Counsel for SAPL effectively objected when Ms. Mitchell was requested to testify whether she would stick by her post as emergency director for her town. SAPL cannot now cite her testimony for a finding of role conflict and abandonment. Tr. 3835.

7.25. Mr. Shivik, Chairman of the Board of Selectmen of South Hampton, did not, as is suggested by SAPL, testify that he or his colleagues on the board would refuse to respond in an emergency. He predicted that normal daytime occupational commitments might leave no more than one selectman available to direct an emergency response. The stated policy of the Town of South Hampton not to recognize the NHRERP is of no moment. We presume that they will follow the plan, or their own plan. Shivik, ff. Tr. 3780, at 1-3.

7.26. SAPL also cites the testimony of Rockingham County Commissioner Maureen Barrows for a finding that role conflict would interfere with the staffing of the Rockingham County Nursing Home in the event of a radiological emergency. SAPL PF 7.1.20, *citing* Barrows, ff. Tr. 4405, at 2. Her testimony, based upon a 1986 survey, was that most employees would not serve in a radiological emergency. Yet cross-examination revealed that the nursing home has, as it must, a complete disaster plan to which the employees are trained, including provisions for recalling personnel in an emergency. Commissioner Barrows was not fully familiar with the plan. Tr. 4426. The survey upon which she relies for her opinion was not, and probably could not be, received into evidence. There is no record basis to find that Commissioner Barrows has the expertise to predict that the staff of Rockingham County Nursing Home will depart from their training to the disaster plan simply because the emergency involved is radiological. Nor, as we conclude below, is that the likely response.

7.27. Daniel Trahan is the Director of the Seacoast Health Center, an intermediate health-care facility in Hampton. It has about 107 elderly and special-needs residents. About 10% are bedfast. In Mr. Trahan's opinion, most, if not all, of his medical staff of eighty persons would experience a role conflict between their duty to their patients and to their families and would therefore forsake the Center's patients in the event of a radiological emergency. Trahan, ff. Tr. 7806, at 1-2, 7. Mr. Trahan has no credentials as an expert on human behavior. As factfinders, we do not share his dismal view of human nature and find no reasoned basis for his dire prediction.

7.28. Similarly, Ms. Breiseth, a selectman for the Town of Hampton Falls, testified concerning the availability of town officials and made passing refer-

ence to evacuating her animals and family before performing her duties as a selectman. Breiseth, ff. Tr. 3739.

7.29. Police Chief Christie, also of the Town of Hampton Falls, has worked in law enforcement since 1964, as Chief since 1975. Appearing with Selectman Breiseth, he states that he is uncertain whether any of his five-person police department would respond in a radiological emergency. His testimony is instructive, because the chief states that conflicting personal responsibilities might prevent his own response. Christie, ff. Tr. 3741, at 3. While the record is replete with the testimony of officials who predict that *others* would abandon their duties in the face of a perceived role conflict, in the case of Chief Christie we have the perplexing direct testimony that he, the sworn leader of Hampton Falls' police, may not do his duty in the event of a radiological emergency. *Id.* On cross-examination, he stated that were he to be on a day off with his family in another state, his family presumably safe from radiation, he would not *see* a responsibility to the Town of Hampton Falls to return. He is not sure how he would respond if he were off duty at home, but if he were working when a radiological emergency arose, he would stay and do his job. Tr. 3755.

7.30. Chief Christie's testimony is not consistent. He would not serve when his family is known to be safe. He would serve if he were already working, apparently without regard to his family's safety. His direct testimony seems designed for litigation. It is not a convincing predictor of how he would perform in an emergency. We don't believe that Chief Christie, after 24 years as a police officer, will abandon his citizens in an emergency. This is a good example of why the Commission's direction to boards to reject such testimony is sound guidance.

7.31. In contrasting testimony, Sergeant DeMarco of the Hampton Police Department made clear his view that any police officer on duty at the time of a radiological emergency would stay by his post and function to the best of his ability; and with respect to those off duty, he thought that they might want to *see* to the safety of their families first but that thereafter they probably would report for duty. Tr. 3723.

7.32. We dwelled upon the hapless Chief Christie more than is necessary to address the narrow issue of his response. His testimony raises a broader aspect of the proceeding — the time-honored presumption that government officials will act in the best interests of their citizens. If Seabrook is allowed to operate, and if the sworn police chief of a town such as Hampton Falls convincingly declares that he will not perform his duties in the time of need, we assume that the rational selectmen of the town will find a chief that will stand by his post.

7.33. Similarly, Mr. David MacDonald, the Civil Defense Director for the Town of Rye, stated that he would resign from that post if Seabrook were granted an operating license. Tr. 3926. We presume that the Town of Rye would readily accept his resignation in favor of a director who would serve in the event of a

radiological emergency. The selectmen of Rye could do no less to meet their obligation to act in the best interests of the residents of Rye.

Emergency Worker Role Abandonment

7.34. The Attorney General presented the testimony of Donald J. Zeigler, Ph.D., Associate Professor of Geography at Old Dominion University; James H. Johnson, Jr., Ph.D., Associate Professor of Geography at the University of California at Los Angeles; and Steven Cole, Ph.D., Professor of Sociology at the State University of New York at Stoney Brook. Professor Cole is also President of Social Data Analyst, Inc. Both Drs. Zeigler and Johnson have backgrounds in social geography. The panel testified on the issue of role conflict and role abandonment. They are qualified to address both issues. Zeigler *et al.*, ff. Tr. 7849; Professional Qualifications, Appendixes 1-3.

7.35. The Zeigler panel states that the NHRERP unrealistically depends upon a timely and adequate response by volunteers and professionals and improperly assumes that role conflict experienced by the responders will not be severe or widespread enough to cause role abandonment. That assumption, according to the panel, "is totally false and inappropriate." They believe that, in fact, significant numbers of those individuals will "either totally abandon their emergency role to protect themselves or their families, or will so delay the performance of their planned emergency duties as to seriously affect the adequacy of the plan as it is now drafted." Zeigler *et al.*, ff. Tr. 7849, at 5.

7.36. Among their reasons for this opinion are:

(1) that research shows that at the time of a disaster, families tend to want to be together and evacuate together; therefore it must be assumed that a number of emergency workers will return to their homes to join their families even at the cost of abandoning their emergency responsibilities (*id.* at 40-41);

(2) that it is "well established in the disaster literature" that the majority of those who experience role conflict resolve it in favor of helping their family and abandoning their emergency-worker role (*id.* at 41-43);

(3) that because it is imperceptible to the senses, ionizing radiation is the thing most feared by people, except for war and terrorism (*id.* at 44);

(4) that there was emergency-role abandonment during the TMI accident in connection with hospital workers and others (*id.* at 44-47);

(5) that surveys at Shoreham and at Diablo Canyon of volunteer firefighters, bus drivers, and teachers showed that a significant percentage of each of these groups would first make sure their families were all right (*id.* at 47-50); and

(6) that the results obtained in answer to survey questions asked in the SDA survey support their views (*id.* at 50-53).

7.37. Applicants and Staff especially dispute this last item, the asserted results of the SDA survey. They note that the Zeigler panel depends very heavily upon the survey that the panel termed "the strongest and most direct evidence of the extent to which role conflict is likely to be a problem . . . ." *Id.* at 50.

7.38. The actual data, which appear in Attachment 5 to the Zeigler testimony (ff. Tr. 7851, at 26-28, Questions 342, 344, 345), and the testimony (at 50-53) reveal the following: thirty or thirty-one people responding to the question had emergency roles; 53% (15 or 16), said they would immediately report for duty in an emergency (answers to Question 344); 40% (12 or 13) said they would check on their families first. *Id.* Of the twelve or thirteen who said they would check on their families first, 73% (or 10) said they would call home and tell the family to leave without them (answers to Question 345); 9% (or 1) said he would drive home to check on the family and 18% (or 2) said they would check some other way. *Id. See also* Tr. 8017-19, 8022-24.

7.39. The Zeigler panel speculates that all of those who attempt to call home will fail to get through and then will go home — apparently not returning. We agree with the Applicants that this is speculation. Moreover, it is speculation beyond the expertise of the panel. Their opinion was not based upon any information received from the telephone company serving the area. *See* Tr. 8024-30. As noted in § 6, *supra*, the telephone company operations manager for New Hampshire testified that it is very unlikely that emergency workers will experience lengthy delays in getting through to their families in light of the large computers that are utilized by the telephone company serving that area. Even if everyone in a telephone company central office (computerized switching center) were to pick up the telephone simultaneously, as unlikely as that may be, some customers may wait a few minutes. Appl. Dir. No. 5, ff. Tr. 8920, at 6-7.

7.40. According to the Zeigler panel's own testimony (based on the SDA survey), some 90% of emergency workers surveyed would either report immediately or after a short delay while checking on their families, if the telephone-overload premise is rejected, as it is. Applicants, however, are unwilling to accept this apparent victory on the subissue because they disparage the SDA survey for other purposes. According to Applicants, computing the sampling errors used for the statistics on emergency workers with the simplified formula used by Dr. Cole for calculating the standard error results for the most part in sampling variability almost as large as the calculated statistics. Tr. 8022-24. This in itself renders the statistics unreliable. Appl. Reb. No. 3, ff. Tr. 9154, at 15-16. *See* Appl. PF 7.1.34. In any event, the subsurvey of the thirty or thirty-one persons with emergency responsibilities does not demonstrate role abandonment; if anything it demonstrates the opposite.

7.41. The Applicants presented an analysis of the human behavior issue by Dennis S. Mileti, Ph.D., Professor of Sociology and Director of the Hazards Assessment Laboratory at Colorado State University. Dr. Mileti testified on the human behavior issues of role conflict and, in general, his concept of the altruistic or "therapeutic" community in emergencies. He is well qualified to testify on these issues. Qualifications, ff. Tr. 5619; Appl. Dir. No. 7, ff. Tr. 5622. We turn first to Dr. Mileti's views on role conflict and abandonment.

7.42. According to Dr. Mileti, the notion of "role conflict" is based on the following ideas: Individuals in society play many different roles, and each role has certain rights and obligations in particular social relationships. The rights and obligations of one role may be in "conflict" with another role. The concept of role "conflict" is generally used uncritically, as an either/or matter in which a person is forced to choose between two or more roles. Conflict implies equally weighted contradictory alternatives, requiring a person to choose one role to play while abandoning another. This condition is rarely, if ever, found in actual social life. A more accurate term is role "strain," which denotes the difficulty of role obligations at the same time. Role "strain" is preferable because it describes more accurately the actual conditions that people experience in all of social life, not just those of emergencies. Role "strain" is something with which people cope in most social situations and is a permanent feature of social life. Appl. Dir. No. 7, ff. Tr. 5622, at 106-07.

7.43. Dr. Mileti stated that it is important to distinguish between role strain, a mental state, which he describes as a feeling of concern and unease, and role abandonment, which is a type of behavior. Thus, while it is to be expected that emergency workers would experience some role strain during an emergency at Seabrook, this does not mean that they would abandon their emergency roles because of it. *Id.* at 107.

7.44. Dr. Mileti acknowledges that the early literature on disasters and emergencies describes the concept of role abandonment by emergency workers in role conflict situations. The early literature "provided 'evidence' that role conflict is resolved in favor of primary family roles at the expense of emergency roles." Consequently, this is the "conventional 'wisdom' of the consequences of role conflict in emergencies." *Id.* at 107-11.

7.45. Dr. Mileti then proceeded to analyze more fully role perceptions, observing that a "would be" emergency worker without a preemergency idea of his or her emergency role could not be said to be abandoning that role. Dr. Mileti propounds the following hypothesis: (1) all are concerned for loved ones in disaster; (2) most do not have defined emergency roles and they are torn between loyalty to intimates and volunteering for emergency work; (3) those with defined emergency jobs perform them, but under stress until assured of the safety of their intimates; (4) there can be provisions to assure emergency workers that intimates are safe, thus removing stress; and (5) that role conflict

for emergency workers with clear preemergency notions of their role is a mental, not behavioral, phenomenon (*citing* Charles E. Fritz, 1961, "Disaster" pp. 651-694, Merton and Nisbet). Appl. Dir. No. 7, ff. Tr. 5622, at 112-15; Tr. 6628, 6668.

7.46. Examining the hypothesis, Dr. Mileti reported on the investigation of the impact of a hurricane on communities without emergency plans: no conflict — everyone chose family over work roles. Appl. Dir. No. 7, ff. Tr. 5622, at 115. However, other investigations reveal that, where there is a high degree of emergency "role-certainty," a large percentage of the emergency work force contributed to disaster response first (over family response) with the disaster response percentage increasing over elapsed time in the emergency. Dr. Mileti believes that the "role certainty" factor could explain why research sometimes finds "role abandonment" and sometimes does not. *Id.* at 116.

7.47. Of particular interest to the Board was Dr. Mileti's report of the work by the well-known disaster expert, E.L. Quarantelli, of the Disaster Research Center at Ohio State University. After examining over 150 disaster events and the behavior of over 6000 emergency workers, Quarantelli concludes that role conflict is not a serious problem in emergencies because other family members and neighbors pick up family obligations, allowing the family-member emergency worker to participate in emergency roles. *Id.* at 116-17.

7.48. Dr. Mileti draws several well-reasoned conclusions regarding role conflict and abandonment on the part of emergency workers. First, when emergency roles are certain — perhaps through training and planning — role conflict in emergencies does not result in the abandonment of emergency work roles. Second, when emergency work roles are not certain — perhaps through a lack of training or planning — role conflict in emergencies can result in seeing would-be workers play more certain roles toward intimates before attending to emergency work. Third, role conflict for emergency workers on the job during an emergency can elicit psychological stress or at least concern about the safety of intimates; and workers can improvise, or emergency plans can formalize, ways that emergency workers can check on the safety of intimates. Conclusions such as these suggest that if emergency workers — before disaster strikes — have a clear and certain image of their emergency role, which can be achieved through planning and training, emergency workers resolve role conflict in emergencies in favor of emergency work roles while improvising ways to check on the safety of intimates, unless formalized ways to accomplish this same objective are drafted into emergency plans. *Id.* at 117-19.

7.49. This conclusion would explain why researchers reported role conflict in emergencies resulting in role abandonment during times when emergency planning and training — and consequent low levels of emergency worker role certainty — were slight in American communities. It would also explain why other researchers found so little role abandonment resulting from role conflict in

more contemporary emergencies where emergency workers could have had more certain, preemergency notions about their emergency roles. It seems, therefore, that the abandonment of emergency work roles by emergency workers is not a problem in disasters if emergencies are prefaced by emergency worker training. But Dr. Mileti emphasizes, and we agree, that this is one very real reason among others why emergency planning and emergency worker training are essential. *Id.* at 117-19.

7.50. People who know in advance of an emergency that they have emergency roles to play are able to make informal family contingency plans in advance of the emergency. For example, families can make plans in advance of an emergency to ensure that, in an emergency, the nonemergency-worker spouse will take the appropriate measures to protect the family unit in the absence of the emergency worker. *Id.* at 120.

7.51. Emergency workers who are at home when an emergency begins will likely continue to play the roles they are performing for a brief period of time. These roles are played at the same time that decisions are made that enable them to feel free about separating from family members so that emergency roles can be performed. What might seem to be a potential for delay in reporting for duty is not, in operation, a real problem because most emergencies do not begin with the need for immediate and dramatic actions such as evacuation; emergency organizations can be mobilized in stages while families complete decisionmaking with other family members or intimates assuming the potential family role obligations of the emergency worker who has reported for work. Further, workers are typically anxious to resolve other responsibilities and report to their emergency work stations. Workers away from home when an emergency begins typically improvise ways to assure themselves of the safety of their families while attending to their emergency duties. *Id.* at 122-23.

7.52. Dr. Mileti testified that in cases where persons are not assigned specific jobs, but rather know they are part of a pool to be drawn upon in an emergency, the data base that exists shows that the only problem that occurs is that of too many persons showing up, which, in turn, can create a management problem. *Id.* at 125; Tr. 6672, 6674. This situation, we infer, is to be distinguished from the hurricane scenario cited by Dr. Mileti, where everyone chose family roles, perceiving no emergency roles.

7.53. Dr. Mileti's literature research and analysis of the emergency worker's "role certainty" element is much more extensive than that of the Zeigler panel. We find it to be very persuasive.

7.54. The Zeigler panel states that the TMI accident experience provides strong evidence of the relationship between the fear of radiation and role conflict. Zeigler *et al.*, ff. Tr. 7849, at 44. In the findings that follow, we consider especially the effect of role certainty, or role uncertainty, during the TMI

accident, and whether there is support for the notion that the particular fear of radiation negates any positive effect of role certainty.

7.55. Unfortunately for Intervenors, one of the important examples cited by the Zeigler panel from the TMI accident is the case where the panel stated that only six of seventy physicians *scheduled* for weekend emergency duty showed up for work. *Id.* at 46. The actual reference upon which the panel relied for that assertion was to the effect that only six of seventy remained *available* for work. As it turned out, even that statement had a very tenuous basis, having been taken from another researcher's footnote, which in turn had been taken from a newspaper article. *Compare* Zeigler *et al.*, ff. Tr. 7849, at 46 n.20 *with* Tr. 8014.

7.56. It was troubling to the Board that the Zeigler panel would depend upon such a remote source for the intuitively improbable conclusion that seventy physicians were scheduled to work in a local (small-city) hospital emergency room for a weekend. But it was even more troubling that the panel did not seem to recognize the difference in physicians failing to report for duty when actually scheduled, as compared to being voluntarily available. The panel had to be nudged by the Board into acknowledging that the direct testimony was misleading and should be corrected. Tr. 8012-16.

7.57. Dr. Zeigler and his colleagues also testified (from Kasl's study) that "4 percent and 11 percent of TMI supervisory and non-supervisory personnel, respectively, evacuated during the crisis." Most of these were in the selective 5-mile radius where evacuation was designated. Zeigler *et al.*, ff. Tr. 7849, at 47. Without some evaluation of the assigned work duties and schedules (role certainty) of the evacuating TMI personnel during their respective evacuations, the testimony is at best insensitive and incomplete. Given nothing but the relatively small number of personnel cited, and the fact that the evacuating workers resided in the 5-mile designated evacuation zone, we would better infer that there was no significant role conflict or abandonment of TMI workers during the accident.

7.58. As far as we can determine from the Zeigler panel's testimony on the TMI accident, they were totally insensitive to the possible effect of role certainty or uncertainty on the phenomena they examined. *Id.* at 44-47. That panel does not include any concept of role certainty in its testimony until it addresses the surveys covering the behavioral *intentions* of emergency workers. *E.g.*, *id.* at 49.

7.59. Dr. Mileti testified that very little reliable information had been gathered about role abandonment and role certainty during the TMI accident. His own field research (having his Ph.D.-candidate student conduct an unstructured telephone survey) does not meet the standards for evidentiary reliability in NRC adjudications. Appl. Dir. No. 7, ff. Tr. 5622, at 129-31. However, Dr. Mileti's uncontroverted testimony from his own experience is that he knows

of no emergency in the history of this country where teachers have abandoned their children. This testimony suffers no evidentiary infirmity. Given his broad experience in the social sciences, his testimony to that effect provides excellent support for the Board's own view that teachers as a group are highly unlikely to abandon their schoolchildren in an emergency. Tr. 6425-26.

7.60. Dr. Mileti testified further that published accounts of role abandonment in medical facilities do not adequately address the issue. He recognizes that many people abandoned their jobs around TMI during the accident. But abandoning a nonemergency, routine job is not, he states, role abandonment by a would-be emergency worker. Moreover, Dr. Mileti states, there was no medical emergency at Three Mile Island and no radiological emergency response plans for the hospitals, thus no emergency role abandonment by medical emergency workers. *See generally* Appl. Dir. No. 7, ff. Tr. 5622, at 128-37.

7.61. "Sophistry," retorts the Massachusetts Attorney General; people have emergency roles even without formal plans. He states that even Dr. Mileti knows that there were real staff shortages due to medical-staff flight while hospitals were preparing for large numbers of contaminated injured. MAG PF 7.1.25.

7.62. We do not have an evidentiary record upon which we can conclude in either direction that there was or was not major role abandonment by would-be emergency workers during the TMI accident. If there was role abandonment during the accident, it was, as we term it "soft" abandonment; that is, workers who might have been useful in emergency roles evacuated. On the other hand there is no evidence that the evacuating people would have been useful by remaining. Most important, there was no reliable evidence of emergency-worker role certainty at TMI because there was no effective radiological emergency response plan in place and little in the way of emergency role assignments. In fact, that is why the emergency planning rule was promulgated, and that is the very reason for this proceeding.

7.63. Intervenors generally urge the proposition that the fear of radiation is greater than the fear of other sources of danger and that human behavior will not conform to traditional, nonradiological models in the event of a radiological emergency. As we note above, the Zeigler panel postulated that the unique fear of radiation will exacerbate role abandonment among emergency workers. Zeigler *et al.*, ff. Tr. 7849, at 44.

7.64. Also in support of the radiation-fear proposition, the Massachusetts Attorney General proposes a finding that Dr. Mileti acknowledged that the public's fear of radiation is greater than its fear of any natural disaster. MAG PF 7.1.6, *citing* Tr. 6425 [*sic*, should be Tr. 6429]. Dr. Mileti did agree with that statement but explained that it was the "mean of hazard risk perception" that is higher (Tr. 6430), as we discuss in the paragraphs below on perceptions of the general public. Dr. Mileti testified that the position of some (the more extreme position) is that the fear of radiation is unique and it produces its

own unique set of laws of human behavior. He rejected this position, which, he asserts, is contradicted by empirical evidence and runs against the basic premise on which the social sciences rest. Dr. Mileti steadfastly maintained that the ordinary principles that explain human behavior will apply in radiological emergencies. But he acknowledges some element of truth in the proposition that the behavior itself will differ in radiological and nonradiological emergencies. As we understand Dr. Mileti's testimony, there is a potentially long list of differences that could be developed for the public's understanding of risks associated with all types of emergencies; that responses may differ based upon the different perceptions of risk, but that the determinants of human behavior remain the same across all types of emergencies. Appl. Dir. No. 7, ff. Tr. 5622, at 137-40. In short, Dr. Mileti's testimony means to us that people might respond differently to a radiological emergency than, say, to a flood based upon their perceptions of the protective response needed, but the fundamental principles of human behavior remain the same. His reasoning is sound and we accept it.

7.65. In contrast, the Zeigler panel cites the TMI experience as "strong evidence of the relationship between fear of radiation and role conflict resulting in worker unavailability." Zeigler *et al.*, ff. Tr. 7849, at 44. Assuming, contrary to our findings above, that there was widespread role conflict and role abandonment during the TMI accident, Dr. Zeigler did not demonstrate a nexus between that conflict and any unique aspect of the fear of radiation. *Id.* at 44-47. Indeed, it would be difficult to establish any nexus without some type of control, e.g., replicating the TMI situation, but substituting a nonradiological source of danger. The Board finds that there is insufficient support for the proposition that the unique nature of the fear of radiation will affect the fundamental principles of human behavior in a radiological emergency. There is no basis to conclude that the unique nature of the fear of radiation will exacerbate role abandonment in radiological emergencies.

7.66. Moreover, the concern that the unique nature of the fear of radiation will cause workers to behave differently in the situation of a nuclear power plant accident than might otherwise be the case, can be overcome by proper training and information. Appl. Dir. No. 7, ff. Tr. 5622, at 137-40.

General Public Response in Emergencies

7.67. The second part of the debate on human behavior in emergencies is the predicted response of the general public to protective action recommendations during a radiological emergency. Will there be panic and aberrant behavior as contended by the Intervenors? Or will a "therapeutic community" emerge to respond in a rational and generally altruistic manner as Applicants' expert Dr. Mileti believes?

7.68. According to Dr. Mileti, and contrary to popular belief, natural and technological disasters are not usually accompanied by panic or total confusion. Appl. Reb. No. 5, ff. Tr. 9408, *passim.*

7.69. Dr. Mileti testified that emergencies are unique situations. Emergencies analogous to one at Seabrook which pose a collective threat to an entire community are, behaviorally, in a class by themselves. Mass emergencies such as these transform communities behaviorally at both the group and individual levels. Priorities of ongoing social life shift, goals and objectives are transformed, and identifications change. The first priority for virtually all people who find themselves in such a collective threat situation becomes the collective safety of people and the community at large. People abandon personal forms of identification and personal interests, and they identify with the entire human collective or community that is threatened. This "shift" in the human character has come to be known, for example, as the "therapeutic community." Appl. Dir. No. 7, ff. Tr. 5622, at 94-95.

7.70. The "shift" in the psychological complexion of social life and human behavior results in a variety of principles that emerge to explain the character of emergency behavior. This includes, for example, a dramatic decline in activities and behavior that run counter to the good of the collective and those that are based in individual or personal interests, and a dramatic increase in acts and behavior that bring people together to help one another. This shift would undoubtedly occur in an emergency at the Seabrook plant; it has occurred in every mass emergency of this sort studied by social scientists where it has been a topic of investigation (and has been evidenced even in emergencies where it was not formally a topic of investigation). *Id.* at 95.

7.71. The results of actual empirical research on human behavior in mass emergencies provide clear guidelines for planning for future emergencies. Public behavior is rational, and the emergency goals of helping themselves as well as others take precedence over almost all else; the character of human spirit is strong when faced with mass emergencies, and most people rise to the occasion. In simple terms, the "thin veneer of civilization" is not stripped from humanity when mass emergencies are experienced (as one would conclude from observing disaster movies); it is in fact strengthened. *Id.* at 96.

7.72. These general principles of human behavior in emergencies are applicable to all types of analogous mass emergencies, and have been observed in climatological, geological, and technological emergencies including the Three Mile Island accident. A frequent research finding is that many people are surprised, as they reflect back on their emergency experience, that they did not observe what they might have expected to observe, for example, panic, hysteria, selfish acts, conflicts over scarce resources, and so on. Expectations about human behavior in emergencies are the antithesis of actual human emergency behavior. The "myths" about emergency behavior are strong and likely explain

why most people who experience an emergency are surprised to learn that "when the chips were down in our community people really pitched in to do their part and help one another." Often locals attribute this inconsistency between what they would have expected and what they experienced to the "unique" character of their community's citizens. But, in fact, it is the general universal character of social life. *Id.* at 98-99.

7.73. Dr. Mileti applies the therapeutic-community concept to evacuation situations, which he characterizes as group behavior rather than individual behavior. People become concerned about the safety of others. Historically, those without transportation have been evacuated by friends, neighbors, and relatives. This is particularly true in the case of those known in advance to be without transportation. There is a large history of evacuations including those involving major events. Despite the large volume of the research data, lack of transportation has never been known to be a problem in evacuations. *Id.* at 96-98.

7.74. Similarly, Dr. Mileti testified that, although he was aware of no empirical studies to document past behavior where sheltering was necessary, he was confident that people would make shelter available if that alternative were selected in a given situation; he attributed the lack of empirical data on this issue to the fact that obtaining shelter from persons having shelter has never been shown to be a problem in times of emergency. *Id.* at 101.

