

NUCLEAR REGULATORY COMMISSION ISSUANCES

OPINIONS AND DECISIONS OF THE NUCLEAR REGULATORY COMMISSION WITH SELECTED ORDERS

January 1, 1988 - June 30, 1988

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PREFACE

This is the twenty-seventh volume of issuances (1 - 665) 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 January 1, 1988 to June 30, 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.

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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)

January 8, 1988

The Appeal Board in this operating license proceeding determines that the evidentiary basis of a Licensing Board's favorable finding of the environmental qualification of a type of coaxial cable used for data transmission in Seabrook's computer system is inadequate to support that finding and remands the issue to that Board for additional proceedings.

APPEARANCES

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

Thomas G. Dignan, Jr., George H. Lewald, and Kathryn A. Selleck, Boston, Massachusetts, for the applicants Public Service Company of New Hampshire, *et al.*

MEMORANDUM AND ORDER

In ALAB-875¹ we confronted, *inter alia*, a challenge by the intervenor New England Coalition on Nuclear Pollution (Coalition) to the Licensing Board's disposition in its March 25, 1987 partial initial decision² of one of the issues the Coalition raised in the onsite emergency planning and safety issues phase of this operating license proceeding involving the Seabrook nuclear facility. Specifically, the Coalition disputed the Board's finding that the RG58 coaxial cable, used for data transmission in the facility's computer system, had been demonstrated to be "environmentally qualified" — i.e., capable of continuing to perform its intended function for such period as might be necessary after a severe (e.g., loss-of-coolant) accident.³

Our review of the matter did not disclose a sufficient evidentiary foundation for that finding. Accordingly, ALAB-875 returned the issue to the Licensing Board with instructions either (1) to identify the portion of the existing record that provided such a foundation; or (2) to reopen the record for a further exploration of the environmental qualification of RG58 cable.⁴

In an October 16, 1987 memorandum (unpublished), the Licensing Board pointed to what it deemed to be adequate evidentiary support for the challenged finding. Given the cited evidence, the Board informed us that it had determined that there was no need to reopen the record.

The Coalition, the applicants, and the NRC staff each took advantage of our invitation to comment on the substance of the Licensing Board's memorandum. On the basis of those comments and our own independent evaluation of the Board's analysis, we conclude that the matter must be remanded once again. For reasons that will appear, we do not believe that the evidence cited by the Licensing Board provides sufficient support for its finding that the RG58 coaxial cable is environmentally qualified. Although the applicants have brought our attention to certain other evidence that they assert does supply a satisfactory basis for the finding, we believe that the Licensing Board should evaluate that claim in the first instance.

1. As noted in ALAB-875, unlike two other types of coaxial cable (identified as RG11 and RG59) similarly supplied by the International Telephone and

¹ 26 NRC 251 (1987).

² See LBP-87-10, 25 NRC 177.

³ The requirement that the RG58 cable meet this standard is rooted in General Design Criterion 4 in Appendix A to 10 C.F.R. Part 50 and 10 C.F.R. 50.49(b).

⁴ See 26 NRC at 269-71.

Telegraph Corporation (ITT), the RG58 cable was not itself tested for the purpose of determining whether it is environmentally qualified. Rather, it appeared from the applicants' equipment qualification file (EQF) pertaining to that vendor's cables that the RG58 cable was deemed qualified solely on the basis of the tests performed on the RG59 cable.⁵ These two cables are indisputably similar in materials and construction. Nonetheless, because of what seemed to be significant differences in the dimensions of their conductors and insulation, it was not clear to us that the RG59 cable test results could serve as the foundation for the environmental qualification of the RG58 cable. The Licensing Board was therefore asked to refer us to disclosures in the existing record that established "that the differences in the two cables are unimportant for present purposes" or, failing that, to reopen the record to explore further the acceptability of using the RG59 cable test results to qualify the RG58 cable.⁶

In its October 16 responsive memorandum, the Licensing Board cited two segments of the EQF (not alluded to in the partial initial decision) as justifying the conclusion that the RG59 cable test results could be used to establish the environmental qualification of the RG58 cable. First, the Board pointed to the fact, revealed in Reference 1 of the EQF, that there are different operating requirements for the insulation resistance (IR) of the two cables. The requirement for the RG59 cable, which has an insulation thickness of 0.061 inch, is 10,000 megohms per 1000 feet of cable. For its part, the RG58 cable, with an insulation thickness of 0.040 inch, has an IR operating requirement per 1000 feet of one-tenth of that amount (i.e., 1000 megohms). These data led the Board to conclude that "the predicted performance of the smaller RG58 cable under conditions of environmental qualification testing would be proportional to the lower required operating resistance of its insulation."⁷

Second, the Licensing Board noted that the RG59 cable had been subjected to a high-potential test during which it was required to withstand an alternating current (ac) voltage of 80 volts per mil (0.001 inch) of insulation thickness. Inasmuch as this specific environmental qualification requirement thus takes into account the thickness of the insulation (i.e., the greater the thickness, the higher the voltage that must be withstood, and vice versa), the Licensing Board reasoned that a high-potential test of the RG58 cable would have yielded results similar to the acceptable results obtained in the testing of the RG59 cable.⁸

⁵ This EQF, identified as Electrical Equipment Qualification File No. 113-19-01, was introduced into evidence as the Coalition's Exhibit 4. One of the purposes of EQFs is to record the manner in which particular equipment is determined to be environmentally qualified.

⁶ ALAB-875, 26 NRC at 271.

⁷ Memorandum to the Appeal Board (October 16, 1987) at 3.

⁸ *Id.* at 3-4. Insofar as the difference in the dimensions of the conductors is concerned, the Board observed that it "could find no requirements in the environmental qualification acceptance criteria, or in the environmental qualification tests themselves, that depended upon the diameter or cross-sectional area of the conductors." *Id.* at 2-3.

2. We agree with the Coalition and the staff that there is evidence in the record that casts considerable doubt on the validity of a principal underpinning of the Licensing Board's thesis — namely, that the performance of the RG58 cable could be predicted on the basis of the satisfactory test results obtained with regard to the RG59 cable. As seen, that thesis rests in large measure on the premise that, at least in the case of ITT coaxial cable, there is a fixed relationship between the thickness of the cable insulation and the specified operating insulation resistance. But that premise is torpedoed by the data in the EQF pertaining to RG11 coaxial cable.

That cable (which, according to the Licensing Board, possesses the same insulation material and construction details as the RG59 cable⁹) has an insulation thickness of 0.122 inch.¹⁰ Because that is twice the thickness of the RG59 cable insulation, under the Licensing Board's hypothesis one would have to assume that the specified operating insulation resistance for the RG11 cable would appreciably exceed the 10,000 megohm value assigned to the RG59 cable. The actuality is, however, that the same value is specified for both cables.¹¹ In short, the presumed relationship between insulation thickness and operating insulation resistance simply has not been established.¹²

Turning to the second prong of the Licensing Board's analysis in its October 16 memorandum, no party appears to dispute that a high-potential test of the RG58 cable would likely have produced results similar to the acceptable results obtained in the testing of the RG59 cable. But, standing alone, that fact does not serve to justify the Board's ultimate conclusion that the RG58 cable can be considered environmentally qualified on the strength of the tests performed on the RG59 cable. In order to reach that conclusion, one would first have to determine that, of the tests utilized in probing the environmental qualification of electrical equipment, only the high-potential test has relevance in the case of the RG58 cable.

The applicants assert that the function of the RG58 cable is not the mitigation of the consequences of an accident. Rather, they insist, the EQF establishes that, should an accident occur, that cable need maintain its integrity only to the extent necessary to avoid compromising the fulfillment of the safety function of other components.¹³ It follows, we are told, that the high-potential test is all that need be satisfied to demonstrate the environmental qualification of the cable.

⁹ See LBP-87-10, 25 NRC at 210-11.

¹⁰ See Coalition Exhibit 4, Reference 1, Appendix A.

¹¹ *Id.* at Reference 1, sections 2.6.1.1.b, 2.6.1.2B.b, and 2.6.1.2C.b.

¹² For their part, the applicants contend that operating insulation resistance values should not be considered as acceptance criteria for accident conditions. If this is so, it would appear that in no event could the relationship between the 10,000 and 1000 megohm values assigned to the RG59 and RG58 cables, respectively, be used to demonstrate environmental qualification.

¹³ In this regard, the applicants cite Coalition Exhibit 4, Reference 1, Appendix A, at A1; Reference 7 at 2; Reference 6.

This well may be so. Insofar as we can ascertain, however, such a line of argument was never presented to the Licensing Board. Moreover, there is nothing in either its partial initial decision or its October 16 memorandum to suggest that the Board considered and placed reliance upon the proposition that the RG58 cable has a very limited post-accident function, which, in turn, drastically reduces the scope of the environmental qualification requirements it must satisfy.

As a general matter, claims that have an asserted evidentiary foundation should be first examined by the trial tribunal. In the circumstances, then, we believe it appropriate to leave it to the Licensing Board to pass initial judgment upon the applicants' new claim. If the Board finds the claim meritorious, it should issue another memorandum setting forth its reasons. On the other hand, if the claim is rejected, our disapproval of the analysis of the operating insulation resistance matter contained in the October 16 memorandum will necessitate a reopening of the record to pursue further the question whether the RG59 cable test results can serve as the foundation for the environmental qualification of the RG58 cable.

The issue concerning the environmental qualification of RG58 cable is *remanded* to the Licensing Board for additional proceedings consistent with this opinion.¹⁴

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

¹⁴ Should it prove necessary, the Licensing Board is to decide whether low-power operation of the Seabrook facility must await the completion of this remand.

In its comments on the Licensing Board's October 16 memorandum, the Coalition attempted to raise the question whether the tests applied to the RG59 cable were sufficient even to qualify that cable. See New England Coalition on Nuclear Pollution's Supplemental Memorandum Regarding Environmental Qualification of RG58 Coaxial Cable (November 4, 1987) at 6. That question was not presented on the Coalition's appeal from the partial initial decision and we therefore do not consider it.

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-6
(ASLBP No. 87-553-04-SP)
(Emergency Planning)

LONG ISLAND LIGHTING
COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

January 7, 1988

In this Memorandum and Order, the Licensing Board rules that Applicant's "Motion for Authorization to Increase Power to 25%" is properly filed and may be considered by the Board without any exemption from the Commission's regulations; but that due process may require a hearing on any unresolved contentions found to be relevant to the motion.

**OPERATING LICENSES: AUTHORIZATION FOR LOW-POWER
OPERATION; EMERGENCY PLANNING**

Where only emergency planning contentions remain to be adjudicated, if an applicant submits a request under 10 C.F.R. § 50.57(c) for operation in excess of 5% power, and asserts that the unresolved contentions can be resolved for the requested power level by virtue of the "not significant for the plant in question" provision of 10 C.F.R. § 50.47(c)(1), the request must be given serious consideration by the Licensing Board.

OPERATING LICENSES: AUTHORIZATION FOR LOW-POWER OPERATION; EMERGENCY PLANNING

The plain wording of 10 C.F.R. § 50.57(c) requires the Board to consider whether pending contentions are relevant to the Applicant's request for authorization to increase power; to allow any party with contentions an opportunity to show that those contentions are so relevant; and to make findings on the application of the criteria in 10 C.F.R. § 50.57(a) to the matters in controversy.

OPERATING LICENSES: AUTHORIZATION FOR LOW-POWER OPERATION; EMERGENCY PLANNING

Where neither common defense and security, nor the plant's conformity with the application is in issue, a positive finding under subsection (a)(3) of 10 C.F.R. § 50.57 would be tantamount to a positive finding for all subsections of that section, and the Board must proceed on the assumption that a restricted power license can issue only if its issuance, the operation of the facility, and the activities authorized will all give reasonable assurance of protection of public health and safety and compliance with the regulations.

OPERATING LICENSES: AUTHORIZATION FOR LOW-POWER OPERATION; EMERGENCY PLANNING

Although the Commission has not spoken directly on this matter and there appears to be no precedential case law controlling, the Commission's emergency planning regulations are promulgated as a matter of policy, and relief from their requirements cannot generally be obtained based on probabilistic risk assessments that show low risk to public health and safety from reactor operations at restricted power levels.

OPERATING LICENSES: AUTHORIZATION FOR LOW-POWER OPERATION; EMERGENCY PLANNING

It is well established that relief from the Commission's safety regulations cannot be founded upon economic considerations. Thus, it would not be fruitful to pursue a restricted power license based on the possible economic impact of power shortages, because even if true beyond question, relief could not be granted for that reason alone.

MEMORANDUM AND ORDER

(In Re: LILCO'S Request for Authorization to Operate
at 25% of Full Power)

INTRODUCTION

Before us is the Applicant's "Motion for Authorization to Increase Power to 25%" of July 14, 1987 (Motion), together with an ensuing agglomerate of answers, replies, responses, and counter responses.¹ It was at the outset by no means clear, either from the Motion or from the original Request for Authorization, exactly what path of reasoning through the legal maze the Applicant intended us to wend toward the relief it sought. Because of this we issued our Memorandum to the Parties of October 8, 1987 (unpublished). We pointed out therein that the Applicant had originally characterized its request as being under 10 C.F.R. § 50.47(c)(1), that the Commission had directed that the request, if refiled with this Board, be filed under 10 C.F.R. § 50.57(c), but that, in refiled, Applicant had merely stated that the request was under the required section but had, in effect, neither changed the previous reasoning nor demonstrated the chain of logic that linked it to the required section of the regulations.

In LILCO's Brief and LILCO's Reply the Applicant has largely ameliorated the flaw, establishing a train of reasoning that we can at least follow, although we cannot, as explained below, fully support it.

As we understand LILCO's theory of the case, the logic is as follows: The request for 25% power is made under the provision of 10 C.F.R. § 50.57(c)

¹ These include: LILCO's "Motion for Designation of Licensing Board and Setting Expedited Schedule to Rule on LILCO's 25% Power Request" of July 14, 1987 (Designation Motion); "Suffolk County, State of New York, and Town of Southampton Statement Concerning LILCO's July 14, 1987, Motion to Increase Power to 25%" of July 27, 1987 (Governments' Opposition to Designation); "Suffolk County, State of New York, and Town of Southampton Response in Opposition to LILCO Motion for Designation of Licensing Board and Setting Expedited Schedule to Rule on LILCO's 25% Power Request" of July 27, 1987 (Opposition to Designation); "NRC Staff Response to LILCO Motion for Authorization to Increase Power to 25%" of July 29, 1987 (Staff Response to Motion); "LILCO's Brief on 25% Power Questions" of November 6, 1987 (LILCO's Brief); "Views of Suffolk County, the State of New York, and the Town of Southampton in Response to the Licensing Board's October 6, 1987 Memorandum Concerning LILCO's Request to Operate at 25% Power" of November 6, 1987 (Governments' Views); "NRC Staff Response to Board Memorandum Requesting Parties' Views on Questions Raised by LILCO 25% Power Authorization Motion" of November 6, 1987 (Staff's Views); "LILCO's Reply Brief on 25% Power Questions" of November 16, 1987 (LILCO's Reply); "Reply of Suffolk County, the State of New York, and the Town of Southampton to LILCO's Brief on 25% Power Questions" of November 16, 1987 (Governments' Reply); and "NRC Staff Reply to Other Party Views on Board Questions Concerning LILCO Motion for Authorization to Operate at 25% Power" of December 15, 1987. All these filings reference or are founded upon LILCO's "Request for Authorization to Increase Power to 25% and Motion for Expedited Commission Consideration" filed before the Commission on April 14, 1987 (Request for Authorization); Governments' "Response in Opposition to LILCO's Motions for Expedited Commission Consideration" of April 27, 1987 (Governments' Opposition to Commission's Expedited Consideration); Staff's "NRC Staff Response to LILCO Motion for Expedited Consideration of Request to Authorize Operation at 25% of Full Power" of April 29, 1987 (Staff Support of Expedition); and the Commission's ensuing Memorandum and Order, CLI-87-4, 25 NRC 882 (1987).

which would allow "operations short of full power operations" upon favorable findings concerning the matters under 10 C.F.R. § 50.57(a). LILCO believes that only one numbered section of 50.57(a), § (a)(3), involves any dispute, and believes further that the showing that has been made under § 50.47(c)(1) by its Request for Authorization fully satisfies the two-pronged test of § 50.57(a)(3) by demonstrating that the 25% power operation "can be conducted without endangering the health and safety of the public" and "will be conducted in compliance with the regulations." LILCO's Brief at 5, 6.

The Governments view LILCO's implication that it has demonstrated compliance with § 50.47(c)(1) as "patently false." Governments' Reply at 4. The Governments point out that before a license can be issued under § 50.57(c) there must be an initial decision on the matters identified in § 50.57(a). Further, the Governments argue that §§ 50.57(a)(2), (3), and (6) must all be satisfied, not simply § 50.57(a)(3) alone. They point out further that LILCO has not acknowledged the important provision of § 50.57(c) that the parties have the right to be heard on relevant contentions before the required initial decision is issued. Governments' Reply at 6.

Staff cites § 50.57(c):

Action on [a motion to operate at low power] shall be taken by the presiding officer with due regard to the rights of the parties to the proceeding, including the right of any party to be heard to the extent that his contentions are relevant to the activity to 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 Staff then notes that "[t]his language indicates that the Board should (1) consider whether pending contentions in the proceeding are relevant to the request for authorization of the activity (here 25% power operation); (2) allow any party with contentions the opportunity to show that those contentions are so relevant; and (3) make findings on the application of the § 50.57(a) criteria to the activity sought to be licensed with respect to those criteria [*sic*; contentions] placed into controversy by an opposing party." Staff's Views at 6.

We are thus confronted at the outset with the following questions:

1. Can the Applicant rely upon § 50.57(c) to obtain authorization for operation at less than full power by using § 50.47(c)(1) to meet the requirements of § 50.57(a)?
2. Which of the requirements of § 50.57(a) must be met in this manner?
3. Which, if any, of the contentions currently in litigation are "relevant to the activity to be authorized"?
4. Through which of the three permitting conditions of § 50.47(c)(1) ("not significant for the plant in question," "adequate interim com-

pensating actions," or "other compelling reasons") can § 50.57(c) be seen to function where the movant attempts to rely on the sequence in question 1, above?

ANALYSIS OF QUESTION 1

In examining the way in which § 50.47(c)(1) can be used to satisfy the requirements of § 50.57(c), it is instructive to consider the history of the section under which LILCO is presently operating the plant at 5% power, § 50.47(d). That section is of comparatively recent origin (47 Fed. Reg. 30,232 (July 13, 1982)) and postdates both § 50.57(c) and § 50.47(c)(1). Two cases, *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-81-21, 14 NRC 107 (1981), and *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), LBP-82-3, 15 NRC 61 (1982), arose before the Commission adopted § 50.47(d), and in each the applicant sought permission to operate at low power for testing purposes while still unable to fully comply with the Commission's emergency planning requirements. *Diablo Canyon*, 14 NRC at 120 *et seq.*; *San Onofre*, 15 NRC at 191 *et seq.*

In each case the applicant argued, as LILCO does here, that operation at a restricted power level (there 5%, here 25%) so reduced such factors as fission product inventory, residual heat, urgency to respond to off-normal conditions, and the possible consequences of an accident that the deficiencies of the emergency plans were not significant for the plant in question. 14 NRC at 123-39; 15 NRC at 191-97. After hearing argument the boards in those cases found that, for the proposed operations, the deficiencies in the plans were indeed not significant. 14 NRC at 139; 15 NRC at 197.

Both of these decisions were undisturbed on review. Indeed, when the Commission issued the rule change that created § 50.47(d), permitting operation up to 5% without full compliance with the emergency planning regulations, it noted these decisions favorably, saying:

The level of risk associated with low-power operation has been estimated by the staff in several recent operating license cases: *Diablo Canyon* . . . *San Onofre* . . . and *LaSalle* In each case the Safety Evaluation Report concluded that low-power risk is several orders of magnitude less than full-power risk. These findings support the general conclusion in the text that a number of factors associated with low-power operation imply greatly reduced risk compare[d] with full power.