7.75. Continuing in that vein, Dr. Mileti stated that to the extent that NHRERP Revision 2 and the ETEs in particular assume that the public will be able to push cars off the road and accomplish other such tasks without specific direction, the plans "are based on a very accurate impression of public behavior in emergencies; for this is precisely what would occur." Appl. Dir. No. 7, ff. Tr. 5622, at 103; *see also id.* at 101-03.

7.76. In addition, data from TMI and evacuations not involving nuclear incidents show that accidents and traffic jams are not problems in vehicular evacuations. *Id.* at 103-05.

7.77. Dr. Mileti's testimony cited above was based upon, as he terms it, an elaborate body of empirical research accumulated over the last three decades regarding public emergency behavior in the United States in reference to geological, climatological, and technological emergencies. This research base also includes many studies about public response to the 1979 emergency and evacuation at Three Mile Island. This record and Dr. Mileti's interpretation of it provide adequate support for the foregoing findings and the Board's conclusion that communitywide emergencies, such as those regarding Seabrook, elicit altruistic public behavior. In such a circumstance the public would share rides with other evacuees without transportation, share shelter with those in need of it, and help themselves and others to solve problems (such as pushing disabled cars out of the way) encountered during the emergency. *Id.* at 105.

7.78. The Massachusetts Attorney General urges the Board to reject Dr. Mileti's "therapeutic community" views on three grounds: (1) there is dispute in the scientific literature from which the "therapeutic community" model is drawn; (2) by Dr. Mileti's own acknowledgment, preemergency fear of radiation is greater than the fear of any natural disaster; and (3) there must be a preexisting community from which any therapeutic community will emerge. MAG PFs 7.1.3–7.1.8. As to the first point, Dr. Mileti acknowledges that there is in fact a dispute in the literature on the issue. Tr. 6383, 6413-17; *but see* Tr. 6431. But those to whom the Attorney General refers as disputing Dr. Mileti did not testify. *Id.* Dr. Mileti did testify. His testimony was not, as asserted by the Attorney General, conclusionary. MAG PFs 7.1.4, 7.1.5. It was well documented, and his testimony was subject to expert and careful cross-examination. Moreover, as factfinders, we found his "therapeutic community" concept to be inherently logical in that an altruistic community response to an emergency is the most rational for community survival.

7.79. The Attorney General's second point — "that the public's pre-emergency fear of radiation is greater than its fear of any natural disaster" (MAG PF 7.1.6) — has record support, but it leads to no conclusion. Tr. 6429-30. Dr. Mileti did not testify that all persons fear radiation more than other sources of danger. Rather he testified that "in general the mean of hazard risk is higher for radiological hazards than for natural hazards." Tr. 6430. As Dr. Mileti explained at the outset in the same context, and as we find above, the fundamental principles of human behavior remain the same across differing emergencies. This is true even though the perceived risks may change, and the responses may differ according to the perception of the emergency. Appl. Dir. No. 7, ff. Tr. 5622, at 137-40. A purpose of NRC-mandated emergency planning, of course, is to account for the special circumstances of radiological danger.

7.80. Finally, the Attorney General argues that Dr. Mileti did not sufficiently weigh the fact that there is a large transient population at the beaches in his "therapeutic community" concept. MAG PF 7.1.7. Dr. Mileti acknowledges that he is not aware of any literature on the effect of special populations, such as transients, on the emergence of the therapeutic community, although there certainly must be visitors, for example, during hurricane evacuations in Florida. *E.g.*, Tr. 6435-36. Nevertheless, he stands by his testimony that a therapeutic community will emerge in the Seabrook EPZ in the event of an emergency there. Tr. 6436. Evidence of the effect of a very large proportion of transients on the emergence of a therapeutic community might have been useful in this proceeding, but there is no indication that such data even exist. Existing evidence on this record, albeit casual, is that visitors are accommodated as well as the preexisting community in an emergency. Tr. 6435. The Board does not believe that altruism necessarily depends upon preexisting familiarity in the community.

7.81. We would, however, expect that behavior perceived to be altruistic may be more common in preexisting communities. For example, as we found above, people will search out those whom they know in advance need transportation. And, as Dr. Mileti stated, communities attributed altruism in emergencies to the "unique" character of their citizens. Appl. Dir. No. 7, ff. Tr. 5622, at 99. On balance, however, the Board disagrees with the Massachusetts Attorney General, and we find that the "therapeutic community" can be expected to emerge in the Seabrook EPZ notwithstanding the special fear of radiation and the large proportion of transients during the summer.

7.82. Questions concerning the possibility of aberrant driver behavior during an emergency were raised by Intervenors. Dr. Ceder, who testified on Evacuation Time Estimates for the Massachusetts Attorney General, also testified that, during an evacuation, what he referred to as "unstable" driver behavior might affect the time in which evacuation could be accomplished. Ceder Dir., ff. Tr. 5169, at 10-11. The Attorney General's witness, Chief Olivera, testified as to observations he has made as Salisbury, Massachusetts Police Chief where traffic jams have caused drivers to disobey passing restrictions; he also speculated that, without police or traffic guides, maintenance of a two-way traffic flow on Routes 1A and 286 would be difficult during an evacuation. Olivera Reb., ff. Tr. 9483, *passim.*

7.83. Countering this testimony, the Staff's traffic expert, Dr. Urbanik testified that there is no evidence that aberrant driver behavior has been a factor in any evacuation in U.S. history. Tr. 7485-86; Urbanik Dir., ff. Tr. 7372, at 17. *See also* Tr. 7774-75 for Dr. Urbanik's qualifications on driver behavior. This is very persuasive testimony and it is not contradicted by Intervenors.

7.84. Although Dr. Mileti does not claim to be qualified as a traffic expert (*e.g.*, Tr. 6316-18), he believes that civil driver behavior should be expected during an emergency. This is, he states, consistent with the phenomenon of "collective identification" observed by sociologists during real emergencies wherein aberrant, antisocial, and individual-focussed acts dramatically fall off. Dr. Mileti is qualified to testify to this limited aspect of driver behavior. Appl. Reb. No. 2, ff. Tr. 9407, *passim.*

7.85. Dr. Albert E. Luloff, a sociologist at the University of New Hampshire, employed his "Beach Blanket Survey" (using people gathered at beach blankets as a survey unit) to gather information about behavioral intentions during a radiological emergency at Seabrook. Luloff, ff. Tr. 8203. Drivers were asked whether or not they would follow a policeman's instructions as to which route they should follow in the event of an accident. Dr. Luloff reported that 22% said they would follow their own route, and 20% stated that it would depend on circumstances. *Id.* at 14.

7.86. Applicants respond that the Beach Blanket Survey is without external or internal validity. Appl. Reb. No. 4, ff. Tr. 9155, *passim.* It is not based on

random sampling in any sense. Two conclusions follow from this: (1) there is no statistical theoretical basis for assuming that its conclusions are accurate, and (2) the estimates of sampling error presented in the report are meaningless and have no statistical basis. The manner in which the sample was selected involves so many kinds of selectivity and unequal representation of persons on the beaches that the statistics calculated from the Beach Blanket Survey should not be trusted even to the extent of generalizing to the beach population on the days sampled. Obviously, according to Applicants' experts, generalization to other populations is not possible from such a blatantly nonrandom sample. *Id.* at 10.

7.87. We agree that as a statistical product the survey was flawed. Moreover, Dr. Luloff candidly conceded other, even greater problems with the survey. Tr. 8220-65; *see* Appl. PF 7.1.22. Even so, however selected, and however queried, some people *say* that they would follow their own evacuation route in an emergency. An important question, therefore, is how reliable are those behavioral-intention answers given on the beach? Applicants contend that the great weight of authority in the field of the social sciences holds that declarations and statements of preemergency intentions have little, if anything, to do with actual behavior; human response in an actual emergency is largely directed by factors that prevail during the emergency as it is experienced. These other factors involve relationships that cannot be simulated by hypothecation or by polls and surveys. Appl. Reb. No. 3, ff. Tr. 9154, at 2-3; Appl. Reb. No. 4, ff. Tr. 9155, at 10-11; Appl. Dir. No. 7, ff. Tr. 5622, at 143-49. We agree. Those surveyed at the beach had no special knowledge about the circumstances expected to prevail during an emergency at Seabrook.

7.88. In any event, IDYNEV, the model used in the Evacuation Time Estimates, utilized a 15% reduction in capacity factor on all roads to account for driver uncertainty and short-term disruptions which can disrupt capacity. Appl. Dir. No. 7, ff. Tr. 5622, at 61-62.

7.89. Unstable or aberrant driver behavior is not expected to be a significant factor in the event of an emergency at Seabrook.

7.90. The Board agrees with the conclusions of Dr. Mileti that to the extent that the fear of radiation is unique and could cause the public to behave differently than they might in a nonradiological emergency, such concerns can be overcome by proper training and public information. *Id.* at 137-40.

Information to the Public

7.91. Dr. Mileti stressed the importance of "good" information to the public in an emergency to overcome problems in the way different segments of the public perceive information (e.g., age, sex, education, personalities, preemergency fear of a particular emergency) which he terms "receiver characteristics."

Good information is also desirable to solve the problem of the way our open society supports varied news-media sources and styles of emergency information competing with reliable official information. Dr. Mileti terms this phenomenon of mixed information "sender characteristics." Prudent planning requires the planner to assume that conflicting information will exist in an emergency. The solution of course is to get the public to focus on good, official information. Thus the Emergency Broadcast System (EBS) becomes essential to an appropriate public response to official emergency recommendations. If the EBS messages are properly crafted, the problems of mixed-receiver and mixed-sender characteristics can be resolved. *Id.* at 150-57.

7.92. The Massachusetts Attorney General argues that Dr. Mileti's "good information" theory is highly abstract and nonempirical, *ergo* unreliable. MAG PF 7.1.10. We disagree. The theory itself is rather straightforward and logically simple. Actually, the Attorney General's disagreement is primarily addressed to the application of the theory. First, according to the Attorney General, the theory rests upon a record that does not include radiological emergencies. *Id.*, 7.1.12. True, the passage of Dr. Mileti's testimony on "good information" makes only a fleeting reference to TMI, the only radiological emergency usable for study. Appl. Dir. No. 7, ff. Tr. 5622, at 153-54. But the lessons learned from the TMI accident are threaded throughout all of Dr. Mileti's testimony on human behavior. *Id.* at 93-189. Moreover, as we have thoroughly discussed in the foregoing paragraphs, the unique aspect of the fear of radiation does not change the fundamental principles of human behavior.

7.93. Dr. Mileti evaluated the Seabrook EBS messages for accuracy, clarity, consistency, certainty, and specificity, among other attributes. He evaluated to determine whether the messages were to be distributed over diverse channels of communication and whether they would be disseminated frequently enough. Finally he evaluated them for source attributes: i.e., officialness, credibility, and familiarity. These are standard, ideal characteristics of information design to help all types of information receivers to make response decisions consistent with realistic risk perceptions. *Id.* at 156-57. Dr. Mileti thought the EBS messages were good, and once honed against his "ideal" attributes, they will provide the listening public a "most solid foundation from which to base sound decision making." *Id.* at 157-59; Tr. 6487-88.

7.94. But, counters the Attorney General, information to the public did not overcome preemergency fear of radiation during the TMI accident. MAG PF 7.1.13. This is probably true. That is why we spent so much time on the issue during this hearing, and that is why the emergency planning rule requires reliable information to the public during radiological emergencies. 10 C.F.R. § 50.47(b)(7).

7.95. The Attorney General, joined in part by SAPL, faults the Seabrook Emergency Broadcast System on the additional grounds that: As at TMI the

news media would be uncontrolled; the NRC or somebody else would provide conflicting information; the public would regard the utility with extremely low credibility as a source of emergency information; a particular study of preemergency fears in the Seabrook EPZ has not been made. MAG PFs 7.1.15–7.1.18; SAPL PF 7.1.26. Together, these arguments (and they are just arguments in that no evidence countering Dr. Mileti's conclusions is cited) would lead us to the conclusion that no emergency messages about Seabrook can be effective, and that the population around Seabrook is somehow different than the population around other commercial nuclear power stations. These views have neither regulatory nor evidentiary support.

Conclusions on Human Behavior in Emergencies

7.96. With respect to the human behavior issues, the Board summarizes its conclusions as follows:

1. School teachers and school officials, as a group, will not abandon their pupils in the event of a radiological emergency at Seabrook.
2. Emergency workers, as a group, will not experience role conflict during a radiological emergency. Many, however, may experience role strain. But role strain will not lead to role abandonment with proper training and the establishing of role certainty.
3. Emergency workers, as a group, will not abandon their roles in a radiological emergency. Those on duty at the time of an emergency will remain on duty. Others will report to duty after seeing to the safety of their families and dependents.
4. In the event Seabrook is permitted to operate, governments in the emergency planning zone, as a part of their preference for planned responses to radiological emergencies, will not tolerate police officers or other officials who would refuse to respond to an emergency at Seabrook.
5. The fear of radiation will not cause trained emergency workers with emergency-role certainty to abandon those roles.
6. The public's fear of radiation is unique as is the fear of other sources of danger. As a group the public's mean risk perception of radiation danger is higher than for danger in natural disasters. Nevertheless, the principles of human nature are not changed by the unique fear of radiation, and the public would not panic in a radiological emergency at Seabrook. The effects of the public's fear of radiation can be overcome by good public information.
7. Emergencies analogous to one at Seabrook, which pose a collective threat to the entire community, support the emergence of a "therapeutic community" in which the first priority is the collective safety of people in the community at large. Transportation is provided to those

without transportation for evacuation. Members of the public, without specific direction, would remove impediments to evacuation and other such tasks. Transients are not abandoned.

8. The characteristics of the members of the public who would receive emergency information are mixed, for example, age, education, sex, personality, and preemergency fear of radiation. There are also mixed sources of information in a radiological emergency with unreliable information competing with reliable, official information. Therefore good information and the Emergency Broadcast System (EBS) are essential to an appropriate public response to official protective action directions.

9. The Emergency Broadcast System for the NHRERP has been evaluated for message content and for breadth and frequency of dissemination. Once honed, the EBS messages will provide good information to the public and a foundation for sound protective decisionmaking.

10. There is no aspect of human behavior in the population of the Seabrook EPZ that will prevent an adequate emergency response in the event of a radiological emergency at Seabrook.

8. SHELTERING OF BEACH POPULATION

8.1. Three contentions, NECNP/RERP-8, SAPL-16, and TOH-VIII, allege that NHRERP Revision 2 did not contain adequate provisions for sheltering persons within beach areas near the plant in the event an accident at Seabrook.

Applicants' Case

8.2. In support of their position on sheltering, the Applicants sponsored a panel of witnesses consisting of Messrs. Callendrello, Frechette, Strome, Bonds, Wallace, Mileti, and MacDonald whose qualifications we have discussed at the outset. They were joined by John W. Baer, an Emergency Planning Specialist from Aidikoff Associates (Qualifications, ff. Tr. 10,022) and Donald W. Bell, Senior Nuclear Technology Engineer from Stone & Webster Engineering Corporation (Qualifications, ff. Tr. 10,022). Appl. Dir. No. 6, ff. Tr. 10,022, *passim.* The members of this panel are qualified to give the testimony presented.

8.3. The NHRERP provides for a range of protective responses that may be implemented to protect the health and safety of the public, including summer, seasonal populations. Further, this range of responses has the flexibility to ensure dose savings in response to a wide spectrum of accident conditions. *Id.* at 1.

8.4. The concept of protective action recommendation decisionmaking employed by the NHRERP is patterned on the emergency planning guidance of

NUREG-0654/FEMA-REP-1, Rev. 1, and emergency planning regulations of the Nuclear Regulatory Commission. *Id.*

8.5. The NHRERP provides for precautionary actions intended to avoid exposure of the beach population to potential radiological risk. Plans and procedures, including decision criteria, have been put into place specifically for implementation of these measures. Accident assessment personnel of the State of New Hampshire are prepared by procedures and training to ascertain from utility emergency response personnel the status and prognosis of plant conditions and safety systems for the purpose of recommending precautionary actions prior to the manifestation of radiological consequences. *Id.* at 1-2.

Protective Action Recommendations

8.6. While the preferred protective action for the seasonal beach population is the precautionary measure of early beach closure or evacuation, the State of New Hampshire is prepared to recommend the protective action of sheltering in a limited number of circumstances. These are described in the New Hampshire Response to FEMA Supplemental Testimony, Enclosure 1 to Letter of Richard H. Strome to Henry G. Vickers, dated February 11, 1988. Appl. Dir. No. 6, ff. Tr. 10,022, at 2 and Appendix 1. The principal controversy among the parties with respect to protecting the beach population in the Seabrook EPZ, addressed in this section, is to what extent and under what circumstances would sheltering be the protective action of choice.

8.7. NHRERP, Volume 1, and the local plans, Volumes 16 through 32, and specifically plans for the Towns of Seabrook and Hampton, Volumes 16 and 18, respectively, provide for a range of responses that may be implemented to protect the health and safety of the public, including the summer, seasonal populations, in the event of a radiological emergency. This range of responses has the flexibility to achieve dose savings in response to a wide spectrum of conditions. Appl. Dir. No. 6, ff. Tr. 10,022, at 4.

8.8. The plans are premised on the basic concept of NUREG-0654/FEMA-REP-1, Rev. 1, that any one response or a combination of responses will be taken to achieve the maximum dose savings to the public. The responses prescribed by the NHRERP range from precautionary actions for the beach population at the early stages of an emergency to the protective actions for the general public of shelter, evacuation, and control of access to affected areas. Appl. Dir. No. 6, ff. Tr. 10,022, at 4.

8.9. The protective action decision criteria of the NHRERP take into consideration plant conditions, evacuation clear times, dose reduction factors, and other conditions that may exist at the time of an accident. *Id.* at 5.

8.10. Protective Action Guides (PAGs) have been promulgated by the EPA for use by public health officials and decisionmakers to determine the need for

protective actions and for choosing appropriate protective actions. The PAGs contemplate the calculation of projected doses at the time of an emergency, which then serve as trigger points to initiate protective actions. A PAG under no circumstance implies an acceptable dose. Since the PAG is based on projected dose, it is used only in an *ex post facto* effort to minimize the risk from an event that is occurring or has already occurred. "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," U.S. Environmental Protection Agency, EPA-520/1-75-001, September 1975 (revised June 1980), at 1.1. In sum, the PAGs are guidance tools for triggering protective action recommendations and do not indicate levels of acceptable or unacceptable doses. Appl. Dir. No. 6, ff. Tr. 10,022, at 5-6; Tr. 11,938-42.

8.11. NHRERP Volume 1, § 2.6.3, incorporates the EPA PAGs for direct exposure to radioactive materials within the Plume Exposure Pathway EPZ. The range of PAG doses delineated by the EPA for the general public are indicated in Table 2.6-1 of the NHRERP. The guidelines incorporated in Table 2.6-1 consider the most sensitive members of the general population: women who are pregnant and infants. As expressed in § 2.6.3, New Hampshire has chosen to base its protective action decisions on the lowest values cited by the EPA, that is, a 1-rem whole-body projected dose, and a 5-rem thyroid projected dose. Appl. Dir. No. 6, ff. Tr. 10,022, at 6.

8.12. In order to utilize the PAGs, projected doses to the general public must be determined. Projected doses must be determined following the incident based on data from (1) plant conditions, (2) release and meteorological conditions, (3) offsite radiological measurements, or (4) combinations of these three factors. Manual of Protective Action Guides, EPA, at 5.1. NHRERP, Volume 1, § 2.5.2, provides for estimating the projected doses for the plume exposure EPZ and for reporting projected doses as quickly as possible in terms of whole-body and thyroid doses. NHRERP, Volume 1, § 2.5.3, describes the means by which State of New Hampshire officials will determine projected doses. Calculation techniques for this purpose are explained in procedures contained in NHRERP, Volume 4A, Appendices N, O, P, and Q. Each of these procedures incorporates the factors identified in the EPA Manual for determining projected dose. Appl. Dir. No. 6, ff. Tr. 10,022, at 6-7.

8.13. The utility has the responsibility to, and will, classify an event based on plant conditions. At a Site Area Emergency or General Emergency classification level, predesignated plant conditions will result in specific protective action recommendations from the utility to the State of New Hampshire. If the event is classified as a Site Area Emergency or General Emergency, and plant conditions do not result in a specific protective action recommendation from the utility to the State, then the appropriate protective action will be reached by utilizing the decision criteria described in modified § 2.6.7, as discussed *infra*. These criteria are used by decisionmakers for choosing between sheltering and evacuation, and

are sufficiently flexible to be applied to any type of projected or actual release from a nuclear power plant. The decision criteria depicted in modified Figure 2.6-7 of the NHRERP consider the time to release, time of plume arrival at a specified location, time of exposure at the reference location, projected dose, EPA PAGs, time available to make protective action decision, time available to implement protective actions, constraints to implementation of protective action decision, and dose reduction factors pertinent to either sheltering or evacuation. At the final decision step in the process, the decision criteria call for detailed analysis and calculations to determine the comparative effectiveness of shelter and evacuation. Appl. Dir. No. 6, ff. Tr. 10,022, at 7-8.

8.14. NHRERP, Volume 4A, Appendix U, contains procedures to be used by accident assessment personnel of the New Hampshire DPHS in applying the NHRERP decision criteria. A revision to this procedure is being incorporated into an update of the NHRERP. The State of New Hampshire protective action decisionmaking procedures recognize that the utility will evaluate plant status at the Site Area Emergency and General Emergency classification levels which may result in a protective action recommendation. DPHS accident assessment personnel at the State Incident Field Office (IFO), co-located with the Utility Emergency Operations Facility (EOF) in Newington, New Hampshire, will obtain plant data in conjunction with utility accident assessment personnel and verify the utility protective action recommendation. Appl. Dir. No. 6, ff. Tr. 10,022, at 8-9, and Attach. 1.

8.15. The State Emergency Operations Center (EOC), IFO, and EOF are activated at the Alert emergency classification level. Prior to the activation of these facilities, the DPHS Emergency Response Initiator is instructed to contact the plant control room for plant status information immediately after being notified of an emergency classification level. The data to be obtained are identified on the notification form utilized by both utility and DPHS procedures. These data will be evaluated by State of New Hampshire accident assessment personnel and decisionmakers to determine the advisability of precautionary actions. Accident assessment will be initiated at the State EOC and continued through the duration of an emergency at both the State EOC and at the IFO/EOF. DPHS accident assessment personnel at the IFO/EOF will receive first-hand projected dose data and field measurement data, assess the data with utility accident assessment personnel in conjunction with emergency management personnel, perform independent calculations of projected doses, and formulate protective action recommendations to be conveyed to the State EOC where the public protective action recommendation decision will be made. *Id.* at 9-10.

8.16. The protective action decision criteria discussed in NHRERP, Volume 1, modified § 2.6.7, contain decision criteria designed for summer, seasonal populations, including seasonal beach populations. These decision criteria incorporate considerations for precautionary actions for the summer, seasonal popu-

lation based on the status and prognosis of plant conditions. These provisions of the NHRERP represent a precautionary approach to the implementation of the emergency planning requirements of 10 C.F.R. § 50.47(b) and guidance of NUREG-0654/FEMA-REP-1, Rev. 1. They are intended to remove the beach population before the potential for exposure beyond the PAGs exists. To accomplish this, they are implemented based on plant status and conditions that may lead to a release as determined by accident assessment personnel of the utility and conveyed to State of New Hampshire decisionmakers. Appl. Dir. No. 6, ff. Tr. 10,022, at 10. *See also* Tr. 10,434-35.

8.17. The NHRERP, Volume 1, § 2.5.2, advises accident assessment personnel that complete radiological assessment data may not be available or no release may yet be projected when they are considering early, precautionary actions for the summer, seasonal population. Therefore, the current plant status and a prognosis of anticipated plant conditions would be the best indicator of the need for precautionary actions. Procedures contained in NHRERP, Volume 4A, as modified, facilitate consideration of plant status and prognosis of plant conditions by providing for early reporting of plant status data by the utility emergency organization to State of New Hampshire emergency management and public health officials. Appl. Dir. No. 6, ff. Tr. 10,022, at 10-11.

8.18. State of New Hampshire accident assessment personnel and decisionmakers will consider implementation of precautionary measures as early as the Alert emergency classification level. At the Alert classification level, any releases are expected to be limited to a small fraction of the PAGs, according to NUREG-0654, Appendix 1. At the Alert classification level, no offsite action would be ordinarily warranted to protect the public, but its consideration here affords additional time to clear the beaches or prevent additional public access to the beaches. Appl. Dir. No. 6, ff. Tr. 10,022, at 11.

8.19. The decision criteria of the NHRERP are not intended to dictate automatic implementation of precautionary actions at the Alert classification level. They are intended to facilitate the exercise of judgment on the part of New Hampshire accident assessment personnel and decisionmakers as to the most prudent course of action given the particular circumstances of an accident situation. *Id.*

8.20. NHRERP is being updated to reference the emergency classification and plant conditions under which precautionary and protective action recommendations would be made. *Id.* at 11-12, Attach. 2. These updates provide that for these conditions during periods of summer, seasonal population, the recommended precautionary action would be closure or evacuation of Hampton and Seabrook beaches. The intent of this provision is the implementation of measures for the beach population at the first indication of a potential for offsite populations to be affected. Under these conditions, any projected doses to the public would be expected to be below the lowest values of the EPA PAGs. At

the Site Area Emergency classification level, offsite protective actions would not be expected to be necessary to protect the public. At this classification level, however, the State will recommend precautionary or protective actions for the beach population. The description of Site Area Emergency of NUREG-0654, Appendix 1, provides foundation for this decisionmaking concept where it states: "Any releases [are] not expected to exceed EPA Protective Action Guideline exposure levels except near site boundary." Appl. Dir. No. 6, ff. Tr. 10,022, at 11-12.

8.21. The emergency classification levels are intended to be anticipatory in nature. They are initiated by plant conditions that allow anticipation of later consequences if conditions are not mitigated. Decisionmakers are thereby led to appropriate courses of action before offsite consequences are expected. *Id.* at 12.

8.22. Actions prescribed for implementation of precautionary and protective actions for the public, and specifically for the seasonal beach population, are contained in appendices to both the New Hampshire Office of Emergency Management and the Division of Public Health Services procedures. These procedures establish explicit actions for implementation of early, precautionary measures and protective actions for the Hampton and Seabrook beaches. *Id.* at 13.

8.23. A key provision for initiation of protective actions is prompt notification of the public. This is achieved by activation of a system of fixed sirens situated throughout the seventeen New Hampshire communities. These sirens provide audible alert coverage of the New Hampshire EPZ communities. For beach areas where precautionary actions may be recommended (i.e., Hampton and Seabrook beaches), sirens have been designated for potential activation in early stages of an emergency for the purpose of initiating precautionary actions. Procedures are in place for these sirens to sound an alert signal and to broadcast a voice message in both English and French to advise beach populations of actions they should take. Procedures provide for immediate (within 15 minutes of the State's decision) activation of the audible alert system by either Rockingham County Dispatch Center or as a backup, by the Towns of Hampton and Seabrook after precautionary or protective action decisions are made for beach areas. *Id.* at 13-14.