47 Fed. Reg. 30,232, 30,233 n.1.

We see a compelling analogy between the situation obtaining before the rule change with respect to *all* low-power operation and that obtaining at present with

respect to operation above 5%. Where only emergency planning contentions remain to be adjudicated, if an applicant submits a request under § 50.57(c) for operation in excess of 5% power, and asserts that the unresolved contentions can be resolved for that power level by virtue of the "not significant for the plant in question" provision of § 50.47(c)(1), we must at least give the request serious consideration. It is at least possible that the applicant may be able to comply with the regulations and obtain a low-power license through this route. Thus we conclude that LILCO's motion is properly filed and that no exemption from the regulations is needed as urged by the Governments.

We caution, however, that the road may be a difficult one. In particular, we note that the Commission sanctioned 5% operation in part because Staff analyses had indicated that the risks involved were "several orders of magnitude less than full power risk." It may well be that the risk at 25% is not so greatly diminished. We note also that the Statement of Considerations that the Commission offered at the time of the rule change specifically noted that while the rule change exempted the applicant from NRC and FEMA review of many of the requirements of § 50.47(b), the NRC would nonetheless be expected to review for compliance with subsections 50.47(b)(3), (5), (6), (8), (9), (12), and (15). 47 Fed. Reg. at 30,233. The exact significance of the Commission's establishing this requirement we have not evaluated in the light of § 50.47(c)(1)'s stated relief from *all* the requirements of § 50.47(b).

Furthermore, we agree with the Staff that the plain wording of § 50.57(c) requires that we "(1) consider whether pending contentions in the proceeding are relevant to the request . . . ; (2) allow any party with contentions the opportunity to show that those contentions are so relevant; and (3) make findings on the application of the § 50.57(a) criteria to the activity sought to be licensed" with respect to the matters in controversy.

The interaction between §§ 50.57(c) and 50.47(c)(1) is, in the case at bar, also complex. It would appear to the Board, for example, that the "relevance" test for contentions expressed in § 50.57(c) is much less rigorous than the "not significant" test of § 50.47(c)(1). Further, LILCO's claim that 25% of power operation lowers the risk sufficiently so that any emergency planning deficiencies are insignificant or compensated (LILCO's Reply at 10) is a claim that inherently compares two incommensurables. How far some given risk must drop and in what way it must drop in order that some particular precaution may become unnecessary is not a matter instantly perceived.

Thus our answer to question 1 is: The applicant is entitled to pursue this course, but the circumstances of a particular case may well require a hearing, and we are bound to consider at the outset whether due process requires such a hearing and upon which of the unresolved contentions it should be based.

ANALYSIS OF QUESTION 2

Here the controversy is simple, direct, and, in the Board's view, of little consequence. The Governments believe that the motion under § 50.57(c) must consider subsections 50.57(a)(2), (3), and (6). Governments' Reply at 5-6. LILCO believes it need only satisfy the requirements for § 50.57(a)(3). LILCO's Reply at 3-5. Staff apparently takes no position.

The three subsections involved in the dispute set forth findings that would be required in order to issue a license (whether for full power or for limited power under § 50.57(c)). They read as follows:

§ 50.57(a) Pursuant to § 50.56, an operating license may be issued by the Commission, up to the full term authorized by § 50.51, upon finding that:

* * *

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

(3) There is reasonable assurance (i) that the activities authorized by the operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the regulations in this chapter; and

* * *

(6) The issuance of the license will not be inimical to the common defense and security or to the health and safety of the public.

LILCO's position, while not succinctly expressed, is apparently that, since only subsection (a)(3) requires "reasonable assurance" and that "reasonable assurance" finding was made with respect to the extant 5% power license, all other § 50.57(a) findings, for whatever power level, have already been resolved favorably to LILCO. LILCO's Reply at 6. We find the logic difficult to follow, but we see no need to grapple with it.

In the Board's view, for this case, where common defense and security are not at issue nor is the plant's conformity with the application, a positive finding under § 50.57(a)(3) would, in fact, be tantamount to a positive finding for all three of the subsections at issue. Certainly a negative finding would be dispositive. We shall proceed on the assumption that a license can issue only if its issuance, the operation of the facility, and the activities authorized will all give reasonable assurance of the protection of health and safety and compliance with the regulations.

ANALYSIS OF QUESTION 3

The question of which contentions currently in litigation are relevant in a substantive way to the activity to be authorized is a question that stands at the core of any litigation concerning the request for 25% power. Furthermore, it is

a question of great complexity, involving as it does the interplay of emergency preparedness with the variable scope of potential accidents when that scope is considered as a function of power level. There are no quick or obvious answers, and, in our view, the answer to this question may itself be achieved only through the analytic crucible of litigation.

The matter of the validity of the technical analysis supporting LILCO'S motion is a narrow one and constitutes only a small part of the total litigation. Its complexity together with the existing burdens on this Board, however, calls, we believe, for the attention that could only be given by separating out that portion of the case for separate consideration. Four possibilities present themselves: We can request the appointment of a separate board, the appointment of a Special Master, the appointment of an Alternate Board Member, or a Technical Interrogator. In any case the new forum would consider the discrete question of whether any of the contentions currently before this Board, including both the so-called legal authority contentions and the contentions before us on remand, are substantively relevant to the proposed operation at 25% of full power. These bodies would be empowered to examine the relevance of such contentions based on LILCO'S technical risk assessment and on any evidence produced by other parties.² The chief difference in their powers would be that a Board so appointed could decide, upon finding that none of the contentions had substantive relevance to 25% operation, that an initial decision could be issued and the request could be granted. If the contentions were evaluated in opposition to a favorable finding under § 50.57(3), the request would be denied. In either case, the decision of the separate board would be appealable. The authority of the Special Master, Alternate Board Member, or Technical Interrogator would be limited to the advisory and assistant role established by 10 C.F.R. § 2.722. The matter of dealing with those contentions at 25% of power would be left to the present Board. We defer deciding what further procedures may be required at that point. It appears certain to us now that the examination of this question cannot be accomplished without some opportunity for the Governments to review both LILCO's original request and the Staff's analysis thereof. In the interest of expedition we therefore direct that the Staff resume its review of the proposal. Further, in order to focus the inquiry, we believe that the Governments must be given further opportunity to state with basis and specificity the ways in which any of their present contentions are relevant to the proposed operation. These statements, of course, would necessarily await the

² Our understanding of LILCO's intent is that it would attempt to prevail on a showing of immateriality of the unresolved contentions under § 50.47(c)(1) based on its technical risk assessment and the uncontested elements of emergency planning now in place. Therefore, the inquiry of the separate forum would focus on the risk assessment and not on final resolution of the remaining contentions in the case. If LILCO establishes that the plant is sufficiently safe when restricted to a maximum of 25% power so that the remaining contentions are immaterial to public health and safety, the contentions would be substantively irrelevant for the purposes of § 50.57(c).

publication of the Staff Safety Evaluation and a reasonable period for review by the Governments' experts. The precise schedule for review, submission of statements, and comment by the parties on such statements would be set by the proposed new Board, Special Master, Alternate Board Member or Technical Interrogator with due regard to the equities involved.

We therefore seek the parties' comments on the relative advantages and disadvantages of requesting that the Chief Administrative Judge appoint an auxiliary board, or in consultation with him, a Special Master with the parties' consent, or an Alternate Board Member, or Technical Interrogator without it. 10 C.F.R. § 2.722(a)(2)(3). The parties have of course given us their views on this matter previously, but this was before we decided that LILCO's motion is properly filed and that it is entitled to timely consideration of its motion under existing regulations without first seeking an exemption. With today's decision it is no longer open to the parties to argue that LILCO is not entitled to proceed on the course it has chosen, that no consideration at all be given its request, or that its request be deferred indefinitely. We can and do additionally consider LILCO's economic concerns in deciding that as a procedural matter LILCO is entitled to explore all possibilities afforded by NRC regulations for obtaining an operating license for Shoreham within a meaningful time frame. Therefore, it is no longer open to the parties to argue that no proceeding be undertaken or that it be long deferred on grounds of excessive burden or lack of resources. Further proceedings by one of the above alternatives, unless LILCO withdraws its request, are inevitable. Parties' views on the best alternatives for going forward may be changed by these developments, and their recommendation on the narrow issue we pose is warranted.

ANALYSIS OF QUESTION 4

As is clear from the discussion above, in the cases that we regard as precedential concerning the matter of operation at powers less than full power, § 50.47(c)(1) was deemed to operate through its "not significant for the plant in question" provision both by the boards that decided the issue and by the Commission. We believe that it should so function here.

We have given consideration to LILCO's position that the other provisions of § 50.47(c)(1) may also afford the requested relief. The position of both Staff and Governments is that the notion of "adequate interim compensating action" was meant to cover the situation where provisions in the emergency plans of one organization compensated for deficiencies in the preparedness of other organizations but was not meant to apply to whatever safety benefits that might result from operation of the reactor at restricted power levels. We are persuaded by the briefings of the parties and our own review of the regulations that

emergency planning regulations are promulgated as a matter of policy and that relief from the requirements of these regulations cannot generally be obtained based on probabilistic risk assessments that show low risk to public health and safety from restricted reactor operations. The Commission has of course devoted considerable effort to ensuring that reactor operations even at 100% power have low risk to the public but still it requires emergency preparedness.

The Commission has not spoken directly on this matter and there appears to be no precedential case law controlling. Additionally, LILCO argues that restricted power levels are but one element among several that together would permit its motion to be granted under the adequate interim compensating action provision § 50.47(c)(1). This route therefore remains at least potentially open to obtain the relief sought if LILCO wants to pursue it although the burden may be a difficult one.

We also considered whether "other compelling reasons" could include impending power shortages on Long Island as a basis for relief as espoused by LILCO. Power shortages may cost money; they may inconvenience people or threaten jobs or loss of industrial capacity. LILCO has not alleged and we find no reason for believing that there are reasons, for granting the request under this provision, related to the public health and safety, at least at any level of significance likely to result from the near-term unavailability of Shoreham. Thus, LILCO's reliance on this provision of § 50.47(c)(1) appears to be based principally on an economic argument. It is well established that relief from the Commission's safety regulations cannot be founded upon economic considerations. The Commission has clearly designated emergency planning as a matter required for protection of public health. Thus, we do not believe that it would be fruitful to pursue a restricted power license for Shoreham based on the possibility of power shortages on Long Island, because even if true beyond question, relief could not be granted for that reason alone. If safety-related reasons exist for granting a license to operate at 25% power, they will have to succeed on their own merit under the regulations without assistance from economic considerations.

CONCLUSION

LILCO has the right to pursue operation at 25% of full power by invoking § 50.57(c) and using § 50.47(c)(1) in the latter's "not significant for the plant in question" provision to satisfy the requirements of § 50.57(a)(3) as required under § 50.57(c). The Governments, however, have the right to be heard to the extent that their contentions are relevant to such operation.

In order to ensure all parties' rights in this proceeding, we direct that the Staff resume its review of LILCO's proposal, and we direct that all parties comment

upon the relative desirability of appointing a Special Master, another board, an Alternate Board Member, or Technical Interrogator to direct the inquiry into whether there are extant contentions in this case that are substantively relevant to the proposed operation at 25% of power. If a Special Master is appointed, such Special Master would be empowered only to recommend to this Board whether there is such relevance to the contentions presently before us. If a board is appointed, such board would be empowered to grant LILCO's request upon a finding that no such contentions existed or, if relevance is found, to deny LILCO's motion. If the motion is denied, this Board will seek the views of the parties as to whether it would be preferable to proceed with resolution of emergency planning contentions for 25% power or for 100% power in the posture of the case as it then exists. If an Alternate Board Member is appointed, that alternate will submit a report to the Board, which will be advisory only, and if a Technical Interrogator, that person will assist the Board in evaluating evidence and preparing a suitable and complete record. This Board will retain jurisdiction over resolution of existing emergency planning contentions at all times.

ORDERED:

1. LILCO is entitled to proceed with its request for 25% power operation under 10 C.F.R. § 50.57(c).
2. Intervenors are entitled to be heard on the relevance of their contentions to LILCO's request.
3. The Staff is directed to proceed with a review of LILCO's 25% power request.

4. The parties are directed to recommend to the Board by January 22, 1988, on the appointment of a separate board, a Special Master, an Alternate Board Member, or a Technical Interrogator to consider LILCO's 25% power request.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**James P. Gleason, Chairman
ADMINISTRATIVE JUDGE**

**Jerry R. Kline
ADMINISTRATIVE JUDGE**

**Frederick J. Shon
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 7th day of January 1988.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges:

**Robert M. Lazo, Chairman
Glenn O. Bright
Richard F. Cole**

In the Matter of

**Docket No. 30-13435
(ASLBP No. 88-559-01-SC)**

**FINLAY TESTING LABORATORIES,
INC.**

January 27, 1988

In this Memorandum and Order, the Licensing Board denies an NRC Staff motion to stay this show-cause proceeding pending completion of a Department of Justice investigation of Licensee's activities, and establishes a schedule for further proceedings.

ENFORCEMENT ACTION: STAY OF PROCEEDINGS

Where a stay of the type requested would devastate Licensee's business and deny Licensee its due process rights, the Staff bears a heavy burden to demonstrate a clear case of hardship or inequity in being required to proceed promptly with its action.

ENFORCEMENT ACTION: STAY OF PROCEEDINGS

Analysis of the facts of this case, using the four-pronged balancing test of *Barker v. Wingo*, 407 U.S. 514 (1972), mandates the conclusion that a stay is unwarranted where (1) no time limit for the stay is even suggested; (2) no privilege is asserted by the Staff to support its contention that discovery requested

by the Licensee in this case would hinder the parallel criminal investigation; (3) the Licensee has persistently asserted its rights to a prompt hearing; and (4) the Licensee would suffer extreme prejudice from the delay both in its business operations and in its ability to effectively prepare a defense to the enforcement action.

MEMORANDUM AND ORDER ON PREHEARING CONFERENCE OF JANUARY 13, 1988

The Licensing Board conducted a prehearing conference pursuant to notice¹ in Honolulu, Hawaii, on January 13, 1988. The parties, Finlay Testing Laboratories, Inc. (Licensee), and the Staff of the Nuclear Regulatory Commission (NRC Staff), both attended and participated.

Matters considered included (1) Licensee's multiple motions dated December 14, 1987, relating to the scheduling of hearings and discovery; (2) NRC Staff Motion for Stay of Proceeding, dated December 17, 1987; (3) identification of the key issues in the proceeding; and (4) establishment of a schedule for further actions in this proceeding.

I. STAFF MOTION FOR STAY OF PROCEEDING

On September 21, 1987, the Deputy Executive Director for Regional Operations issued against Licensee an Order Suspending Licensing (Effective Immediately) (published at 52 Fed. Reg. 36,479 (Sept. 29, 1987)). The order recited that on August 31, 1987, the NRC Staff commenced an investigation into the Licensee's activities, based upon allegations received by the Staff. Relying upon the results of an initial investigation by the NRC's Office of Investigations ("OI"), the Staff determined that on the two occasions that were the subject of the allegations the Licensee had transported licensed material in violation of U.S. Department of Transportation ("DOT") and NRC regulations. The order also noted the failure on both of these occasions to use required shipping papers and labels. *See* 10 C.F.R. § 71.5. While noting that the OI investigation was continuing, the Staff concluded on the basis of information from the initial investigation that the violations appeared to be deliberate, raising significant doubts as to whether the Licensee is able or willing to comply with the Commission's requirements to protect the public health and safety. Therefore, the Deputy Executive Director for Regional Operations, pursuant to 10 C.F.R. §§ 2.201(c) and

¹ 53 Fed. Reg. 89 (1988).

2.202(f), suspended on an immediately effective basis all activities authorized under the license.

The order further noted that, pursuant to 10 C.F.R. § 2.202(b), the Licensee might file an answer showing cause why the license should not have been suspended and might also request a hearing on the order. If a hearing were requested by the Licensee (or any other person adversely affected²), the Commission would issue an order designating the time and place for any hearing. The issue to be considered at any such hearing would be whether the suspension order should be sustained.³

On October 5, 1987, the Licensee filed an "Answer; Request for Rescission or Relaxation of Order; Request for Hearing." Therein, the Licensee admitted that the improper shipments to and from the island of Hawaii in February 1987 occurred, as recited in the order. Answer at 17. The Licensee also admitted that the DOT's labeling requirements were not met with respect to the August 18, 1987 shipment to Johnston Island, as recited in the order, but denied that it violated DOT regulations by shipping the radiographic device on a military flight that also carried passengers. *Id.* at 17-18. The Licensee denied that Gordon Finlay, president and owner of the Licensee, had any knowledge of (1) the repackaging of the radiographic device involved in the Johnston Island shipment and the failure to have properly labeled the resulting package (Answer at 10) and (2) the improper shipment of a radiographic device to the island of Hawaii. *Id.* at 13.

As noted in the order (at 3), the OI investigation was continuing at the date of the order's issuance. That investigation is still continuing, but as of early December 1987, had progressed to the point where the Staff and OI considered referral of the matter to the Department of Justice (Department) to be appropriate. Discussions by OI and the Staff were undertaken with the Department, resulting in the Department commencing on December 8, 1987, a criminal investigation of the activities of the Licensee. In a conference call on the following day (December 9, 1987), the Staff advised Judge Lazo and counsel for the Licensee that the Department had commenced a criminal investigation of the Licensee's activities and that the Department was requesting the Staff to seek a stay of this proceeding in order to avoid irreparable harm to the criminal investigation. It was agreed during that conference call that the Staff would file by December 16, 1987, a motion for a stay of this proceeding.

Although the Staff intends to seek a stay for a period sufficient to permit the Department to complete its criminal investigation, since the Department has only recently begun its investigation it is not now in a position to estimate the

²No other person requested a hearing on the order.

³The order further stated that an answer or request for hearing would not stay the immediate effectiveness of the order. Order at 5.

length of time needed to complete the investigation. However, the Department believes that it will be in a position to make such an estimate by about the middle of January 1988. Accordingly, the Staff is currently requesting a stay of this proceeding until mid-February 1988 to permit the Staff to file a motion for an extension of the stay (which the Staff would file by January 29, 1988), to provide the Licensee an opportunity to respond to that motion, and to allow time for the Licensing Board to rule on that motion.

On December 28, 1987, Licensee filed its opposition to NRC Staff Motion for a Stay of Proceeding. In its opposition, Licensee requests not only that the Staff's motion be denied, but also that the Order Suspending License (Effective Immediately), entered September 21, 1987, be immediately vacated due to Staff's dilatory and bad-faith conduct.

Licensee argues that Staff must make out a clear case of hardship or inequity in being required to go forward with this matter if there is even a fair possibility that the stay will damage Licensee. A stay of the type requested would devastate Licensee's business and deny Licensee its due process rights. See *Landis v. North American Co.*, 299 U.S. 248, 254-55 (1936).

Staff acknowledges the heavy burden placed upon it, yet asserts an entitlement to the stay based principally upon the slip opinion attached to its motion, *Advanced Medical Systems, Inc.*, ALJ-87-4, 25 NRC 865 (1987) (AMS).

The facts of this matter could not be more dramatically different than those in AMS. And, in AMS, only a 3-month stay was granted by the Presiding Officer, AMS, 25 NRC 872-73. While the balancing test applied in that case is generally applicable before courts deciding this issue, it is clearly evident that each balancing factor weighs in favor of Licensee, and against granting the Staff's motion.

Despite the explanation by the Staff, it is clear that the request is for an open-ended stay of all matters in this proceeding. A status report in mid-February 1988 can hardly be considered the end of the stay request. Staff "intends to seek a stay for a period sufficient to permit the Department [of Justice] to complete its criminal investigation . . . [and Justice] is not now in a position to estimate the length of time needed to complete the investigation." Staff Motion at 4. Such an open-ended stay request was denied in AMS under enormously less egregious circumstances for the Licensee.

In AMS, "[b]efore the proceeding progressed very far, the NRC Staff administratively relaxed the terms of the order." AMS, 25 NRC at 865. AMS was authorized to, and did, resume the suspended activities under certain conditions imposed by the Staff.

This one fact in AMS, above all else, militated against the Presiding Officer's outright denial of the stay request made by the Staff there. As the Staff argued in AMS (at 866):

The Staff believes that *since AMS may now perform its normal business* under the conditions of the relaxed suspension order, a stay would not be unduly burdensome on AMS [emphasis added].

On the contrary, in this proceeding Licensee is unable to conduct anything like its normal business. The suspension order has neither been relaxed nor rescinded, wholly or partly, despite detailed settlement proposals by Licensee to the Staff urging relaxation or rescission of the order.

Staff admits that Licensee has consistently requested a hearing and expeditious processing of this matter. The combined motions filed by Licensee with the Presiding Officer, dated December 14, 1987, detail the efforts to which Licensee has gone in seeking some forward movement in this matter. It is not without moment that Licensee requested a hearing, a motions hearing, discovery, and a prehearing conference before learning of the December 8 Staff referral to the Department. There is no indication that Licensee intends to abuse the discovery process.

Analysis of the facts in this matter, under the four-prong balancing test established in *Barker v. Wingo*, 407 U.S. 514 (1972), also mandates the conclusion that a stay is unwarranted.

(1) Length of Delay

Staff seeks an open-ended stay. No one can avoid that unmistakable conclusion, and no one has predicted when, or if, the Department of Justice investigation will be concluded. No time limit for the stay is even suggested. As is well known, it is not unusual for criminal investigations to take months, even years.

(2) Reasons for Delay

The Staff's justification for the delay is principally that discovery of witness statements upon which the suspension order was based would reveal to potential targets of the criminal investigation significant information relevant to the criminal investigations. Staff's Motion at 8. The statements were obtained by NRC Office of Investigations, not the Department; and were ostensibly obtained for this, not a criminal, proceeding.

However, no protection has been requested under 10 C.F.R. § 2.790(a)(7), even though the Staff is clearly aware of that protective provision. Staff's Motion at 4 n.7. More importantly, except for telling us that criminal discovery procedures are more restricted than civil discovery procedures, the Staff offers no justification for withholding the discovery requested by Licensee. Significantly, no privilege of any type is asserted by the Staff on the discovery issue.

This same basic argument was raised by the IRS in *Campbell v. Eastland*, 307 F.2d 478 (5th Cir. 1962), *cert. denied*, 371 U.S. 955 (1963). However, *Campbell* was also drastically different in circumstance from this matter.

In *Campbell*, the plaintiff filed a civil action for a tax refund knowing that he was about to be indicted for tax fraud (307 F.2d at 481-89). In that case, not only the timing, but the tactics of the action's filing itself, and subsequent requests for discovery, led the Fifth Circuit to find that Campbell's motion under Rule 34 for discovery, if not the suit itself, was purely for the purpose of obtaining the otherwise unobtainable criminal investigative reports. *Id.* at 490.

This matter is nothing like *Campbell*. Investigative reports of the Department have not been requested. The Department admits that it is conducting its own investigation into essentially the same factual allegations. Olingy Affidavit, ¶¶ 3-6. It will prepare its own reports. Additionally, Licensee did not commence this matter; the Staff did. And, Licensee did not request discovery with knowledge that a criminal referral had been or would be made. *Cf. Campbell, supra*, 307 F.2d at 481-82. Even in *Campbell*, the Fifth Circuit indicated that the discovery Licensee seeks should have been available under the circumstances (*see id.* at 489).

The reports prepared as part of a criminal investigation would necessarily contain information of importance to the criminal prosecution that could have no necessary relation to the refund claim but could not be physically separated in the files. *Limited discovery and other remedies were available which would not be vulnerable to improper inspection. Thus, the plaintiffs were clearly entitled to discovery of any documents obtained from the plaintiffs' files. By interrogatories under Rule 33, the plaintiffs could learn the names and addresses of persons having knowledge of relevant facts. By depositions under Rule 26, they could ascertain relevant facts known to the agents [emphasis added].*

In *Campbell*, a very broad request for "any and all" confidential criminal investigative reports was made by Campbell. No such request has been made here. In essence, the Fifth Circuit agreed that production of all of the items of discovery Licensee is requesting in this matter was proper, even though Campbell was acting in bad faith there.

The Staff seeks to bolster its reasons for delay by offering *in camera*, *ex parte* proof, by hearsay affidavit, to bolster the Department trial attorney's conclusory affidavit. However, such an *ex parte* presentation is in contravention of the NRC's own policy statement and a clear violation of the Licensee's constitutional rights of due process and confrontation of witnesses. Any order entered based upon such *ex parte* proceedings would be constitutionally and procedurally void.

Licensee argues that the now obvious underlying reason for delay is the Staff's deliberate and consistent pattern of dilatory tactics since early September to avoid having this matter determined. This is the very strongest case for

denial of the Staff's motion. *SEC v. Dresser Industries, Inc.*, 628 F.2d 1375 (D.C. Cir. 1980).

(3) Licensee's Assertion of Its Rights

There is no issue here. The Staff admits that "the Licensee has persistently asserted its right to a prompt hearing." Staff Motion at 9. Presumably, the Staff will also admit that Licensee has persistently requested action on its settlement proposals, its requests for settlement conferences, its requests for prehearing conference, and its requests for documents and other discovery, all of which are described in Licensee's December 14, 1987 motions and attachments.

Licensee states that it is losing over \$36,000.00 in average monthly revenues, and has lost through cancellation of contracts and continuing related expenses over \$400,000 in revenues to date. Additionally, the very nature of this proceeding, and Staff's national press release about it, has harmed the business and reputation of Licensee. Most importantly, Licensee is being prevented from any opportunity to vindicate itself through proper procedural channels in this matter. Finlay Affidavit.

(4) Prejudice to the Licensee

The Licensing Board has already heard much about the financial and personal pressures under which the Licensee is operating. The affidavit of Gordon Finlay attests to the financial and personal devastations that the unresolved suspension order has caused.

Perhaps more importantly, the open-ended delay attendant to the stay request will hamper if not effectively destroy the Licensee's opportunity to present a defense to the suspension order. Witnesses are already dispersed throughout the Continental United States and much of the South Pacific Ocean, and other important evidence such as Military Airlift Command (MAC) documents and witnesses will in due course be moved, stored, transferred, reassigned, discharged, lost, or destroyed. Most of the Staff's witnesses no longer work with the Licensee. Some of them left on bad terms. The identities of these witnesses are and have been largely known to the Licensee, having been disclosed by the OI and others during the investigation.

Unless the Licensee is allowed to examine, and to cross-examine, these and other Staff witnesses on the statements they have given, the statements already obtained by the Staff may be the only recallable versions of the facts when and if a hearing occurs.

The Staff has already conducted an extensive investigation of Licensee, including its books and records, and obtained sworn statements from numerous witnesses. Essentially, the Staff already has the evidence it needs to proceed in this matter. On the other hand, Licensee is at a serious disadvantage because the Staff has refused to disclose any of the investigative information, or the nature of the documentation, upon which it intends to rely. This is not a situation where the Staff may, by this delay, be impaired in its ability to sustain the suspension order. It is, however, a matter with dangerous potential of fatally impairing Licensee's ability to mount its defense.

In this matter, dramatically unlike the AMS matter, Licensee is not allowed to conduct any activities under its NRC license.

II. STAFF OFFER TO MAKE AN *IN CAMERA, EX PARTE* PRESENTATION

In its Motion for Stay of Proceedings the Staff noted that the attached Department of Justice declaration does not contain all of the details that might be offered in support of the motion. In this regard, Counsel for the Staff stated that the Staff, OI, and the Department are not willing to state on the public record or to the Licensee, even under protective order, additional matters that the Licensing Board may consider necessary to rule upon the motion. However, it was stated that the Staff, OI, and the Department were prepared to make an *in camera, ex parte* presentation to the Licensing Board under the provisions of the Commission's Statement of Policy; Investigations, Inspections, and Adjudicatory Proceedings. 49 Fed. Reg. 36,032 (Sept. 13, 1984) if the Licensing Board believed that additional details are necessary in order to rule on the Staff's motion for stay.

After considering the NRC Staff Motion for Stay of Proceeding, the Licensee's opposition to NRC Staff Motion for Stay of Proceedings, their attachments and the accompanying affidavits of Judith E. Olingy, Esq. (Department of Justice Attorney), and Gordon Finlay, the Board determined that the Staff had failed to establish that the proceeding should be stayed so as to permit the Department of Justice to complete a parallel criminal investigation. In denying the motion, the Board declined to hear an *in camera, ex parte* presentation as offered by the Staff.

In its ruling, the Licensing Board noted that an *ex parte* communication, such as offered by the Staff, would serve no useful purpose at this time. It could not be part of the adjudicatory record upon which we could base a decision to grant or deny Staff's motion for a stay of the proceeding. Nor, in our view, would the additional details hinted at by the Staff tilt the balancing of the equities which

weighs so heavily in favor of Licensee and against granting the Staff's motion to prevent this proceeding from going to hearing without further delay.

III. STAFF POSITION REGARDING SETTLEMENT

Staff delayed holding settlement discussions from September 21 until November 9. When settlement discussions were finally held at Licensee's insistence, Licensee expected that a meaningful settlement proposal would be promptly and positively considered. Licensee has stated that it spent substantial time and money in preparing its proposal dated November 18, 1987. Staff then delayed responding to the settlement proposal and ultimately refused to discuss settlement at all.⁴ Staff dallied in responding to the Presiding Officer's requests regarding discovery and hearing timing. When finally faced with a requirement to provide justification for its order, Staff referred this matter to the Department of Justice on the same issues, and the same basic information, that it had in August, over a month before the order was entered.

Such conduct not only prejudices the Licensee but demonstrates the very reason that the regulations mandate a prompt hearing when *ex parte* suspension orders are issued. 10 C.F.R. § 2.202(c).

IV. SCHEDULE

During a prehearing conference by telephone conducted on January 20, 1988, Counsel for Licensee and NRC Staff proposed to the Licensing Board a schedule that they had agreed upon for discovery and hearing in this proceeding. That schedule that has been approved by the Licensing Board is set forth below.

January 13, 1988	Discovery period begins.
January 22, 1988	Last day for filing discovery requests by NRC Staff.
January 29, 1988	Last day for filing Staff's responses or objections to Licensee's discovery requests.
February 5, 1988	Last day for filing Licensee's responses or objections to Staff's discovery requests.
February 26, 1988	Last day for filing prefiled written direct testimony by both parties — in hands of Board.
March 9, 1988	Hearing begins.

⁴ See Letter dated December 15, 1987, from Lawrence J. Chandler to Barry D. Edwards, and Tr. 35 and 56.

**V. LICENSEE'S MULTIPLE MOTIONS
DATED DECEMBER 14, 1987**

On December 14, 1987, Licensee filed a (1) Motion for Order Setting Hearing; (2) Motion for Prehearing Conference; (3) Motion for Settlement Conference; and (4) Motion for Order Shortening Time for Response to Requests for Production of Documents and Other Discovery.

Licensee's motion for order setting hearing is granted by the actions of the Licensing Board taken in this Order and the Notice of Hearing entered this day. The prehearing conference requested by Licensee was held on January 13, 1988. Licensee's motion for settlement conference is denied. Licensee's motion for order shortening time for response to discovery requests is granted to the extent ordered by the Licensing Board in this Order.

V. ORDER

For all the foregoing reasons and upon consideration of the entire record in this matter, it is, this 27th day of January 1988, ORDERED:

1. That NRC Staff Motion for Stay of Proceeding, dated December 17, 1987, is *denied*; and
2. Licensee's Motion for Order setting hearing is *granted*.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Robert M. Lazo, Chairman
ADMINISTRATIVE JUDGE

Glenn O. Bright
ADMINISTRATIVE JUDGE

Richard F. Cole
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 27th day of January 1988.

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)

January 11, 1988

This case, involving an application for the issuance of a senior reactor operator's license, was dismissed as moot after it became apparent that the Applicant, who is already licensed to operate Beaver Valley Nuclear Power Station, Unit 2, would not use a license for Unit 1 even if it were issued to him.

RULES OF PRACTICE: MOOTNESS

A proceeding to determine whether or not a senior reactor operator's license should be issued, is moot if the license in question would not be used. Although the Applicant sought a determination concerning whether or not he had passed a test, it is not the business of the hearing officer to determine issues subsidiary to the ultimate issue of whether or not to issue a license. Even though private decisions might affect Applicant's career because he has not been issued a license, this impact on private decisions does not prevent the proceeding from being moot.

RULES OF PRACTICE: CONTINUING JURISDICTION

The hearing officer, although dismissing the case as moot, considered the possibility that events could transpire that would cause the case to have an impact on future federal licensing decisions, and it retained jurisdiction to entertain a motion to reactivate the case if that contingent event did transpire.

DECISION

This case involves an appeal by David W. Held from the denial of a senior reactor operator's (SRO) license for Unit 1 of the Beaver Valley Nuclear Power Station. I have determined that the case is moot, in that Mr. Held is licensed as an SRO for Beaver Valley Unit 2 and cannot utilize more than one license at the present time. Tr. 16-18, 22-23. The truth of the inability to use more than one license is corroborated by the letter of Duquesne Power and Light Company withdrawing its previous certification that it required Mr. Held's services for operating Unit 1. Letter from J.D. Sieber, Duquesne Light Co., to U.S. Nuclear Regulatory Commission, November 12, 1987.

The reason the case is moot is that this is a proceeding contesting the denial of a license and I am authorized to consider an appeal from a denial of a license. My jurisdiction is to determine whether or not a license should be issued, not to decide whether or not a particular examination has been passed.¹

We note that Mr. Held applied for his SRO license for Unit 1 in 1986. He demonstrated his physical health, passed the written examinations for Unit 1, and presented a statement from Duquesne Light Company, the operator of the unit, that he was needed as an operator of that unit. Were it not for the determination of the Staff of the Nuclear Regulatory Commission that Mr. Held had not passed the simulator portion of his examination, he would have been issued a license.² 10 C.F.R. § 55.11 (prior to May 26, 1987).

Mr. Held's principal remaining concern, and the reason he has continued to press his appeal, is that the issuance of a license to operate Unit 1 could be useful to him in his career to demonstrate that he has filled the requirements for jobs that require a knowledge of both Beaver Valley units. Tr. 14-15. In

¹ I have considered whether it would be appropriate to hold a hearing to determine whether a license should have been issued at the time Mr. Held was first graded on his simulator examination. Although I consider this to be a possible interpretation of the regulations, I have decided that it is not necessary to incur the expense of a hearing under circumstances where there is very little likelihood that the contested license would ever be used.

² Mr. Held also claims that he would have been paid \$4000 additional during the past 16 months had he been licensed. Filing of January 4, 1988, at 2. However, it is my job to decide whether or not to license Mr. Held, not to administer the personnel system of Duquesne Light, which is free to determine for itself, in the absence of any final NRC determination, whether Mr. Held had completed the necessary work to be considered as qualified as other operators of Unit 1.

this instance, that possibility is troubling because Mr. Held's alleged difficulties on the simulator examination do not appear to be specific to Unit 1 and are, therefore, the kind of alleged deficiencies that an employer could consider to have been resolved through Mr. Held passing the SRO examination for Unit 2 and gaining operating experience with that unit.

A consequence of the decision I am now issuing is that there is no final decision by the Nuclear Regulatory Commission concerning whether Mr. Held passed his simulator examination or should have been issued a license at the time he took that examination. Hence, Mr. Held is in a special kind of limbo in which the outcome of his license application has never been fully determined. Duquesne Light Company could, therefore, consider itself free to determine whether he has demonstrated the kind of knowledge of Unit 1 that would fit him for Beaver Valley duties for which the utility wishes him to be knowledgeable of Unit 1 (but for which there is no legal requirement that he be licensed to operate Unit 1).

In reaching this decision, based on mootness, I am aware that there is a possible circumstance in which the mootness of this case would be self-reversing. That is, it is possible that at some future time, Duquesne Light could obtain an agreement to dual-license personnel for both of its units and it might not feel free to include Mr. Held within the dual-licensed group.³ Should this event occur within the next 2 years, then Mr. Held should immediately notify me and the case will be automatically reactivated because it would then be ripe for adjudication.

In closing, I would like to express my appreciation both to Mr. Held and to the Staff of the Commission for the excellence of their presentations. In particular, as a nonlawyer, Mr. Held has distinguished himself for clarity of writing and verbal expression, diligence, and cooperativeness.

ORDER

Upon consideration of the filings of the parties and the entire record in this matter, it is, this 11th day of January 1988, ORDERED:

That the case is dismissed as moot, subject to the condition that Mr. Held may move to reopen the case within 2 years should a circumstance arise in which the issuance of senior operator license for Beaver Valley Nuclear Power Station, Unit 1, is necessary for Mr. Held to obtain a dual license for Units 1 and 2.

³ Letter of Duquesne Light to U.S. Nuclear Regulatory Commission, November 28, 1987, attached to Mr. Held's filing of January 4, 1988.

This Decision shall become final agency action in 30 days unless a petition for reconsideration is filed in a timely fashion. If such a motion is filed, this decision (as amended) shall become final agency action 30 days after issuance of the decision on the motion for reconsideration.

**Peter B. Bloch
ADMINISTRATIVE JUDGE**

Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

Hugh L. Thompson, Jr., Director

In the Matter of

Docket No. 70-135

BABCOCK & WILCOX
(Apollo Facility)

January 5, 1988

The Director of the Office of Nuclear Material Safety and Safeguards denies a petition filed by Cindee Virostek requesting action with regard to the Babcock & Wilcox Apollo facility. The Petitioner requested that the license for the facility be "suspended until corrective actions have been fully implemented," after which the license be "terminated and revoked, and the facilities and grounds be released for unrestricted use." The Petitioner asserted that the Licensee had not fulfilled a license condition requiring decontamination at the end of the plant life, that the facility has had a significant adverse affect upon Apollo Township and the surrounding environment, and that material is missing and unaccounted for.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

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

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

INTRODUCTION

On February 24, 1987, Cindee Virostek (Petitioner) filed petitions pursuant to 10 C.F.R. § 2.206 requesting that the Director of the Office of Nuclear Reactor

Regulation, the Director of the Office of Inspection and Enforcement, and the Director of the Office of Nuclear Material Safety and Safeguards take action with regard to the Babcock & Wilcox (B&W) Apollo facility. The Petitioner requested that the license for the facility be "suspended until corrective actions have been fully implemented," after which the license be "terminated and revoked, and the facilities and grounds be released for unrestricted use."

The Petitioner asserts as a basis for this request that the Licensee has not fulfilled License Condition No. 37 of License No. SNM-145, which provides that at the end of plant life, the Licensee shall decontaminate the facility and grounds so that they can be released for unrestricted use. The Petitioner also asserts as bases for the request that the Apollo facility has had a significant adverse affect upon Apollo Township and the surrounding environment, and that material is missing and unaccounted for. By letter dated April 10, 1987, the Licensee was asked if it wished to submit information concerning the issues raised in the Petitions. The Licensee provided such information on May 20, 1987.

The Petitions have been appropriately referred to me for a decision. For the reasons given below, I have concluded that the Petitioner's request should be denied.

DISCUSSION

Background

The Apollo facility was established as a commercial venture by Nuclear Materials and Equipment Corporation in 1957 to develop and manufacture nuclear fuel containing uranium and to provide decontamination laundry services. In 1967, the license authorizing these activities was transferred to a subsidiary of Atlantic Richfield Company, which continued these activities until 1971, when this subsidiary was purchased and the license was acquired by Babcock & Wilcox.¹

In 1980, Babcock & Wilcox (B&W) decided to discontinue uranium fuel processing at the Apollo facility and embarked on a program to remove process equipment and to decontaminate the buildings in which uranium fuel processing had been conducted. Uranium processing equipment was removed and shipped for disposal, thus removing the major fraction of the uranium contamination associated with fuel processing operations. B&W's license was amended on April 18, 1984, to delete authority to conduct fuel processing operations and to delete the expiration date.

¹The commercial laundry business was discontinued by Babcock & Wilcox in 1981.