8.24. Activation of the audible alert signal will be followed by a voice message over the siren public address system containing emergency instructions for the public. The script of the voice message is: "Attention . . . Attention . . . Because of a problem at Seabrook Station, the beaches are now closed. Please leave the beach immediately. Listen to a local radio station for more information." *Id.* at 14, *and see* NHRERP, Vol. 16 at IV-18h, Vol. 18 at IV-26g.

8.25. The sirens have been tested in voice mode and will produce a message intelligible by 90% of the population at a distance that provides for coverage of the entire beach area. Tr. 10,600-01. In addition to the audible alert system, a series of permanent signs that display emergency instructions will be posted in recreation areas, including on the beaches, throughout the EPZ. Currently, eighteen locations for placement of these signs have been identified in cooperation with the New Hampshire Department of Resources and Economic Development. The instructions explain what to do when sirens are heard and identify the emergency broadcast stations from which further information and instructions can be obtained. This information is also displayed in both English and French. Additional public information materials containing the same information, again in both languages, will be available to transients at motels, hotels, and business establishments throughout the EPZ. Appl. Dir. No. 6, ff. Tr. 10,022, at 14-15.

8.26. EBS messages are to be broadcast at 15-minute intervals over radio stations identified on the public information signs and in other informational materials for transients. The content of the EBS message will depend on the actions recommended by State of New Hampshire decisionmakers. EBS messages containing instructions for the transient population, including transients without their own means of transportation, are presently being prepared. *Id.* at 15.

8.27. Precautionary actions planned for implementation for Hampton and Seabrook beaches pertain particularly to the beach areas in an approximate 2-mile radius of Seabrook Station which are those areas that could potentially be most immediately affected. This area is bounded by Great Boar's Head (not Little Boar's Head) at Hampton Beach to the north and the New Hampshire–Massachusetts border at Route 286 and Ocean Boulevard at Seabrook Beach to the south. *Id.* at 15-16.

8.28. Precautionary actions prescribed for this area are:

(1) Closing beaches that attract seasonal populations and which are in close proximity to the plant;

(2) Implementation of traffic control to discourage transient traffic from flowing into the affected areas, including beach areas;

(3) Issuance of public announcements of actions taken through emergency broadcast and normal media channels; and

(4) Monitoring of traffic flow and local conditions in affected areas.

Id. at 16.

8.29. To facilitate implementation of these actions, the following arrangements have been made:

(1) The Department of Resources and Economic Development (DRED), which has jurisdiction over State beaches and parks, has been designated to assist with closing beaches and parks and adjacent parking

areas under its control. Procedures are in place for DRED to utilize lifeguards, park managers, and other available personnel for this purpose.

(2) Specific traffic control points have been designated for state and local police to discourage access of transient traffic into beach areas and to facilitate egress of outgoing traffic. These points are specified for implementation of early precautionary actions.

(3) Procedures are in place at the Rockingham County Dispatch Center and in the RERPs for the Towns of Hampton and Seabrook for activation of public alert sirens and public announcements for the beaches. Additionally, public information personnel at both the Media Center and the State EOC are activated at the Alert classification to issue public announcements to the media.

(4) Utility, state, and local emergency response organizations will be activated at the Alert emergency classification level, to monitor conditions in the plant and in potentially affected areas.

Id. at 16-17.

8.30. In the event that accident conditions do not allow time for implementation of early precautionary measures for the beach populations, evacuation, nevertheless, continues to be the preferred protective action. *Id.* at 17.

8.31. Numerous factors can influence the effectiveness of evacuation. These include the delay time between accident warning and initiation of evacuation, the radius within which the public is evacuated, evacuation speed, and changing meteorological conditions during the evacuation. *Id.* at 17-18.

8.32. Specific and detailed procedures are provided in the NHRERP to ensure early notification and evacuation of the beach population. Administrative provision for and coordination of emergency instructions to be broadcast have been provided in NHRERP, Volume 1, §2.1, and Volume 4, NHCDA Procedures, and Volume 4B, State Police Communications Center Procedures, to ensure the flexibility to get the most appropriate message aired in a timely manner for the spectrum of accident conditions. The conditions covered by these provisions range from where the emergency organizations are fully staffed and are following a slowly developing situation to the case where a severe situation is developing rapidly prior to emergency organizations being able to fully staff or assess the situation. Appl. Dir. No. 6, ff. Tr. 10,022, at 18.

8.33. The NHRERP will include a special-facility plan for each campground in the EPZ. These plans are to call for campground operators to ensure that campground users are notified of an emergency. The campground operators will either close the campgrounds as a precautionary measure or evacuate them based on the protective action recommended for the general population. Campground users constitute neither a significantly large segment of the population nor an

inordinate concentration of persons in any one area of the EPZ so as to impede their rapid departure from the EPZ in the event of an emergency. *Id.* at 3.

8.34. Except for institutionalized populations, sheltering and evacuation will be implemented on a municipality-by-municipality basis in New Hampshire. One town may be advised to take shelter, while an abutting town is advised to evacuate or take no protective action. Therefore, shelter areas in New Hampshire are defined as municipalities. The decision to implement sheltering or evacuation of a particular municipality in the EPZ will be based on a prediction that projected doses to the general population will equal or exceed EPA PAGs for these areas. *Id.* at 25.

Shelter in Place

8.35. New Hampshire relies upon the shelter-in-place concept, which generally provides for sheltering at the location where the instruction to shelter is received. This means: Those at home are to shelter at home; those at work or school are to shelter in the workplace or school building. Transients located indoors or in private homes will be asked to shelter at the locations they are visiting if this is feasible. Transients without access to an indoor location will be advised to evacuate as quickly as possible in their own vehicles (i.e., the vehicles in which they arrived). *Id.* at 18-19; NHRERP, Vol. 1, §§ 2.6.5, 2.6.6.

Beach Sheltering

8.36. In response to comments by FEMA, on February 11, 1988, the State provided a detailed explanation of the use it intends to make of sheltering as a protective response for Seabrook area beach populations, along with a rationale in support of its choice of protective actions for this population. Appl. Dir. No. 6, ff. Tr. 10,022, Appendix 1.

8.37. Beach closure or evacuation of the beach areas are the preferred courses of action for the beach area population. Sheltering as a protective action option for this segment of the population would be considered in only a very limited number of circumstances characterized by one or more of the following conditions:

(1) Dose Savings:

Sheltering could be recommended when it would be the most effective option in achieving maximum dose reduction. New Hampshire has chosen to base its protective action decision on the lowest values cited by EPA guidance, that is, 1-rem whole-body dose and 5-rem thyroid dose. The protective action guidelines contained in EPA 520/1-75-001, Manual of Protective Action Guides for Nuclear Incidents, Revised 1980, have

been adopted in the protective action procedures of Appendix F and Appendix U.

(2) Consideration of Local Conditions:

The protective action recommendation procedure of the NHRERP (Volume 4, Appendix F, and Volume 4A, Appendix U) considers impediments to evacuation when the evacuation decision is the result of the detailed evaluation utilized in the decisionmaking process.

(3) Transients Without Transportation:

When evacuation is the recommended protective action for the beach population, certain transients may be without their own means of transportation. Shelter will be recommended for this category of transients to ensure they have recourse to some protection while awaiting transportation assistance.

Appl. Dir. No. 6, ff. Tr. 10,022, at 19-20, and Appendix 1. The choice as to the protective action ordered will, in the last analysis, be based upon which action will maximize the dose savings to the beach population as a whole. Tr. 10,413-14.

8.38. For implementation of the sheltering protective action option under any of the three conditions discussed above (dose savings, local conditions, transients without transportation), New Hampshire decisionmakers will rely on the mechanisms now in place, or to be put in place, in the NHRERP for recommending shelter to the public whether on the beach or any other place. These mechanisms include rapid assessment of accident conditions; activation of the public alert system, which includes the beach public address system; and EBS announcements. It is expected that people will comply with EBS announcements to take shelter and that owners/operators of public-access facilities will make their facilities available for this very limited instance. Appl. Dir. No. 6, ff. Tr. 10,022, at 20.

Dose Savings from Sheltering

8.39. Generally, the likelihood that shelter will be the action of choice is extremely low. The circumstances required for such a decision would, at a minimum, be that (1) no earlier action had been taken (including precautionary beach closing); (2) that there existed a peak, or close to peak, beach population; and (3) the release was one of known short duration without particulates and projected to arrive at the beach in a short time. Tr. 10,719-20. *See also* Tr. 10,720-21. It is unlikely that it will be possible to predict the duration or amount of a release with any degree of reliability. Tr. 10,720-21, 11,481-82.

Dose Reduction Factors

8.40. NHRERP, Volume 1, Table 2.6-4, provides representative values of cloud dose reduction factors for typical structures that can be found in the Seabrook Station EPZ. On the basis of these values, New Hampshire decisionmakers can approximate the level of protection that would be afforded to the population by a protective action recommendation to shelter. The dose reduction factor values range from 0.2 or less (80% protection) for large office or industrial-type buildings, to 0.9 (10% protection) for wood-frame houses with no basements. Based on the documents, Structure Shielding from Cloud and Fallout Gamma Ray Sources for Assessing the Consequences of Reactor Accidents, EG&G, Inc., Las Vegas, Nevada, EGG-1183-1670 (1975), and Public Protection Strategies for Potential Nuclear Reactor Accidents: Sheltering Concepts with Existing Public and Private Shelters by Aldrich *et al.*, February 1978, and their analysis of typical structures to be found in the Northeast region of the United States, Seabrook Station EPZ structures have a cloud dose reduction factor of at least 0.9; and this is, therefore, a reasonable dose reduction factor to be assumed by the NHRERP. As an assumed dose reduction factor, New Hampshire decisionmakers would apply this factor to calculations of projected doses to determine the level of protection that would be provided by implementation of sheltering. The only exceptions to this rule are certain institutions, including hospitals, nursing homes, and correctional facilities, where risks from evacuation are higher than those for the general population. For these institutions, shielding factors of the individual structures have been determined and would be applied to calculation of projected doses to the resident populations according to instructions contained in NHRERP, Volume 4A, Appendix U. Appl. Dir. No. 6, ff. Tr. 10,022, at 25-26; Appl. Exh. 34.

8.41. Essentially any indoor location, even a wood-frame house with no basement, provides at least a 10% reduction for a cloud source. This assessment of the relative shelter effectiveness of structures in the Seabrook Station EPZ indicates that typical residential structures afford a cloud shielding factor of at least 0.9. Appl. Dir. No. 6, ff. Tr. 10,022, at 26-27.

8.42. It is reasonable to assume that schools and day-care centers share the prevailing characteristics of typical winterized structures of the Seabrook Station EPZ and are airtight structures. However, because protective action recommendations for the general population are applied to schools and day-care centers, evaluation of protection afforded by these structures would not affect the choice of the sheltering option. Specific protective action recommendations would not be made for schools (which, for the purpose of the plan, include day-care centers) based on the relative sheltering factors of their structures. The NHRERP explicitly says in Volume 4A, Appendix U, that sheltering factors other than 0.9 are not to be considered for school facilities. Schools (and day-

care centers) will follow the same protective actions prescribed for the general population. Appl. Dir. No. 6, ff. Tr. 10,022, at 27.

Transit-Dependent Transients

8.43. If evacuation is the recommended protective action for the beach population, certain transients may be without their own means of transportation. Their number is estimated at 2% of the peak beach population. Recent estimates of the peak beach population for Hampton and Seabrook were made using the results of vehicle occupancy rate surveys and counts of projected peak number of vehicles. The summer weekend peak population estimates calculated 23,841 for Hampton Beach South and 7398 for Seabrook Beach. Use of the 2% estimate and the peak population figures yields peak numbers of transients without transportation of 477 at Hampton Beach and 148 at Seabrook Beach. These are considered to be peak numbers because they do not take into account ride-sharing, which FEMA's Regional Assistance Committee advises is a significant factor in estimating transportation resource requirements. As the Board concluded in § 7 on Human Behavior in Emergencies, above, the transients actually without transportation are likely to be offered rides. *See also* Tr. 10,104-05, 10,108, 10,118, 10,120-21. With ride-sharing considered, it is believed that more than enough transportation capacity exists for all beach transients without their own transportation. However, bus routes have been planned and sufficient bus resources identified to provide transportation for persons in the beach areas, including summer transients, who may lack their own. The NHRERP is being amended to provide protection to the transients while they are awaiting transportation assistance. Appl. Dir. No. 6, ff. Tr. 10,022, at 20-21.

Beach Shelter Survey

8.44. The NHRERP will identify potential shelter locations for the transient beach population without transportation. A shelter study performed by Stone & Webster, Appl. Exh. 2, and analyzed by New Hampshire Yankee (Appl. Dir. No. 6, ff. Tr. 10,022, Attach. 3), was provided to the State as a resource document. In its review, the State found the document to be of some value. It identified a large number of shelters that may serve as a pool from which public shelter choices will be made. The appropriate EBS message will be modified to provide for instructions to persons on the beach who have no means of transportation to go to public shelters to await assistance in the event evacuation of the beach is recommended. *Id.* at 21, and Appendix 1 at 10.

8.45. Although the State of New Hampshire has formed a judgment that adequate shelter exists for the beach population under the circumstances in which sheltering may be required (Tr. 10,693-95, 10,698), the State does not intend at this time to incorporate the shelter study or the analysis of this study into the NHRERP or rely on the shelter study as a planning basis. As a compilation of available resources, the shelter study may be used, as previously noted, to assist in identifying those public buildings to which beach transients without their own means of transportation may be directed for shelter while awaiting transportation assistance. Appl. Dir. No. 6, ff. Tr. 10,022, at 22. As we discuss below, the Intervenors dispute the accuracy of the shelter study.

Massachusetts Attorney General's Case

8.46. Massachusetts Attorney General James M. Shannon also filed expert testimony in support of the sheltering contentions. His witnesses were: Dr. Robert L. Goble, a Doctor of Physics, with experience in emergency planning, who is currently a Research Associate Professor of Environment, Technology, and Society and adjunct Professor of Physics at Clark University (Qualifications, ff. Tr. 10,963, at 1-2, and Attach. 1; Tr. 11,290-93, 11,583-84); Dr. Ortwin Renn, a Doctor of Social Psychology, with expertise in emergency planning and, in particular, human behavior and response in emergencies, who is currently an Associate Professor of Environment, Technology, and Society and a member of the Hazards Assessment Group of the Center for Technology, Environment, and Development at Clark University (Qualifications, ff. Tr. 10,963, at 2-3, and Attach. 2); Dr. Robert T. Eckert, Vice President of Salmon Falls Research Associates, Inc., and Associate Professor of Forest Resources at the University of New Hampshire, who has an expertise in statistical analysis (Qualifications, ff. Tr. 10,963, at 3-4, and Attach. 3); Prof. Victor N. Evdokimoff, a certified health physicist and a registered expert in radiation protection with the Commonwealth of Massachusetts, who is currently an adjunct Assistant Professor of Public Health at Boston University School of Medicine and Radiation Safety Officer at Boston University Medical Center (Qualifications, ff. Tr. 10,963, at 4-5, and Attach. 4); and Dr. Thomas Adler, whose qualifications are set forth in our findings on Evacuation Time Estimates, § 9, *infra*. The witnesses sponsored by the Massachusetts Attorney General are qualified to give the testimony presented by each. Their testimony addressed the major area of controversy, i.e., whether, and under what circumstances, sheltering should be a preferred protective action for the summer beach population.

8.47. In examining the evidence and proposed findings presented by the Massachusetts Attorney General, the Board agrees that there are certain factors specific to the Seabrook EPZ that should be considered regarding protection of

the summer beach population. The Federal Emergency Management Agency has stated with respect to its consideration of this issue that:

> [F]actors unique at least in magnitude to Seabrook . . . concerning protection of the Seabrook beach population are the size of the transient ("day tripper") beach population; size of the beach population; number of unwinterized housing/commercial buildings; volume of corridor type road traffic; complexity of road network; number of local governments involved in the emergency planning process; and large geographic size of the EPZ.

Goble Panel, ff. Tr. 10,963, Attach. 5, at 8. *See also* Goble Panel, ff. Tr. 10,963, at 10-12.

8.48. As we found above, and to place into context the Attorney General's position, the State of New Hampshire would consider sheltering the summer beach population when: (1) it would be the most effective option in achieving maximum dose reduction; (2) there exist physical impediments to evacuation, such as fog, snow, road conditions, bridge situations, and highway constructions; or (3) when sheltering for beach transients without their own transportation is deemed necessary. Applicants and the State of New Hampshire perceive these circumstances to be "very limited." Appl. Dir. No. 6, ff. Tr. 10,022, at 19; Tr. 10,721.

8.49. The controversy among the parties, according to the Attorney General, essentially centers on the circumstances in which sheltering would be the most effective option in achieving maximum dose reduction, and to what extent those circumstances are "very limited." AG Shelter PF 10.1.7. Applicants reply that the issue is whether shelter is an available protective action for the beach population, not whether sheltering would achieve the most effective maximum dose reduction, and not to what extent sheltering circumstances are very limited. Appl. Reply 10.1.7. The Board believes, however, that the appropriate issue is whether the State of New Hampshire has given careful and sufficient consideration to the option of sheltering the beach population in the NHRERP. As noted below, the emergency planning regulations do not require sheltering as such as a protective action.

8.50. The Massachusetts Attorney General, through the Goble Panel, fashions a multipart case on the issue. First, evacuation, if feasible, is usually the preferred protective action. Goble Panel, ff. Tr. 10,963, at 13, 16-17. Second, sheltering would be preferred to evacuation when severe accidents develop rapidly and exposure would *begin* in times that are short compared to times needed to *complete* evacuation. *Id.* The panel believes, therefore, that the NHRERP is "grossly inadequate" because it contains essentially no provisions for sheltering the summer beach population and that *ad hoc* sheltering won't work. *Id.* at 6. Third, because of factors particular to Seabrook, i.e., large summer beach populations and long evacuation times of 5 to 10 hours, plume

arrival would occur before evacuation is *completed* in rapidly developing severe accidents.

8.51. Fourth, suitable shelters would reduce exposure to cloudshine, to groundshine, and, especially, to inhalation radiation compared to waiting outside or in cars during delayed evacuations. *Id.* at 17.

8.52. Continuing to its fifth point, the Goble Panel reasons that, for sheltering to be a viable option, there must be adequate sheltering, sufficient in quantity, with good shielding factors. It must be accessible without delay by a population properly instructed to seek shelter. Sixth, the NHRERP does not provide adequately for sheltering in that it lacks decision criteria, identification of sheltering space, and guidance for people on the beach to seek shelter. *Id.* at 21.

8.53. The seventh point, somewhat of a "Catch 22," is the panel's conclusion that the characteristics of the Seabrook EPZ beach area render sheltering infeasible. The summer beach population is large. It is a nonresident population; nothing has been revealed in the literature about nonresident behavior when ordered to seek shelter from a technological hazard. Nonresidents will have a stronger propensity to evacuate than to seek shelter. *Id.* at 11-12. In part because of human behavior characteristics of the nonresident "daytrippers" and the average time-distance between the beach population and available shelters (plus inadequacies in the NHRERP) it would take a long time for beach visitors to reach shelter. *Id.* at 11, 71-80. But time-to-shelter aside, there are not enough shelters in the beach communities for the large population they estimate would need shelter. *Id. generally* at 22-64. In fact, according to the Goble Panel, there is insufficient sheltering space on most of the beaches for any of the population estimates. *Id.* at 86. Not that it would do the beach people any good even if they found and finally arrived at shelters because the owners might not even admit the beach population to their buildings according to the Goble Panel's analysis. *Id.* at 80-84. This may be a good thing because the beach area buildings, with an average 0.9 dose reduction factor, do not provide sufficient shielding anyway. *E.g., id.* at 67.

8.54. The Panel concludes that any attempt to achieve sheltering, either by authorities or spontaneously, is likely only to make the situation worse. *Id.* at 87. Taking the panel's testimony as a whole, they would attribute part of the problem to poor planning by the State of New Hampshire. But the major thrust of the Goble Panel's testimony is that, because of factors beyond the control of New Hampshire emergency planning officials, specific to Seabrook (e.g., nature and size of beach population, time-to-shelter, quantity and quality of shelters), sheltering is not a good idea and probably impossible as an effective protective action.

8.55. As noted above, the avowed purpose of presenting the Goble Panel was to fault the NHRERP because it does not provide for sheltering the beach

population in a severe, rapidly developing accident. The argument collapses under its own weight. While the Applicants and the State of New Hampshire quarrel with some of the premises of the Attorney General's panel of experts (size of population, amount of sheltering, evacuation times), there is no dispute among the parties that sheltering has serious site-specific disadvantages as a protective action option. That is precisely why the State of New Hampshire has deemed sheltering to have an extremely low likelihood of being the protective action of choice. New Hampshire officials, agreeing with Applicants' planners, believe that general sheltering can afford maximum dose savings over evacuation only when (1) there is a large beach population, (2) with consequent evacuation times significantly longer than the exposure duration, and (3) where there are no particulates in the release, (4) so that the temporarily sheltered population does not become exposed or reexposed while evacuating through radioactive particulates on the ground. Tr. 10,720-21.

8.56. A very striking aspect of the Goble Panel's analysis of the merits of sheltering is that there is virtually no evaluation of the significance of the nature (gaseous or particulate) and duration of the release. Dr. Goble testified simply that for a short-duration (a few hours) gaseous ("puff") release, sheltering is the only effective response. Goble Panel, ff. Tr. 10,963, at 15-16. While he recognized that in the puff release there would be no ground-deposited radioactivity (*id.*) his panel never directly addresses the opposite problem: evacuating the beach population first to shelter, then from shelter through particulate deposits (groundshine), or, in the case of any release of long duration, the problem of evacuating after a sheltering delay through both cloud and groundshine. Most important, the Goble Panel did not wrestle with the fact that the duration of an uncontrolled release is very difficult to predict. Goble Panel, ff. Tr. 10,963, *passim.*

8.57. This insensitivity is all the more puzzling because Dr. Goble recognizes that protection from inhalation exposure in typical houses rapidly degrades (*id.* at 33), and that, with a 0.9 cloudshine dose reduction factor (10% protection), the small benefits of sheltering are rapidly used up (*id.* at 68).

FEMA's Position

8.58. As previously noted, the State of New Hampshire's explanation of the use it intends to make of sheltering as a protective response for the beach population was prompted by comments made by FEMA in testimony prepared for possible presentation in this proceeding. FEMA instead presented the testimony of Joseph K. Keller to explain FEMA's evaluation of the technical appropriateness of New Hampshire's response to FEMA's comments. Cumming and Keller, ff. Tr. 13,968, at 7-11. Mr. Keller is well qualified to evaluate

New Hampshire's proposed use of protective actions. Cumming and Keller, ff. Tr. 13,968, Attach. B (professional qualifications).

8.59. Mr. Keller testified, in agreement with NRC's current guidance, that initial protective action decisions for areas near the site should be based on plant status without inclusion of calculations of projected doses unless a release of radioactive material is already under way. The basis for the immediate evacuation of the close-in areas without dose calculations is based on the fact that, unless a release of radioactive material is under way, there is little or no likelihood of having reliable predictive information needed to perform dose projection calculations. The information necessary to make an accurate calculation would include the projected duration of a release, the time at which such a release would begin, and the magnitude of a projected release. Cumming and Keller, ff. Tr. 13,968, at 9.

8.60. In addition, in severe-accident sequences the total dose potential is comprised of several components. These are the direct exposure from immersion in the plume, cloudshine from a plume overhead, exposure from inhalation of the plume, and groundshine from deposited radionuclides. The exact relationship among the various components will vary with time and distance from the point of release; however, in severe-accident sequences the groundshine component is most likely to be the major contributor to total dose if no protective actions are taken. *Id.*

8.61. In those cases, if the dose reduction strategy is sheltering first, followed by an evacuation after plume passage, the total dose reduction would not be as great as that for the immediate evacuation strategy. The sheltering part of the strategy reduces dose primarily from the plume immersion and inhalation component. In the New Hampshire submission, the dose reduction factor ascribed to the available shelters is 0.9. That means that an individual inside such a shelter would receive 90% of the plume immersion dose he or she would receive without shelter. Another way of expressing this measurement is to say that a building with a dose reduction factor of 0.9 provides a dose reduction of 10%. *Id.* at 9-10.

8.62. The dose reduction for the inhalation dose is greater than 10%, but approaches zero depending on the rate at which outside air, the plume, infiltrates the shelter. It is generally accepted that after 2 hours, the effectiveness of a shelter to reduce the inhalation exposure begins to degrade. For the "unwinterized" structures in the New Hampshire beach areas, this degradation would likely begin much sooner. During the evacuation after plume passage, the individual previously in shelters would still receive the groundshine dose, potentially the major component. Therefore, sheltering followed by evacuation is likely to be a less effective means of achieving dose reduction than evacuation alone, particularly for severe-accident sequences. *Id.* at 10.

8.63. In the immediate evacuation case, as stated above, the dose reduction involves the groundshine component. The exact dose reduction that would result in most cases is difficult to predict due to the many potential combinations of the geometries of the plume and the evacuation routes. In the extremely rare case where the evacuation routes coincide with the plume path, an estimate of the dose reduction can be made. Because of the dispersion and dilution of the plume as it moves downwind from the point of release, the dose rate decreases with distance. The rate at which the dose rate decreases as a function of distance (r) from the source can be approximated by an inverse power series (r^{-a}, where "a" varies between 1.5 and 3 depending on the atmospheric stability class). Generally speaking, the closer an area is to the point of release, the greater the potential dose savings to be achieved by early evacuation. *Id.* at 11.

8.64. By implementation of the immediate evacuation strategy, dose reduction greater than those to be derived from a "shelter first–evacuate later" concept can be obtained by movement of the population relatively short distances even in the extremely unlikely case where the plume track and the evacuation routes coincide.

8.65. FEMA's conclusion, as presented by Mr. Keller, is that the requirement for a range of protective measures has been satisfied even though the State of New Hampshire has chosen not to shelter the summer beach population except in very limited circumstances. With respect to the summer beach population, the planning elements J.9 and J.10.m of NUREG-0654/FEMA-REP-1, Rev. 1, have been met. Cumming and Keller, ff. Tr. 13,968, at 11.

8.66. These planning elements provide as follows:

> J.9. Each State and local organization shall establish a capability for implementing protective measures based upon protective action guides and other criteria. This shall be consistent with the recommendations of EPA regarding exposure resulting from passage of radioactive airborne plumes, (EPA-520/1-75-001) and with those of DHEW (DHHS)/FDA regarding radioactive contamination of human food and animal feeds as published in the Federal Register of December 15, 1978 (43 FR 58790).
>
> J.10. The organization's plans to implement protective measures for the plume exposure pathway shall include:
>
> m. The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions. This shall include expected local protection afforded in residential units or other shelter for direct and inhalation exposure, as well as evacuation time estimates [footnote omitted].

8.67. FEMA concludes further that there exists a technically appropriate basis for the choice made by the State of New Hampshire not to shelter the summer beach population except in very limited circumstances. Mr. Keller testified that whenever this choice is incorporated into the NHRERP, implementing detail will be necessary. Cumming and Keller, ff. Tr. 13,968, at 11; *see also* Tr. 14,220.