The license was subsequently modified by the NRC and set to expire on March 31, 1987, and on February 25, 1987, B&W submitted an application for license renewal. Because the application was submitted more than 30 days prior to expiration of the existing license, the existing license will not expire until final action has been taken on the application for renewal.² In its renewal application, B&W proposes to use the Apollo facility to supplement and duplicate some of the nuclear service operations that are presently conducted at its nearby Parks Township facility.

The Petitioner raises several issues as a basis for her request for relief. For the most part, however, the Petitioner has not provided the factual basis for her request with the specificity required by § 2.206 and, for this reason, action need not be taken on the request. See, e.g., *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), DD-85-11, 22 NRC 149, 154 (1985). Nonetheless, the issues raised in the petitions have been evaluated to the extent possible. As discussed below, I have determined that there is no basis to take the action requested.

Unfulfilled License Condition

The Petitioner asserts that since the Licensee has terminated fuel processing operations, this corresponds to the end of plant life as defined in 10 C.F.R. Part 70, and the plant, therefore, should be decontaminated so that the facility and grounds can be released for unrestricted use in accordance with License Condition No. 37.

Sections 30.36 and 70.38 of 10 C.F.R. provide that each licensee shall request termination of its license when it decides to terminate all activities involving materials authorized under the license, shall terminate use of such material, and shall remove radioactive contamination to the extent practicable. License Condition No. 37 provides that B&W shall decontaminate the Apollo facility at the end of plant life so that the facility and grounds can be released for unrestricted use. The intent of these regulations and license condition is to prevent abandonment of the facility without decontamination prior to license termination.

As described above, in February 1987, B&W requested authority to conduct nuclear service operations at the Apollo facility. Thus, it is clear that B&W has decided not to terminate all licensed activities at the facility.³ The term "end of

²Section 70.33(b) of 10 C.F.R. provides that in any case in which a licensee, not less than 30 days prior to expiration of its existing license, has filed an application for renewal of a license, its existing license shall not expire until the application for renewal has been determined by the Commission.

³The Petitioner asserts that the Licensee was notified in writing by the NRC Staff to submit a schedule for decontaminating the Apollo plant by January 1, 1984, but failed to submit such a schedule. Although this assertion is true, the request was made under the assumption by the Staff that, because the Licensee had ceased
(Continued)

plant life," as used in License Condition No. 37, is meant to refer to the cessation of all licensed activities. Consequently, there is no merit to the Petitioner's assertion that the Licensee should be required to complete decontamination of the facility at this time.

Significant Adverse Effect

The Petitioner asserts that the Apollo facility has had a significant adverse effect upon Apollo Township and the surrounding environment and that the facility is an immediate and serious threat to the health and safety of the Licensee's employees and the public, to the environment, and to the common defense and security. The Petitioner further asserts that all Licensees at this facility have had a history of chronic noncompliance, that there have been cases involving a deliberate failure to comply with regulatory requirements, cases when noncompliance caused a serious accident and incident, and cases where the nature and number of noncompliances demonstrated that management has not conducted its activities with adequate concern for public health and safety.

A review of the compliance history at the Apollo facility shows that, while compliance problems were incurred by former licensees prior to B&W's acquisition of the license, and by B&W early in its history, B&W's record of compliance has since improved. Since the beginning of 1982, the NRC has identified only five instances of noncompliance, none of which had the potential to affect public health and safety or resulted in escalated enforcement action.⁴ Moreover, the Petitioner has provided no information on any particular conditions or events that allegedly now pose a threat to the public health and safety, to the environment, or to the common defense and security such as would warrant the requested action. See *Limerick, supra*, 22 NRC at 154.

Material Unaccounted For

The Petitioner raises numerous issues regarding material that she alleges is missing and unaccounted for. The Petitioner first alleges that there is the possibility that a diversion has occurred because material that was found to be missing and unaccounted for in the 1950s, 1960s, and 1970s was never properly investigated. During this time period, prior to the time when the license was

fuel processing at the facility, no future activities were to be conducted at the plant. B&W informed the Staff by letter, dated December 12, 1983, that this assumption was erroneous, and thus it did not need to submit a schedule for plant decontamination.

⁴The most significant situation of noncompliance since B&W assumed operations at Apollo involved material control and accounting problems identified from 1974 to 1977. These problems were resolved through improvements in B&W's measurements program.

acquired by B&W, the Atomic Energy Commission (AEC) determined during an inspection that there had been material unaccounted for (inventory difference). The AEC attempted to reconcile the excessive inventory difference, and then a request was made to the Federal Bureau of Investigation for investigation into the possibility of a diversion. The results of the investigation were inconclusive. On April 25, 1977, the NRC issued an unclassified digest of a classified NRC Task Force Report on "Accumulated Material Unaccounted For (MUF) — High Enriched Uranium — Babcock & Wilcox Company — Nuclear Materials Division — Pennsylvania Facilities" covering the period of April 1, 1974, to August 8, 1976. The Task Force concluded that B&W had upgraded its physical security system and had taken actions toward substantive program improvements in material control and accounting. In accordance with applicable requirements, since 1977, while B&W was in the production mode, the frequency of physical inventories was every 2 months for high-enriched uranium and every 6 months for low-enriched uranium. There have since been no inventory differences or any deficiencies relating to the control and accountability of nuclear materials that have not been resolved to the satisfaction of the NRC.

The Petitioner next asserts that B&W's Apollo facility was classified as a "mixed facility," and, as such, received special nuclear material both under a license and under license-exempt contract conditions. As such, the Petitioner asserts that there is a need to verify and validate the "contractor's explanation of inventory differences." The NRC is not aware that there was any special nuclear material at the Apollo facility that was not licensed, including material that was received under AEC contract. To the Staff's knowledge, all special nuclear material, regardless of ownership or contractual relationship, was inventoried and resulting inventory differences were investigated. Therefore, the investigations conducted of the inventory differences did address all special nuclear material. As indicated above, since 1977, there have been no inventory differences or deficiencies relating to the control and accountability of nuclear materials that have not been resolved to the satisfaction of the NRC.⁵

⁵The Petitioner also asserts that there is a need for verification of the Energy Research and Development Administration's (ERDA's) contractual responsibilities under ERDA Contract Agreement Number IA-1009. Agreement IA-1009 was a 1975 draft agreement between the NRC and ERDA which was never executed. Instead, the agencies exchanged correspondence in 1976 stating their agreement that they would independently exercise their safeguards and security responsibilities at mixed facilities. The ERDA field offices responsible for contracts audited the contract books and security of classified material. The Petitioner provides no basis for her assertion that ERDA's (now, the Department of Energy (DOE)) contractual responsibilities should be verified. The Petitioner also asserts that there is a need for verification of the inventory difference control limits established by plant design and if they were adjusted due to upgrading of plant design. The Petitioner asserts that this need is due to the fact that a "5-fold error" was found in 1977. The Staff has been unable to determine to what error Petitioner is referring. With regard to the Petitioner's concern that inventory difference control limits were adjusted, the Staff notes that in August 1976 the inventory difference control limits were reconfigured to provide tighter regulatory restraints on inventory differences. It is not clear if that is the action referred to by the Petitioner. As the Petitioner has provided no specific information with regard to these concerns, further action is not warranted. See *Limerick, supra*, 22 NRC at 154.

The Petitioner claims that it is in the public's best interest to have inventory differences that were separately identified and accounted for as being in process tanks, walls, floors, or work areas, and burials, verified. At the end of the phase of high-enriched uranium processing at the Apollo facility, the Licensee nondestructively assessed the quantities of material identified as inventory remaining in the building structure and assigned values for material holdup and shipments to licensed disposal sites. The NRC independently verified those quantities. Final assignment of values for material holdup in the building structure has not been completed; however, since the material is in a form not readily extractable, and the results of plant effluent and environmental measurements are within NRC standards, the material poses no significant threat to public health and safety. Samples of material being sent for disposal at licensed burial sites were also independently measured at that time. The material sent to burial included process equipment, tanks, and cleanup residues. Thus, the Petitioner's request to have such inventory differences verified has been satisfied, and no further relief need be granted.

The Petitioner claims that since much of the material was government-owned and handled under government contracts, the Commission should require all government-owned material to be returned to the government. It should be noted that there are no longer any government contracts in effect for work at the Apollo facility, that all such contracts have been closed out, that there are no outstanding shipper/receiver differences, and that there are no active certificates of possession under any such government contracts.

Finally, the Petitioner states that the Commission should require verification of undeclared losses of material contained in waste material that went to onsite controlled burial. The Staff is unaware of any onsite burial of waste material at the Apollo facility; therefore, there are no known "undeclared losses of material" buried on site at the Apollo facility to be verified.

In sum, none of the Petitioner's allegations concerning B&W's control and accounting of nuclear materials at the Apollo facility since B&W took control of the facility provide any basis for the action that the Petitioner requests. Further, since 1977 there have been no inventory differences or deficiencies relating to the control and accountability of nuclear materials which have not been resolved to the satisfaction of the NRC.⁶

⁶The Petitioner claims that it would be in the best interest of the government and the public to decommission and deactivate in accordance with the "provisions of the interagency agreements" for past projects which Petitioner states were to be performed by DOE. In this connection, the Petitioner alludes to a Memorandum of Understanding between ERDA and the Commission which she alleges was to be reviewed and modified as necessary to comply with a February 24, 1978 Memorandum of Understanding. The Staff is unaware of any such interagency agreements, of any February 24, 1978 Memorandum of Understanding, or of any other Memorandum of Understanding between ERDA and the Commission.

CONCLUSION

For the reasons stated in this Decision, the Petitioner's request that I institute a proceeding to suspend and subsequently revoke the license for B&W's Apollo facility and that the facility and grounds be released for unrestricted use is denied.

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

**FOR THE NUCLEAR
REGULATORY COMMISSION**

**Hugh L. Thompson, Jr., Director
Office of Nuclear Material Safety
and Safeguards**

**Dated at Silver Spring, Maryland,
this 5th day of January 1988.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. 50-289-CH

GENERAL PUBLIC UTILITIES
NUCLEAR CORPORATION
(Three Mile Island Nuclear
Station, Unit 1)

February 19, 1988

In response to a question certified to it by the Appeal Board, the Commission directs the Board to consider information relating to Mr. Charles Husted's job performance at General Public Utilities Nuclear (GPUN) in recent years. The Appeal Board had asked the Commission whether Mr. Husted's recent job performance could be taken into account in determining whether restrictions imposed on Mr. Husted as a condition of the restart of TMI-1 should be lifted.

MEMORANDUM AND ORDER

On December 31, 1987, the Appeal Board issued ALAB-881 (26 NRC 465) certifying a question to the Commission concerning its jurisdiction. Specifically, the Appeal Board sought guidance on the question of whether the Commission wishes to expand retroactively the subject matter of the proceeding to include the issue of Mr. Charles Husted's job performance at General Public Utilities Nuclear ("GPUN").

The Commission has decided to permit the evidence of Mr. Husted's job performance at GPUN to be considered by the Board. Specifically, the Com-

mission finds that such evidence is relevant to the question of whether the restart condition should be vacated by the Board. In determining whether the condition continues to be warranted, it is reasonable to take into account mitigating factors such as satisfactory job performance. In reaching our decision we need not determine whether the Appeal Board correctly decided that subject matter jurisdiction did not extend to consideration of Mr. Husted's job performance.

Consideration of this issue will not necessitate the taking of new evidence. Evidence of Mr. Husted's recent job performance at GPUN is already in the record and was considered by the Administrative Law Judge. Permitting consideration of this issue, therefore, will not necessitate reopening of the record.

Accordingly, the Commission directs the Appeal Board to consider the issue of Mr. Charles Husted's job performance at GPUN in rendering its decision in this matter.

It is so ORDERED.

For the Commission*

JOHN C. HOYLE
Assistant Secretary of the
Commission

Dated at Washington, D.C.,
this 19th day of February 1988.

*Commissioners Bernthal and Rogers were not present for the affirmation of this order; if they had been present they would have approved it.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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)

February 3, 1988

The Appeal Board grants two motions of an intervenor to reopen the record and to admit two additional contentions in the onsite emergency planning and safety issues phase of this operating license proceeding, and remands the contentions to the Licensing Board for appropriate consideration and disposition.

RULES OF PRACTICE: REOPENING OF RECORD

A motion to reopen a closed evidentiary record must be timely, address a significant safety or environmental issue, and demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially. 10 C.F.R. 2.734(a).

RULES OF PRACTICE: CONTENTIONS (UNTIMELY FILING)

The factors that Commission adjudicatory tribunals are to balance in determining whether to accept a late-filed contention are:

- (i) Good cause, if any, for failure to file on time.
- (ii) The availability of other means whereby the petitioner's interest will be protected.
- (iii) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.
- (iv) The extent to which the petitioner's interest will be represented by existing parties.
- (v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

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

RULES OF PRACTICE: CONTENTIONS (UNTIMELY FILING)

To be admissible in a licensing proceeding, a late-filed contention must, in addition to meeting other requirements, satisfy the specificity and basis requirements imposed by the Rules of Practice. *See* 10 C.F.R. 2.714(b).

EMERGENCY PLANS: LOW-POWER LICENSE (STANDARD FOR ISSUANCE)

Under the Commission's emergency planning regulations, low power operation of a nuclear power plant is precluded in the absence of an emergency response plan that includes, *inter alia*, satisfactory provisions for public notification within the plume exposure pathway Emergency Planning Zone.

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, Deborah S. Steenland, and Martha Siegel, 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

Before us are two motions of the Attorney General of Massachusetts to reopen the evidentiary record in the onsite emergency planning and safety issues phase of this operating license proceeding involving the Seabrook nuclear facility.¹ The first of these motions, filed last November, asserted that the City of Newburyport, Massachusetts, had "dismantled and removed" all of the emergency notification sirens, poles and related equipment located within the city that were to be employed in connection with any response to a radiological emergency at Seabrook.² Given this development, the Attorney General wishes to introduce a new contention, in essence challenging the applicants' compliance with the Commission's emergency planning regulations on the ground that "no means have been established to provide early notification and clear instruction" to Newburyport residents in the event of a radiological emergency.³ The second motion, filed last month, points to still later developments that, the Attorney General maintains, support his submission of a further contention to the effect that the same is now true with respect to the residents of the remainder of the Massachusetts portion of the Seabrook plume exposure pathway emergency planning zone (EPZ).⁴

The applicants and the NRC staff assert that the motions are not meritorious. In addition, the applicants maintain that the Attorney General should be precluded from obtaining the requested relief on an application of the doctrines of estoppel and/or waiver.

For the reasons that follow, we conclude that (1) the applicants' estoppel/waiver claim is insubstantial; and (2) both motions satisfy the governing standards for reopening a closed record for the purpose of permitting the introduction of additional contentions. Accordingly, we are granting the motions and remanding the Attorney General's new contentions to the Licensing Board for appropriate consideration and disposition.

We further conclude that compliance with the emergency response planning regulations in question is a precondition to low-power operation. Therefore, no

¹ The record in that phase closed on October 3, 1986 (Tr. 1026). On March 25, 1987, the Licensing Board issued a partial initial decision in which it resolved all then pending issues in the applicants' favor and authorized the issuance of a low-power license permitting Seabrook operation up to five percent of rated power. LBP-87-10, 25 NRC 177. The *offsite* emergency planning phase of the proceeding remains before a differently constituted Licensing Board.

² Contention of Attorney General James M. Shannon and Motion to Admit Late-Filed Contention and Reopen the Record (November 13, 1987) at 1. Newburyport is within the ten-mile Seabrook plume exposure pathway emergency planning zone. At that time, we had other issues before us relating to emergency notification sirens for the Seabrook facility.

³ *Id.* at 9.

⁴ See Contention of Attorney General James M. Shannon on Notification System for Massachusetts and Motion to Admit Late-Filed Contention and Reopen the Record (January 7, 1988) [hereinafter, "Second Motion"] at 1-2.

authorization of such operation may be forthcoming while the remand is pending — i.e., in advance of ultimate Licensing Board resolution of the early public notification matter.

1. As we noted at the outset of a recent decision in this proceeding, radiological emergency response planning must include, *inter alia*, “means ‘to provide early notification and clear instruction to the populace within the [EPZ].’”⁵ In the case of Seabrook, this requirement was to be met in large measure through sirens installed on poles located in the various New Hampshire and Massachusetts communities within the facility’s EPZ.

During the course of the litigation below of the onsite emergency planning issues, none of the parties was given reason to believe that emergency notification sirens installed in Massachusetts communities would not remain available to fulfill their intended purpose.⁶ Apparently, the first formal indication in the proceeding that at least some of those devices might become unavailable was the Attorney General’s motion to reopen the record based upon Newburyport’s removal of the city-owned emergency notification sirens within its borders.

In responding to that motion, the applicants maintained that the loss of the Newburyport sirens lacked safety significance. We were told, with supporting affidavits, that notification to approximately 60 percent of the area of the city would be provided by existing sirens in neighboring Massachusetts communities. Coverage for the balance of the city would be supplied by an airborne alerting system utilizing a helicopter carrying acoustical packages able to deliver both siren signals and voice messages. In addition, a route alerting system using sirens mounted on vehicles would supply the required notification should the helicopter be unavailable or grounded by weather.⁷

In a further filing authorized by us, the Attorney General challenged the capability of the proposed airborne system to meet NRC and Federal Emergency Management Agency requirements.⁸ More significant, however, it now appears that the applicants no longer have at their disposal any of the fixed-position

⁵ ALAB-879, 26 NRC 410, 412 (1987) (quoting 10 C.F.R. 50.47(b)(5)). That decision affirmed the rejection by the Licensing Board of late-filed contentions submitted by the Attorney General and another intervenor that sought to challenge the adequacy of certain emergency notification sirens installed in two communities within the Seabrook EPZ. As explained in our November 25, 1987 order (unpublished), ALAB-879 does not control the disposition of the contentions now before us, which have a quite different foundation.

⁶ This fact is of some significance. As observed in ALAB-879, 26 NRC at 412 n.4, even though the sirens are designed to provide offsite public notification of a radiological emergency, the Commission deems the arrangements for such notification to be within the ambit of onsite emergency planning. See Statement of Consideration accompanying 10 C.F.R. 50.47(d), 47 Fed. Reg. 30,232, 30,234 (1982). Thus, as no party disputes, the onsite emergency planning phase of the proceeding was the appropriate forum for the consideration of any issues pertaining to compliance with the relevant Commission regulation on this subject.

⁷ See Applicants’ Opposition to Motion of Attorney General for the Commonwealth of Massachusetts to Reopen the Record and Admit Late-Filed Contention (December 18, 1987) at 4-5.

⁸ See Supplemental Memorandum of Attorney General James M. Shannon in Support of Motion to Admit Late-Filed Contention and Reopen the Record (December 31, 1987) at 2-3.

sirens that had been installed in Massachusetts to provide early notification of a Seabrook emergency.

Last April, the Board of Selectmen of the Town of West Newbury, Massachusetts, directed the removal of five utility poles in that community on which emergency notification sirens had been installed by the applicants. The basis of the Board's action was that it had proceeded without statutory authority when in 1984 it had issued a permit to erect the poles. The lead applicant, Public Service Company of New Hampshire (Public Service), thereupon brought suit in a federal court seeking, *inter alia*, both a declaratory judgment that it was entitled under state law to maintain the poles *in situ* and appropriate injunctive relief. From the denial of a preliminary injunction, Public Service appealed to the United States Court of Appeals for the First Circuit. On December 16, 1987, that court affirmed, upholding the district court's determination that Public Service had not made a sufficient showing of a likelihood that it would prevail on the merits of its suit and would suffer irreparable harm in the absence of injunctive relief *pendente lite*.⁹ In this connection, the court specifically determined, *inter alia*, that Public Service had failed to establish that, in all probability, the issuance of the pole permit was within the reach of the selectmen's statutory authority.¹⁰

In the wake of the First Circuit's decision, the New Hampshire Yankee Division of Public Service sent essentially identical letters on December 29 to the Boards of Selectmen in Salisbury, Newbury, Amesbury, Merrimac, and West Newbury, Massachusetts. Each letter referred to the fact that Public Service "currently owns and maintains a public alert notification system" in that town. The letter then went on to state that, "[a]s a result of recent court actions on siren pole removal, [Public Service] is taking steps to provide alternative methods of notification to Massachusetts residents living within 10 miles of Seabrook Station." Accordingly, in the case of each municipality, Public Service proposed to give the sirens and poles to the town for use in connection with emergencies not related to Seabrook. In the circumstances, the letter continued, "[w]e will not be including the Massachusetts siren system in any documentation to the Nuclear Regulatory Commission or the Federal Emergency Management Agency involving the licensing of Seabrook Station."¹¹

The First Circuit's action and Public Service's response to it form the basis of the Attorney General's second reopening motion. The Attorney General also alludes in that motion to the fact that the special use permit issued to Public Service by the Commonwealth of Massachusetts for the installation of a public

⁹ *Public Service Co. of New Hampshire v. Town of West Newbury*, No. 87-1395 (1st Cir. Dec. 16, 1987).