8.68. The Board believes that Mr. Keller's testimony on behalf of FEMA was well reasoned. With the exception of FEMA's stated conclusion that implementing detail will be necessary, we have adopted Mr. Keller's testimony virtually verbatim. The Board returns to the question of implementing detail and the regulatory presumption to be attached to FEMA's findings on these issues below.

8.69. On cross-examination, Mr. Keller acknowledged that he could, given enough time, construct a scenario with groundshine, immersion, cloudshine, and inhalation components where the dose would be less for sheltering first compared to immediate evacuation. Tr. 14,231. But, he insisted, for the majority of the cases of severe-accident sequences, the indications are that the converse is true, and to get maximum dose savings, the "best thing to do is evacuate immediately," even if it means that people might be contaminated during the evacuation process. *Id.*

8.70. Mr. Keller would also agree to a few hypothetical instances presented by the Massachusetts Attorney General where sheltering first would achieve greater dose savings. For example, after first sheltering, the population could be instructed to evacuate in a direction to avoid groundshine. Tr. 14,239-44.

8.71. In explaining the difficulties with dealing with such hypothetical cases, Mr. Keller summed up the controversy among the adverse parties quite clearly and succinctly: the uncertainty of what is going to occur prior to it occurring is great. Citing a few of the possible uncertainties (e.g., various combinations of meteorology, start and duration of release, and source term), Mr. Keller explained that all of the uncertainties can have very large consequences — much larger than the benefit one would get from sheltering, especially the sheltering with the low shielding factors found in the beach area. In retrospect, it may turn out that sheltering, particularly in minor releases, would have been the better choice, but this would be second-guessing. Tr. 14,241-44. It is necessary to reduce the groundshine component. In a real event, where the decisionmaker has to make an actual decision, the better course is to evacuate in roughly a 2-mile circle, in case things go as badly as they can. Don't calculate — just do it. Tr. 14,243-44. The Board finds that Mr. Keller defended well FEMA's position against the many hypotheses put to him by the Intervenors.

8.72. Intervenors, particularly NECNP, fault Mr. Keller's testimony on the grounds that his analysis is generalized, generic, and not specific to the Seabrook site. NECNP PFs 27-28. This is not a valid criticism of the testimony. Mr. Keller's technical analysis is no less relevant to Seabrook simply because his reasoning and the physical laws of nature relied upon may also be relevant to other nuclear power plants.

Implementing Provisions

8.73. NECNP urges the Board to withhold approval of FEMA's conclusions on the adequacy of sheltering the transient beach population unless there are implementing provisions. NECNP PFs 40-42. As noted above, FEMA stated that when the sheltering option is incorporated into the NHRERP, implementing detail will be necessary. Cumming and Keller, ff. Tr. 13,968, at 11. With respect to the small number of transients depending upon transportation, FEMA's Mr. Cumming believes that there is now some degree of implementing detail. We do not believe that any additional planning detail is necessary for that group. However, with respect to the so-called "98%" — the balance of the transient population at the beach — FEMA's position is not clear. *Compare* Tr. 14,219-20 *with* Tr. 14,252.

8.74. FEMA has monitored the transcripts of this proceeding and now may be satisfied that, given the "extremely, extremely limited option" of sheltering, implementing detail for sheltering the general transient beach population would not be essential to FEMA's approval. As FEMA's witness, Mr. Cumming, noted, to use the sheltering option, decisionmakers must be able to know exactly what they are doing. Tr. 14,253. Even so, the Board is not confident that it knows what FEMA's final stand on this matter is.

8.75. After reviewing the testimony on the reasons why sheltering is a very low-probability option, particularly Mr. Keller's explanation of the many conditions that must line up before sheltering can be predicted to save doses, the Board is concerned that forcing implementation into the NHRERP would be a mistake. The greatest risk is that the decisionmaker might implement the sheltering option using preset implementing detail without understanding that the potential benefits are not very great and can be readily outweighed by the uncertainties. Certainly, without knowing what type of implementing detail might be included in the NHRERP, we cannot require implementation as a condition of approval as NECNP recommends. Nor would cluttering the NHRERP with unnecessary detail improve it.

8.76. We doubt that preset sheltering implementation is a practical or conservative approach. There are already provisions for flexible EBS messages to the beach visitors. In any event, the absence of implementing detail for sheltering in the NHRERP is not so material as to foreclose a finding by the Board that the NHRERP provides reasonable assurance that adequate protective measures will be taken in the event of a radiological emergency at Seabrook. The Board is confident that FEMA and the State of New Hampshire will appropriately resolve any differences on the point upon reviewing the Board's concerns. We are reinforced in this view by the observation that New Hampshire emergency planning officials, and in particular, Mr. Richard H. Strome, the Director of the State's Office of Emergency Management, were

in virtually constant attendance during the long hearing on these issues. New Hampshire officials testified extensively on the NHRERP. They demonstrated a thorough understanding of the plan, the NRC and FEMA's emergency planning regulations, and the relevant technical considerations. We believe that the State of New Hampshire will take advantage of any reasonably available opportunity to improve and to maintain the NHRERP and to ensure its implementability. We need not tell them how to implement further the plan's sheltering provisions.

8.77. Moreover, the Board is mindful of the guidance of NUREG-0654 that planning for particular accidents or accident sequences is not required in that "[n]o specific accident sequence should be isolated as the one for which to plan, because each accident could have different consequences, both in degree and nature." *Id.* at 6.

Amount of Sheltering

8.78. Returning to the subissue of the accuracy of the Stone and Webster shelter study, as we noted above, New Hampshire intends to use the study only as a resource document that identifies a large number of shelters from which public shelter choices can be made. Mass AG and Town of Hampton presented evidence that many of the owners of the shelters listed in the shelter study had never been contacted by Stone and Webster, that a number of the shelters in fact were unsuitable for various reasons, and that a number of the owners claimed that in the event of a real emergency, they would not open their establishments to shelterees. Goble Panel Dir., ff. Tr. 10,963, at 6-7, 36-67; Moughan and Lincoln Dir., ff. Tr. 10,857, *passim*; Hollingworth Dir., ff. Tr. 10,832, *passim*.

8.79. In retrospect the Board permitted the litigation over the sufficiency of adequate sheltering to grow larger than it needed to be. Upon final analysis the Attorney General and Hampton presented the very reasons why sheltering in the Seabrook beach EPZ would be an option of very limited utility. Carrying Intervenors' argument to the end, if sheltering is not an effective protective action, then their respective contentions, faulting the NHRERP for not providing for sheltering, fail. Evacuation would then be the only protective option.

8.80. Nor can the sheltering contentions be read to allege that sheltering *must* be a protective option for the beach population. The Commission's emergency planning regulations do not require sheltering as such. The pertinent provision, 10 C.F.R. § 50.47(b)(10), requires only a "range of protective actions." The relevant planning element, NUREG-0654, J.10.m, requires an evaluation of the *expected* local protection afforded by sheltering, but does not set standards for that protection or require it. And, of course, it is now well established as the law in this case that the emergency plan for the Seabrook station need not achieve any preset dose savings. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-86-13, 24 NRC 22, 30 (1986); *Southern California*

Edison Co. (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-83-10, 17 NRC 528, 533 (1983); Notice of Rulemaking, Licensing of Nuclear Power Plants Where State and/or Local Governments Decline to Cooperate in Offsite Emergency Planning, 52 Fed. Reg. 6980, 6982 (Mar. 6, 1987); Notice of Promulgation of Rule, Evaluation of the Adequacy of Off-Site Emergency Planning for Nuclear Power Plants at the Operating License Stage Review Where State and/or Local Governments Decline to Participate in Off-Site Emergency Planning, 52 Fed. Reg. 42,078, 42,084-85 (Nov. 3, 1987); Ruling Precluding Admission of Sholly, *et al.*, Testimony, Tr. 5594-609.

8.81. The Intervenors' contentions were pressed by them under a theory that a minimum amount of sheltering must be available for the beach population, given the evacuation characteristics of the Seabrook beach EPZ. Even though we have rejected that theory as a matter of law, the contentions have induced the Board to recast the issue as being whether the State of New Hampshire has given careful and adequate consideration to sheltering as a protective action. Subsumed in that issue is the premise that if expected sheltering can readily afford dose savings over immediate evacuation for the spectrum of accidents in the NUREG-0654 planning assumptions, sheltering should be provided for, or its omission should be justified. In this case the State of New Hampshire has provided for sheltering under the very limited circumstances discussed above. Therefore, to the limited extent that sheltering is a protective option for the beach population, some thought must be given to whether there is enough sheltering even for those limited cases, or if not, whether evacuation would be the choice. It is by this reasoning that the Board arrives at the conclusion that the quantity of suitable sheltering near the beaches requires further discussion.

8.82. We agree with the Applicants and Staff that there were weaknesses in the sheltering surveys sponsored by the Intervenors. In some cases the survey sponsored by the Town of Hampton (Moughan and Lincoln Dir., ff. Tr. 10,857, Attachment and Supplemental Attachment), and that sponsored by Mass AG (Goble Panel Dir., ff. Tr. 10,963, Attach. 12), showed different responses with respect to the same properties. In addition, we agree that the survey sponsored by the Attorney General has a built-in bias in that it identified the survey as being done for the Massachusetts Attorney General. Tr. 11,423; Mass AG Exh. 19, *passim*. But even giving full weight to the Intervenors' surveys, there still remained most of the sheltering identified by Stone and Webster. Furthermore, at the request of the Intervenors, the members of the Board made site visits to the beach area observing the general sheltering situation. By any measure, it is clear that among the residential and commercial buildings in the EPZ beach communities there is a substantial amount of available sheltering — typical of beach areas.

8.83. The shelter survey indicates that some three times as much potential shelter space as is necessary is available (Appl. Dir. No. 6, ff. Tr. 10,022,

Attach. 3, at 1; Tr. 10,687-88) with an average dose reduction factor of better than 0.9 (Tr. 10,764-65). Materials offered by the Intervenors as to unsuitable accommodations included within the study, even if fully credited, only eliminate some 20% of the existing shelter potential. *Compare* Goble Panel Dir., ff. Tr. 10,963, at 58, *with* Appl. Exh. 2, at 7. Indeed, according to the Applicants and Staff, even accepting Mass AG's witnesses' estimate of the peak population involved and their further estimates of inaccessible shelter space (*see* Goble Panel Dir., ff. Tr. 10,963, at 35), there is sufficient available space to adequately accommodate that population. Tr. 11,415-18; *compare* Tr. 11,609-13; *see* Appl. PF 10.1.63.

8.84. In the very limited cases where sheltering would be deemed in advance to achieve dose savings (gaseous release, arriving early, with a short duration compared to extended evacuation time estimates), it is unlikely that evacuation would afford very much dose avoidance. That is one of the premises underlying a rare choice of sheltering. In fact, Dr. Goble believes that sheltering is the only response that would do any good in a "puff" release. Goble Panel, ff. Tr. 10,963, at 15-16. It follows, then, that sheltering would be the protective option even if there were not enough shelters for the entire beach population. The exact amount of sheltering, exceeding any significant amount, therefore, is immaterial to its choice as a protective action in the circumstance presented to us as sheltering situations.

8.85. The Board has considered the proposed findings that the owners of establishments in the beach communities would close their doors to the transient beach population because of hostility toward the utility. We reject that proposition because it is logically flawed. There is no reason why beach area proprietors would transfer their hostility to the beach population. It is more likely that, in an actual emergency, the transient beach population seeking shelter would be seen as fellow victims.

FEMA's Change of Position

8.86. FEMA changed its position on the beach population sheltering issue. On September 11, 1987, FEMA filed proposed testimony in this proceeding in which it stated that, considering the evacuation time estimates for Seabrook, "it appears that thousands of people could be unable to leave during an accident at Seabrook involving a major release of radioactivity without adequate shelter for as much as the entire duration of that release." Therefore, according to FEMA, until the beach protection issues are resolved, FEMA would not be able to conclude that the New Hampshire State and local plans to protect the public in the event of an accident at Seabrook are adequate to "protect the public health and safety by providing assurance that appropriate measures can be taken

offsite in the event of a radiological emergency." *Citing* FEMA regulation 44 C.F.R. § 350.5(b).

8.87. The proposed FEMA testimony had been prepared by, and was to have been presented by, Mr. Edward A. Thomas, Chief of the Natural and Technological Hazards Division, FEMA Region I. Mr. Thomas was then also the Chairman of FEMA's Regional Assistance Committee for Region I. The September 11, 1987 proposed testimony was never offered by FEMA. Instead, FEMA presented the testimony of William R. Cumming and Joseph Keller. Cumming and Keller, ff. Tr. 13,968. Mr. Keller's portion of the FEMA testimony has been adopted almost in its entirety by the Board in the findings above. As can be readily observed, FEMA arrived at quite a different conclusion in the testimony received into evidence. Mr. Cumming, a FEMA attorney with pertinent program responsibilities, contributed to FEMA's testimony by explaining the developments leading to FEMA's current position, and the legal basis for FEMA's position. *Id.* at 1-7.

8.88. Signs that FEMA's position was beginning to change emerged in its proposed supplemental testimony of January 25, 1988. There FEMA explained that it could not conclude that the NHRERP was adequate until it is clear that New Hampshire has considered and explained the use it intends to make of sheltering. Not that FEMA was imposing a requirement that sheltering be available, but if New Hampshire did not intend to employ sheltering for the transient beach population, FEMA expected to review the rationale for that choice. *Id.* at 2. It was New Hampshire's response to FEMA's comments and FEMA's subsequent review of that response that led to much of the substantive evidence adduced on the issue of sheltering the transient beach population.

8.89. The full swing of FEMA's position became apparent on March 14, 1988, when FEMA again filed proposed testimony explaining that the September 11, 1987 proposed testimony was outdated. FEMA found that the pertinent planning elements of NUREG-0654, J.9 and J.10.m, were now satisfied.

8.90. The Intervenors reacted strongly. Where once they perceived that the rebuttable presumption attendant to a FEMA finding was theirs, now the presumption would work against them. 10 C.F.R. § 50.47(a)(2). They set about trying to recapture the FEMA presumption, or, failing that, at least to destroy any advantage to Applicants' case. Based in part upon a deposition of Mr. Thomas, Intervenors began a large and aggressive discovery program founded on the proposition that the original FEMA position had yielded to improper political influences and to threats from NRC Staff officials.

8.91. The Board took over active management of the controversy. In part to reduce unnecessary discovery burdens, and in part to ensure accuracy and public confidence in the hearing, we invited Mr. Thomas and the cognizant FEMA and NRC officials to testify.

8.92. The Board received the testimony of FEMA's Associate Director for State and Local Programs and Support, Mr. Grant Peterson; FEMA's Deputy Associate Director for State and Local Programs and Support, Dr. David McLoughlin; and FEMA's Assistant Associate Director for the Office of Natural and Technological Hazards, State and Local Programs and Support, Mr. Richard Krimm. These officials had the principal responsibility within FEMA for establishing the relevant FEMA policies and regulatory positions as well as managing the respective programs. Collectively, they were responsible for FEMA's change of position on the sheltering issue. They were selected by the Board to appear in consultation with the Intervenors. For 3 days they were subject to extensive examination and cross-examination. Tr. 12,649-782, 12,788-13,053, 13,061-298.

8.93. The Board found no basis whatever to support a charge that FEMA's change in position was a result of political pressure or NRC threats — or that such pressure or threats ever existed. Rather, FEMA's change was brought about by a thorough evaluation of the technical, regulatory, and legal issues involved. *Id., passim. See also* Appl. Exh. 38 (Letter to Senator Glenn from FEMA Director Becton, May 13, 1988). After hearing from the FEMA officials, the Board found no need to hear from NRC Staff officials on the matter in controversy. Mr. Thomas' testimony had no significant effect upon the weight to be given FEMA's final testimony. Tr. 13,684-879.

8.94. The digression into the reasons for FEMA's change of position was in the nature of discovery. It produced relatively little information on the merits of the Intervenors' sheltering contentions, and what little information was developed was reproduced in other evidence. Consequently there would be no benefit to this decision to be gained from further review of the matter. There is no need to discuss the Intervenors' extensive proposed findings respecting FEMA's change.

8.95. FEMA's Regional Assistance Committee (RAC) contributes advice on FEMA's review of emergency plans. It is an interagency committee in each region. In Region I the RAC is comprised of nine federal agencies: FEMA, NRC, EPA, Departments of Energy, Interior, Health and Human Services, Transportation (Coast Guard), Commerce (NOAA), and Agriculture. FEMA Dir., ff. Tr. 3088. FEMA's final position on the beach population sheltering issue had the support of a majority of the Regional Assistance Committee. The earlier position did not have Regional Assistance Committee approval. Appl. Exh. 38; Staff Exh. 2(a) and Exh. 3. In any event, FEMA's position on the sheltering issue, with nothing more than its technical and regulatory analysis, is supported by the preponderance of the reliable, probative, and substantial evidence.

Summary and Conclusions

8.96. With respect to issues concerning sheltering the beach population, the Board summarizes and concludes as follows:

1. The preferred protective action for the seasonal beach population in the Seabrook EPZ is almost always early beach closure or evacuation.
2. Employing the shelter-in-place concept, the State of New Hampshire is prepared to recommend sheltering of the beach population in consideration of a very limited number of conditions:
    - A. When sheltering can be predicted to be the most effective option for achieving maximum dose reduction.
    - B. In consideration of impediments to evacuation such as fog, snow, road and bridge conditions, and highway construction.
    - C. When transients without transportation need sheltering pending evacuation.
3. The likelihood that sheltering would afford maximum dose savings to the transient beach population is very low. Such a determination would require:
    - A. That no earlier action, such as precautionary beach closing had been taken.
    - B. There exists a peak or close-to-peak beach population with consequent evacuation times significantly longer than the duration of the predicted release.
    - C. The release is predicted to be one of short duration, without particulates, and projected to arrive at the beach in a short time.
4. It is unlikely that the duration or amount of an uncontrolled release can be reliably predicted.
5. New Hampshire appropriately assumes a dose reduction factor of 0.9 for the available sheltering in the beach areas which is the same as saying that such shelter provides 10% shielding from the plume exposure compared to no shelter. Such sheltering rapidly degrades, especially for inhalation doses.
6. There exists enough sheltering for the peak or near-peak transient summer beach population. In the very limited circumstance where sheltering is the planned option, given the substantial amount of sheltering, sheltering probably would provided maximum dose saving even if there were not enough available sheltering for the entire beach population.
7. The NRC's emergency planning regulations and the planning elements of NUREG-0654, FEMA-REP-1 do not require sheltering as such. There is no legal requirement that Applicants demonstrate that

preset minimum dose savings will be achieved with respect to the NHRERP in general and with respect to its provisions for sheltering or evacuating the transient beach population in particular. Even so, before a finding can be made that adequate protective measures can and will be taken in the event of a radiological emergency at Seabrook, the Board must find that the State of New Hampshire has carefully considered the option of sheltering the transient beach population within the Seabrook close-in EPZ, and that provisions have been made for sheltering if that protective action will readily and predictably provide maximum dose savings under the circumstances of the area that exist.

9. FEMA has concluded that the requirements for a range of protective actions under NUREG-0654, FEMA-REP-1, have been satisfied even though the State of New Hampshire has chosen not to shelter the beach population except in very limited circumstances. FEMA also concluded that there is a technically appropriate basis for New Hampshire's choice. FEMA's finding is supported by the preponderance of the reliable, probative, and substantial evidence.

11. The Board finds and rules that adequate consideration has been given by the State of New Hampshire in the NHRERP to the protective action of sheltering for Seabrook area beach population.

9. EVACUATION TIME ESTIMATES (ETEs)

Legal and Regulatory Requirements for ETEs

9.1. One of the sixteen planning standards in 10 C.F.R. § 50.47(b) which must be met before offsite emergency plans can be approved is that:

> A range of protective actions have [*sic*] been developed for the plume exposure pathway for emergency workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place. . . .

10 C.F.R. § 50.47(b)(10).

9.2. Appendix E, § IV, to 10 C.F.R. Part 50, requires that the Applicant(s) shall:

> provide an analysis of the time required to evacuate and for taking other protective actions for various sectors and distances within the plume exposure pathway EPZ [emergency planning zone] for transient and permanent populations.

9.3. Pursuant to NUREG-0654, compliance with the foregoing provisions requires that an evacuation time estimate be prepared. An ETE should provide a

reasonable estimate of the time required to evacuate various sectors of the EPZ, taking into account such factors as the traffic capacities of evacuation routes under emergency conditions, and should provide an identification of and means for dealing with potential impediments to use of evacuation routes. NUREG-0654, § II.J.10(i) and (h). Appendix 4 of NUREG-0654 provides guidance for the preparation and presentation of an ETE.

9.4. The emergency planning regulations do not set specific time limits governing the evacuation of plume EPZs. The matter of time within which an evacuation might be accomplished is to be determined on a case-by-case basis upon a consideration of all relevant conditions prevailing on the specific locality. The primary purpose for having evacuation time estimates is to assist responsible governmental officials in making informed decisions regarding what protective actions are appropriate in a given radiological emergency in order to maximize dose savings. To make these decisions the government officials must have available to them evacuation time estimates that are realistic appraisals of the minimum period in which, in light of existing local conditions, evacuation could reasonably be accomplished. The nearer to plant the area that might have to be evacuated, the greater the importance of accurate time estimates. *Cincinnati Gas & Electric Co.* (William H. Zimmer Nuclear Power Station, Unit 1), ALAB-727, 17 NRC 760, 770, 771 (1983).

9.5. An ETE should not reflect a worst-case scenario, rather, it should reflect realistic conditions so that it is of use to the decisionmakers; for an ETE to be too "conservative" in its assumptions is as detrimental as it would be for all assumptions to be made in a highly "unconservative" manner. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 246 (1986); *id.*, ALAB-836, 23 NRC 479, 491 (1986). We would state the concept somewhat differently: Conservatism in an ETE lies neither in the direction of overestimating or underestimating, but in the direction of realism.

9.6. The Commission has emphasized that an adequate emergency plan is not required to achieve a preset minimum dose savings or a minimum evacuation time for the EPZ in the event of a serious accident. *Long Island Lighting Co.* (Shoreham Nuclear Power Station), CLI-86-13, 24 NRC 22, 30 (1986).

Background

9.7. A number of contentions admitted for litigation in this proceeding raise issues as to the reliability of the ETE which has been done for Seabrook Station. *See* summary of contentions and bases set out in Appl. Dir. No. 7; ff. Tr. 5622, at 1-11. One of the issues raised by the ETE contentions relates to the subject of human behavior in an emergency situation and is treated in a separate section of this Partial Initial Decision. *See* § 7, *supra*.

9.8. Notwithstanding the fact that the regulatory scheme for ETEs does not set minimum times for evacuations, the Intervenors have pressed a position that the ETEs for the beach area near Seabrook are simply too long. For example, even after the Commission's clear-cut explanation of the standards for dose savings and evacuations in serious-accident situations in the *Shoreham* decision, CLI-86-13, *supra*, the Attorney General still sees the central controversy as "whether, during the summer months, and especially when the beach areas adjacent to the plant are crowded, the population in the beach areas can be evacuated safely and in a reasonable enough time to afford them adequate protection were a serious radiological emergency to occur." MAG PF 6.1.11. As a consequence, the case presented by the Attorney General, the lead Intervenor on the ETE issue, consisted of evidence that the ETEs prepared by Applicants' contractor were too short, although we recognize that some of the contentions addressed the workability of the NHRERP traffic management plan itself. Unfortunately the Applicants met the Intervenors' case in kind by presenting a case tending to show ETEs shorter than we believe to be warranted. The Staff, through its expert witness, brought greater objectivity to the controversy.

9.9. Another unfortunate aspect of the way the evidentiary record developed was the fact that the ETE issues were heard months before the contentions on sheltering the beach population were heard. Therefore, within the context of the ETE debate, there was little or no appreciation among the parties of the fact that sheltering would rarely be the protective action for the beach population. The significance of this fact is that, to the extent that evacuation is the forced protective action, it is less likely that a decisionmaker will be influenced in his protective action decision by ETEs within the relatively narrow range bounded by the different ETEs advanced by the adversary parties. We return to this point in our conclusions below.

9.10. Our view of the ETE issue is that even though evacuation time estimates are unlikely to be controlling factors in assisting New Hampshire officials in choosing the most appropriate protective actions for the summer beach population, the estimates should be as accurate as reasonably achievable under the state of the art, but with due consideration also given to their predicted use. The various experts presented by the Applicants, Massachusetts Attorney General, and the Staff, while clearly competent in the field of traffic engineering, and ETEs in particular, had no expertise in protective actions related to radiological emergencies. Therefore their strongly held views on how accurate ETEs should be were founded on their opinions of how accurate ETEs can be. They demonstrated no understanding of how ETEs in the range litigated would influence the protective action choice of the decisionmaker during a radiological emergency at Seabrook.

Description of the EPZ Beach Area

9.11. Although Seabrook Station is commonly referred to as being located on the New Hampshire seacoast, in fact it is located on the western edge of a harbor that is protected from the Atlantic Ocean by a series of low-lying barrier islands. These islands are from 1/4- to 1/2-mile wide and run from Hampton south through Seabrook and the Massachusetts towns of Salisbury, Newburyport, and Newbury. At various points, tidal marsh, instead of harbor water, separates the New Hampshire and Massachusetts mainland from these islands. The main inlet to this harbor is located about 1.7 miles directly to the east of the plant, and the state line between Massachusetts and New Hampshire is about 2 miles to the south. The chief problem confronting evacuation planners is that few roads lead onto and off the islands, yet some of New England's most beautiful sandy beaches north of Boston are located on these islands, and these beaches attract tens of thousands of transient visitors during the summer. The barrier islands have also become quite developed and now contain a sizeable permanent population. There are also hundreds of beach houses and rental units which are populated only during warm weather, as they are not winterized. Many stores, shops, restaurants, and arcades are found concentrated in beach areas of Hampton and Salisbury. There are also two major state parks on the islands which attract thousands of beach-goers: Hampton Beach State Park and Salisbury Beach State Reservation.

9.12. An understanding of the road network in the beach areas is essential to an understanding of the evidence, the Board's findings, and the evacuation concerns. Coastal Route 1A is the one road that traverses the barrier islands in New Hampshire from north to south. It is a two-lane road. DeMarco and Lally, ff. Tr. 3659, at 5. This road, also known as Ocean Boulevard, extends north across the state line out of Salisbury Beach and runs for about 1 1/2 miles through Seabrook's beach area. Heading further north, it then crosses the Hampton Harbor Bridge and passes through the crowded beach area in Hampton. *Id.*; Adler, ff. Tr. 7109, at 2. After winding about 4-5 miles through Hampton, it then winds along the coast to the north, through the EPZ towns of North Hampton and Rye, and finally ends in downtown Portsmouth. Adler, ff. Tr. 7109, at 2.

9.13. The other major north-south routes in the EPZ are Route 1, which is on the mainland and parallels Route 1A about 3 miles to the west of the coast, and Interstate 95, a limited-access multilane expressway, which is about 4 miles west of the beaches. *Id.* The obvious traffic strategy for an evacuation when the beaches are crowded is to get those in the beach areas onto I-95 as quickly as possible. The problem is that there are only five roads connecting coastal Route 1A with Route 1 over the 10-mile stretch between Seabrook and Portsmouth and each one is a two-lane road (one lane in each direction). Outside of Portsmouth there are only three access points onto I-95 from roads leading

west from Route 1: at Route 110 in Amesbury; at Route 107 in Seabrook; and at Route 51 in Hampton. The latter access junction, Route 51 at I-95, is the choke point or controlling traffic-control point affecting the overall evacuation time for the beach area. A map of the Seabrook beach Area EPZ is appended to this decision.

Applicants' Case

9.14. Volume 6 of the New Hampshire Radiological Emergency Response Plan (NHRERP) Revision 2, includes a series of evacuation time estimates for the general population for nine different regions and ten different evacuation scenarios. NHRERP, Vol. 6, at 10-6 to 10-10. As noted below, some of the ETEs for certain scenarios have been superseded by testimony at the hearing. Volume 6 also contains the traffic management plan which the State of New Hampshire has chosen to rely upon (*see id.*, §§ 7-9 and Appendices I-L), and a description of the study done to estimate evacuation times based on that traffic management plan. *See id.*, §§ 1-6, 10, and Appendices A-H, M, and N. Section 12 describes surveillance procedures for spotting road blockages caused by disabled vehicles and recommends locations for positioning tow trucks during an evacuation. All the work reflected in Volume 6 was prepared by KLD Associates, Inc., under the direction of Edward B. Lieberman. Tr. 5638. The work was done over the 12-month period from August 1985 to August 1986, when Revision 2 was published. NHRERP, Vol. 6, at 1-1.

9.15. The Applicants' panel of witnesses for their direct case on this subject consisted of Messrs. Callendrello and Frechette, whose professional qualifications were described in § 2, *supra*, joined by Gordon Derman, President of Avis Air Map Company (Qualifications, ff. Tr. 5260), Edward B. Lieberman, of KLD Associates (Qualifications, ff. Tr. 5617), who calculated the ETEs, and Dennis S. Mileti, Ph.D., Professor of Sociology and Director of the Hazards Assessment Laboratory at Colorado State University (Qualifications, ff. Tr. 5619).

9.16. Mr. Lieberman is a recognized authority in the field of ETE development and was, until the change of position on Seabrook by the Commonwealth of Massachusetts, the expert retained by the Commonwealth which, *inter alia*, performed an independent technical review of Mr. Lieberman's methodology and found it acceptable. Tr. 6781-87.

9.17. The panel members individually and as a whole were competent to testify on the subjects addressed.

9.18. In addition, rebuttal testimony was presented by the Applicants with respect to certain surveys presented by witnesses for the Mass AG (Appl. Reb. No. 3, ff. Tr. 9154; Appl. Reb. No. 4, ff. Tr. 9155), by a panel including Dr. Mileti and Bruce David Spencer, Ph.D., Director of Methodology Research

Center NORC, University of Chicago and Associate Professor of Statistics and Education at Northwestern University (Qualifications, ff. Appl. Reb. No. 3, ff. Tr. 9154). The Board finds that Dr. Spencer and Dr. Mileti were competent and qualified to testify as to the subjects they addressed.

ETE IDYNEV Model

9.19. In the NHRERP a number of ETEs for various scenarios were presented. Appl. Exh. 5, Vol. 6, § 10.

9.20. These estimates were made by using a computer model known as IDYNEV. *Id.* at 10-1.

9.21. IDYNEV (Interactive Dynamic Network Evaluation) is an analytical tool developed by KLD for FEMA. It consists of an equilibrium traffic assignment submodel, a macroscopic traffic simulation submodel, and an intersection capacity submodel. *Id.* at 1-12. According to Dr. Urbanik, the NRC Staff's ETE expert, the IDYNEV model is the state-of-the-art technology for ETEs. Mass AG Exh. 10 at 1; Tr. 7440-42.

9.22. Although the Massachusetts Attorney General, through his expert witness, Dr. Avishai Ceder, criticized the IDYNEV model on many grounds in his testimony (ff. Tr. 5169), the Applicants and Staff handily fended off his criticisms. Appl. and Staff PFs 6.1.15–6.1.53. In his proposed findings the Attorney General declines to address the merits of the IDYNEV model, urging the Board not to resolve the matter. The Attorney General's surviving complaint is that Dr. Ceder was not provided the source code for IDYNEV — a matter not pursued during discovery. *See* MAG PFs 6.1.427–6.1.253. The Board notes that the Attorney General's well-qualified witness, Dr. Adler, also used IDYNEV in his analysis of the ETEs. We conclude that IDYNEV is appropriate for use in determining ETEs for nuclear power plants.

9.23. In direct testimony presented during the hearings, the Applicants presented updated ETEs, also made through the use of IDYNEV, but which took into account, *inter alia*, (a) information obtained from more recent aerial surveys which affected population estimates and vehicle estimates, (b) new ramp-capacity assumptions set out in the 1985 Highway Capacity Manual, (c) an assumption of a larger voluntary or "shadow" evacuation in areas within and beyond the EPZ, (d) a more detailed representation of through traffic along the interstate highways, and (e) three additional analysis regions. Appl. Dir. No. 7, ff. Tr. 5622, *passim*, and particularly at 42-43.

9.24. After publication of NHRERP Revision 2 (Appl. Exh. 5, Vol. 6) and during the course of the proceeding, additional ETEs were generated. A matrix showing ETEs for the various areas of evacuation and scenarios (i.e., weather conditions, day of week, time of day, and season) are set out in the record. Staff Exh. 1, ff. Tr. 6742.

9.25. These ETEs are expressed in time from the Order to Evacuate (OTE) and do not include the times between notification or an order for "beach closure" and the OTE; this was done because beach closure may precede an OTE by hours and possibly days in a given situation. Appl. Dir. No. 7, ff. Tr. 5622, at 77; Tr. 6751-53.

9.26. The effect of the new IDYNEV runs on the various ETEs was an increase of 95 minutes to a decrease of 15 minutes, depending upon the scenario and region being considered. *Compare* Appl. Dir. No. 7, ff. Tr. 5622, at 42-43, *with* Appl. Exh. 5, Vol. 6, at 10-6 to 10-10.

Intervenors' Case

9.27. The Massachusetts Attorney General was the lead Intervenor on the ETE issues and presented the only expert testimony. SAPL also presented testimony, that of Mrs. Mimi Fallon and State Representative Beverly Hollingworth, whose testimony was helpful to the Board.

9.28. The Mass AG's ETE witnesses included Dr. Thomas Adler, the president of Resource Systems Group, Inc.; Dr. Colin High, Research Associate Professor of Engineering and Environmental Studies, Dartmouth College; and Dr. William Befort, Assistant Professor of Forest Resources, University of New Hampshire.

9.29. The Attorney General also presented Dr. Avishai Ceder, Visiting Professor of Civil Engineering and principal-in-charge of traffic engineering and network optimization projects at Massachusetts Institute of Technology, and Dr. Albert Luloff, Associate Professor of Rural Sociology and Community Development, University of New Hampshire. Dr. Ceder's testimony challenged the validity of the IDYNEV code, and, as we noted above, the Attorney General did not pursue Dr. Ceder's substantive criticisms. Nor did the Attorney General follow through on Dr. Luloff's testimony on population growth rates and population distributions within the EPZ. *See* Appl. PFs 6.1.54–6.1.70.

9.30. Other Attorney General witnesses, Dr. Stephen Cole, Dr. Donald Zeigler, and Dr. James Johnson, Jr., were presented on the human factors aspects of emergency evacuations, and their testimony was addressed in that section of this decision.

9.31. Intervenors' primary ETE witness was Dr. Adler. He has a Ph.D. from Massachusetts Institute of Technology in Transportation Systems. Adler, ff. Tr. 7181, at 2, and Attach. 1. Over the period 1976 to 1986 he was a professor in the Resource Policy Center, an academic and research program of the Thayer School of Engineering at Dartmouth College. *Id.* At Dartmouth he taught graduate- and undergraduate-level courses in the areas of transportation systems analysis, transportation engineering, transportation planning, computer/mathematical modeling techniques, statistical analysis, and computer science. *Id.* He also

directed a program of research for clients such as the U.S. Department of Transportation, U.S. Department of Energy, and others in the general area of computer modeling of transportation systems. *Id.*

9.32. Since 1986, Dr. Adler has been the president of Resource Systems Group, Inc., a private consulting firm, where he has maintained research and project activities similar to those he pursued while at Dartmouth. Dr. Adler conducted a review and evaluation of the validity and reliability of the Seabrook Station ETE study and traffic management plan incorporated into Volume 6 of the NHRERP. *Id.* at 6. In doing this work he obtained from KLD a compiled version of the IDYNEV computer program and the computer tapes of the input files KLD used for the ETE study documented in Volume 6. *Id.* at 7. As the Attorney General puts it "he got the IDYNEV model up and running," and he examined all of KLD's input data. He then conducted over seventy-five separate model runs and sensitivity tests using IDYNEV. We find that Dr. Adler, with his knowledge and experience, and equipped with a copy of the IDYNEV model, was well qualified and equipped to comment on the adequacy of the ETE study and the accuracy of the ETEs it produced. We also find that his testimony was helpful, but that portions of his critique of the KLD study were beyond the area of his expertise.

9.33. The Attorney General elected to consolidate his case into proposed findings on four "overarching problems with the ETE analysis and traffic management plan." MAG PF 6.1.43. We agree with the Attorney General that the problems he has elected to confront in his proposed findings are probably those that require the most serious consideration by the Board.

9.34. The major issues the Attorney General elected to pursue concern his claim of critical inadequacies in the planning with respect to: (1) returning commuters; (2) vehicles in the beach areas; (3) the late staffing of traffic and access control posts; and (4) the IDYNEV model. *Id.* Given the Board's discussion of the Attorney General's position on the IDYNEV model, above, we infer that leaving that issue in the list of the major issues troubling the Attorney General was the result of a drafting error. The other three issues, however, are important as we note in the following findings.

Returning Commuters

9.35. Contentions TOH III(D) and SAPL 31(7) raised the issues pressed by the Intervenors at the hearings, whether the Volume 6 ETE study adequately considered the effects on the ETEs of the thousands of returning commuters whose vehicle trips home would occur simultaneously with the evacuation trips of others. By way of introducing his concerns about returning commuters and other ETE issues, the Attorney General, citing from Dr. Ceder's testimony, explains that essentially IDYNEV performs ETE calculations by simulating or

"modeling" all the vehicular trips that would likely occur on the EPZ road network under a variety of different evacuation scenarios. Ceder, ff. Tr. 5169, at 4. Dr. Ceder explained further:

> Stated simply, IDYNEV is a computer model into which is put instructions describing each key link of roadway network and each key intersection to be used in the evacuation. The model is then given inputs for the number of vehicles entering the simulated roadway network at various "entry nodes," *i.e.*, points at which vehicular evacuation trips originate. Next, the IDYNEV model assigns the input vehicles to certain links (based on some behavioral assumptions) and simulates their movement across the network (based on some assumptions about speed, delay and congestion level). Following this simulation, the model calculates how long it would take to have all the vehicles travel to points 2 miles, 5 miles, and 10 miles from Seabrook Station (or to the EPZ boundary, which in some points is almost 14 miles from the nuclear plant). . . . As is described in Volume 6, KLD Associates used the IDYNEV model to produce Seabrook's evacuation time estimates for ten (10) different scenarios, depending on the season/day/time/weather combinations.

Id. at 4-5. Figure 1-3 on page 1-13 of NHRERP Volume 6 is a graphic display of the IDYNEV model's "link-node" representation for the Seabrook Station EPZ road network.

9.36. The number of vehicle trips modeled during each IDYNEV computer run is, of course, one of the critical variables. In conducting its ETE study, KLD Associates estimated what the total number of vehicle trips would be. This process was referred to as roadway "demand" estimation. NHRERP, Vol. 6, 2-1 and *passim*.

9.37. Section 2 of Volume 6 specifically describes the demand estimation process KLD used for estimating the total number of vehicular trips that would be generated in the evacuation process by some nine groups. By process of elimination we infer that returning commuters must be included in the first group: "permanent residents: evacuation trips taken after leaving their homes" (at 2-5, *et seq.*).

9.38. This inference is confirmed in § 5 of Volume 6 which describes the demand estimation process utilized for the employee population. There it is noted that for purposes of estimating evacuation traffic, those employees who work within the EPZ and who live within the EPZ have already been counted as part of the permanent population. *Id.* at 5-1.

9.39. Dr. Adler, who examined the KLD computer runs, testified that these "return-home-from-work" trips were not explicitly modeled in any of the evacuation scenarios even though they would add a significant number of trips to the road network during an evacuation. Adler, ff. Tr. 7181, at 30. This testimony was uncontradicted as far as we can determine. Dr. Adler stated that the 1986 employment data contained in Volume 6 indicate that there could be up to 54,488 such commuter trips home by residents of the EPZ. This is not a useful figure, however, because it assumes that everyone working within and

without the EPZ who has a home within the EPZ would return to that home before evacuating. *Id.*

9.40. In his rebuttal testimony, Dr. Adler presents an analysis of how many trips would likely be generated by commuters who would want to return to their homes in the EPZ during an emergency at Seabrook Station. Adler, ff. Tr. 9524, at 4-5. He calculated that there would be 35,200 commuter trips home that will occur and 41,500 trips that might occur. *Id.* at 5. This testimony, too, was uncontradicted, but the Board intuitively regards the figures as excessive. Moreover, from the estimate of 35,000 to 41,000 commuter-generated trips, Dr. Adler builds an argument that would invite an inference that these commuters are all tripping around the EPZ on their way home and are uncounted. It is by no means clear that this is the case. In fact, the figures advanced by Dr. Adler do not include the commuters who begin their trips home from the beach, who as we note below have been considered in the ETEs. During summer peak days, those would necessarily be a large proportion of the total.

9.41. Nevertheless, if Dr. Adler's thesis is correct, a significant number of trips by commuters to their homes were not modeled in the IDYNEV runs.

9.42. Next Dr. Adler raises the problem of "commuter surging." This concern relates to "commute-home times." He states that, in making its ETE calculations, KLD assumed that after public notification of an emergency at Seabrook Station, returning commuters will have commute-home times that are normal for the late afternoon peak-hour conditions. Appl. Dir. No. 7, ff. Tr. 5622, at 78-79. *See* NHRERP, Vol. 6, at 4-10. But the traffic conditions that exist during a commuter's normal trip home will not resemble the much more congested conditions that will occur after notification of an emergency at Seabrook Station. Adler, ff. Tr. 7109, at 29-30; Adler, ff. Tr. 9524, at 6.

9.43. After comparing information adduced by KLD Associates and data from Social Data Analysts (the Attorney General's contractor), the Attorney General urges the Board to find "[i]t is simply not reasonable to assume that under these circumstances returning commuters will be able to drive home as quickly as they could under normal conditions." MAG PF 6.1.65, *citing* Adler, ff. Tr. 9524, at 6.

9.44. Then, according to the Attorney General, by assuming that commuters return home earlier than could realistically be expected, the KLD analyses use trip generation times for evacuating households that are unrealistically short. This has the effect of lowering ETEs for all scenarios according to Dr. Adler. Adler, ff. Tr. 9524, at 6.

9.45. But, having made the argument, the Attorney General seems to back off when he states that the primary concern is not that delays in driving home have not been properly addressed. MAG PF 6.1.73. According to the Attorney General the assumptions KLD made about preparation times at home may or may not compensate for the realistic delays commuters will experience driving

home. If they did not, then KLD did not utilize a "trip generation distribution" for IDYNEV that is realistic. *See* NHRERP, Vol. 6, Ch. 4. While Intervenors do dispute that KLD's trip generation times are realistic (Adler, ff. Tr. 9524, at 6A), their chief concern lies elsewhere in the failure of IDYNEV to model the returning commuters' trips at all. It is the delays these trips cause to other evacuees that is the primary focus of Dr. Adler.

9.46. Applicants challenge Dr. Adler's commuter-surge hypothesis by first challenging his interpretation of the data. *See* Appl. PF 6.1.156. Then Applicants point out that the model compensates commuter travel delays by making a pessimistic assumption in connection with the mobilization process.

9.47. However, as it turns out, the extended debate about the effect on ETEs by delays in commuter trips home and "commuter surge" is more simply resolved. As Applicants point out, "delay in commuters joining the evacuation stream to leave the EPZ has no effect on the ETE so long as the trip generation time is not lengthened to the point where it approaches what would otherwise be the ETE." Appl. PF 6.1.154, *citing* Tr. 6712. The commuters' trips from home once they arrive there have been included in the IDYNEV input. Tr. 6793-95.

9.48. Stated in its simplest terms, it does not matter (to the ETE) how long it takes a commuter to get home before he begins to evacuate the EPZ, assuming road network congestion, because the commuter will simply join the evacuation stream after he leaves his home and that trip has been included in the analysis. Extended times for commuter trips home may affect who evacuates first in that the commuter may be farther up the evacuation stream than others. It could be that if the commuter is very late arriving home and then begins his evacuation trip after almost everybody else is gone, he has missed the maximum efficient evacuation, but that scenario is not argued by the Attorney General and is not a problem. Almost all commuters will leave work relatively early in the evacuation. *See* Appl. PFs 6.1.155-6.1.156. The real issue is what effect the returning commuter has upon the ETEs and other evacuees by using the road network to get home.

9.49. Dr. Adler's first point on the possible effect of the returning commuters' trips is about the "frictional" factor times. This is where commuters are postulated to return home *against* the evacuation stream. *See generally* Adler, ff. Tr. 7181, at 28-31; Adler, ff. Tr. 9524, at 4-8. One assumption built into the model was that there would be a 10% directional "split" for traffic moving over two-way roads (i.e., of the traffic on the roads, 90% would be moving outbound and 10% moving inbound). Adler, ff. Tr. 9524, at 7. *See* NHRERP, Vol. 6, at 3-8. When traffic flows in opposite directions on undivided roads, there is a "frictional" interaction which has the effect of reducing the capacity of the road. *Id.* To find out what the capacity reduction factor is for a 90-10 "split," KLD referenced the Highway Capacity Manual ("HCM") and found it to be 0.75. *Id.*

9.50. Dr. Adler believes that based upon his estimate of some 40,000 commuter trips after the notification of an emergency, the 90-10 directional split should be regarded as being in the range of 70-30 or 60-40. Tr. 9536-37. However, Dr. Adler does not explain how he arrived at the larger proportion of inbound to outbound drivers. Applicants do not address the matter. *See generally* Appl. PF 6.1.52, *et seq.* The Board does not believe that matter is of serious consequence. First, the 0.75 capacity reduction factor cannot be assumed to be linear when the directional split changes. Logically, frictional effects would not seem to be very sensitive once the incoming lane becomes loaded with traffic — especially given the assumption that evacuating traffic will also be congested (known in the field as "Level of Service F"). Presumably the Highway Capacity Manual provides values for splits other than 90-10, and we assume that Dr. Adler has access to the Manual. There was no need for conjecture on his part. Nor will the Board entertain conjecture now.

9.51. Next Dr. Adler raises the issue of commuters moving *across* the general flow of evacuating traffic as they make their way home. According to Dr. Adler, commuter trips that flow across the flow of evacuating traffic at crucial intersections in the EPZ will have the effect of reducing the effective "green time" available to evacuating traffic at these intersections because the evacuating traffic will be forced to "give up time" to cross flows of commuter traffic. The Attorney General contends that the effects of cross flows of commuter traffic have not been included at all in the evacuation traffic model. The cross flows were not modeled, nor were their effects on intersection capacities considered. MAG PF 6.1.61, *citing* Adler, ff. Tr. 7109, at 30.

9.52. The most important effect upon the evacuation ETEs would be commuter trips to home that flow *with* the evacuation stream. Dr. Adler argues that these trips will also reduce the amount of roadway capacity available to the evacuating public and that this effect is not included or considered at all in the evacuation traffic model. *Id.* Instead, commuters whose trips home originate toward the center of the EPZ and terminate at home at some point farther out in the EPZ are assumed to magically show up at their homes without having traveled on the roads with the flow of evacuating traffic. MAG PF 6.1.59, *citing* Adler, ff. Tr. 9524, at 7. The operative phrase here is "trips home originate toward the center of the EPZ" because commuter trips from the beach to home have already been accounted for in vehicle counts and the estimation of the beach population. The commuters working at the beach, during the peak summer season, would clearly constitute a major portion of the problem, but should not be considered in Dr. Adler's hypothesis.

9.53. Dr. Adler explained that in fact there are likely to be many EPZ residents who work at the many places of employment along Route 1 in the Hampton/Seabrook area who, in order to return home to EPZ towns to the north (e.g., Exeter, Newfields, Stratham, Greenland, or Portsmouth), would have to

go through the critical intersection at I-95/Route 51. Tr. 7259-60. While the KLD study assumes that all these commuters will return home and then, using IDYNEV, accounts for their evacuation trips *from* their homes, it ignores their return trips home altogether. In doing so, it jumps these vehicles over the I-95/Route 51 intersection, an important constraining element in the evacuation of those persons in the beach areas and in other areas close to the nuclear plant. It puts them in places from which evacuation out of the EPZ is not constrained. Tr. 7259. The result is that the ETEs reported by KLD for the beach area evacuees and others are low.

9.54. Applicants do not address this problem directly. The closest they come is their proposed finding that the portion of commuter traffic that moves along with the evacuees will not affect the ETEs because the commuters will at some point leave the traffic stream to go home, and the gaps they leave will be filled by the evacuating vehicles. Appl. PF 6.1.57.

9.55. But the Attorney General counters that while this might be true where only a few commuter vehicles are in a traffic queue with a large number of other vehicles, Dr. Adler's test run adding only 200 commuter trips to the model demonstrates that it is not true when a hundred or more commuters are present on a given link over the period of time that commuter trips are expected to occur. This test run, which is described on pages 7-8 of Attachment 8 to Dr. Adler's direct testimony (ff. Tr. 7181) examined the effect of only 200 commuters traveling on Route 51 with the evacuation flow onto I-95 on-ramp (*see* NHRERP, Vol. 6, at I-39) under the summer weekend conditions. The ETEs for the northern part of the EPZ went up 10 minutes, while the Hampton Beach ETE went up 15 minutes. Thus, it appears that when the evacuating traffic stream passes through a constraining element, which could be an intersection, an on-ramp, or a narrow "bottleneck" link, the presence of even a few hundred commuter vehicles flowing along with evacuation traffic will reduce the ability of that constraining element to service the evacuating vehicles (*see* Tr. 9537), and will increase the ETEs along that evacuation pathway. Because Dr. Adler believes there are likely to be tens of thousands of returning commuters on weekdays (*see* Adler, ff. Tr. 9524, at 4-5), the potential effects on ETEs for some regions are substantial. He stated that ETEs could be extended by several hours, presumably during weekdays. *Id.* at 8.

9.56. Applicants claim that Dr. Adler's exercise of adding the 200 commuters to the traffic stream on the critical path, and the resultant 10-minute increase in the ETE is spurious, because the model "already assumes all commuters who return will evacuate and accounts for them." Appl. PF 6.1.159.

9.57. The Board has not been able to fathom Applicants' position on this issue. Although Dr. Adler clearly and repeatedly, early in the proceeding, explained that he *knows* that the KLD study includes the commuters at the point where they leave their homes, his concern is how did the KLD study get

the commuters through the constraining roadway links on their way home. That is the Board's concern too. Applicants have never faced the issue, they are in default, and the record remains incomplete.

9.58. Dr. Adler stated that he "cannot exclude the possibility that the commuter traffic flows, if fully included in the KLD baseline analysis, would extend the ETEs by several hours." Adler Reb., ff. Tr. 9524. That carefully hedged speculation is hyperbole. As we noted above, Dr. Adler would allow the commuters starting home from the beach to be added to the problem, when it is undisputed that the commuters' summer beach vehicles have already been accounted for. Further, the Attorney General blends two mutually inconsistent scenarios. The large number of returning commuters would be expected on weekdays. Yet the problem with the constrained roadway elements through which Dr. Adler passes them on their way home is a summer weekend problem because of the swollen beach population.

9.59. But overall, the Attorney General's position is a responsible one. He does not seriously argue that the ETEs would in fact be extended by hours, only that a better job can be done in modeling commuter trips than by ignoring them completely. Dr. Adler testified that he and his colleagues have data that can be used to better account for returning commuters. Tr. 9538.

9.60. The Board believes that the omission of the commuter trips to home will not have a large effect on the ETEs. Perhaps the answer lies somewhere in the record and we simply haven't found it. It is extremely unlikely that adding the commuter trips to home will influence a protective action. Nevertheless the New Hampshire decisionmakers are entitled to the most accurate ETE reasonably achievable. Therefore the Board retains jurisdiction over this aspect of the proceeding so that we may return to the parties for further advice.

Delayed Staffing of Traffic Control Points

9.61. SAPL 31, Basis 4, asserts that the ETEs presented in Volume 6 are not realistic because they were calculated using the unrealistic assumption that traffic management and control measures are in effect at the time the evacuation is ordered. This issue is also raised by TOH III, Basis C(2). Dr. Adler testified that the IDYNEV results presented in Volume 6 assume that all of the traffic control posts are fully operational from the beginning of the beach closing (which is assumed in the ETE study to occur 25 minutes before the order to evacuate). Adler, ff. Tr. 7181, at 44.

9.62. In a rapidly developing accident, this assumption may be unwarranted. Because of the limited number and locations of available police officers, sufficient traffic guides would not be able to man all traffic control posts (TCPs) in the short period of time before evacuation begins. Applicants do not dispute this fact. They respond to the contentions with the expert testimony

of Mr. Lieberman that a series of "sensitivity runs" on the IDYNEV model demonstrates that delayed staffing of traffic control posts would have a minimal effect on the ETEs in most cases. We discuss this point in the following findings.

9.63. The Attorney General filed extensive proposed findings on this issue (MAG PFs 6.1.190–6.1.246) which wander among the subissues of: (1) whether the ETEs are inaccurate because of delayed TCP staffing, (2) whether the State's traffic management plan is inadequate on that account, and (3) in a discourse beyond the expertise of its traffic experts, whether aberrant driver behavior in emergencies will result from delayed staffing — a question that should have been directed to the section on human behavior. The Board had difficulty following the Attorney General's arguments on this issue because he repeatedly mixes the concept of evacuation time estimate *accuracy* with the concept of expeditious evacuations. This is exemplified by his concluding proposed finding on the issue:

> Moreover, before we can approve any future set of ETEs as being realistic for the conditions at hand, we must be assured that the number of traffic guides is sufficiently large to provide us with reasonable assurance that the beach areas can be evacuated in an orderly fashion. The current plans have an inadequate number of traffic guides who can be in place during the first two or three hours of an evacuation to provide us with this assurance.

9.64. The Board has approached the issue from both perspectives: i.e., whether delayed staffing renders the ETEs inaccurate in a rapidly developing accident, and whether such delayed staffing renders the New Hampshire traffic management plan inadequate notwithstanding the ETEs.

9.65. NHRERP, Volume 6, at 8-11, indicates that there are seventy separate traffic control posts in New Hampshire. According to Volume 6, traffic control posts are designed to perform a number of rather obvious functions: (1) facilitate evacuating traffic movements that serve to expedite travel out of the EPZ along the planned evacuation routes; (2) discourage traffic movements that permit evacuating vehicles to travel in a direction that takes them significantly closer to the power station; and (3) resolve potential conflicts between traffic streams at intersections by assigning right-of-way so as to promote safe operations and to keep traffic moving. NHRERP, Vol. 6, at 7-1, 8-4.