¹⁰ *Id.*, slip op. at 7-11.

¹¹ Second Motion, Exhibit 4.

notification siren on the Salisbury Beach State Reservation has expired, with the consequence that that siren has been removed.¹²

2. Undergirding the applicants' estoppel/waiver theory is the premise that the Commonwealth of Massachusetts, its agencies and its political subdivisions, aided by the Attorney General, "have systematically set out to destroy the in-place fully adequate early notification system."¹³ Moving ahead from this premise, the applicants ask us to decide whether, "when a party to an NRC proceeding purposefully disables a nuclear power plant system, . . . that party [should] then be afforded further discretionary hearing rights (to which it has no absolute entitlement) because its own acts against the facility have created a regulatory deficiency."¹⁴ To point us in the direction of a negative answer to this question, the applicants offer this bit of rhetoric: "What the Commonwealth, its agencies, and political subdivisions have done to Seabrook is indistinguishable from the action of a private individual who somehow gains access to a nuclear power plant and deliberately renders a safety system inoperative."¹⁵ And, as if that were not enough, the applicants add the claim that the Commonwealth had "disable[d]" the early notification system "in violation of its own State laws" (specifically, the Massachusetts Civil Defense Act).¹⁶

We can readily appreciate the frustration of the applicants engendered by the recent turn of events respecting their early notification system. But that frustration cannot serve to justify entirely unfounded charges that, among other things, would cast a sovereign state and its agencies and political subdivisions in a role equivalent to that played by one who enters a nuclear plant illicitly and then engages in a most serious form of federal criminal misconduct. That the applicants' charges are utterly without warrant is manifest.

In leveling those charges, the applicants simply ignore the fact that the West Newbury siren poles were ordered removed on a determination that the issuance of the permit for their installation was *ultra vires* — i.e., beyond the statutory authority of the Board of Selectmen of that municipality. And, as we have seen, the Court of Appeals for the First Circuit explicitly decided that the attack of Public Service (the lead applicant) upon that determination fell wide of the mark. Inasmuch as the judicial result was promptly followed by their abandonment of all fixed-position sirens in Massachusetts, one may reasonably infer that

¹² See *id.*, Exhibits 2 and 3.

¹³ Applicants' Answer to "Contention of Attorney General James M. Shannon on Notification System for Massachusetts and Motion to Admit Late-Filed Contention and Reopen the Record" (January 25, 1988) [hereinafter, "Applicants' January 25 Answer"] at 4.

¹⁴ *Id.* at 5-6.

¹⁵ *Id.* at 6.

¹⁶ *Ibid.* According to the applicants, that Act "places an affirmative duty upon The Commonwealth to engage in productive emergency planning for Seabrook."

the applicants themselves recognized that the same legal conclusion would be required with regard to the sirens installed on poles in the other communities.

The short of the matter thus is that the loss of the sirens (or, as applicants would have it, the destruction of their "fully adequate early notification system") did not stem from some unlawful or untoward act on the part of the Commonwealth or its agencies or political subdivisions. Rather, it came about as a result of belated obedience to the law of that jurisdiction.¹⁷ That being so, it is of no moment here whether, and if so to what extent, the Commonwealth or its agents may have been involved in any decision by a municipality to require the removal of siren poles within its borders. Be that as it may, the factual ingredients of an estoppel claim are patently absent.¹⁸

3. We now turn to the merits of the Attorney General's motions. The standard for reopening a closed evidentiary record is set forth with particularity in the Commission's Rules of Practice. A motion seeking that relief must be timely, address a significant safety or environmental issue, and "demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially."¹⁹

So too, the Rules of Practice prescribe the factors that Commission adjudicatory tribunals are to balance in determining whether to accept a late-filed contention. They are:

- (i) Good cause, if any, for failure to file on time.
- (ii) The availability of other means whereby the petitioner's interest will be protected.
- (iii) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.
- (iv) The extent to which the petitioner's interest will be represented by existing parties.
- (v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.²⁰

a. We entertain not the slightest doubt that both motions satisfy the reopening criteria. To begin with, each is clearly timely. The motion based upon the fate of the Newburyport sirens was filed with the Licensing Board on September

¹⁷ Although there is no need to pursue the question, it seems likely that, under Massachusetts law (and as a general matter), the recipient of a permit issued by a governmental body assumes the risk of *ultra vires* action that, unfortunately for the applicants, materialized here.

¹⁸ Accordingly, we need not and do not explore whether, and if so in what circumstances, the doctrines of estoppel and waiver may be applied against a state and its officers. Nor is it necessary to inquire into whether those doctrines can appropriately be applied to bar a state from raising issues concerned with the health and safety of its citizens.

¹⁹ 10 C.F.R. 2.734(a).

²⁰ 10 C.F.R. 2.714(a)(1). Although the section is cast in terms of untimely petitions for leave to intervene and/or requests for a hearing, it is settled that the specified factors are also to be applied to contentions in the posture of those now before us. See *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041 (1983).

21, 1987, a few days *before* (according to the appended affidavit of the mayor of the city) the last of those sirens was to be removed.²¹ Within little more than two weeks of the Board's October 26 denial of it for want of jurisdiction, the motion was renewed before us. And the second motion was filed 22 days after the First Circuit ruled in the West Newbury matter and less than ten days following Public Service's dispatch of its letters announcing an intention to abandon any reliance upon fixed-position sirens in Massachusetts. Especially given the intervening holidays, this represented sufficient sensitivity to the requirement that the motion be timely filed.

Extended discussion should not be necessary with regard to the obvious safety significance that attends upon compliance with the Commission's regulation designed to provide the members of the public located inside the EPZ with "early notification and clear instructions" in the event of a radiological emergency.²² And, assuredly, the Attorney General has met his burden of demonstrating that a materially different result would have been likely had the evidence undergirding the reopening motions been considered initially. As will be seen later and as the staff itself recognizes,²³ suitable measures for early public notification are not merely an essential ingredient of emergency planning but, as well, an absolute precondition to the authorization of low-power operation. Consequently, had the Licensing Board been informed that the sirens relied upon by the applicants to provide early notification in Massachusetts were no longer available to fulfill that function, the March 25, 1987 partial initial decision²⁴ would not — indeed could not — have authorized such operation.²⁵

²¹ Although the decision to remove the sirens may have been made at an earlier time, we see no reason why the Attorney General had to act in advance of actual removal. Indeed, until effect was given to the decision, any reopening motion might well have been subject to dismissal as premature.

²² The staff's insistence that the Attorney General's motions do not present a significant safety issue is based upon its belief that there is no possibility that the "absence of a public notification system [will place] the affected population at risk in the event of an accidental radioactive release at the Seabrook Station." NRC Staff Response to Contention of Attorney General James M. Shannon on Notification System for Massachusetts and Motion to Admit Late-Filed Contention and Reopen the Record (January 28, 1988) at 7. In asserted support of this belief, the staff attached to its response the affidavit of Frank J. Congel, the Director of the NRC's Division of Radiation Protection and Emergency Preparedness. Mr. Congel assures us that Seabrook will not be allowed to operate at any level of rated power unless the staff is persuaded that the applicants are in compliance with all Commission regulations, including the early notification provisions of 10 C.F.R. 50.47(b)(5).

We find the Congel affidavit quite beside the point. It does not establish anything more than that the staff is confident that, in the discharge of its regulatory responsibilities, it both can and will make certain that an adequate early notification system is in place before low-power operation is commenced. Even if justified (and the Attorney General may have another view on that score), that confidence has no bearing upon whether the loss of the fixed-position sirens gives rise to a significant safety issue. Indeed, if the staff's thesis were carried to its logical end, one would have to conclude that even the development of serious cracks in the reactor containment would not pose a significant safety issue because, obviously, the staff would not allow the facility to operate unless and until it was satisfied that the cracking problem had been resolved.

²³ See *infra* pp. 53-54 and *supra* note 22.

²⁴ See *supra* note 1.

²⁵ To be sure, the Licensing Board could not have taken into account the loss of the fixed-position sirens in Massachusetts unless it had before it a contention that made an issue of the resultant lack of compliance with Commission regulations. It may justifiably be assumed, however, that such a contention would have been promptly

(Continued)

b. A balancing of the five factors that control the disposition at the threshold of late-filed (but otherwise admissible) contentions also strongly favors the grant of the relief sought by the Attorney General's motions. For even the most cursory analysis discloses that at least four of those factors assist the Attorney General's cause.

Starting with the first factor, the contentions obviously could not have been filed at a time when the applicants still retained the use of fixed-position sirens throughout the Massachusetts portion of the EPZ. It is equally plain that the Attorney General neither has other means at his disposal to protect his interest in assuring compliance with the Commission's regulations concerned with public notification (the second factor) nor can count on that interest being represented by other parties to the proceeding (the fourth factor). Given his retention of the services of an acknowledged acoustics expert, there appears to be no reason to question that the Attorney General would assist materially in the development of a sound record respecting the adequacy of any substitute public notification arrangements that the applicants might propose (the third factor). That leaves just the fifth factor. To be sure, the new contentions will introduce additional issues and may possibly delay the completion of the proceeding. But that consideration cannot serve to outweigh the other four factors and, thus, to deny the Attorney General an opportunity to litigate the effect of the recent events upon the sufficiency of crucial elements of the applicants' emergency plans.²⁶

c. Finally, the applicants maintain that, if not prepared to adopt their estoppel argument, we should withhold action on the Attorney General's motions to await (1) the submission (expected later this month) of the applicants' alternative plans for providing notification to Massachusetts residents in the event of an emergency at Seabrook; and (2) the filing of any intervenor contentions addressed to those plans.²⁷ We reject the suggestion as serving no useful purpose.

forthcoming had the loss of the sirens occurred while the record was still open. Apart from the fact that the Attorney General moved with considerable dispatch once the sirens became unavailable, the record discloses that, at an early stage of the proceeding, several of the intervenors manifested an interest in the aspects of emergency planning related to public notification. *See, e.g.*, LBP-82-76, 16 NRC 1029, 1045-46, 1074-75, 1088, 1091 (1982); LBP-82-106, 16 NRC 1649, 1662 (1982). (That interest could not, of course, have generated a viable contention so long as the sirens remained in place and capable of providing the requisite notification and instruction.)

²⁶ The extent of any real delay in the overall licensing proceeding is even debatable. The Licensing Board assigned to the offsite emergency planning phase of the proceeding (*see supra* note 1) has yet to close the record on the issues concerning the plans for the New Hampshire portion of the EPZ. Moreover, the hearing on the offsite emergency plans for the Massachusetts portion is unlikely to commence for at least several additional months. Thus, it is far from clear that delay in the ultimate disposition of the operating license application will occur. As previously noted, and as discussed at greater length below, the admission of the contentions will, however, have an impact upon the ability of the applicants to obtain a low-power operating license for Seabrook at this juncture.

²⁷ *See Applicants' January 25 Answer* at 11-12. In a January 20 motion for an extension of the time within which to file that answer, the applicants had indicated that they anticipated the completion of the substitute plans by February 22.

For its part, in its response to the Attorney General's first reopening motion, the staff had similarly called upon us to defer action to await the submission of alternative plans for notifying Newburyport residents of a Seabrook emergency (that motion, to repeat, dealt solely with the removal of the Newburyport sirens). *See NRC*

(Continued)

The loss of the fixed-position sirens in every Massachusetts community within the EPZ has given rise of itself to a significant safety issue with regard to whether, at the time of the commencement of facility operation, there will be arrangements in place adequate to ensure that Massachusetts residents will obtain the requisite early notification of a Seabrook emergency. Even if the record is not reopened now to reflect that loss, such a step will have to be taken to allow the receipt of the applicants' substitute public notification plans for Massachusetts.²⁸

Once that has been accomplished, the issue of compliance with the governing Commission regulation may or may not disappear as a matter for litigation. If no intervenor interposes an acceptable challenge to the substitute plans, the issue will, of course, drop out of the proceeding.²⁹ Otherwise, it will continue in existence pending a determination whether those plans satisfy the Commission's public notification requirements.

In short, there is no sensible reason not to reopen the record *now* on the strength of the developments that undergird the Attorney General's contentions and to return the public notification matter to the Licensing Board for further proceedings. And the appropriate course of future events is equally clear. Upon the receipt for inclusion in the record of the applicants' public notification alternative to the now-removed sirens, the Licensing Board must provide the Attorney General (and the other parties) with a reasonable period in which to submit additional contentions challenging the adequacy of proposed substitute arrangements.³⁰ For the reasons already assigned with respect to the contentions set forth in the Attorney General's motions at hand, if filed within the Licensing

Staff Response to Contention of Attorney General James M. Shannon and Motion to Admit Late-Filed Contention and Reopen the Record (January 14, 1988) at 7-8. Noting that we had tentatively disapproved the proposal in our unpublished January 20 order denying the applicants' motion of that date for an extension of time, the staff does not reassert it in the response to the second reopening motion.

²⁸ The Rules of Practice require that, "[i]n any proceeding involving an application," the staff introduce into evidence "any safety evaluation prepared by the staff." 10 C.F.R. 2.743(g). We may assume that, in compliance with that directive, the staff placed in the record Supplement No. 4 to its Safety Evaluation Report for the Seabrook facility (NUREG-0896, May 1986). At page 13-11 of that Report, the staff addresses "the means to provide early notification and clear instruction to the populace within the plume exposure Emergency Planning Zone (EPZ)." The reader is informed that:

A total of 133 new electronic sirens will be installed in the plume exposure EPZ to perform the initial alerting function. These will be complemented by seven mechanical sirens recently installed in the City of Newburyport, Massachusetts.

This representation indisputably no longer holds true. It would seem equally beyond cavil that the Attorney General is entitled to have the record corrected to reflect the current reality: i.e., that fixed-position sirens are no longer in the picture in Massachusetts and, accordingly, the applicants have found it necessary to devise other means for satisfying the early notification provisions of 10 C.F.R. 50.47(b)(5).

²⁹ In that circumstance, the staff would still have to pass judgment on the adequacy of the plans. As seen, *supra* note 22, it is fully prepared to discharge that responsibility.

³⁰ It may be that, if dissatisfied with those arrangements, the Attorney General need only amend the contentions we admit today so as to claim (with an accompanying statement of basis) that "inadequate" (rather than "no") means have been established to provide the requisite "early notification and clear instruction" to Massachusetts residents within the EPZ. We need not decide that matter here but, rather, leave it for Licensing Board consideration if necessary.

Board-prescribed period any such additional contentions most likely will survive a balancing of all five lateness factors. Thus, so long as they also satisfy the specificity and basis requirements imposed by the Rules of Practice,³¹ there is a high probability that the Board will be obliged to admit them for litigation.

4. What remains for determination is whether the reopening of the record and the admission to the proceeding of the Attorney General's contentions stand in the way of an authorization of low-power Seabrook operation.³² In some circumstances, resolution of that question might have necessitated an assessment of the likelihood that an emergency arising during such operation would call for protective measures in the Massachusetts portion of the EPZ. As it happens, however, the Commission has relieved us of any need to embark upon that inquiry.

We have previously observed that the Statement of Consideration that accompanied the 1982 adoption of certain amendments to the Commission's emergency planning regulations placed the previously decreed public notification requirement within the ambit of onsite emergency planning.³³ In this regard, one of the issues raised in the comments submitted in response to the notice of proposed rulemaking was stated in these terms:

Issue 6: The public knowledge that no offsite protection exists could cause chaos in the event of an incident during fuel loading or low power testing.

In relevant part, the Commission's response was that:

Prior to issuing an operating license authorizing low-power testing and fuel loading, the NRC will review the following offsite elements of the applicant's emergency plan:

* * *

(b) Section 50.47(b)(5). Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and followup messages to response organizations and the public has been established; *and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.*³⁴

In a word, then, the Commission explicitly assured the public that no low-power operation would take place in the absence of a review of certain offsite

³¹ See 10 C.F.R. 2.714(b).

³² Although low-power operation was authorized in the Licensing Board's March 25, 1987 partial initial decision (see *supra* note 1), for a variety of reasons that need not be chronicled here no license for such operation has as yet issued.

³³ See *supra* note 6.

³⁴ 47 Fed. Reg. at 30,234 (emphasis supplied). Although Seabrook possesses a fuel loading license, it was issued long before the applicants lost the availability of the fixed-position sirens in Massachusetts.

elements of emergency planning, including the public notification element.³⁵ And the Commission made equally plain that there would continue to be a full opportunity for public participation in that review. Another of the issues addressed in the Statement of Consideration was:

Issue 5: Unlike some of the more technical issues, emergency planning is a subject upon which the average citizen is knowledgeable and can make a valuable contribution to the licensing proceedings. This is an important opportunity for public participation. Eliminating this consideration from licensing decisions in effect removes this vital experimental evidence from public scrutiny.

To which the Commission responded:

The proposed rule does not eliminate any important substantive aspect of emergency planning from the operating license hearings. *Whether an applicant satisfies the requirements of 50.47(a) and 50.47(b) is still an issue that may be raised and litigated in those hearings.* In cases where such issues are raised, applicants' and State and local jurisdictions' emergency plans should be available for examination in the hearing process prior to the issuance of an operating license.³⁶

We are duty-bound, of course, to accord total respect to such unambiguous declarations on the part of the Commission with regard to the meaning and effect of its regulations. The short of the matter thus is that our own views on whether low-power operation might occasion a need to trigger offsite public notification mechanisms are of no present moment. The Commission has spoken directly on the subject. As a consequence of its mandate, Seabrook low-power operation is precluded unless and until the applicants have submitted substitute public notification plans for the Massachusetts communities within the EPZ that meet with staff approval and, if challenged in an appropriate and timely manner by a party to the proceeding, those plans are then found by the Licensing Board, as well, to satisfy the governing Commission regulation.³⁷

³⁵ As is apparent from Mr. Congel's affidavit (*supra* note 22), the staff is prepared to give effect to that assurance in this instance.

³⁶ 47 Fed. Reg. at 30,233 (emphasis supplied). In this connection, the applicants' reliance upon *Louisiana Power and Light Co. (Waterford Steam Electric Station, Unit 3)*, ALAB-732, 17 NRC 1076, 1104-05 (1983), is misplaced. That decision does not affect at all the entitlement of an intervenor to challenge either the adequacy or the non-availability of plans for an early notification system. As we were careful to note, the Licensing Board had found that the plans in that regard were "sufficiently detailed and concrete" to provide "reasonable assurances that they can and will be implemented in the event of an emergency." This being so, we concluded that the installation and testing of the siren system could "properly be overseen by the Staff," adding that there was "no reason on this record to assume that the system will not function as proposed." No such assumption can be made here, especially where there is no system at all.

³⁷ See 10 C.F.R. 50.57(c), which provides that, in acting upon an applicant's motion for low-power operation, the Licensing Board is to consider whether any of the admitted contentions "are relevant to the activity to be authorized." See also 10 C.F.R. 50.47(d), to the effect that a precondition to a license authorizing low-power operation is a finding "that the state of onsite emergency preparedness provides reasonable assurance that adequate

(Continued)

The Attorney General's November 13, 1987 and January 7, 1988 motions to reopen the record and to admit additional contentions are *granted* and the cause is *remanded* to the Licensing Board for further proceedings consistent with this opinion. The authorization of low-power operation contained in the Licensing Board's March 25, 1987 partial initial decision, LBP-87-10, 25 NRC 177, 216, is not to become effective pending the outcome of the remand.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

protective measures can and will be taken in the event of a radiological emergency." Once again, offsite public notification measures are deemed to come within the scope of onsite emergency preparedness.

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
50-444-OL
(Offsite Emergency Planning)

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, *et al.*
(Seabrook Station, Units 1
and 2)

February 4, 1988

The Appeal Board denies the motion of the Attorney General of Massachusetts for directed certification of a Licensing Board ruling denying admission of certain testimony proffered by that intervenor. The motion for interlocutory review was filed seven weeks after the trial board's ruling and was rejected for not being filed promptly.

RULES OF PRACTICE: DIRECTED CERTIFICATION

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

APPEARANCES

John Traficonte, Boston, Massachusetts, for intervenor James M. Shannon, Attorney General of Massachusetts.

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

Sherwin E. Turk for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

Since early last October, the Licensing Board has been conducting evidentiary hearings on the emergency response plans developed for the New Hampshire portion of the plume exposure pathway emergency planning zone for the Seabrook nuclear facility. In the course of those hearings, the Board issued oral rulings on November 16 and 18, declining (in response to the applicants' motion) to admit into evidence certain prepared testimony proffered by the intervenor Attorney General of Massachusetts.¹ In addition, on November 18, the Board denied the Attorney General's motion to refer the rulings to us under 10 C.F.R. 2.730(f).²

Seven weeks later, on January 7, 1988, the Attorney General filed a motion with us seeking interlocutory review of the rulings by way of directed certification.³ The applicants and the NRC staff oppose the requested relief on a variety of grounds. We deny the motion on a single ground: it manifestly comes too late.⁴

As we had recent occasion to observe:

Although the Rules of Practice do not specify any time limit for motions requesting the exercise of our discretionary authority under 10 C.F.R. § 2.718(i) to direct certification of an interlocutory ruling, we have indicated that parties should act with dispatch in seeking such relief. That suggestion is in accord with the analogous referral provision of 10 C.F.R. § 2.730(f) specifying that referrals of interlocutory rulings by the licensing boards

¹ See Tr. 5594-616; 5959-61.

² See Tr. 6004-07.

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

⁴ Given this determination, we neither need nor do intimate any view respecting either (1) whether the standards for directed certification have been satisfied (see *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977)); or (2) whether the challenged Licensing Board rulings are correct on the merits.

must be made "promptly." Even though the Commission's regulations generally prohibit interlocutory appeals, each exception to that proscription, such as that for referrals, requires that the interlocutory appeals be taken expeditiously in order to prevent undue delay and to avoid diverting attention from the progress of the licensing hearing. Thus, like a referral, a petition requesting the invocation of our discretionary directed certification authority must also be filed promptly after the interlocutory ruling at issue is handed down. To hold otherwise would sanction the possibility of needless delay in licensing proceedings in contravention of the Commission's policy "that the process move[] along at an expeditious pace, consistent with the demands of fairness." It also would create the unnecessary incongruity in the Rules of Practice of requiring licensing boards to act immediately in requesting our review of interlocutory rulings while not imposing a similar requirement on the parties themselves.⁵

The Attorney General's filing does not explain why directed certification was not sought much more expeditiously. Nor is a possible justification for the seven-week delay readily apparent. The Attorney General has committed sufficient resources to this proceeding to have allowed a considerably earlier endeavor to obtain our intercession.⁶ Moreover, in mid-November, all of the participants had substantial cause to believe that the hearings might well be concluded before the end of January.⁷ In the circumstances, whatever else might be said of the motion, it scarcely could be regarded as "prompt."

Motion for directed certification *denied*.⁸
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

⁵ *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Units 1 and 2), ALAB-870, 26 NRC 71, 76 (1987) (footnotes omitted). The cited Commission policy is found in the *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 453 (1981).

⁶ In actuality, the directed certification motion would have required relatively little additional expenditure of resources. For, in large measure, the arguments presented in the motion were also contained in the Attorney General's filing below in opposition to the applicants' motion to exclude the prepared testimony in question. Compare Attorney General James M. Shannon's Motion for Directed Certification of the November 16 and 18, 1987 Atomic Safety and Licensing Board Rulings Concerning the Admissibility of Certain Evidence (January 7, 1988) with Attorney General James M. Shannon's Response to the Applicants' Objection in the Nature of a Motion *In Limine* to the Admission into Evidence of the Testimony of Sholly, Beyca, Thompson and Leaning (October 15, 1987).

⁷ It is our understanding that the need for the additional evidentiary sessions to be held later in the year did not surface until sometime in January.

⁸ Should he be dissatisfied with the result reached by the Licensing Board in its initial decision, the Attorney General will be free to appeal the decision under 10 C.F.R. 2.762 and to renew on that appeal his challenge to the evidentiary rulings in question.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Christine N. Kohl, Chairman
Dr. W. Reed Johnson
Howard A. Wilber

In the Matter of

Docket No. 40-2061-SC

KERR-McGEE CHEMICAL
CORPORATION
(Kress Creek Decontamination)

February 10, 1988

Concluding that there was no legal basis for the show cause order that initiated this proceeding, the Appeal Board affirms the Licensing Board's dismissal of that order.

ATOMIC ENERGY ACT: COMMISSION AUTHORITY (SPECIAL
NUCLEAR, SOURCE AND BYPRODUCT MATERIALS)

Under section 161b of the Atomic Energy Act of 1954 (AEA), as amended, 42 U.S.C. § 2201(b), the Commission is authorized to "establish by rule, regulation, or order, such standards and instructions to govern the possession and use of special nuclear material, source material, and byproduct material as the Commission may deem necessary or desirable to promote the common defense and security or to protect health or to minimize danger to life or property."

UMTRCA: APPLICATION

The Uranium Mill Tailings Radiation Control Act of 1978, Pub. L. No. 95-604, 92 Stat. 3021 (UMTRCA or "Tailings Act") (codified in scattered sections

of 42 U.S.C.), and certain Environmental Protection Agency (EPA) standards promulgated thereunder and codified at 40 C.F.R. Part 192, cannot be applied retroactively to require cleanup of contamination that occurred before 1978.

ENFORCEMENT ACTION: LEGAL BASIS

If the application and enforcement of a law or regulation is legally prohibited in a certain situation, it cannot be applied or enforced against a party anyway as a matter of discretion — absent, of course, the consent of the party that would be subject to such order.

UMTRCA: APPLICATION

There is nothing to indicate that the Commission is authorized or intends to enforce or apply EPA's Part 192 standards pursuant to any statute other than the Tailings Act.

ATOMIC ENERGY ACT: RADIATION PROTECTION STANDARDS

The regulations traditionally applied by the NRC under section 161b of the AEA are the agency's 10 C.F.R. Part 20 Standards for Protection Against Radiation.

UMTRCA: COMMISSION AUTHORITY (MILL TAILINGS)

Insofar as the regulation of tailings is concerned, the NRC's authority under the AEA and Part 20 has always been regarded as limited. UMTRCA was enacted to fill this regulatory gap. *See Petition of Sunflower Coalition*, CLI-82-34, 16 NRC 1502, 1504 (1982); *id.*, CLI-81-13, 13 NRC 847, 850-51 (1981); H.R. Rep. No. 1480, 95th Cong., 2d Sess., pt. 1, at 11-13, *reprinted in* 1978 U.S. Code Cong. & Admin. News 7433, 7433-35.

EVIDENCE: SPONSORSHIP BY EXPERT

Technical documents offered into evidence require sponsorship by knowledgeable expert witnesses who can be examined on the factual assertions and technical opinions expressed in such documents. *See Duke Power Co.* (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-669, 15 NRC 453, 477 (1982).

RULES OF PRACTICE: OFFICIAL NOTICE

Under the Commission's Rules of Practice, a licensing board "may take official notice of any fact of which a court of the United States may take judicial notice or of any technical or scientific fact within the knowledge of the Commission as an expert body." The rule also contemplates that each officially noticed fact will be identified in the record with sufficient particularity. 10 C.F.R. § 2.743(i)(1).

RULES OF PRACTICE: OFFICIAL NOTICE

The entirety of a voluminous technical document prepared by another agency does not fall within the scope of the Commission's official notice rule.

RULES OF PRACTICE: OFFICIAL NOTICE

Official notice of a document is especially inappropriate where there is an ongoing dispute between the parties over what the document says.

RULES OF PRACTICE: OFFICIAL NOTICE

Reliance on official notice assumes the ready availability of the noticed material to all participants in the adjudicatory process — including those who conduct appellate review.

RULES OF PRACTICE: APPELLATE REVIEW (SUPPORTING RECORD)

If any party expects an Appeal Board to review material that assertedly supports its arguments on appeal but is not physically in the record or readily available from familiar sources (e.g., the *Federal Register*, NRC-generated documents, law reviews), that party is obliged to provide the Board with copies of it. *Cf. Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-804, 21 NRC 587, 592 n.6 (1985) (adjudicatory boards should not have to complete a party's research for it). *See also id.*, ALAB-845, 24 NRC 220, 249 n.30 (1986), and *id.*, ALAB-836, 23 NRC 479, 485-86 n.3 (1986) (appellate review hampered by party's failure to include important document in record and board's failure to take care in preservation of record).

RULES OF PRACTICE: OFFICIAL NOTICE

When a party relies on officially noticed material, it should so indicate. *See* 10 C.F.R. § 2.762(d) (appellate briefs must indicate precise portions of the record relied upon); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 702 n.27 (1985), *aff'd in part and review otherwise declined*, CLI-86-5, 23 NRC 125 (1986) (parties' briefs must contain explicit references to all relevant parts of the record).

RULES OF PRACTICE: AMICUS CURIAE (BRIEFS)

The customary content of an amicus curiae brief is legal argument, not new evidence.

RULES OF PRACTICE: REOPENING OF RECORD

Any party to an NRC adjudication that seeks to add new evidence to a closed record must satisfy the Commission's criteria for reopening, including the submission of the new evidence in affidavit form. *See* 10 C.F.R. § 2.734(a), (b).

ADJUDICATORY PROCEEDINGS: SCOPE

The scope of an adjudicatory proceeding is limited to matters embraced in the notice of hearing. *General Public Utilities Nuclear Corp.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-881, 26 NRC 465, 476 (1987); *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289 n.6 (1979).

APPEARANCES

Stephen H. Lewis for the Nuclear Regulatory Commission staff.

Peter J. Nickles, Richard A. Meserve, and David P. King, Washington, D.C.,
for licensee Kerr-McGee Chemical Corporation.

DECISION

The NRC staff appeals the Licensing Board's decision in this show cause proceeding involving radioactive contamination near licensee Kerr-McGee Chemical Corporation's Rare Earths Facility in West Chicago, Illinois. In its decision, the Licensing Board rejected the staff's view that the Environmental Protection Agency's (EPA) so-called "radioactivity-in-soil" standards (which the NRC is authorized to enforce) should apply here.¹ The Board determined instead that certain NRC regulations govern the matter at hand. It concluded, however, that, based on the record here, the radiological dose limitations in those NRC standards have not been exceeded. The Board accordingly dismissed the show cause order, which would have required licensee to plan and implement a cleanup of the contaminated area. *See* LBP-86-18, 23 NRC 799 (1986). Licensee opposes the staff's appeal from the Board's initial decision. For the reasons explained below, we affirm the Board's dismissal of the show cause order.

I.

As noted in the 1984 show cause order that initiated this proceeding, Kerr-McGee holds an NRC license to possess thorium at its Rare Earths Facility in West Chicago.² The order charged that, over the years, wastes from the plant had been indirectly discharged into nearby Kress Creek.³ Beginning in 1977, several surveys detected radioactive contamination — namely, thorium and daughter products of thorium decay — in Kress Creek and the West Branch of the DuPage River, into which the Creek flows (hereinafter collectively referred to as "the Creek" or "Kress Creek"). After setting forth the quantitative results of the most comprehensive of those radiological surveys, the order stated that the contamination levels found along the Creek exceed EPA standards codified in 40 C.F.R. Part 192 and established pursuant to the Uranium Mill Tailings Radiation Control Act of 1978, Pub. L. No. 95-604, 92 Stat. 3021 (UMTRCA or "Tailings Act") (codified in scattered sections of 42 U.S.C.). The order also stated that EPA considers these standards applicable for cleanup of offsite

¹ During the hearing, these standards, found in 40 C.F.R. Part 192, were referred to as the "radium-in-soil" standards. The staff now advises us that "radioactivity-in-soil" is the more appropriate phraseology. NRC Staff Brief (August 11, 1986) at 2 n.2.

² This facility, which began operating in 1932 and was acquired by Kerr-McGee in 1967, produced thorium nitrate for use in incandescent light mantles. It also produced "rare earths" for a variety of industrial uses and thorium under government contract. These operations produced waste materials containing thorium and thorium daughter products. Operations under the license ceased in 1973, and a proceeding to decommission the facility is pending before a licensing board. *See* LBP-86-18, 23 NRC at 814-15.

³ Kress Creek is not within the boundaries of the West Chicago Rare Earths Facility. Horn, et al., fol. Tr. 349, at 6.

vicinity properties (such as Kress Creek), and that the NRC is authorized to enforce these standards under section 275d of the Atomic Energy Act of 1954 (AEA), as amended, 42 U.S.C. § 2022(d). Citing various sections of the AEA and the NRC's regulations in 10 C.F.R. Parts 2 and 40,⁴ the order then directed Kerr-McGee to show cause why it should not be required to prepare and execute a plan for the cleanup of the radiological contamination in Kress Creek. 49 Fed. Reg. 9288-89 (1984).

Kerr-McGee invoked its right to a hearing on the charges in the order. From the outset, there was confusion about what statutes and regulatory standards should be applied, whether the NRC had jurisdiction, and who had what evidentiary burdens. The Licensing Board issued a series of orders in an effort to clarify the positions of the parties on such matters. *See, e.g.*, Memorandum and Order of December 28, 1984 (unpublished); Second Prehearing Conference Memorandum and Order of February 7, 1985 (unpublished), *reconsideration denied*, Memorandum and Order of March 22, 1985 (unpublished). As will be seen, of pertinence to the staff's appeal is its concession, early on, that the Tailings Act and EPA's regulations thereunder cannot be retroactively applied and thus are not legally binding in this proceeding. The staff therefore redefined the legal theory of its case in terms of the Atomic Energy Act. Specifically, the staff argued that section 161b of the AEA, 42 U.S.C. § 2201(b), provides the necessary statutory authority for the show cause order,⁵ and that the EPA radioactivity-in-soil standards may be used as guidance in the Commission's enforcement of its responsibilities under the Atomic Energy Act. *See* Memorandum and Order of February 7, 1985, at 5, 6-7, 8; Memorandum and Order of March 22, 1985, at 3, 4-5; LBP-86-18, 23 NRC at 804; Tr. 70-71, 95. The staff presented its case accordingly, relying solely on the Atomic Energy Act and the EPA Tailings Act standards.⁶

The Licensing Board reached four principal conclusions in its consideration of the case. First, it determined that the NRC has jurisdiction under the AEA, independent of the Tailings Act, to require licensee to clean up the contamination in the Creek, if such remedial plan is found to be necessary for the protection of the public health and safety. The Board essentially found such jurisdiction in

⁴ Kerr-McGee's license to possess thorium is held pursuant to the regulations in 10 C.F.R. Part 40. 10 C.F.R. Part 2 contains the Commission's Rules of Practice.

⁵ Under section 161b, the Commission is authorized to

establish by rule, regulation, or order, such standards and instructions to govern the possession and use of special nuclear material, source material, and byproduct material as the Commission may deem necessary or desirable to promote the common defense and security or to protect health or to minimize danger to life or property[.]

⁶ Initially, there were two other parties to the proceeding. One, an owner of property along the Creek, later withdrew. The other — the Illinois Department of Nuclear Safety — chose not to participate further in the proceeding after two of its six issues were dismissed as a sanction for its failure to comply with discovery orders. LBP-86-18, 23 NRC at 802-03.

section 161b of the AEA (*see supra* note 5) and in the Commission's Standards for Protection Against Radiation, 10 C.F.R. Part 20. Citing 10 C.F.R. § 20.2, the Board pointed out that the latter standards are expressly applicable to 10 C.F.R. Part 40 licensees like Kerr-McGee. LBP-86-18, 23 NRC at 805-06, 823.

Second, the Board decided that EPA's Tailings Act standards do not provide appropriate guidance for the protection of the public health and safety from the contamination in Kress Creek. To support its position that EPA intended these standards to be applied to the cleanup of offsite vicinity properties like the Creek, the staff relied heavily on EPA's Final Environmental Impact Statement (FEIS) for 40 C.F.R. Part 192. After reviewing the staff's testimony and the referenced portions of the FEIS, however, the Board concluded that the primary focus of EPA's radioactivity-in-soil standards was radon emanating from tailings piles⁷ and the need to limit the corresponding inhalation exposure of people in houses to radon-222 and its daughters. By contrast, the situation at Kress Creek does not involve a tailings pile, and the principal risk pathway is direct gamma-ray exposure, rather than inhalation.⁸ Thus, the Board concluded that the EPA Part 192 standards could not properly serve as guidance for the cleanup of Kress Creek. LBP-86-18, 23 NRC at 806-10, 817, 818, 821-22, 823.

Third, while acknowledging that the staff chose not to advocate the application of the NRC's Part 20 radiation protection standards to the situation at hand, and that it would therefore be precluded from ordering any remedial action based thereon, the Licensing Board nonetheless concluded that those standards not only are applicable, but also are more appropriate here than the EPA radioactivity-in-soil standards. The Board cited 10 C.F.R. § 20.105(a), in which the Commission establishes a 0.5 rem per year limit on all exposures to an individual in an unrestricted area (except from natural background radiation and medical uses). The Board also noted that a proposed amendment to Part 20 (section 20.303(a), as proposed at 51 Fed. Reg. 1092, 1133 (1986)) would establish a "reference level" of 0.1 rem per year. That is, if a licensee can show that *its* activities will result in a dose to any individual no greater than 0.1 rem per year, it will be deemed to be in compliance with the overall 0.5 rem limitation in section 20.105(a). The Board then decided that the 0.1 rem proposed reference level could serve as appropriate guidance for the Kress Creek situation. LBP-86-18, 23 NRC at 809-11, 823.

⁷ Section 101(8) of UMTRCA defines "tailings" as "the remaining portion of a metal-bearing ore after some or all of such metal, such as uranium, has been extracted." Pub. L. No. 95-604, 92 Stat. 3023 (codified at 42 U.S.C. § 7911(8)).

⁸ The Board also noted that the inhalation exposure risk at the Creek is from daughters of radium-228 (the thorium series), whereas the EPA standards are concerned with the inhalation of radon-222, a radium-226 daughter (the uranium series). Given equal concentrations in the soil of radium-228 and radium-226, the overall inhalation risk from the former to residents in a house built on that soil is about 90-fold smaller than the latter, due to differences in their half-lives and decay schemes. LBP-86-18, 23 NRC at 808-09, 821.

Fourth and finally, after applying the 0.1 rem limitation to the contamination at Kress Creek and using an occupancy rate⁹ more conservative than Kerr-McGee used in its analysis, the Board concluded that the record does not demonstrate that this limit is exceeded. *Id.* at 812-13, 821-23. The Board noted, however, the existence in residential areas of a few "hot spots" of "relatively high gamma [radiation] exposure rates" (i.e., apparently greater than 50 microrem per hour). *Id.* at 813, 820-21. *See also* Letter from Richard A. Meserve to John H Frye, III, et al. (May 6, 1986) (enclosing maps discussed in testimony of Auxier, et al., fol. Tr. 591, Appendix B). Under 10 C.F.R. § 20.1(c), it pointed out, licensees are obliged to "make every reasonable effort to maintain radiation exposures . . . as low as is reasonably achievable." (This is known as the ALARA standard.) The Board suggested that this standard applies here as well and opined that the hot spots "might be cleaned up with a minimum of expense and disruption." LBP-86-18, 23 NRC at 813. But because the staff chose not to pursue this avenue, the Board declined to speculate further on whether remediable action would in fact be warranted under Part 20. *Ibid.* Accordingly, the Board dismissed the staff's 1984 show cause order. *Id.* at 823.