9.66. In addition to traffic control posts (TCPs) there are also access control posts (ACPs). Table 9-4 in Volume 6 (at 9-12) contains a list of the nineteen access control posts in New Hampshire and a summary of the personnel and equipment needed at each.

9.67. The principal purpose of ACPs is to restrict entry to the EPZ. *Id.* at 9-1. Obviously ACPs are important in a radiological emergency, but for this issue, they are most important because they absorb available police officers.

9.68. Some EPZ towns do not have sufficient local manpower to staff all the traffic control posts in the town. *See, e.g.*, Appl. Exh. 1, Table 2.2-4, ff. 2-11.

In such towns, the State Police have been assigned to staff those traffic control posts that local responders cannot staff. Altogether, the EPZ towns are expected to provide seventy-two traffic guides, and the State Police will provide forty-eight more to staff the traffic control points inside the EPZ. *See* Appl. Exh. 1. This means that 40% of all traffic guides at TCPs in the EPZ towns are expected to be State Police Troopers.

9.69. There is also a need for twenty-six State Police Troopers to be placed at access control posts in addition to the forty-eight who are to staff traffic control posts. According to the Attorney General, eleven additional State Police Troopers will be needed to provide assistance to those municipalities anticipated to require full state assistance. *Id.*, Table 3.1-3 and 3.1-4, at 3-6 and 3-7. This latter group of eleven Troopers, however, are to be assigned where there is local nonparticipation in the emergency response. But we presume that in fact those municipalities will respond, so the number of additional Troopers needed is uncertain. But it is not disputed that at least seventy-four State Troopers would be needed to staff all TCPs and ACPs in the EPZ. MAG PF 6.1.203.

9.70. Captain Sheldon Sullivan of the New Hampshire State Police testified that Troop A covers Rockingham County, where Seabrook Station is located. Tr. 4676. But Troop A has only thirty-six Troopers and on any given shift, including a summer weekend, would have only six or seven Troopers on duty. Tr. 4677 (Sullivan). Another six or seven would be on call. Tr. 4677-78. For the State Police to provide all of the Troopers required to staff all the TCPs and ACPs assigned to it in an EPZ-wide evacuation, other troops from other parts of the state would be mobilized. *See* Tr. 4679-80.

9.71. Captain Sullivan testified that after the State Police are told to move into the EPZ (Tr. 4725), he estimated that only four could respond and reach TCPs and ACPs in 15 minutes and only three additional Troopers could reach TCPs/ACPs within the next 45 minutes. Tr. 4714. Thus, only seven Troopers could arrive at TCPs/ACPs within the first hour after being notified to move into the EPZ. In the next hour, Captain Sullivan estimates that only six more Troopers would arrive at TCPs. Tr. 7415. Thus, within the first 2 hours after being told to move into the area, only thirteen Troopers would have arrived at TCPs. After that, additional Troopers would continue to arrive so that within 5 hours after notification, about 100 Troopers would be on duty. *Id.*

9.72. Therefore, in a fast-breaking accident of the type assumed in calculating scenario 1 of the ETEs, the State Police will not be able to have all or even most of the seventy-four Troopers who would be required to staff all ACPs and TCPs in the EPZ report to those posts prior to the declaration of the beach closing or the order to evacuate. The Intervenors' position that, for the planning-basis accident on which the ETE study was based (NHRERP, Vol. 6, at 4-1), the study did rely on an erroneous assumption, i.e., that all traffic management

and control measures would be in effect at the time evacuation is ordered. As we noted at the outset, Applicants' witnesses acknowledged this fact.

9.73. This means that during the first hours of a fast-breaking accident for which an *EPZ-wide evacuation* has been called, numerous traffic control posts will not be implemented fully as described in the plans. We turn first to the issue of whether the ETEs are fatally inaccurate on that account. Applicants, of course, did not ignore the significance of the problem. *See generally* Appl. PFs 6.1.131–6.1.139.

9.74. First, as Applicants point out, Dr. Adler himself made a run with IDYNEV which assumed that the very important TCPs at the Route 110/I-95 and I-95/Route 51/ Route 101C were not fully operational until 1 hour and 45 minutes into the general evacuation or about 2 hours after beach closing; the result was a 7% increase in ETEs. Adler Dir., ff. Tr. 7181, at 45.

9.75. The Applicants made several sensitivity runs assuming late or no manning of traffic control points. Appl. Dir. No. 7, ff. Tr. 5622, at 44-48, 67-68. The purpose of the first sensitivity run was to quantify the effect on ETEs of the late arrival of some traffic guides at control points during the summer season. Based on the information provided by the New Hampshire State Police, noted above, four State Police will report to the assigned control points within 15 minutes of the beach closure. Three more will report to their respective control points within the following 45 minutes; and six additional police will arrive within 2 hours of beach closure. This assumed manning schedule will have the following impacts on highway capacity relative to that used for the planning basis:

- The Route 51 overpass of I-95 will service only one lane of westbound flow for a period of 1 hour following the beach closure. Thereafter, two lanes will be established to service westbound evacuating flow.
- The intersection of Routes 1 and 101C will not be manned until 2 hours after beach closing. It is assumed that evacuees will respond to existing signal control even in the presence of no competing traffic flow.
- During the first 2 hours, evacuees from Hampton Beach will not be discouraged from traveling south over the Hampton Harbor Bridge into Seabrook. Subsequently, all Hampton Beach evacuees will travel north and west, only.

Appl. Dir. No. 7, ff. Tr. 5622, at 44-45.

9.76. The purpose of the second sensitivity run was to examine the sensitivity of ETEs with respect to any possible further delay in manning the Route 51 overpass of I-95. Specifically, it is assumed for this run that the State Police established the TCP there 2 hours after the beach closing. *Id.* at 45-46.

9.77. The third sensitivity run examined the impact on ETEs if none of the capacity-enhancing TCPs in Massachusetts were established.

— The intersections of Routes 1 and 286, and of Routes 1 and 1A, both in Salisbury, were assumed to service evacuating flow with the existing signal-control policy. It is assumed that evacuees would not violate this policy even in the absence of competing traffic flow.
— Only one ramp will service westbound evacuating traffic along Route 110, onto Southbound I-95.

Id. at 46.

9.78. The results of these sensitivity runs indicate that in the case of Run No. 1, the ETE for the entire EPZ will be reduced by some 20 minutes; in Run No. 2 the ETE is increased by 5 minutes; and the ETE will increase by 2 hours under the circumstances modelled in Run No. 3 if the TCPs in Massachusetts remain unmanned throughout the evacuation. *Id.* at 46-48. If the Massachusetts TCPs are established, even with a delay, the ETEs will be reduced below the Run No. 3 time. These ETEs will approach those of the planning basis if delay in establishing these TCPs is moderate. Adler Dir., ff. Tr. 7181, at 45.

9.79. Dr. Adler disagreed with Applicants' argument that these "sensitivity" runs have "adequately analyzed" the delays in the arrival of the State Police. He argues that the results of these IDYNEV runs were obtained only because, in conducting these "sensitivity" runs, Mr. Lieberman did not hold all other variables constant and, instead, changed a number of variables unrelated to staffing at the Route 51/I-95 overpass. This roadway link is recognized as the most critical of any in the EPZ. According to Dr. Adler, these other changes result in the IDYNEV model sending fewer vehicles through this crucial bottleneck. Adler, ff. Tr. 9524, at 3.

9.80. In particular, Dr. Adler and the Attorney General challenge one of the more controversial changes introduced into the IDYNEV model for these sensitivity runs. As noted above, Mr. Lieberman assumed that, during the first 2 hours, evacuees from Hampton Beach were not "discouraged" from travelling south over the Hampton Harbor Bridge into Seabrook. Appl. Dir. No. 7, ff. Tr. 5622, at 45. Mr. Lieberman reasons that since the Avis (airplane) photos reveal the Hampton Beach traffic to constitute the critical path, "any movement south over the bridge could expedite the evacuation." *Id.* at 47. This routing, however, would take evacuees "somewhat closer" to the Seabrook Station. *Id.* For the sensitivity runs, Mr. Lieberman modeled IDYNEV to assume that up to 900 vehicles will travel south (in the direction of Seabrook) by the time TCP A-HB-01 (just north of the Hampton Harbor Bridge) is manned, and thereafter it assumes that all traffic in Hampton Beach moves north, then west. *Id.*

9.81. Intervenors pounce on Mr. Lieberman's assumption that some evacuating vehicles will move south (closer to the plant) before the relevant TCP is manned. Beginning a line of reasoning that implies that Mr. Lieberman *ordered* the evacuees closer to the plant, rather that having IDYNEV simply

assume that movement, the Attorney General charges the Applicants with "blatant" hypocrisy. MAG PF 6.1.234.

9.82. The background of this charge is that, in his direct testimony, Dr. Adler suggested that one-third or two-thirds of Hampton Beach area visitors might evacuate south (said to be closer to plant) along Route 1A instead of following Route 51 west (the planned route) because, by going south, they can go home faster via I-95. Adler, ff. Tr. 7181, at 47.

9.83. Applicants called Dr. Adler's simple logic "unreasonable" because his assumption would violate the "criterion based in part on perceived human preference to move away from the accident." Appl. PF 6.1.124. But when Applicants' expert, Mr. Lieberman, needed to make realistic assumptions in his sensitivity runs, he readily assumed that a substantial number of cars would move "somewhat closer" to the plant. Unlucky for the Attorney General, while he made a good case that Applicants (or more accurately, Applicants' lawyers) dabbled in hypocrisy, he simultaneously destroyed his argument that the sensitivity run unrealistically assumed traffic movement south over the bridge and closer to the Seabrook plant. MAG PF 6.1.234.

9.84. Thus both experts agree — in the event of an emergency, with delayed TCP staffing at the Hampton Harbor Bridge, substantial traffic movement south, somewhat closer to the plant will occur. We have not overlooked the fact that neither Mr. Lieberman nor Dr. Adler are human-behavior experts and that their views on this point are lay observations. Nevertheless, the assumption is reasonable, and we find that Mr. Lieberman's sensitivity runs adequately take into account the effect of delayed staffing of the TCPs upon the evacuation time estimates.

9.85. The debate over delayed staffing of the TCPs does not end with the foregoing finding, however. The Attorney General argues that there are other substantive reasons, however, why the Board should reject the Applicants' "sensitivity" analysis. Again confusing cause with effect, these reasons all relate in one way or another to the desirability of earlier staffing of the crucial TCPs. MAG PFs 6.1.236–6.1.246. In particular the Attorney General argues that whether the TCPs on either side of the Hampton Harbor Bridge (to discourage travel closer to Seabrook) should be staffed as soon as possible after a beach closing is a critical safety decision that the State of New Hampshire must make and that earlier staffing is in fact feasible. MAG PF 6.1.236.

9.86. The Board agrees with at least part of the Attorney General's argument. Whether or not the relevant TCPs are staffed earlier in the event of a radiological emergency at Seabrook is in fact a decision the State, not the Board, must make. But, we believe the Attorney General has overstated the problem relating to allowing traffic to move south over the bridge. The evacuation route maps in Volume 6 (Appendix K) do not clearly establish that allowing traffic to move south over the bridge, then west on Route 286, would take the traffic

closer to the plant. The plant is roughly equidistant from Routes 51, 1A, and 286. But assuming that the experts are correct on that score, the movement in that direction is not very much, and the trade-off may well favor an expedited evacuation south.

9.87. We do not find the State's traffic management plan to be inadequate because of the TCP staffing aspects for the following reasons: First, we note that New Hampshire has committed all its available State Police resources to traffic control in the event of an evacuation. There is no regulatory requirement that the State recruit more troopers in anticipation of a rare event. Second, the staffing problem arises from a postulated rapidly developing accident at the very end of the spectrum of accidents within the NUREG-0654 planning bases, but with the additional postulation that the accident occurs on a peak summer day. That particular accident sequence need not be isolated from all others for emergency traffic management purposes. Third, TCP staffing shortages revealed by this litigation would arise during a hypothetical evacuation of the entire EPZ. In an actual emergency, however, evacuation would be implemented on a municipality-by-municipality basis. Appl. Dir. No. 6, ff. Tr. 10,022, at 25. There are in fact seven Emergency Response Planning Area (ERPAs) for Seabrook into which the municipalities are grouped. NHRERP, Vol. 6, at 10-1. An evacuation of only a portion of the EPZ, even in a fast-breaking accident, will ameliorate or eliminate the problem of limited police mobilization.

9.88. The Attorney General makes several suggestions for earlier staffing of TCPs in Seabrook (MAG PF 6.1.236) and better ETE sensitivity depending on staffing sequences. *Id.*, 6.1.245. We will leave it to the State to assess the value of these suggestions for itself. As the Board noted earlier, New Hampshire emergency planning officials have closely observed this proceeding for opportunities to improve their radiological emergency response plan. We are confident that New Hampshire will allow no reasonable opportunity to pass without full evaluation and appropriate implementation.

Beach Population Estimates

9.89. There is no dispute that during the summer season, vacationers and other transients enter the EPZ beach areas in large numbers. These nonresidents may dwell within the EPZ for the entire summer season, for a month, for a week or two, for a day or two, or may enter and leave within the same day. NHRERP, Vol. 6, at 2-1, 2-2. The beach areas also contain some permanent residents. *Id.* at 2-9.

9.90. There is also no dispute that the population in the beach areas can vary widely from day to day and even over the course of a single day. *See id.* at 2-10, 2-13, and 10-12; *see generally* Appl. Exh. 32. One of the key factors behind these fluctuations is the weather. *See* Tr. 5748 (Lieberman).

9.91. There is also no dispute that the Volume 6 ETEs are sensitive to this variation in the size of the population in the beach areas. NHRERP, Vol. 6, at 10-12.

9.92. Dr. Adler testified that the ETEs are in fact "very sensitive" to variations in the beach population and that the reason for this is that it is precisely the evacuation routes that the beach area evacuees will have to use which are the most congested and which serve as a bottleneck to the entire region. Tr. 7036 (Adler).

9.93. The Massachusetts Attorney General characterizes the dispute over the size of the EPZ beach area population between the Applicants and Intervenors as centering on: (1) how large the total beach area population gets; (2) what information about the beach population should be used in an ETE study; and (3) whether the Volume 6 ETE study, even with Applicants' update work, provides decisionmakers with an adequate factual basis for making reasonably accurate judgments in an emergency about the ETEs for the extant beach area population at any point in time in the summer, given the widely variable nature of the size of this population. These issues are raised in Contentions TOH III(1), (3), and (A); SAPL 31(20); and SAPL 34. MAG PF 6.1.86. We find this a fair summary.

9.94. A major element of SAPL Contention 31 and the Town of Hampton Contention III was that the beach vehicles' contribution to the ETEs had not been accurately assessed in Volume 6 of the NHRERP. At the hearing, Applicants presented new data and proposed a revised ETE for the maximum beach population scenario. No witness defended the accuracy or realism of the Volume 6 beach population estimates and, on face, we find the Intervenors' allegation, that Volume 6 is inadequate and should be revised, fully supported by the record.

9.95. NUREG-0654, Rev. 1, Appendix 4, which provides guidance on what should be contained in an evacuation time assessment study, states that "[e]stimates of transient population shall be developed using local data such as peak tourist volumes and employment data for large factories." NUREG-0654, Rev. 1, at 4-3.

9.96. In preparing Volume 6 of the New Hampshire RERP, KLD Associates followed the NUREG-0654 guidance and sought to determine the "peak" size of the beach area population. However, independent of any set requirement of NUREG-0654, Mr. Lieberman of KLD Associates, the author of Volume 6, included in that Volume, at 2-10, a statement reading: "The evacuation plan must consider the peak traffic which could occupy the beach areas *at any point in time*" (emphasis added).

9.97. Volume 6 also included rather elementary statements to the effect that "in a practical sense beach traffic is generally limited by parking capacity," and "these parking capacities limit the number of people who occupy the beach areas at any point in time." *Id.*

9.98. The Massachusetts Attorney General seizes upon these statements to build the foundation for his rebuttal testimony. Quite correctly, he argues that any determination of a "peak" population must take into consideration the capacity of available parking at the beach. However, he relies almost exclusively on Mr. Lieberman's words "at any point in time" to impute to Volume 6 the conclusion that, to produce accurate ETEs for Seabrook, one must consider the "peak traffic which could occupy the beach areas at any point in time." *See* MAG PF 6.1.88. The operative word here is "could," not "would." His reasoning continues that this accuracy goal is not met by focusing only on the less-than-peak, but perhaps more typical size of the vehicle population on a busy beach day. *Id.*

9.99. The record shows that the Attorney General's interpretation of Mr. Lieberman's statements does not comport with Mr. Lieberman's actual understanding of NUREG-0654. In cross-examination, Mr. Lieberman stated:

> If we're trying to get an ETE, and we say, well, we want to use as a basis peak volumes as is suggested in NUREG-0654, then if I had the best of all worlds and I had perfect data for all the days in the past decade, I would not use the peak day. I might use some 85 percentile or something of that nature. . . . I'm trying to describe to you my understanding of what NUREG-0654 is looking for, not the absolute peak day; a reasonable expectation of the peak day. . . . I take issue with [the Attorney General's] using the phrase "peak day" in the singular as though its our responsibility to find the peak day of the decade and use that as a basis for calculating ETE[s]. That's where we have different points of view.

Tr. 6106-07.

9.100. While the Board finds that the Attorney General's reliance on the "any point in time" phrase is without merit, it does point to the fact that the phrase can be misleading. Mr. Lieberman simply did not choose his words with sufficient appreciation of how they would be treated in this litigation. Volume 6 would be improved if the State of New Hampshire were to modify it in accordance with Mr. Lieberman's actual views, cited above.

9.101. Further, we find that Mr. Lieberman's wording "which can be physically accommodated" on page 2-1 of Volume 6 with regard to parked vehicles to be equally inadequate. As he makes clear in his prefiled testimony, he wrote the Volume 6 phraseology "in the context of *reasonable expectation*" (emphasis added). Appl. Dir. No. 7, ff. Tr. 5622, at 16. If Volume 6 were to make this perspective explicit to the reader it would be similarly improved.

Applicants' Aerial Photographs

9.102. Applicants presented testimony on a proposed revision to the previous peak beach vehicle estimate of Volume 6, with the revised estimate being approximately 15 percent higher, or 29,293 vehicles. The new estimate was

based on aerial photographs taken on Saturday, July 18, 1987, by Avis Airmap. These photographs revealed a parked car count of 26,850 and, to account for the fact that the photographs were taken at various times before the presumed peak hour of 2:00 p.m., the Applicants' witnesses made upward adjustments to the data from each photograph to produce the 29,293 value. *Id.* at 27-38. These adjustments were validated by counting cars on a set of photographs taken closer to 2:00 p.m. (the so-called "Flight 10" photographs) and comparing the results with the projections; good agreement was found. Tr. 6117.

9.103. The Applicants did not include vehicles in transit on the roads in the count as a device to avoid possible double counting of residents at the beach. Also, during an evacuation, many cars already moving on the roads would "beat the evacuation wave" in any event, and some parked cars would not be used in the evacuation. Tr. 6117-20. Staff witness Urbanik stated, however, that he would include those cars which were in transit on the roads — approximately 1500 vehicles — in a count. Tr. 7374. We accept Dr. Urbanik's view and the resulting vehicle count becomes 30,793 vehicles.

9.104. Applicants assert that July 18, 1987, was a representative peak day. Tr. 6075, 6083-84. Applicants' view was based on consideration of the weather as a sunny warm day with temperatures in the mid-80s, media reports (*Boston Globe* articles and tourist-oriented publications that reportedly described this to be a time of a heat wave and recordbreaking crowds at the beach) and a comparison of the data from two traffic counting points on Routes 286 and 51 showing close similarity between the number of entering vehicles between 11:30 and 12:30 on July 18, 1987, and a peak traffic day on July 16, 1983, when continuous traffic recorders were being operated by HMM Associates.

9.105. Intervenors brought out on cross-examination that the Applicants' evidence did not unequivocally establish that July 18, 1987, was the maximum or the peak of the peaks. Tr. 6080-116. However, cross-examination did not establish that any of the Applicants' bases for inferring that July 18, 1987, was a representative peak day were in error. *Id.*

9.106. Staff witness Urbanik endorsed the July 18, 1987 datum as being appropriate in revision of the NHRERP. Tr. 7374. Dr. Urbanik has been involved in development of Seabrook's ETEs for a good many years, and we find merit in his opinion that the reasonably expectable peak, not the "peak of the peaks," is the better premise. Although this opinion is not purely within his area of expertise as a traffic engineer, it makes good sense and is based upon sound experience. Nevertheless, if information about the maximum peak summer day is available it should be identified for any appropriate use.

Intervenors' Aerial Photographs

9.107. Intervenors also had two other sets of photographs, each of which provided complete coverage of the beach area and were taken on flights made July 5, 1987, between 3:30 and 4:45 p.m. and on July 19, 1987, between 1:40 and 2:40 p.m.; on both days the temperature was 80°F, there were scattered clouds, and July 19 was more humid than July 5, 1987. High *et al.* Dir., ff. Tr. 6849, at 12.

9.108. In using the July 5, 1987 photographs, Dr. Befort counted a total of 24,309 parked cars; using the July 19 photos, the result was 25,451 parked cars. *Id.* at 13. Dr. Befort also testified that for various reasons and based on certain other photographs, it was doubtful that either of these counts represented the peak because the July 5, 1987 photographs were shot after the peak hour, and there is evidence that the July 5, 1987 peak was higher than the actual peak on July 19. *Id.* at 13-15, 21. The Board believes that Dr. Befort is overanalyzing his data, that July 19, 1987, comes very close to being a maximum peak day. However, his testimony does establish that the actual maximum peak is an elusive and fleeting moment, which suggests that the information is not valuable to the protective-action decisionmaker.

Potentially Available Parking Spaces

9.109. Utilizing primarily the photographs taken on July 5, 1987 (with the July 19, 1987 photographs used to clarify detail and act as a cross-reference), Dr. High has made an estimate of the number of parking spaces in the beach areas. *Id.* at 14.

9.110. The figure derived by Dr. High, 38,825, is higher by 13,000 spaces than the number arrived at by KLD in a count based upon the August 11, 1985 photographs and reported in NHRERP, Vol. 6. *Id.* at 16-17a. It is about 8000 higher than the number of cars estimated to be present based on projection of the actual car count from aerial photos taken on July 18, 1987. *See* Finding 9.15, *supra.*

9.111. This substantially higher figure was reached by adding to the parked cars counted by Dr. Befort the following: unoccupied spaces in "organized official public lots" and "commercial lots"; unoccupied spaces "in other parking lots whether paved or unpaved where there was evidence that the lot is used (at least one car or wear marks)"; unoccupied spaces in yards around houses and cottages "if they were accessible without moving other vehicles unless a blocking pattern was actually present"; "unoccupied curb space where there was at least one car parked in the section, or wear marks to indicate use and where driveways, intersections, or roadways were not obstructed" such spaces were counted on major highways only if they were "off the travelled lanes"; and

"hidden spaces" reduced by a factor in densely built up areas to account for the fact that some of the assumed hidden space might be a swimming pool or lawn. High *et al.* Dir., ff. Tr. 6849, at 15-16.

9.112. Dr. High testified that the various types of parking spaces (14,516 in total) added to parked cars actually counted were not capable of being separately classified except for some 3706 which were in organized official lots. Tr. 6857, 6860, 6884-85.

9.113. The High *et al.* Panel testified that their effort is an attempt to replicate the methodology used by the Applicants' experts in NHRERP and indicated that it should be adopted for that reason. Tr. 6874-75, 6893-94; *see also* Tr. 7129-30.

9.114. However, Applicants' experts, KLD, used that methodology not because KLD believed it to be as good as simply counting cars on a representative peak day, but because the photographs available to KLD at the time NHRERP was compiled clearly did not represent a peak day, and some adjustment had to be made. Tr. 6766-68; *see also* Tr. 7380-83.

9.115. Staff witness Urbanik stated flatly that the High *et al.* figure was not, in his judgment, reasonable because it deviated so far from the counts of cars seen in the three sets of photographs taken in July, 1987. Tr. 7379-80, 7385-86. *See also* Tr. 7382-83, 7502-03.

9.116. The counting of additional spaces that are not delineated involves a great deal of judgmental activity, is not easy to do, and gives data of questionable accuracy (Tr. 5909, 5919-23, 5927, 7383-85, 7751-52; *see also* Tr. 6899, 7040-41), absent a good deal of "ground-truthing" (Tr. 5923).

9.117. In response to a question as to whether the 38,825 figure was an "absolute upper limit on the parking capacity of the area," Dr. High and Adler replied:

> No. It represents, in our judgment, a reasonable estimate of the available parking capacity in the area. Not all of that capacity may be in use at one time as vehicles move around the area. However, all of it could be used. The absolute upper limit is clearly greater because our parking capacity estimate restricts blocking and double-parking in driveways and yards, and does not allow for double parking on side streets, parking on travelled lanes, or parking on grassy areas, front lawns, vacant lots and beaches. Clearly any or all of these could be used under very heavy use of beach areas. If all of these additional areas were used the number of vehicles that could be parked would be much higher than our estimate.

High *et al.* Dir., ff. Tr. 6849, at 18.

9.118. Dr. High and Adler further claimed that applying the above-quoted criteria to ten randomly selected photographs indicated a 119% increase in unoccupied parking spaces over that estimated by the technique they used to get the 38,825 figure. *Id.* at 18-19. However, the witnesses did not claim that any higher number could properly be used for ETEs in 1987 or 1988. Tr. 6922,

6928, 6935, 6938. In any case, we find that it is not reasonable to expect that actual parking capacity should include any and all of the unoccupied spaces falling within the specified criteria, including widespread illegal parking.

9.119. We note that Drs. High and Adler state that not all of that capacity may be in use at one time as vehicles move around the area, but they did not offer any estimate of what the probable maximum occupancy might be. Staff witness Urbanik expressed the view (squarely with his expertise) that parking capacities are rarely absolutely full and roughly 90% or less occupancy would be expectable for an area with a lot of turnover. Tr. 7387-88. We find the Intervenors' parking spaces count of 39,000 to be a reasonable estimate of the beach area capacity and that 90% occupancy would amount to approximately 35,000 as an expectable occupancy. As Intervenors point out, the aerial photographs show that a peak day for Hampton may not be a peak day for Salisbury and 2:00 p.m. may not be the peak hour in all places, which also supports Dr. Urbanik's opinion. *See* MAG PF 6.1.163.

9.120. Applicants' estimate of parked vehicles from the July 18, 1987 data analysis was 29,300, to which 1500 vehicles in transit should be added. In addition, the Intervenors presented convincing unrebutted testimony based on field observations that there are in excess of 2200 parking spaces in the EPZ beach areas which are not observable in vertical aerial photos because they are in under-building parking areas, garages, and carports. Hollingworth, ff. Tr. 8608, at 5 (1664 such spaces in New Hampshire); Moughan, ff. Tr. 9494, at 2 (548 such spaces in Massachusetts). It is not unreasonable to assume that on reasonably busy beach days 90%, or about 2000, of these vehicle spaces would be occupied. *See* Adler, ff. Tr. 9524, at 14. Together, the 29,300 parked vehicles seen, the 1500 vehicles seen on the roads, and 2000 more that likely were parked in spaces hidden from view, total 32,800 vehicles that were likely present in the beach areas on July 18, 1987.