In its appeal from the Licensing Board's decision, the NRC staff raises two issues. First, it argues that the Board abused its discretion in concluding that the EPA radioactivity-in-soil standards are not appropriate for application to the situation presented by the contamination in Kress Creek. The staff quarrels with the Board's discussion of EPA's FEIS for the Part 192 standards. It claims that this FEIS considered direct gamma radiation exposure, as well as radon-222 inhalation, and that it reflects EPA's concern with not just tailings piles, but also with offsite thorium contamination. The staff further asserts that EPA believes its radioactivity-in-soil standard is preferable to an exposure standard (like that in the NRC's Part 20 regulations) because it can be more uniformly applied and does not require occupancy estimates.

The staff's second issue on appeal concerns the Licensing Board's discussion of the Commission's Part 20 standards. The staff's argument is hard to follow, but seems to boil down to the following two points. First, the Licensing Board erred in relying on a regulation that is still only in proposed form — i.e., proposed section 20.303(a), which embodies the 0.1 rem per year reference level. Second, other proposed amendments to Part 20 imply that remedial action pursuant to an ALARA standard would be necessary, in any event, if that reference level were exceeded; the EPA radioactivity-in-soil criteria apparently embody an ALARA standard and thus should be applied here.

Kerr-McGee disputes each of the staff's criticisms of the Board's decision. With respect to the staff's complaint that the Board abused its discretion in not

⁹ The time period that people might reasonably be expected to be in a particular locale.

applying EPA's standards, Kerr-McGee asserts that those arguments conflict with the staff's own testimony and proposed findings of fact. Licensee also contends that the staff has distorted the Board's analysis of EPA's FEIS and intent underlying the radioactivity-in-soil standards. In defense of the result reached below, Kerr-McGee argues further that, apart from the fact that the EPA standards cannot be legally applied retroactively, they also cannot, by their terms, compel cleanup of thorium contamination on offsite property like the Creek. And even if they did apply, Kerr-McGee maintains that the environmental harm and costs associated with cleanup would outweigh the assertedly insignificant risk from the contamination, so as to preclude ordering cleanup. As for the staff's criticism of the Board's Part 20 discussion, licensee first notes that that portion of the decision is dictum. Kerr-McGee also argues that, because the staff steadfastly relied solely on the EPA standards throughout this proceeding, it has waived its right to press any arguments on appeal concerning Part 20. Licensee further contends that the staff's apparent preference for application of an ALARA standard would actually offer a lower, and thus less conservative, level of health protection.

II.

A. The NRC staff's first and principal argument — that the Licensing Board abused its discretion in declining to find the EPA radioactivity-in-soil standards provide appropriate guidance for the cleanup of the contamination at Kress Creek — is readily disposed of. In fact, the Licensing Board had no discretion to abuse.

The staff acknowledged early in this proceeding that the 1978 Tailings Act and the EPA Part 192 regulations promulgated thereunder cannot be applied retroactively to require cleanup of any contamination deposited into the Creek before 1978. Moreover, there is no dispute that the contamination here at issue occurred before 1978.¹⁰ Thus, the staff conceded that the Tailings Act and the related EPA standards are not enforceable in this proceeding. Tr. 70-71, 95. See Kerr-McGee Chemical Corporation's Memorandum and Response to the [Licensing] Board's Questions (January 17, 1985) at 9-10; Memorandum and Order of March 22, 1985, at 3, 4; NRC Staff Brief, *supra* note 1, at 5-6.¹¹ Consequently, the staff urged the Licensing Board to use the EPA standards, in

¹⁰ The show cause order itself notes that operations at the facility ceased in 1973 and that the contamination was detected no later than 1977. 49 Fed. Reg. 9288. See also Tr. 95; Memorandum and Order of February 7, 1985, at 6; Horn, et al., fol. Tr. 349, at 14-18.

¹¹ The parties have not briefed before us this issue of whether UMTRCA and EPA's Part 192 standards are retroactively enforceable here. The staff's concession, however, obviates such discussion and analysis at this stage.

its discretion, as a "guidepost" for the enforcement of the NRC's responsibilities under section 161b of the Atomic Energy Act. Tr. 70-71. This, however, is but an improper attempt to do indirectly that which is barred directly. And, as should be obvious, if the application and enforcement of a law or regulation is legally prohibited in a certain situation, it cannot be applied or enforced against a party anyway as a matter of discretion — absent, of course, the consent of the party that would be subject to such order.¹²

Further, there is nothing to indicate that the Commission is authorized or intends to enforce or apply EPA's Part 192 standards pursuant to any statute other than the Tailings Act.¹³ Section 161b of the Atomic Energy Act, as the Licensing Board held, may well supply the necessary statutory jurisdictional toehold for an order requiring a licensee to take action to remedy a situation like the Kress Creek contamination. That does not mean, however, that, absent express Commission direction, the EPA Part 192 standards can be imported to provide the substantive basis for such a remedial order, either as a matter of law or in the guise of discretion. In other words, these standards, explicitly promulgated pursuant to different statutory authority and otherwise legally barred from application here, cannot be "legitimized" by the staff's mere invocation of section 161b of the AEA. On the other hand, the regulations traditionally applied by the NRC under section 161b are the agency's Part 20 radiation protection standards.¹⁴ But the staff expressly eschewed litigating this case under Part 20: the show cause order makes no mention of any Part 20 standard and, despite the Licensing Board's suggestion, the staff declined to pursue this course at the hearing. LBP-86-18, 23 NRC at 810.

In sum, EPA's radioactivity-in-soil standards may not be applied in this proceeding, even as a matter of discretion. The only colorable legal basis for

¹² This contrasts with the situation where a statute imposes certain responsibilities on *an agency* (e.g., the National Environmental Policy Act's (NEPA) requirement that agencies prepare a detailed environmental impact statement (EIS) for major federal actions significantly affecting the environment), and the agency has some discretion to expand the scope of its *own* responsibilities (e.g., by discussing matters in an EIS for which NEPA requires no consideration).

¹³ For example, the show cause order cites section 275d of the Atomic Energy Act, 42 U.S.C. § 2022(d), as providing authority for the NRC's implementation and enforcement of the EPA standards. 49 Fed. Reg. 9288. Section 275d, however, was added to the AEA by section 206(a) of UMTRCA, Pub. L. No. 95-604, 92 Stat. 3039-41.

¹⁴ Insofar as the regulation of tailings is concerned, however, the NRC's authority under the AEA and Part 20 has always been regarded as limited. UMTRCA was enacted to fill this regulatory gap. See *Petition of Sunflower Coalition*, CLI-82-34, 16 NRC 1502, 1504 (1982); *id.*, CLI-81-13, 13 NRC 847, 850-51 (1981); H.R. Rep. No. 1480, 95th Cong., 2d Sess., pt. 1, at 11-13, reprinted in 1978 U.S. Code Cong. & Admin. News 7433, 7433-35.

In particular, section 201 of UMTRCA added tailings to the list of materials within the scope of the Atomic Energy Act. "[T]he tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content" are now known as "section 11e(2) byproduct material" under the AEA. Pub. L. No. 95-604, § 201, 92 Stat. 3033 (codified at 42 U.S.C. § 2014(e)(2)). In ALAB-867, 25 NRC 900, 906-09 (1987), we determined, on the basis of the record developed below and contrary to the staff's position before us, that the contamination in Kress Creek is section 11e(2) byproduct material.

the show cause order here at issue can be found in 10 C.F.R. Part 20, but the staff, as the proponent of that order, refused to prosecute its case on that theory. Hence, the show cause order must be dismissed.

Even if the EPA standards could be permissively applied to Kress Creek, the formal record of this adjudicatory proceeding is so deficient that it provides us no warrant for directing the Licensing Board to do so. The primary basis of the staff's argument on appeal is the fault it finds in that Board's discussion of the FEIS for EPA's Part 192 regulations, on which document the staff relied heavily. The staff complains that the Board did not accord proper weight to certain parts of the FEIS and misunderstood others. Based on our reading of the Board's decision, the appellate briefs of both the staff and Kerr-McGee, and Respondent's (Kerr-McGee's) Exhibit No. 6 (a three-page excerpt from the FEIS, marked for identification but apparently not admitted into evidence), it *appears* that the Board fairly represented and construed the portions of the FEIS on which the parties relied. We cannot *verify* this, however, because the EPA FEIS is not, in fact, included in the record.

Despite the staff's substantial reliance on the EPA FEIS in the presentation of its case, the staff saw no "need to make it a part of the record" and therefore did not offer it into evidence. Tr. 427.¹⁵ After ascertaining that all the parties and Licensing Board members had copies of the FEIS and eliciting no objection, the Board took official notice of the document. *Ibid.* Unfortunately, there are fundamental problems with the manner in which this "evidence" was treated.

Under the Commission's Rules of Practice, a licensing board "may take official notice of any fact of which a court of the United States may take judicial notice or of any technical or scientific fact within the knowledge of the Commission as an expert body." The rule also contemplates that each officially noticed fact will be identified in the record with sufficient particularity. 10 C.F.R. § 2.743(i)(1). The entirety of a voluminous technical document prepared by another agency, like the EPA FEIS, thus does not fall within the scope of the Commission's official notice rule. Further, official notice is especially inappropriate where, as here, there is an ongoing dispute between the parties over what the document says.

But more important from a practical standpoint, reliance on official notice assumes the ready availability of the noticed material to all participants in the adjudicatory process — including those who conduct appellate review. Inasmuch as the FEIS is not physically included in the record of this proceeding and the staff failed to provide us with even one copy of it, we do not have this

¹⁵ Had the staff tendered the FEIS, it would have had to produce as well an EPA expert responsible for the preparation of the document, who could be examined on the factual assertions and technical opinions expressed in the FEIS. See *Duke Power Co.* (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-669, 15 NRC 453, 477 (1982). The staff, in fact, produced no EPA witnesses at the hearing. See also *infra* pp. 70, 72, & note 21.

document.¹⁶ If the staff, or any other party, expects us to review material that assertedly supports its arguments on appeal but is not physically in the record or readily available from familiar sources (e.g., the *Federal Register*, NRC-generated documents, law reviews), that party is obliged to provide us with copies of it. Cf. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-804, 21 NRC 587, 592 n.6 (1985) (adjudicatory boards should not have to complete a party's research for it). See also *id.*, ALAB-845, 24 NRC 220, 249 n.30 (1986), and *id.*, ALAB-836, 23 NRC 479, 485-86 n.3 (1986) (appellate review hampered by party's failure to include important document in record and board's failure to take care in preservation of record).¹⁷ Because we obviously cannot review material neither provided to us nor properly included in the record, the staff must now bear the burden of its own shortcomings in this regard.

The staff's problems with the record are not limited to the omission of the FEIS. Accompanying its brief on appeal was the staff's Motion to Accept EPA Letter (August 11, 1986), tendering an August 8, 1986, letter from an EPA official to the Director of the NRC's Office of Nuclear Material Safety and Safeguards (the office that issued the show cause order in this proceeding). The staff believes that the letter would aid our understanding of the EPA radioactivity-in-soil standards, and asks that we accept it "in the nature of a brief *amicus curiae*." NRC Staff Motion at 1. It also claims that acceptance of it would not prejudice other parties. *Ibid.* Kerr-McGee opposes the motion, calling it "a patent attempt to supplement a gaping hole in the record." Kerr-McGee's Memorandum in Opposition (August 19, 1986) at 2.

Our determination that the EPA standards may not legally be applied here renders the staff motion irrelevant; accordingly, we deny it. But assuming that the contents of the EPA letter were germane to the outcome, we agree with Kerr-McGee's assessment of the staff's motion. As noted earlier (*supra* note 15), the staff presented no EPA witness to testify in support of the staff's interpretation of EPA's Part 192 standards and corresponding FEIS. The staff now belatedly and improperly tries to cure this infirmity in its case by "smuggl[ing] the letter into the record in the guise of an *amicus* brief." Kerr-McGee's Memorandum at 4.

¹⁶ See Letter from NRC staff counsel Lillian M. Cuoco to John H. Frye, III, et al. (February 5, 1985), transmitting the FEIS to the Licensing Board but not to anyone else on the service list, including us and the Commission's Secretary, the official custodian of the record under 10 C.F.R. §§ 2.701, 2.702 ("cc w/out enclosures: Service List"). The Licensing Board no longer has its copy, and the Commission's Secretary has only the three pages of the FEIS that were marked for identification as Respondent's Exhibit No. 6 at the hearing.

¹⁷ It should also go without saying that, when a party relies on officially noticed material, it should so indicate. See 10 C.F.R. § 2.762(d) (appellate briefs must indicate precise portions of the record relied upon); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 702 n.27 (1985), *aff'd in part and review otherwise declined*, CLI-86-5, 23 NRC 125 (1986) (parties' briefs must contain explicit references to all relevant parts of the record). Not only does the staff's brief fail to advise us that the Licensing Board took official notice of the EPA FEIS (a fact omitted from Kerr-McGee's brief and the initial decision as well), it includes numerous references to "the FEIS" without even fully identifying it. See, e.g., NRC Staff Brief at 7-9.

The staff's suggestion that we treat its filing as an *amicus curiae* brief is nothing short of an embarrassment. For one thing, we have never heard of an *amicus* brief being submitted by anyone other than the *amicus* itself (in this case, EPA). More significant, the EPA letter is not legal argument (the customary content of an *amicus* brief), but rather new evidence of EPA's intent concerning the scope of its radioactivity-in-soil standards. *See, e.g.*, NRC Staff Motion, EPA Letter at 3. As the staff knows, or should know, any party to an NRC adjudication that seeks to add new evidence to a closed record must satisfy the Commission's criteria for reopening, including the submission of the new evidence in affidavit form. *See* 10 C.F.R. § 2.734(a), (b).¹⁸ The staff's motion and attached letter do not even pay lip service to these well established requirements.

B. The staff's arguments in connection with the Licensing Board's discussion of the NRC's Part 20 standards also fail. To begin with, as the Board itself recognized, it had no authority to require any remedial action under Part 20 because the staff had not advocated such at any time during the course of the proceeding. LBP-86-18, 23 NRC at 810.¹⁹ Thus, as Kerr-McGee correctly points out, that part of the initial decision is dictum. Nonetheless, the Board discussion represents a commendable effort on its part to satisfy itself that the contamination in Kress Creek does not present a serious threat to the public health and safety.²⁰ In this circumstance, we fail to understand how the staff is aggrieved by an opinion that attempted to achieve the ultimate, ostensible goal of the staff order that initiated this proceeding in the first place — protection of the public from the potentially adverse effects of the contamination in the Creek.

Perhaps the answer lies in the staff's implicit assumption that the NRC's Part 20 standards and EPA's radioactivity-in-soil standards are mutually exclusive or present an "either/or" choice. But we are aware of no basis for such an assumption. That is, even if we were to agree with the staff that the Board improperly applied Part 20 in this proceeding, that would not automatically mean that the staff's view concerning the EPA standards would prevail. Indeed, it is possible — but we need not decide — that neither standard applies.

In any event, the staff's arguments — to the extent we understand them — are somewhat disingenuous. The staff criticizes the Licensing Board for looking to a proposed regulation for guidance (proposed 10 C.F.R. § 20.303(a)), when the

¹⁸ The first of these criteria is a showing that the motion is timely — i.e., that there is good cause why the new evidence was not submitted earlier, during the hearing. 10 C.F.R. § 2.734(a)(1). *See infra* note 21.

¹⁹ The order authorizing the Licensing Board to conduct this proceeding identified the issues as those set forth in the staff's show cause order. *See* Commission Order of June 28, 1984 (unpublished). *See also General Public Utilities Nuclear Corp.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-881, 26 NRC 465, 476 (1987), and *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289 n.6 (1979) (scope of proceeding limited to matters embraced in notice of hearing).

²⁰ Because the Board's Part 20 discussion is dictum, our comments of course should not be taken as implying our affirmance of the Board's findings and conclusions in this regard.

staff's entire case was premised on the equally nonbinding EPA radioactivity-in-soil standards. Further, on appeal the staff itself relies on *other proposed* amendments to Part 20 in a final (unsuccessful) attempt to convince us that the EPA standards should apply here. See NRC Staff Brief at 14.

C. Lastly, we are compelled to note our view that the public interest has not been well served in this proceeding. At least seven years elapsed between the discovery of the contamination in Kress Creek and the issuance of the 1984 show cause order. Contrary to the 1980 advice of its counsel, the NRC staff predicated the show cause order on a law that could not be enforced in the circumstances of this case — a fact the staff subsequently conceded at the second prehearing conference some five years later. See Respondent's Exhibit No. 15, Memorandum from Howard K. Shapar to William J. Dircks (March 31, 1980) at 4-6; *supra* p. 67. See also Respondent's Exhibit No. 16, Memorandum from Leo B. Higginbotham to Guy H. Cunningham (September 15, 1980). Despite opportunities afforded by the Licensing Board to pursue the matter on more legally viable ground under 10 C.F.R. Part 20, the staff chose not to assert this even as an alternative theory. Although it relied almost exclusively on EPA standards and documents, the staff presented no EPA witnesses during the several days of hearing and failed to exercise adequate care in the development of the formal record. See *supra* pp. 69-71.²¹ The proceeding has also had a tortuous history on appeal due to confusion surrounding the characterization of the contaminant material in Kress Creek, and the related issue of whether an agreement with the State of Illinois transferred jurisdiction over this proceeding, as asserted by the staff. See ALAB-867, *supra* note 14, 25 NRC 900. But worst of all, hot spots of contamination apparently remain, with no immediate prospect of cleanup. See *supra* p. 66. Thus, on the one hand, licensee Kerr-McGee has been subjected to years of regulatory uncertainty and pointless litigation that consumed substantial public and private resources alike, while, on the other hand, the contamination problem that led to this proceeding still goes unremedied.²²

The Licensing Board's dismissal in LBP-86-18, 23 NRC 799, of the show cause order that initiated this proceeding is *affirmed*.

²¹ An internal NRC document admitted into evidence in this proceeding reflects the NRC staff's curious "reluctance to rely upon EPA as witnesses," and its even more surprising view that the very EPA standards upon which it relies are "unduly stringent for the thorium chain." Respondent's Exhibit No. 11, Memorandum from Guy H. Cunningham, III, to John G. Davis (August 22, 1985), Enclosure at 1.

²² The participation of the State of Illinois in this proceeding was similarly ineffective. See *supra* note 6.

The NRC Staff Motion to Accept EPA Letter is *denied*.
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
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)

February 22, 1988

The Appeal Board denies as untimely an intervenor's motion to reopen the record and admit a new contention in the onsite emergency planning and safety phase of this operating license proceeding.

RULES OF PRACTICE: REOPENING OF RECORD

A motion to reopen a record in an operating license proceeding must meet three established criteria. The motion must either be timely or raise an exceptionally grave issue that should be considered even though untimely presented; it must address a significant safety or environmental issue; and it must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially. 10 C.F.R. 2.734(a)(1).

RULES OF PRACTICE: REOPENING OF RECORD

The burden is on the party seeking the reopening of an evidentiary record to demonstrate in its moving papers that the criteria for granting such relief are met. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), CLI-86-7, 23 NRC 233 (1986).

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

10 C.F.R. 2.206 authorizes the filing of a petition with the Director of NRC's Office of Nuclear Reactor Regulation seeking the institution of a show cause proceeding for the modification, suspension, or revocation of a license or such other action as may be proper. Such petitions may be filed at any time and are the appropriate means for bringing to the Commission's attention a party's safety concerns that, for one reason or another, cannot be raised in a licensing proceeding.