9.121. Intervenors make the point that the Salisbury Beach did not have the degree of occupancy on July 18, 1987, that has been observed on other days and propose that an additional 2500 vehicles should be used for planning purposes. MAG PF 6.1.174. Regarding Hampton Beach, witnesses have noted that the Applicants' July 18 photographs do not show a line of parked vehicles extending out of Hampton Beach on Route 51 toward the mainland as happens on the busier summer days. Fallon, Tr. 8660-67. Intervenors suggest roughly 750 vehicles should be added to the Applicants' estimate for this area. In total, the Intervenors' view is that, on busy days, the peak vehicle count may be approximately 36,000. We find that by either estimation from the July 18, 1987, observations or by considering expectable maximum occupancy of parking areas that 35,000 to 36,000 vehicles may be reasonably postulated as the "peak of the peaks."

9.122. Since neither Applicants nor Intervenors have ever observed more than approximately 27,000 vehicles, a 35,000 number appears quite conservative as an expectable maximum peak occupancy. We agree with Applicants and Staff that 31,000 is an appropriate number for reasonably expectable peak occupancy. There are other aspects to the calculation of the ETEs than just the beach population number which have been argued in this litigation, but we find this particular issue might have the following aspects. The Volume 6 EPZ clearance rate corresponds to 686 vehicles per minute and the Intervenors' calculated ETE for 38,825 vehicles in 9:25 corresponds to a clearance rate of 687 vehicles per minute. Thus, the maximum peak occupancy would correspond to an ETE of 8:30 and the reasonably expectable peak occupancy would correspond to an ETE of 7:32, with the proviso that these numbers are applicable to hypothetical accidents that are synchronous with the 2:00 p.m. population peak.

9.123. SAPL presented the rebuttal testimony of three long-time residents of the Hampton Beach area for their views of ETEs. Rebuttal Testimony of Mimi Fallon, Beverly Hollingworth, and Elizabeth Weinhold, ff. Tr. 8608. A video tape of the Hampton Beach area, evacuation routes, and an example of summertime traffic congestion produced by Mrs. Fallon was helpful because it enabled the Board to compare an observed situation with calculations and analyses based upon expert testimony. The tape was received into evidence as SAPL Exh. 7.

9.124. Mrs. Hollingworth and Mrs. Fallon both agreed that Sunday, not Saturday, would experience peak traffic density. While we are fully aware that both witnesses are ardent anti-Seabrook activists, their testimony, within the area of their competence, was reasonable. Mrs. Fallon stated that Sunday, July 19, 1987, was "considerably heavier" that Saturday the 18th. *Id.* at 3.

9.125. Mrs. Fallon has made an extended study of the summertime traffic pattern at the beaches near Seabrook station over at least 9 years. She recorded several relevant time segments including July 19, 1987. What appears to be a coincidence, Mrs. Fallon began to record the traffic stream leaving the Hampton Beach area near the bridge at 1:59 p.m. on July 19, 1987. As noted above, about 2:00 p.m. is the accepted peak hour for population density during summer peak days. After 2:00 p.m. the net traffic flow is away from the beaches.

9.126. The tape shows many, many people dressed and behaving as they would on a hot sunny summer day with blue skies. All visible parking places were filled during the afternoon. Mrs. Fallon states that there were crowds on the beach and she was involved in quite a bit of traffic herself as she went about her video taping. Tr. 8653. Spontaneous dialogue by a local hotel keeper reveals that this is a representative of a peak summer day and that Mrs. Fallon's tape would demonstrate problems with evacuation. The tape demonstrates that congested traffic occupied the exodus roadways throughout the afternoon into the evening. Seven hours later, by 9:09 p.m., the tape demonstrated that the traffic

had subsided. Remaining traffic, though heavy, moved freely. Mrs. Fallon recalls that the traffic jam (meaning congested traffic) went on for 7 hours (Tr. 8654) that the exiting population were mostly daytrippers, and that residents find that they cannot readily leave the area until after 9:00 p.m. While Mrs. Fallon's recording could not be the basis for ETEs, it is in good agreement with the ETEs calculated by the Board from the testimony of the experts.

9.127. Intervenors would have us find "that any redone ETE study meet the test of realism, i.e., that it provide an adequate data base and methodology for decisionmakers to reference an ETE which is reasonably realistic for the size of the beach population present at the time of an emergency, whenever it occurs." MAG PF 6.1.189. We make no such finding. Intervenors' witnesses displayed much competence in traffic and parking capacity estimation but did not demonstrate any familiarity with nuclear emergency planning. The purpose of ETEs is to provide the information useful in the choice of protective actions. As a consequence of this hearing, the State has been provided with an additional ETE for the rather fleeting peak of the peaks which it can add to its Scenario 1 if it finds value in the additional information.

9.128. As we have found in § 8 of this decision, the preferred protective action for the seasonal beach population in the Seabrook EPZ is almost always early beach closure and evacuation over sheltering. The evacuation time will depend on the time of day at which the hypothesized accident occurs, but we do not see any reason why the ETE, whether 6, 7, or 8 hours, would have any influence on the protective action decision. The State of New Hampshire should be able to sustain the evacuation for whatever length of time is required in the hypothetical scenarios.

9.129. As the Commission has stated in the context of extended evacuations, "for which scenarios, if any, does it eliminate evacuation as a viable protective action?" *Shoreham*, CLI-86-13, supra. On this record, we do not find any indication that further refinement of the ETEs would make any contribution to public protection.

ETE Conclusion

9.130. The Board concludes that, in accordance with 10 C.F.R. Part 50, Appendix E, § IV.7, Applicants will have provided an accurate analysis of the time required to evacuate the Seabrook EPZ within the scope of the contentions of the Intervenors, and in particular with respect to evacuating the population at the New Hampshire beaches during summer weekends, providing:

(1) That the respective findings modifying the ETEs by this Board are incorporated in the ETEs provided by the Applicants to the State of New Hampshire, and

(2) that trips by returning commuters within the EPZ to their homes in the EPZ are properly accounted for in the evacuation time analyses. The Board retains jurisdiction over this subissue pending further advice from the parties, which advice will be solicited in a forthcoming order.

10. CONCLUSION AND ORDER

10.1. The Board has considered all of the evidence presented by the parties on the admitted contentions concerning the adequacy of the New Hampshire Radiological Emergency Response Plan. Based upon a review of the entire record in this proceeding and the proposed findings of fact and conclusions of law submitted by the parties, and based upon the findings of fact set forth herein, which are supported by reliable, probative, and substantial evidence in the record, this Board has decided all matters in controversy except for the effect of trips home by returning commuters on the evacuation time estimates as noted in § 9, above. Accordingly, the Board reaches the following conclusions.

10.2. Subject to the satisfaction of the conditions set forth below, the Board finds reasonable assurance that adequate protective measures can and will be taken within the New Hampshire portion of the Seabrook EPZ in the event of a radiological emergency at Seabrook, in accordance with the Commission's emergency planning regulations with respect to the issues decided in this Partial Initial Decision.

10.3. Subject to the satisfaction of the conditions set forth below, the NHRERP meets the requirements of the emergency planning standards of 10 C.F.R. § 50.47(b) and Appendix E to 10 C.F.R. Part 50. Also subject to the satisfaction of conditions set forth below, the NHRERP provides reasonable assurance that adequate protective measures can and will be taken with respect to the issues decided in this Partial Initial Decision.

10.4. The Board orders that, pursuant to the Atomic Energy Act of 1954 and the Commission's rules and regulations, based on the Findings of Fact and Conclusions of Law set forth in this Partial Initial Decision, issuance of an operating license for Seabrook Station shall be subject to the satisfaction of the following conditions:

(a) The Director of Nuclear Reactor Regulation, in consultation with the Federal Emergency Management Agency, shall confirm that the State of New Hampshire has provided for FEMA review satisfactory personnel rosters and call lists of compensatory plan and reception center emergency workers, as discussed in § 5.

(b) The Director of Nuclear Reactor Regulation, in consultation with the Federal Emergency Management Agency, shall verify that the NHRERP revisions committed to by the State of New Hampshire, as discussed herein, have been made.

(c) The Director of Nuclear Reactor Regulation shall verify that the NHRERP revisions required by the Board relating to the need to ensure operation of the Manchester secondary center for periods consistent with emergency workers' expected post 12-hour usage (Finding 5.68), and the identification of additional special-facility monitors for the Manchester and Dover host communities (Finding 5.78) have been made.

(d) The Director of Nuclear Reactor Regulation, in consultation with the Federal Emergency Management Agency, shall verify that the Applicants have provided to the State of New Hampshire the Board's findings modifying ETEs presently contained in Volume 6 of the NHRERP. However, this condition shall not become effective until the Board has consulted with the parties concerning the effect of trips home by returning commuters on the ETEs and has issued a respective order.

Finality and Appeals

Pursuant to 10 C.F.R. § 2.760 this Partial Initial Decision will constitute the final decision of the Commission 30 days from the date of its service, 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. §§ 2.785 and 2.786.

Any party may take an appeal from this Partial Initial Decision by filing a Notice of Appeal within 10 days after its service. Each appellant must file a brief supporting its position on appeal within 30 days after filing its Notice of Appeal, or if the NRC Staff is the appellant, within 40 days. Within 30 days after the period has expired for the filing and service of the briefs of all appellants (40 days in the case of the NRC 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 only a single responsive brief regardless of the number of appellants' briefs filed. *See* 10 C.F.R. § 2.762.

THE ATOMIC SAFETY AND
LICENSING BOARD

Jerry Harbour
ADMINISTRATIVE JUDGE

Gustave A. Linenberger, Jr.
ADMINISTRATIVE JUDGE

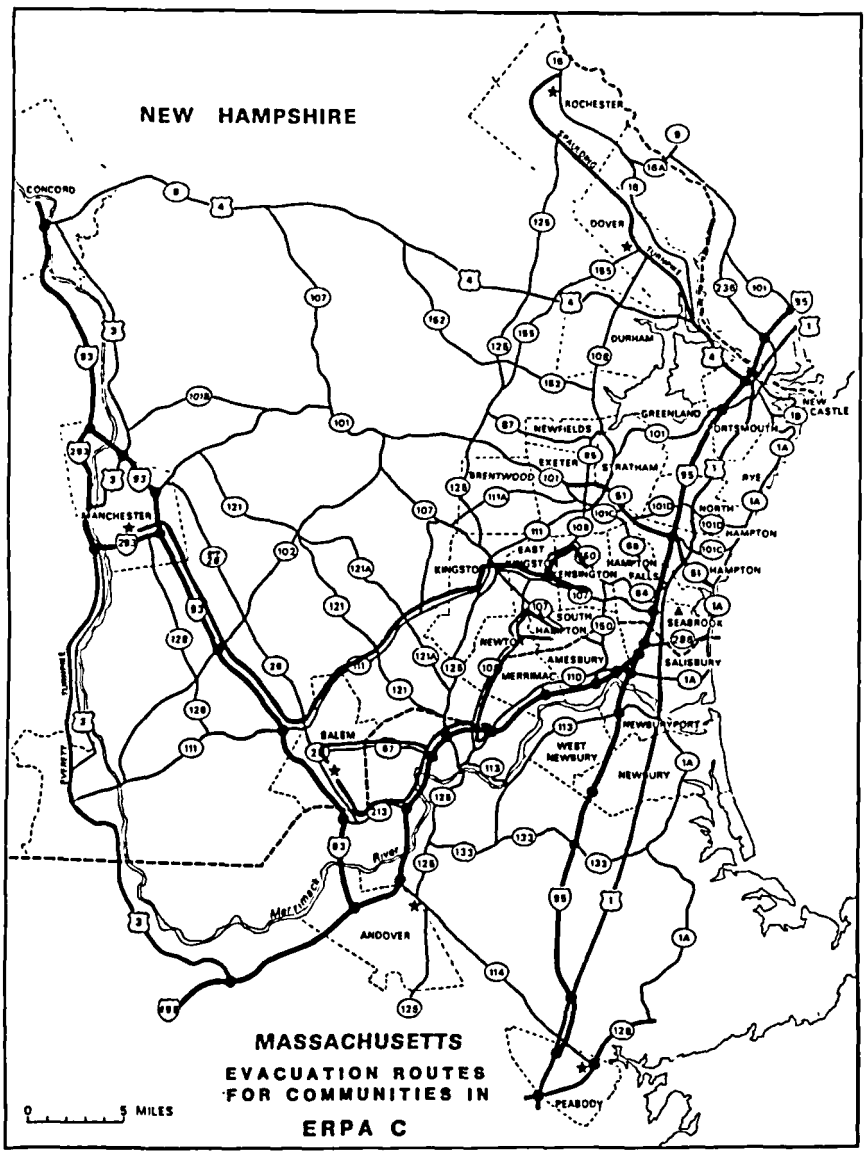
Ivan W. Smith, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland,
December 30, 1988.

APPENDIX

Massachusetts Evacuation Routes for Communities in ERPA C

SOURCE: NHRERP, Vol. 6, Appendix K (Appl. Exh. 5).



Cite as 28 NRC 809 (1988) DD-88-20

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of **Docket No. 50-312**

SACRAMENTO MUNICIPAL UTILITY DISTRICT
(Rancho Seco Nuclear Generating Station) **December 14, 1988**

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by Ms. Barbara Moller that requested the Nuclear Regulatory Commission (NRC) to (1) immediately test all individuals working at, or having access to, the Rancho Seco Nuclear Generating Station (Rancho Seco) for drug use; and (2) require the Sacramento Municipal Utility District (SMUD) to implement a mandatory periodic drug testing program at Rancho Seco. The Petitioner based her requests on allegations that (1) cocaine was found on the Rancho Seco site; (2) subsequently, nine persons were tested for drug use at Rancho Seco; (3) this testing was inadequate to find the party in illegal possession of the cocaine; accordingly, (4) illegal drug use at Rancho Seco poses a danger to public health and safety.

UTILITY DRUG TEST PROGRAMS

Where NRC inspections show that a utility drug test program functions properly and the program works properly in discovering illegal drugs on the plant site, without more, there is no basis for the NRC to impose further requirements on the utility or on individuals working at, or having access to, the plant.

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

INTRODUCTION

On August 3, 1988, Ms. Barbara Moller (Petitioner) submitted a petition requesting the U.S. Nuclear Regulatory Commission (NRC or Commission) to immediately test all individuals working at, or having access to, the Rancho Seco Nuclear Generating Station (Rancho Seco) for drug use. The petition also requested the NRC to require the operators of Rancho Seco, the Sacramento Municipal Utility District, to implement a mandatory periodic drug testing program at Rancho Seco. The Petitioner has reiterated these concerns in a portion of a more recent letter to the NRC, dated August 30, 1988.

Ms. Moller's petition was based on allegations that (1) cocaine was found on the Rancho Seco site; (2) subsequently, nine persons were tested for drug use at Rancho Seco; (3) this testing was inadequate to find the party in illegal possession of the cocaine; accordingly, (4) illegal drug use at Rancho Seco poses a danger to public health and safety.

In accordance with the following discussion, I find that there are no grounds for NRC to immediately test Rancho Seco personnel for drug use or to take action to modify the existing utility administered program to prevent use of illegal drugs at Rancho Seco. I have decided, therefore, to deny the request.

BACKGROUND

The Rancho Seco Nuclear Generating Station, operated by the Sacramento Municipal Utility District (SMUD, the Licensee) is a 916-MWe Babcock and Wilcox (B&W)-designed pressurized-water reactor located in Sacramento County, California, about 25 miles southeast of Sacramento. The plant received an NRC operating license in 1974.

On July 14, 1988, in accordance with Rancho Seco's Fitness-for-Duty Program, site security personnel and contractor specialists began a random drug search with drug-detecting dogs. In a warehouse located within the restricted area on site, one of the dogs detected a plastic bag containing a substance that was later analyzed by a laboratory and determined to be 0.53 gram of cocaine. Further search in the warehouse and in other areas of the plant found no additional evidence of illegal drugs. The NRC Operations Center in Washington was then notified by telephone that illegal drugs had been found on the Rancho Seco site.

Although the warehouse where the drugs were found is normally attended or locked, it is accessible to personnel working at Rancho Seco, both SMUD employees and contract personnel. All persons who have access to the warehouse

are subject to security screening and site access controls. Additionally, SMUD employees and contractors working at Rancho Seco are subject to the SMUD "Fitness for Duty Policy."

DISCUSSION

NRC policy with respect to fitness for duty, which addresses drug use, was published in the *Federal Register* on August 4, 1986 (51 Fed. Reg. 27,872). The nuclear industry has developed a guide for utilities to use in developing fitness-for-duty programs at individual sites. The industry guide, entitled "EEI Guide to Effective Drug and Alcohol/Fitness for Duty Policy Development," was developed by the Edison Electric Institute Human Resource Management Division. The latest version of that guide was published in August 1985.

In February 1987, SMUD adopted a fitness-for-duty program, SDP 606-14, "Fitness for Duty Policy." The SMUD program meets the current guidelines established by the industry and NRC. The main features of the SMUD program include:

- Random drug searches on site using drug-detecting dogs six times per year,
- Random medical screening of personnel,
- Preemployment and prevital access screening,
- For-cause screening,
- Behavioral observations,
- Undercover investigations.

The NRC Staff reviewed the SMUD drug policy and its execution at Rancho Seco and did not find any discrepancies relating to current criteria. Specific drug-related occurrences at Rancho Seco including the July 14, 1988 event were investigated by the Staff who concluded that SMUD effectively dealt with the events. Onsite inspections have not identified inadequacies in the Licensee's implementation of the program or in its handling of specific drug-related events.

As a followup to the July 14, 1988 drug find, SMUD tested the ten individuals who are normally assigned to work in the warehouse for drug use. All of the individuals tested negative for cocaine. However, one individual tested positive for a different illegal substance, and his employment was terminated. Two additional individuals who normally have access to the warehouse were on vacation at the time and were not tested. These two individuals had participated in previous medical examinations which included evaluation for drug use; the results of these prior examinations were negative.

Licensee actions relating to this event were reviewed by NRC inspectors during an onsite inspection on September 12-16, 1988. The inspection findings are documented in Inspection Report 50-312/88-29, dated October 7, 1988. The

inspectors did not identify any potential deficiencies in the Licensee's handling of the July 14, 1988 event.

The NRC is concerned with the possibility of illegal drug use at nuclear facilities and has concluded that rulemaking is appropriate to mandate certain actions at all operating nuclear power plants. These proposed regulations were published in the *Federal Register* on September 22, 1988 for public comment. The proposed rule would require random testing for illegal drugs for workers with unescorted access to Protected Areas at Rancho Seco and all other operating nuclear power plants.

CONCLUSION

The petition requested NRC to immediately test for drug use, all individuals working at, or having access to, the Rancho Seco Nuclear Generating Station. The petition also requested NRC to require SMUD to implement a mandatory periodic drug testing program at Rancho Seco. NRC recognizes that drug use is a potentially significant problem facing the nuclear industry and is approaching this issue systematically, through rulemaking. Our investigation of the drug-related event at Rancho Seco has not identified health and safety concerns that warrant immediate action by the NRC. The currently proposed federal regulations may eventually require certain nuclear facilities to change their drug prevention programs. However, at the present time, there is no basis for NRC to require SMUD to modify its existing program.

The institution of proceedings pursuant to 10 C.F.R. § 2.202 is appropriate only if 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, 29 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 conclude that no substantial health and safety issues have been raised by the Petitioner that warrant immediate drug testing by the NRC at Rancho Seco or the initiation of a proceeding to modify the existing program for detection of use of illegal drugs at Rancho Seco. 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 of the Commission for the Commission's review.

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 14th day of December 1988.

Cite as 28 NRC 814 (1988) DD-88-21

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of **Docket No. 50-293**

BOSTON EDISON COMPANY
(Pilgrim Nuclear Power Station) **December 29, 1988**

Massachusetts Governor Michael S. Dukakis and Attorney General James M. Shannon filed a petition on behalf of the Commonwealth of Massachusetts and its citizens (Petitioners) with the Nuclear Regulatory Commission (NRC) requesting that the Director of the Office of Nuclear Reactor Regulation (NRR) institute a proceeding to modify, suspend, or revoke the operating license held by Boston Edison Company (BECo, the Licensee) for its Pilgrim Nuclear Generating Station (Pilgrim). In particular, the Petitioners requested the NRC to (1) modify the Pilgrim license to bar restart of the facility until a plant-specific probabilistic risk assessment (PRA) is performed for Pilgrim and all indicated safety modifications are implemented; (2) modify the Pilgrim license to extend the current shutdown pending the outcome of a full hearing on the significant outstanding safety issues and the development and certification by the Governor of adequate emergency plans; and (3) issue an order, effective immediately, to modify the Pilgrim license to preclude the Licensee from taking any steps in its power ascension program until a formal adjudicatory hearing is held and findings of fact are made concerning safety questions raised regarding Pilgrim.

The relief sought by the Petitioners is based on allegations of (1) evidence of continuing serious managerial deficiencies at Pilgrim, (2) evidence that a plant-specific PRA as well as the implementation of any safety modifications indicated thereby should be required prior to Pilgrim's restart, and (3) evidence that the state of emergency preparedness does not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency during operations at Pilgrim.

In DD-88-7, 27 NRC 601 (1988), the Director denied Petitioners' request insofar as it related to the need for a PRA. In DD-88-17, 28 NRC 491 (1988), the Director denied Petitioners' request insofar as it related to management issues. The Director here denies the petition insofar as it relates to emergency preparedness issues.

EMERGENCY PREPAREDNESS:

In light of substantial progress in addressing the issues in emergency preparedness plans for Pilgrim, requested enforcement action, pursuant to 10 C.F.R. § 2.206, held not warranted.

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

INTRODUCTION

On October 15, 1987, Massachusetts Governor Michael S. Dukakis and Attorney General James M. Shannon filed a petition on behalf of the Commonwealth of Massachusetts and its citizens (Petitioners) with the Nuclear Regulatory Commission (NRC) requesting that the Director of the Office of Nuclear Reactor Regulation (NRR) institute a proceeding to modify, suspend, or revoke the operating license held by Boston Edison Company (BECo, the Licensee) for its Pilgrim Nuclear Power Station (Pilgrim). In particular, the Petitioners requested the NRC to (1) modify the Pilgrim license to bar restart of the facility until a plant-specific probabilistic risk assessment (PRA) is performed for Pilgrim and all indicated safety modifications are implemented; (2) modify the Pilgrim license to extend the current shutdown pending the outcome of a full hearing on the significant outstanding safety issues and the development and certification by the Governor of adequate emergency plans; and (3) issue an Order, effective immediately, to modify the Pilgrim license to preclude the Licensee from taking any steps in its power ascension program until a formal adjudicatory hearing is held and findings of fact are made concerning safety questions raised regarding Pilgrim.

Petitioners based their request on an assertion of continuing serious managerial deficiencies at the plant, on an assertion that a plant-specific PRA as well as the implementation of any safety modifications indicated thereby should be required prior to Pilgrim's restart, and on an assertion that the state of emergency preparedness does not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency during operations at the Pilgrim plant.

On May 27, 1988, I issued an Interim Director's Decision in response to the petition. I concluded that the information identified in the petition did not warrant the initiation of the requested actions in regard to the probabilistic risk assessment and attendant plant modifications. Accordingly, I denied the request on this issue. I further stated that the management and emergency preparedness portions of the petition would be addressed in a subsequent response.

On October 6, 1988, I issued a Second Interim Director's Decision. As noted in my Decision, the Petitioners alleged that serious managerial deficiencies continue to exist at Pilgrim. I concluded that the information identified in the petition did not warrant the initiation of the requested actions in regard to the management issues. Accordingly, I denied the request on this issue. I further stated that the emergency preparedness portion of the petition would be addressed in a subsequent response.

For the reasons discussed below, Petitioners' request relating to emergency preparedness is denied.

BACKGROUND

In April 1986, the Pilgrim facility was shut down for technical and management reasons. 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. In a memorandum to NRC, dated March 31, 1987, FEMA stated that it was 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 issues raised by State Senator William Golden in a petition submitted to NRC July 15, 1986, the report submitted by the Office of Public Safety, the Impell Report, and other relevant available information. 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 report entitled, "Self-Initiated Review and Interim Finding for the Pilgrim Nuclear Power Station, Plymouth, MA," to the NRC. FEMA found that offsite emergency preparedness had deteriorated at Pilgrim and that FEMA could no longer make the finding that the Commonwealth and local plans were adequate. Specifically, FEMA identified six significant emergency preparedness issues which are summarized below:

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 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.

As previously indicated, the plant was voluntarily shut down by Boston Edison at the time for reasons other than emergency preparedness, and the NRC concluded that there was no need to take immediate enforcement action. Boston Edison was working with the Commonwealth and local officials at that time to improve the offsite emergency response plans, and it was apparent that improvements were already being made. However, the NRC Staff judged the deficiencies identified by FEMA to be significant enough that the NRC stated that the plant would not be permitted to restart until improvements were made in the plans and some limited demonstrations of those improvements were observed.

The Staff has been carrying out an ongoing assessment of progress toward resolving these issues. NRC Staff efforts to evaluate emergency planning progress have included discussions with FEMA Region I Staff, Commonwealth and local emergency planning officials, and Boston Edison representatives. The NRC Staff has conducted and attended numerous public meetings in the area has met with all of the Civil Defense Directors for the emergency planning zone (EPZ) and reception center communities,[1] and has toured the area, including the beaches and the local emergency operations centers. In addition, NRC Staff has made several visits to the area to observe limited demonstrations associated with emergency worker training for implementing the evacuation plans for schools and day-care centers, the transportation-dependent population, and the special-needs population.

Thus far, the plans submitted by the Commonwealth to FEMA have been submitted for "informal technical review." The Commonwealth, while partici-

[1] The EPZ communities are Plymouth, Duxbury, Kingston, Carver, and Marshfield. The reception center communities are Taunton and Bridgewater.

pating in the revised plan development process, continues to characterize all of the revised plans as "draft." Although the revised plans have not been submitted formally pursuant to 44 C.F.R. Part 350, the FEMA technical reviews are being conducted in a manner similar to that used for the review of formal submittals. In correspondence with the Commonwealth, dated March 30, 1988, and August 22, 1988, FEMA expressed its concern over emergency planning for Pilgrim, recognized the progress being made in improving emergency plans for Pilgrim, and encouraged the development, by the Commonwealth, of a schedule indicating Commonwealth milestones for completing the overall planning process. The Commonwealth has not yet indicated when revised plans will be formally submitted to FEMA.

BASES FOR PETITIONERS' REQUEST

The Petitioners raise specific deficiencies that constitute the bases for their request. These asserted deficiencies are summarized below:

1. The lack of any articulated evacuation plans for public and private schools as well as day-care centers;
2. The lack of any articulated evacuation plans for the special-needs population;
3. The lack of any articulated evacuation plans for the transport-dependent population;
4. The lack of identifiable public shelters for the beach population;
5. The lack of a reception center, as required in the plan, for people evacuating by the northern route;
6. The lack of real progress in planning and the diminution in the state of emergency preparedness;
7. The Pilgrim emergency response plans do not incorporate current or reliable evacuation time estimates (ETEs);
8. Offsite exercises and drills have not been held for a significant period of time.

The Petitioners state that the first six plan deficiencies have been identified by both FEMA and the Massachusetts Executive Office of Public Safety.

The Petitioners state that the following specific functional deficiencies in the first four areas enumerated above must be addressed before any determinations can be made if adequate plans can be developed, namely:

— Identification/estimation of populations;
— Identification/estimation of resources;
— Develop plans for emergency actions to be taken for each population with potentially available resources;
— Obtain commitments for required resources;

— Provide education/information to public;
— Conduct exercises/drills.

DISCUSSION

NRC regulations in 10 C.F.R. § 50.47(b) provide sixteen planning standards applicable to onsite and/or offsite emergency response plans which, as required by 10 C.F.R. § 50.54(q), must be met by Licensees authorized to operate a nuclear power plant. Although elements of several planning standards (e.g., 1, 3, 7,10, and 14) are pertinent, the issues raised by the Petitioners are largely directed to 10 C.F.R. § 50.47(b)(10) which requires that "protective actions" be developed for emergency workers and the public. The evaluation criteria used by the NRC and FEMA in determining conformance with each planning standard is detailed in NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

The Commission has determined that deficiencies in emergency plans, even major deficiencies, do not necessarily raise a substantial health and safety issue regarding plant operation. Indeed, even in those instances where the Commission can no longer make a finding that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, emergency preparedness deficiencies may not require facility shutdown. *See* 10 C.F.R. § 50.54(s)(2)(ii). In practice, radiological emergency response plans are rarely if ever perfect. Deficiencies will be found and assessed for significance. While all deficiencies in emergency plans are expected to be corrected, few such deficiencies would be expected to change a finding of reasonable assurance by the NRC pending their resolution.

The following discussion addresses each of the Petitioners' emergency preparedness concerns as presented in their petition:

A. Evacuation Plans for Schools, Special-Needs Populations, and Transportation-Dependent Populations (Issues 1, 2, and 3)

The NRC Staff, through its participation on the FEMA Regional Assistance Committee (RAC), has reviewed the revised plans (*see* following Table) and procedures that have been submitted to FEMA by the Commonwealth and determined that, consistent with NRC regulatory requirements, they include (1) identification of schools, day-care centers, the special-needs population, and the transportation-dependent population; (2) identification of transportation resources; and (3) detailed evacuation procedures for these populations. With regard to the commitments for required resources, letters of agreement have been

signed to date by thirty-four of the thirty-five transportation providers. The Staff has determined that these letters of agreement represent transportation resources in excess of those required to implement the revised emergency plans (e.g., 954 buses committed whereas 407 buses are needed for plan implementation). The form and content to be used in each letter of agreement was provided by the Commonwealth in their letter to Boston Edison on October 10, 1988.

For the special-needs population, the Staff has determined that the responsibilities for identifying, notifying, and carrying out protective actions have been adequately incorporated into the revised town emergency plans and procedures. The Civil Defense Directors in meetings with the NRC Staff have confirmed that each town has a list of the special-needs population which was supplemented by soliciting input from residents by newspaper advertisements. The Commonwealth and Boston Edison are working out details to conduct an additional special-needs population survey. It should also be noted that the plans themselves provide that an individual can call the Civil Defense Office and arrange for transportation. Although the Civil Defense Directors indicated in meetings with the Staff that they believe that not all those with special needs have been identified, they indicated their belief that the number of unidentified special-needs persons in the EPZ towns was not large. Thus, the Staff has determined that the status of planning for the special-needs population is adequate. Furthermore, planning is expected to continue to improve because the public information brochure, which will go to all EPZ residents, has provisions for allowing special-needs residents to identify themselves to town officials. These steps will provide an additional measure of assurance that such persons have been identified.

The NRC Staff concludes that the revised plans and procedures adequately address the Petitioners' issues related to planning for public and private schools as well as for day-care centers, the special-needs population, and the transportation-dependent population, raised in their § 2.206 petition. The revised plans and procedures include the identification and estimation of populations and resources, provide for emergency actions to be taken for each population group with available resources, and include commitments for required resources.

Table
Status of Revised Plans and Implementing Procedures

1. Carver — the draft plan, Implementing Procedures (IPs), and Shelter Implementation Program were authorized by the Selectmen for submittal and were forwarded to Massachusetts Civil Defense Authority (MCDA) and then to FEMA for review.

2. Duxbury — The initial draft plan was reviewed by FEMA and comments were provided to local planning officials. All draft implementing procedures, except three, containing the necessary information, have been prepared and reviewed by the responsible implementing official (e.g., police chief, fire chief, department head), reviewed by the civil defense director, and forwarded to the next level within the local community's approval process.
3. Kingston — all documents are complete and were authorized by the Selectmen for submittal and were forwarded to MCDA and then to FEMA for review.
4. Marshfield — all documents are complete and were authorized by the Selectmen for submittal and were forwarded to MCDA and then to FEMA for review.
5. Plymouth — The initial draft plan was reviewed by FEMA, and comments were provided to local planning officials. All draft implementing procedures, except three, containing the necessary information, have been prepared and reviewed by the responsible implementing official (e.g., police chief, fire chief, department head), reviewed by the civil defense director and forwarded to the next level within the local community's approval process.
6. Bridgewater — the draft plan and IPs were authorized by the Selectmen for submittal and were forwarded to MCDA and then to FEMA for review.
7. Taunton — the draft plan and IPs were authorized by the Mayor for submittal and were forwarded to MCDA and then to FEMA for review.

B. Shelters for the Beach Population (Issue 4)

Petitioners have raised a concern regarding the lack of identified public shelters for the beach population. The August 1987 FEMA report included this as one of the six significant emergency preparedness issues.

The FEMA position on shelters for the beach population was modified subsequent to the issuance of FEMA's August 1987 report on emergency preparedness at Pilgrim. In a letter to the Commonwealth dated August 22, 1988, FEMA stated its current position that "a range of protective actions" could be satisfied by evacuation alone for the beach population. The NRC Staff views evacuation of the beach population as the preferred protective action strategy. In view of these positions, and since the revised Pilgrim emergency plans provide for evacuation of the beach population in the event of an emergency, the Staff has determined that the issue of the lack of identified public shelters for the beach population is resolved.

Even though not required by NRC regulations, BECo has completed a shelter survey and developed a shelter implementation program, including shelter identification, letters of agreement, and shelter procedures. BECo has indicated that it will continue its shelter program for the beach population to provide added protective measures.

C. Reception Center for People Evacuating to the North (Issue 5)

Boston Edison has performed an analysis that concludes that the existing two reception centers (Taunton and Bridgewater), with appropriate renovations and additional equipment, have the capability to support an evacuation from the EPZ. The NRC Staff has reviewed this analysis and has concluded that, with some specific augmentation, the existing two facilities would meet NRC standards. The Commonwealth has not yet authorized these improvements and has indicated that it will pursue development of a third reception center. Even without augmentation, the Staff has concluded that these two facilities could now be used to provide effective support for evacuees. It must be noted that reception centers would be used only after people in the EPZ are evacuated and, therefore, incomplete reception center renovations would not directly affect the adequacy of the protective actions taken.

The Commonwealth is making progress toward establishing a third reception center for people evacuating to the north. The Commonwealth has designated a State-run facility in the town of Wellesley as the proposed northern reception center and has conducted a feasibility study that indicates that the facility is suitable for use as a reception center. The Commonwealth has indicated that it will undertake capital improvements and procedure development.

Thus, while not yet completely resolved, the Staff concludes that this issue does not pose a substantial health and safety issue.

D. Lack of Progress in Emergency Preparedness (Issue 6)

Significant progress has been made in correcting the August 1987 FEMA-identified issues. The emergency plans and procedures for the five EPZ and two reception center communities have been revised (*see* Table, pp. 820-21). Although the revised plans and procedures are new documents, they build upon previously existing plans and procedures by providing extensive and detailed guidance on carrying out the emergency response effort and formalizing many previous practices.

Statewide and MCDA Area II plans have been updated, and the revised Area II plan has been forwarded to FEMA for review. Improvements have been made in the public and media information program. An "Interim Public Information

Brochure" has been disseminated, and work is continuing on the final public information program.

Training on the revised plans and procedures for the EPZ and reception center towns is being conducted in accordance with a comprehensive training program approved by the Commonwealth. Although training of a substantial number of individuals is yet to be completed and although the Commonwealth has not yet approved many training modules, almost all of the training modules and lesson plans have been prepared, and training of emergency response personnel by Commonwealth-certified instructors is well under way. General overview training has been conducted for many offsite organizations, and specific training is being conducted, including training for transportation providers. The NRC Staff has reviewed the training program, including certain individual lesson plans, and has observed the training of bus and ambulance drivers from companies providing transportation for schools and day-care centers, special-needs population, and transportation-dependent persons. The training includes classroom sessions on basic radiation safety, dosimetry, emergency preparedness, and specific procedural assignments, and travel on the actual routes to be used in an emergency. As training modules are approved by the Commonwealth, training based on these modules is being accomplished.

A further indication of progress was obtained by the NRC Staff in a series of meetings between October 25 and November 2, 1988, with the seven Civil Defense Directors (CDDs) for the EPZ and reception center towns. Discussions were held in the offices of the CDDs and included tours of the local Emergency Operations Centers (EOCs) for each of the towns. Although the CDDs expressed concerns related to the status of the plans and procedures and with the availability of personnel and training, all of the CDDs expressed the opinion that the state of emergency preparedness is much improved. With respect to personnel, most CDDs indicated that they have the majority of people necessary to implement the plans, but several of the towns are short of volunteers to complete their staffing plans primarily in second shift and nontechnical positions.

Based on the Staff tours of the EOCs, but primarily based on input from the CDDs, the Staff concludes that the status of the EOCs is as follows. The EOCs for Plymouth, Carver, and Taunton are operational. The EOC for Kingston is nearly operational with telephone call routing problems being corrected. The Kingston EOC could be used effectively in an emergency. The new EOC for Duxbury is sufficiently complete that it could be used effectively now. In Bridgewater, the renovation to the EOC space is nearly complete and communications equipment is being installed. The Marshfield EOC is considerably behind the other EOCs but is expected to be operational in January 1989. The old EOC in Marshfield is still operational and could be used in an emergency.

Significant improvements have been made in the ability of Boston Edison to notify the local towns of an event. The previous system relied on notification from Boston Edison to the State police dispatcher in Middleboro, Massachusetts. The State police were then responsible for relaying information to the towns. In order to improve the timeliness and reliability of notification, a new Digital Notification Network has been installed and is operational. This system automatically rings down to the local 24-hour warning points, the State police, and the Massachusetts Civil Defense Agency. Boston Edison conducted a satisfactory test of the new notification network as part of the December 13, 1988 onsite emergency preparedness exercise.

Based on the foregoing, as well as the discussion in other sections of this Decision, the Staff concludes that there has been substantial progress in offsite emergency preparedness at Pilgrim. To the extent that concerns continue to exist, they are not so significant that they call into question the basic soundness or workability of the plans. The current status of facilities, plans, procedures, and training is such that the NRC Staff finds that there is reasonable assurance that adequate protective actions can and will be taken in the event of a radiological emergency at Pilgrim. Furthermore, current ongoing efforts are expected to fully resolve the remaining concerns.

E. Evacuation Time Estimates (ETEs) (Issue 7)

In support of the revised plans and procedures, BECo has developed an evacuation time estimate (ETE) and a traffic management plan update for the 10-mile EPZ which were submitted to FEMA by the Commonwealth in March 1988 for review. The ETE study was further updated and distributed to the local planners and to MCDA in August 1988. The ETE is a planning tool which is used by decisionmakers to make an appropriate selection of protective actions, e.g., evacuation, sheltering, delayed evacuation, under various traffic-accident and meteorological conditions. The ETE study contains data on the population within the EPZ, including permanent residents; seasonal residents; transients such as tourists at beaches, parks, historical sites, and recreation centers; campers; and daytrippers. The NRC Staff has reviewed the most recent revision of the ETE study and determined that the assumptions are reasonable, the methodology is acceptable, and that the ETE study meets the NRC regulatory standard in terms of providing a tool for decisionmakers in the event of a radiological emergency.

F. Public Education

The Petitioners raised concerns related to the adequacy of public education/information regarding emergency planning for Pilgrim. Boston Edison has been working closely with Commonwealth officials to develop public education materials and, according to Boston Edison, verbal agreement has been reached on the concepts to be included in the public information brochure. A draft brochure was prepared and on December 12, 1988, was forwarded to MCDA for review and approval. MCDA has requested an additional review of the draft brochure by local civil defense directors, and this review is currently in progress. MCDA must then approve the brochure for publication. The Licensee expects the brochure to be ready for distribution in January 1989. An "Interim Public Information Brochure" was disseminated in December 1987.

The Staff concludes that the "Interim Public Information Brochure" provides sufficient information to the public, pending issuance of the revised brochure.

G. Exercises and Drills (Issue 8)

Full-participation exercises at Pilgrim were held in 1982, 1983, and 1985. Boston Edison was granted two schedular exemptions from the requirement to conduct a full-participation exercise in 1987. Conduct of a full-participation exercise was deferred until the end of 1988 because ongoing improvement efforts in the offsite plans are not complete. On December 8, 1988, Boston Edison requested an additional extension of the exemption until 120 days after completion of the power ascension program.

Although substantial additional progress has been made in planning, and Boston Edison believes that the scheduling of an exercise could now be undertaken, the Commonwealth has stated in a November 21, 1988 letter to the Licensee that "it is inappropriate to discuss an exercise drill schedule at this time." The Commonwealth has agreed to participate in discussions regarding the exercise objectives but feels that an exercise should not be held until the planning process is complete. Boston Edison states that the extension is appropriate because it will enable Licensee personnel to devote full attention to the power ascension program, permit certain exercise preparation activities to take place after the power ascension program is complete, and will provide an opportunity to complete emergency planning tasks. The NRC Staff has considered the Licensee's request for an exemption extension and is preparing an approval for transmittal to Boston Edison.

As noted above, several previous successful full-participation exercises have been conducted at Pilgrim over the years in which FEMA had found the plans to be adequate, and the infrastructure to handle emergency preparedness is still largely in place. Most of the local individuals who would take part in

emergency actions, that is, civil defense authorities, police authorities, and school authorities, have been working closely with Boston Edison in developing the revised plans. Therefore, the Staff believes that those individuals are knowledgeable in terms of the appropriate protective actions to be taken and will act to implement the revised plans, even though the plans are still in draft and even though there has not been a full-participation exercise with the revised plans.

The Commonwealth also participated fully in exercises at Vermont Yankee in December 1987 and at Yankee-Rowe in April 1988. These exercises demonstrated the Commonwealth's interaction with other agencies to assess and respond to conditions requiring actions to protect the health and safety of the public. Annual onsite exercises have been conducted pursuant to 10 C.F.R. Part 50, Appendix E, and during the most recent exercise, conducted December 13, 1988, notification and communication tests with the EPZ towns were conducted.

As a result of the Staff's review it has been determined that substantial emergency planning progress has been made, an infrastructure to handle emergencies is in place and would implement the revised plans, and the Commonwealth has demonstrated the capability to perform State functions during an emergency. The Staff, therefore, has concluded that the the Petitioners' concerns regarding exercises do not raise a substantial health and safety issue.

CONCLUSION

The institution of proceedings pursuant to 10 C.F.R. § 2.202 is appropriate 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); *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 922-23 (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.

My conclusions relating to emergency preparedness at Pilgrim insofar as such matters are raised in the Petition,[2] consider all of the information that is available to us today, including statements made by the Commonwealth at the October 14, 1988 Commission meeting; the recent report from the Commonwealth of Massachusetts Secretary of Public Safety, Charles V. Barry, dated October 11,

[2] The broader emergency planning issues raised by the Commonwealth in its several reports, but not in the 2.206 petition to which this Decision is directed, were addressed by the Staff at the October 14 and December 9, 1988 Commission meetings in the context of the overall readiness of the Pilgrim plant to resume power operation. For reasons presented on the record of those public meetings, I have concluded, in the overall context of emergency planning, that I have reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

1988; the recent meetings with the local Civil Defense Directors; and the statements made by the Commonwealth and local officials at the December 9, 1988 Commission meeting.

As explained above, substantial progress has been made to address the issues in emergency preparedness plans for Pilgrim raised in the petition; this progress is continuing. In view of this substantial progress I have concluded that no enforcement action is warranted. *See County of Rockland v. NRC*, 709 F.2d 766, 776 (2d Cir. 1983) (upholding the Commission's determination not to take enforcement action regarding emergency planning deficiencies at Indian Point Nuclear Plant, based on substantial progress in correcting the deficiencies). Significant safety improvements have taken place in the physical state of the plant and the current organizational and management structure has been significantly strengthened. Additionally, the Licensee's power ascension program, which has been approved by the Staff, is a deliberate and controlled process that will be conducted over a 4- to 6-month period and receive extensive Staff oversight. I conclude that no substantial health and safety issues have been raised by the Petitioners nor are any other matters raised which warrant the initiation of a proceeding. Accordingly, the Petitioners' requests for action pursuant to § 2.206 are denied as described in this Decision.

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 Rockville, Maryland,
this 29th day of December 1988.

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 100-2**

PUBLIC INTEREST RESEARCH GROUP, *et al.* **November 29, 1988**

The Nuclear Regulatory Commission is denying a petition for rulemaking filed by Louis J. Sirico, Jr., Esq., on behalf of the Public Interest Research Group, et al. The Petitioners requested that the Commission amend its regulations to prohibit the construction of nuclear power reactors where the population in the surrounding area exceeds or will exceed specified numerical limits. The petition is being denied for the following reasons: (1) it would unnecessarily restrict NRC's regulatory siting policies and procedures by elevating population density criteria above other siting criteria such as environmental and ecological factors; and (2) it would not result in a substantial increase in the overall protection of the public health and safety, as compared to the current siting criteria when combined with calculations of potential health effects. The NRC has carefully considered the issues raised in the petition, and has taken them into account in reaching a decision on the areas that fall within its jurisdiction.

CONSTRUCTION PERMIT: REACTOR SITE CRITERIA (10 C.F.R. PART 100 AND REGULATORY GUIDE 4.7)

The NRC's population density parameters are for no more than 500 persons per square mile averaged over any radial distance out to 30 miles, or the projected population density over the lifetime of the facility not to exceed 1000 persons per square mile averaged over any radial distance out to 30 miles (Regulatory Guide 4.7). If this density siting requirement cannot be met, special attention should be given to the consideration of alternative sites with lower population densities.

CONSTRUCTION PERMIT: REACTOR SITE CRITERIA (10 C.F.R. PART 100 AND REGULATORY GUIDE 4.7)

The NRC's siting requirements allow for the consideration of alternative sites with superior environmental parameters (e.g., suitable meteorological conditions, natural resources, and water temperature conditions) or superior geophysical conditions (e.g., suitable geologic, hydrologic, and tectonic conditions) if the population density parameters cannot be met.

DENIAL OF PETITION FOR RULEMAKING

I. BACKGROUND

By letter dated June 1, 1976, Mr. Louis J. Sirico, Jr., Esq., on behalf of the Public Interest Research Group and twenty-five other specified citizen groups, filed with the Nuclear Regulatory Commission a petition for rulemaking. The Petitioners requested that the Commission amend its regulations of 10 C.F.R. Part 100, "Reactor Site Criteria," to set numerical limits on allowable population density around nuclear power reactor sites. The amendments to 10 C.F.R. § 100.11(a) proposed by the Petitioners would set 0.4 mile and 3 miles as the minimum distances for the outer boundaries of the exclusion area and the low population zone, respectively. A new section of 10 C.F.R. § 100.12 proposed by the Petitioners would set a maximum population density of 400 persons per square mile averaged over any radial distance out to a distance of 40 miles. The Petitioners proposed that the Commission also deny construction permit applications where, during the effective period of the plant's license, the maximum projected population density would exceed 800 persons per square mile averaged over any radial distance out to a distance of 40 miles. Additionally, the Petitioners proposed that all population figures and projections include transit populations.

II. BASIS FOR REQUEST

The Petitioners indicated that despite an official policy against building nuclear power reactors near cities, both the Nuclear Regulatory Commission (NRC), and its predecessor, the Atomic Energy Commission, have permitted utilities to build nuclear power reactors too close to metropolitan areas. It is the view of the Petitioners that reliance on broad policy statements and regulatory guides in this matter are inadequate and that current Commission policy should be incorporated into NRC regulations. The Petitioners proposed criteria that

would prohibit the construction of nuclear power plants where the population in the surrounding area exceeds or will exceed specified numerical limits.

III. PUBLIC COMMENTS ON THE PETITION

A notice of receipt of the petition for rulemaking was published in the *Federal Register* on July 1, 1976 (41 Fed. Reg. 27,141). Interested persons were invited to submit written comments or suggestions concerning the petition by August 30, 1976. The NRC received fourteen comments in response to the notice: eleven from public utilities, utility representative organizations, nuclear power plant vendors, and industry representative organizations; and three from individuals. Twelve of the commenters (86%) opposed the petition. The main reasons cited by these commenters were: (1) The petition's proposal would result in a "serious loss of regulatory flexibility . . ." because this would greatly reduce the number of suitable sites for nuclear power plants, especially in densely populated areas such as the State of New Jersey. The commenter stated that "elevating population density criteria above these other concerns (ecological or environmental impacts) by a rigid and mechanical test (density criteria) cannot in every case work in the best interest of the public." (2) The petition's proposal "has misjudged both the content and adequacy of the Nuclear Regulatory Commission's siting policies and practices. The NRC's regulations and siting practices when combined with the conservative accident calculational procedures they require are more than adequate to protect the health and safety of the public." (3) The petition's proposal established "no factual basis for which the proposed amendments would further the public safety by establishing arbitrary values for minimum distances for exclusion area(s) and low population zones and on allowable population density." The two commenters supporting the petition's recommendation were from the Petitioners themselves. The Petitioners' chief concern was the "fear that putting this plant (in Iowa) so close to so many people creates an unacceptable public health menace." The Petitioners' position was that all future nuclear power plants should be sited in areas of low population density in order to better protect the health and safety of the general population.

IV. STAFF ACTION

The response to the petition for rulemaking was delayed because of pending Commission action concerning population siting criteria. An NRC Staff paper (SECY-78-624) was submitted to the Commission on December 4, 1978. In a memorandum to the Executive Director for Operations, dated February 15,

1979, the Commission deferred action on the population density siting criteria issue pending submission of the Siting Policy Task Force report. The Petitioners were notified of this deferral and that the petition would be considered in the context of the rulemaking on siting criteria.

Recent events, including the reactor accident at Chernobyl in the USSR, continued uncertainty over certain aspects of the accident source-term work, and the lack of projected construction permit applications have led the Commission's Executive Director for Operations to conclude that the rulemaking on siting criteria should be terminated. Therefore, there is no reason to further delay action on this petition. However, the need for additional rulemakings or rule revisions will be considered in the context of a study on the readiness to resume licensing that is currently under way by the NRC Staff. It is expected that the NRC Staff will address the question of siting policy and criteria adequacy as part of this broad study.

V. REASONS FOR DENIAL

The NRC shares the Petitioners' concern regarding siting future nuclear power plants in areas of low population density. As stated in NRC Regulatory Guide 4.7,

> [a]reas of low population density are preferred for nuclear power station sites. High population densities projected for any time during the lifetime of a station are considered during both the NRC staff review and public hearing phases of the licensing process. If the population density at the proposed site is not acceptably low, then the applicant will be required to give special attention to alternative sites with lower population densities.

In addition, NRC Regulatory Guide 4.7 recommends a minimum exclusion distance of 0.4 mile and minimum distance of 3 miles for the outer boundary of the low population zone. Further, this Regulatory Guide indicates that transit population should be included in population density calculations for those sites where a significant number of people work, reside part-time, or engage in recreational activities, and are not permanent residents of the area.

However, the NRC's specific population density parameters for siting nuclear power plants differ from those indicated by the Petitioners. The NRC's population density parameters are for no more than 500 persons per square mile averaged over any radial distance out to 30 miles, or the projected population density over the lifetime of the facility not to exceed 1000 persons per square mile averaged over any radial distance out to 30 miles (Regulatory Guide 4.7). If this density siting requirement cannot be met, special attention should be given to the consideration of alternative sites with lower population densities. The petition's proposed criteria would limit existing permissible population density

to 400 people per square mile within a 40-mile perimeter and limit maximum projected population density to 800 people per square mile.

At first glance, it might appear that the NRC's population density siting parameters and the population density siting parameters indicated by the Petitioners are similar — 500 vs. 400 per square mile averaged over any radial distance of 40 vs. 30 miles for the initial operation of the nuclear power plants. However, the real difference between the NRC's and the Petitioners' population density siting requirements is regulatory flexibility. The NRC's siting requirements allow for the consideration of alternative sites with superior environmental parameters (e.g., suitable meteorological conditions, natural resources, and water temperature conditions) or superior geophysical conditions (e.g., suitable geologic, hydrologic, and tectonic conditions) if the population density parameters cannot be met. However, on the other hand, the petition's siting requirements would automatically eliminate any site from further consideration if specific population density criteria are not met regardless of any other mitigating factors.

The NRC believes that Regulatory Guide 4.7 adequately addresses population density siting considerations and that no new rulemaking as proposed by the Petitioners is justified at this time. Also, the Petitioners offer no basis for the specific numerical population density limits indicated in the petition. Therefore, the petition would not result in a substantial increase in the overall protection of the public health and safety, as compared to the current NRC siting criteria when combined with calculations of potential health effects.

However, the NRC Staff is preparing to carry out an additional review of the Commission's present siting policy and criteria in light of its ongoing risk assessment activities and in view of a study by the NRC Staff that is now under way to examine our readiness to resume licensing.

For the Nuclear Regulatory
Commission

Victor Stello, Jr.,
Executive Director for
Operations

Dated at Rockville, Maryland,
this 29th day of November 1988.

CASE NAME INDEX

CASE NAME INDEX

CASE NAME INDEX

LEGAL CITATIONS INDEX
CASES

LEGAL CITATIONS INDEX
CASES

LEGAL CITATIONS INDEX
CASES

LEGAL CITATIONS INDEX
CASES

LEGAL CITATIONS INDEX
CASES

LEGAL CITATIONS INDEX
CASES

LEGAL CITATIONS INDEX
CASES

LEGAL CITATIONS INDEX
CASES

LEGAL CITATIONS INDEX
CASES

LEGAL CITATIONS INDEX
CASES

LEGAL CITATIONS INDEX
CASES

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
REGULATIONS

LEGAL CITATIONS INDEX
STATUTES

LEGAL CITATIONS INDEX
STATUTES

LEGAL CITATIONS INDEX
OTHERS

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

SUBJECT INDEX

FACILITY INDEX

FACILITY INDEX

FACILITY INDEX

*U.S. G.P.O. 1989-241-584:00008