APPEARANCES

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

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

Gregory Alan Berry and Edwin J. Reis for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

On February 2, 1988, intervenor New England Coalition on Nuclear Pollution (Coalition) filed a motion to reopen the record in the onsite emergency planning and safety issues phase of this operating license proceeding involving the Seabrook nuclear facility. The motion further seeks the admission of a new contention challenging the environmental qualification of the RG59 coaxial

cable that was supplied by the vendor International Telephone and Telegraph Corporation (ITT) for use in the radiation monitoring system.¹

We agree with the applicants and the NRC staff that the Coalition has not met the first of the three established criteria for the reopening of a record to consider additional evidence. More specifically, the Commission's Rules of Practice require the Coalition to demonstrate, *inter alia*, that its motion either is timely or raises an "exceptionally grave" issue that should be considered even though untimely presented.² It is manifest that the motion is not only extremely tardy but also falls far short of providing the necessary showing on the safety significance of the issue the Coalition seeks now to inject into the proceeding.

1.a. At a hearing before the Licensing Board and under the aegis of its Contention I.B.2, the Coalition litigated the environmental qualification of a different type of coaxial cable furnished by ITT. That cable, identified as RG58, is used for data transmission in the facility's computer systems. No tests were performed on it to determine whether it was environmentally qualified. Rather, according to information contained in the applicants' equipment qualification file (EQF) pertaining to certain ITT cables (which was placed into evidence by the Coalition on September 30, 1986),³ the affirmative conclusion on that question was reached solely on the basis of tests performed on the RG59 cable.

The Coalition did not dispute that the RG59 test results established the environmental qualification of that cable. It did, however, maintain that those results could not properly be employed to qualify the untested RG58 cable as well. The Licensing Board rejected that argument in its March 25, 1987 partial initial decision authorizing the issuance of a low-power license for the Seabrook facility.⁴ On an appeal from that decision, the Coalition renewed its claim.

In ALAB-875, issued on October 1, we considered the matter.⁵ Early in the discussion, we stressed that the Coalition did "not dispute that the . . . RG59 coaxial cable [was] properly demonstrated to be environmentally qualified" but was complaining merely that such a demonstration was lacking with regard to the RG58 cable.⁶ We then went on to find a lack of any apparent basis for the Licensing Board's conclusion that the environmental qualification of the RG58 cable was "adequately documented" in the applicants' EQF file (i.e., that the

¹ By virtue of General Design Criterion 4 in Appendix A to 10 C.F.R. Part 50, components such as the RG59 cable must be capable of continuing to perform their intended function for such period as might be necessary after, e.g., a loss-of-coolant accident — that is, they must be "environmentally qualified."

² See 10 C.F.R. 2.734(s)(1).

³ See Tr. 472-73. This EQF, identified as Electrical Equipment Qualification File No. 113-19-01, was introduced into evidence as the Coalition's Exhibit 4. One of the purposes of EQFs is to record the manner in which particular equipment is determined to be environmentally qualified.

⁴ LBP-87-10, 25 NRC 177, 210-11.

⁵ 26 NRC 251, 270-71.

⁶ *Id.* at 270.

RG59 cable test results could serve as the foundation for such qualification).⁷ As a consequence, we remanded the issue to the Licensing Board with instructions either to point to such a foundation in the existing record or to reopen the record for further exploration of the RG58 cable issue.⁸

In an October 16, 1987 memorandum (unpublished), the Licensing Board set forth what it deemed to be the requisite record support for the challenged finding that the RG58 cable was environmentally qualified. On our invitation, the Coalition (as well as the applicants and the NRC staff) submitted written comments on the substance of the memorandum. In the course of its comments, the Coalition attempted to raise the question whether the tests applied to the RG59 cable were sufficient even to qualify *that* cable.⁹ We rejected the attempt. Although deciding in ALAB-882 that the issue of the environmental qualification of the RG58 cable had to be remanded once again to the Licensing Board, we had this to say with regard to the newly surfaced RG59 question: "That question was not presented on the Coalition's appeal from the partial initial decision and we therefore do not consider it."¹⁰

b. The short of the matter, therefore, is that for the entire period that its Contention I.B.2 was in litigation below, as well as during the course of the briefing and argument of its appeal from the Licensing Board's action on that contention, the Coalition accepted (implicitly if not explicitly) the environmental qualification of the RG59 cable. It was not until last November — in a document that was supposed to be confined to the RG58 cable question that had been presented below and renewed on appeal — that the Coalition endeavored to shift directions on the acceptability of the RG59 cable. And another three months elapsed before the Coalition undertook to give effect to that shift through the vehicle of the motion to reopen the record that is now at hand.

At least some of the delay in presenting the issue might have been excusable had there been some recent development that brought into question for the first time the environmental qualification of the RG59 cable. But, as the Coalition recognizes, no such justification is available to it. To the contrary, as will be seen shortly, the Coalition's proposition that the RG59 cable is not environmentally qualified rests entirely on disclosures in the applicants' EQF — which the Coalition itself introduced into evidence well over a year ago. Confronting this fact, the Coalition tells us that it did not become aware of the portion of the EQF assertedly establishing the inadequacy of the RG59 cable "until

⁷ *Id.* at 271.

⁸ *Ibid.*

⁹ See New England Coalition on Nuclear Pollution's Supplemental Memorandum Regarding Environmental Qualification of RG58 Coaxial Cable (November 4, 1987) at 6.

¹⁰ 27 NRC 1, 5 n.14 (1988).

recently, when we were immersed in the issue of RG58 qualification.”¹¹ Leaving aside whether the Coalition had an obligation to familiarize itself with the content of the EQF before putting it into evidence as a Coalition exhibit, it appears that that intervenor became “immersed” in the RG58 cable issue no later than the time of the briefing of its appeal from the partial initial decision, last spring. Consequently, we remain unpersuaded that there is a satisfactory explanation for the lateness of the hour.

2. As the Commission stressed in its *Perry* decision two years ago, the burden is on the party seeking the reopening of an evidentiary record to demonstrate in its moving papers that the criteria for granting such relief have been met.¹² In that case, the reopening motion was timely and the question was whether it raised a significant safety issue.¹³ Here, to repeat, because the motion is untimely, the Coalition’s burden is considerably greater: it must establish that the issue it would now add to the proceeding is not merely “significant” but “exceptionally grave.”

But the fact is that the Coalition’s motion does not establish the existence of *any* safety issue insofar as the RG59 cable is concerned. All that we are told in either the motion itself or the supporting affidavit is that (1) the applicants’ EQF indicates that the insulation resistance requirement for RG59 cable is 10,000 megohms per 1000 feet; and (2) “[t]he insulation resistance measurements of samples of RG59 cable during environmental qualification testing fell as low as 300 megohms 1.7 hours into the steam/chemical spray, high humidity exposure tests, and remained below the required level for up to 14.5 days.”¹⁴ While that may be so, these questions remain: does the differential have any safety significance and, if so, precisely what is it? On that score, the motion and supporting affidavit are singularly unilluminating. More particularly, we are not favored with the foundation for the Coalition’s apparent assumptions that (1) the 10,000 megohm value was intended to reflect an acceptance criterion for performance of the RG59 cable under accident conditions; and (2) that cable will accordingly be unable to perform its intended function in an accident environment. Yet the validity of neither of those assumptions is so obvious as to be susceptible of official notice. To the contrary, both have been challenged in affidavits supplied in connection with the opposition of the applicants and the staff to the reopening motion. The applicants’ affiant avers that the 10,000 megohm value was nothing more than a procurement specification having no

¹¹ NECNP Motion to Reopen Record and Admit New Contention (February 2, 1988) [hereinafter “Coalition Motion”] at 3.

¹² *Cleveland Electric Illuminating Co. (Perry Nuclear Power Plant, Units 1 and 2)*, CLI-86-7, 23 NRC 233 (1986).

¹³ See *infra* p. 79. 10 C.F.R. 2.734(a)(1) requires that, even if timely filed, a reopening motion address a significant safety or environmental issue and demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially.

¹⁴ Coalition Motion at 4. See also *id.*, Affidavit of Robert D. Pollard at 1-2.

relationship to the performance of the cable under accident conditions.¹⁵ He goes on to assert that the RG59 cable test results reported in the EQF and relied upon by the Coalition demonstrate that that cable will withstand an accident environment.¹⁶ For their part, the staff's affiants reach essentially the same conclusion.¹⁷

In these circumstances, the teachings of the Commission in *Perry* are not simply apposite but controlling. The motion to reopen in that case rested upon a recent earthquake in the vicinity of the Perry plant that assertedly exceeded certain facility seismic design parameters. Although not challenging the characterization of the earthquake, the applicants and the staff maintained that the event lacked safety significance. Upon considering the papers before us, we decided that, before passing upon the reopening motion, a brief hearing should be conducted for the purpose of exploring further the various claims on the issue of safety significance. The Commission decided otherwise. Based upon the determination that the movant had not shown affirmatively in its motion papers that the earthquake had safety significance because it exceeded the facility's seismic design, the Commission vacated our order calling for the exploratory hearing and denied the motion to reopen. A different ultimate result could scarcely be reached here given the fact that, despite being obligated to establish affirmatively the existence of an "exceptionally grave" safety issue, the Coalition's motion papers failed to demonstrate the presence of an issue of any safety significance.

¹⁵ See Applicants' Opposition to Motion of NECNP to Reopen the Record and Admit Late-Filed Contention (February 12, 1988), Affidavit of Richard Bergeron at 2-3.

¹⁶ *Id.* at 3-4.

¹⁷ See NRC Staff's Response to NECNP Motion to Reopen Record and Admit New Contention (February 17, 1988), Joint Affidavit of Amritpal S. Gill and Harold Walker at 6-11. The affidavit also indicates that the 10,000 megohm value is not rooted in any regulatory requirement. *Id.* at 10-11.

It is noteworthy that the Coalition was on prior notice that at least the applicants would challenge any endeavor to use the 10,000 megohm insulation resistance value as an acceptance criterion for accident conditions. See ALAB-882, 27 NRC at 4 n.12. In that circumstance, it is especially surprising that the Coalition made no attempt in its motion and supporting affidavit to flesh out its contrary view that that value must be taken as bearing upon the ability of RG59 cable to perform its intended function in an accident environment.

The Coalition's motion to reopen the record on the environmental qualification of the RG59 cable is *denied*.¹⁸

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

¹⁸ Although we have concluded that the Coalition has failed to demonstrate the safety significance of its concerns about the RG59 cable, our denial of its motion to reopen the adjudicatory proceeding is without prejudice to the filing of a petition with the Director of the NRC's Office of Nuclear Reactor Regulation pursuant to 10 C.F.R. 2.206. That section authorizes the filing of a petition seeking the institution of a show cause proceeding for the modification, suspension, or revocation of a license or "such other action as may be proper." Section 2.206 petitions may be filed at any time and are the appropriate means for bringing to the Commission's attention a party's safety concerns that, for one reason or another, cannot be raised in a licensing proceeding.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

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

In the Matter of

Docket No. 50-289-CH

GENERAL PUBLIC UTILITIES
NUCLEAR CORPORATION
(Three Mile Island Nuclear
Station, Unit No. 1)

February 23, 1988

After certifying a question to the Commission in ALAB-881, 26 NRC 465 (1987), the Appeal Board, as presaged in that earlier memorandum, reverses the Administrative Law Judge's order in ALJ-87-3, 25 NRC 345 (1987), that continued in effect a license condition precluding a specified utility employee from having supervisory responsibilities for the training of nonlicensed personnel.

APPEARANCES

Michael W. Maupin, Richmond, Virginia, for Charles Husted.

Deborah B. Bauser, Washington, D.C., for intervenor General Public Utilities Nuclear.

Louise Bradford, Harrisburg, Pennsylvania, for intervenor Three Mile Island Alert.

Janice E. Moore for the Nuclear Regulatory Commission staff.

DECISION

In ALAB-881, 26 NRC 465 (1987), we were faced with the appeal of Charles Husted from an Administrative Law Judge's ruling that left intact a license condition originally imposed on General Public Utilities Nuclear (GPUN) that barred the utility from employing Mr. Husted as supervisor of non-licensed operator training.¹ The appeal was supported by GPUN and the NRC staff and it was opposed by intervenor, Three Mile Island Alert. The history of the proceeding, the trial judge's findings, and our discussion of the issues are detailed in ALAB-881 and need not be repeated here. Suffice it to note that we there determined that certain record evidence concerning Mr. Husted's job performance at GPUN was pivotal to the outcome of the appeal. We further found, however, that a jurisdictional deficiency in the proceeding precluded us from considering that evidence. In short, we concluded that without the evidence in question we must affirm the trial judge's decision but, if we could consider the evidence of Mr. Husted's job performance, we would reverse. In these circumstances, we certified to the Commission the question whether it wished to expand retroactively the subject matter of the proceeding to encompass the issue of Mr. Husted's job performance.

In a February 19, 1988 memorandum and order, the Commission responded to our certified question by directing us to consider the subject evidence.² Accordingly, as presaged in ALAB-881, we now *reverse* the Administrative Law Judge's order in ALJ-87-3 to the effect that the "condition regarding Charles Husted imposed in ALAB-772, 19 NRC at 1224, requiring that he have no supervisory responsibilities insofar as the training of nonlicensed personnel is concerned, shall not be vacated."³ Further, we *vacate* the trial judge's conclusion that "[t]here is no basis to come to a different finding in regard to Mr. Husted serving in those licensed capacities in which the Licensee and the Commonwealth of Pennsylvania stipulated that he should not serve."⁴

¹ See ALJ-87-3, 25 NRC 345 (1987).

² CLI-88-1, 27 NRC 41.

³ 25 NRC at 385.

⁴ *Id.*

As the Commission indicated in the hearing notice, the agency is powerless to undo the stipulation between GPUN and the Commonwealth of Pennsylvania. Thus, Mr. Husted must seek relief directly from those parties if he wishes reinstatement to the positions of licensed operator, instructor of licensed operators or training instructor. See 50 Fed. Reg. 37,099 (1985).

It is so ORDERED.

FOR THE APPEAL BOARD

**C. Jean Shoemaker
Secretary to the
Appeal Board**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

John H Frye, III, Chairman
Dr. Oscar H. Paris
Frederick J. Shon

In the Matter of

Docket No. 50-322-OL-5
(ASLBP No. 86-534-01-OL)
(EP Exercise)

LONG ISLAND LIGHTING
COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

February 1, 1988

Licensing Board concludes that fundamental flaws were demonstrated in the offsite emergency plan for the Shoreham Nuclear Power Station by the February 13, 1986 Exercise of that plan. Communications flaws were demonstrated within the Emergency Operations Center in the handling of information on traffic impediments; among field workers in that the plan does not permit such lateral communications (the Chairman dissented from this conclusion); at the Emergency News Center in the inability to provide timely information on protective action recommendations and traffic impediments; and in the EBS messages in that they contained some conflicting and confusing information. A flaw was demonstrated in that large numbers of Traffic Control Posts were not timely staffed until well after traffic congestion would have occurred. Training Program flaws were demonstrated in communications, functions of Traffic Guides and Bus Drivers, and prompt response of field personnel.

EMERGENCY PLANS: DEFINITION OF FUNDAMENTAL FLAW

A fundamental flaw is a pervasive problem in an emergency plan or its implementation which, if uncorrected, would substantially affect the health and safety of the public. It describes a condition in which there is a lack of reasonable assurance that the public can be protected in an emergency. The condition described by a fundamental flaw is substantially the same as that described by the Federal Emergency Management Agency's definition of a deficiency in an emergency plan.

EMERGENCY PLANS: BACKUP ROUTE ALERTING

Appendix 3, ¶ B, of NUREG-0654 does not require that backup route alerting be completed within 45 minutes.

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INITIAL DECISION (Emergency Plan Exercise)

I. INTRODUCTION

A. Procedural History

This Decision addresses the question whether the February 13, 1986 Exercise of the offsite emergency plan for the Shoreham Nuclear Power Station revealed any fundamental flaws in that Plan. Earlier, we issued a Partial Initial Decision, LBP-87-32, 26 NRC 479 (1987), in which we concluded that the February 13 Exercise did not comply with the requirements of 10 C.F.R. Part 50, Appendix E, ¶IV.F.1.¹ The history of this proceeding is recited in that decision and need not be repeated here.

In this Decision, we determine the extent to which the Exercise demonstrated fundamental flaws. As a preliminary matter, we decide the question of the standard to be employed in making this determination. We also address Intervenor's

¹This Decision decided Contentions EX-15 and EX-16. Because Intervenor took the position that a decision was not necessary, it also addressed but did not decide Contention EX-21.

legal arguments concerning whether the results of the Exercise may be used to support licensing of the plant for commercial operations.

The parties to this proceeding are the Applicant, Long Island Lighting Company (LILCO); the Intervenor, Suffolk County, New York State, and the Town of Southampton (the last did not participate in the hearing); and the NRC Staff. We noted in LBP-87-32 that this proceeding marks the first time that a power reactor operating license applicant has, because of state and local opposition, taken on the responsibility for offsite emergency planning. LILCO has established a separate organization to carry out these functions which is known as the Local Emergency Response Organization (LERO). LERO is staffed by LILCO employees and contractors.

In this Initial Decision, we conclude that this record² reveals certain fundamental flaws which, while they remain uncorrected, bar the issuance of a full-power, full-term operating license for the Shoreham Nuclear Power Station. Although we found flaws related to the prompt dispatch of Traffic Guides and training, the great bulk of these flaws relate to communications. Breakdowns in communications occurred within LERO as well as between LERO/LILCO on the one hand and the public and media on the other. Errors occurred not only with respect to procedures, but also with respect to the substance of the information transmitted. Confusing and conflicting information was furnished to the public, and erroneous information to the media. It is clear that much needs to be accomplished if these problems are to be overcome.

All of the proposed findings of fact and conclusions of law submitted by the parties have been considered in formulating this Decision. Those not incorporated directly or inferentially in this Decision are rejected as unsupported in fact or law or as unnecessary to the rendering of this Decision.

While FEMA did not render an overall finding regarding the February 13, 1986 Exercise, we must nevertheless accord presumptive validity to FEMA's factual findings contained in its Post-Exercise Assessment and testimony. This presumption is rebuttable and disappears in the face of a challenge. See 10 C.F.R. § 50.47(a)(2); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), ALAB-698, 16 NRC 1290, 1298 (1982), *aff'd* 8 LBP-81-59, 14 NRC 1211, 1460-66 (1981); *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-86-11, 23 NRC 294, 365 (1986). In this connection, we wish to comment on the testimony presented by the FEMA witnesses, Thomas E. Baldwin, Joseph H. Keller, and Roger Kowieski. We found these witnesses to be highly competent in the field of emergency preparedness. They

² This record was established in hearings that began on March 10, 1987, and continued over the course of 4 months, until June 18, 1987, when the record was closed. Thirty-four witnesses testified. The transcript numbered 8694 pages and prefiled written testimony added 3218 pages. One hundred and forty-nine exhibits were offered. The text of the contentions, a list of witnesses, and a list of the exhibits offered is contained in the Appendix to LILCO's proposed findings.

had extensive knowledge of the plan and the exercise results, and their testimony was forthright and impartial. We found their testimony to be most valuable in the preparation of this Decision.

B. Intervenor's Legal Argument Based on the Absence of a FEMA Finding

In Contention EX-19, Intervenor's make two arguments: first, that under NRC's regulations, it is necessary for NRC to base its finding as to reasonable assurance on FEMA's finding, so that the absence of a FEMA finding precludes an NRC finding; and second, that had it not been for FEMA's advance determination that it could not issue a finding in light of the absence of state and local government participation in the Exercise, it would have issued a negative finding. Intervenor's Proposed Findings at 18-29.

In its September 11, 1987 brief on this contention, Staff urges that Intervenor's first argument coincides with the Board's view of the issue raised as expressed in the October 3, 1986 Prehearing Conference Order. Staff goes on to argue that Intervenor's position should be rejected. We agree with Staff that Contention EX-19 was admitted to consider whether FEMA's inability to make a favorable finding would preclude a finding by NRC. Because we have found fundamental flaws in the Plan which preclude a positive reasonable assurance finding so long as they exist, Intervenor's first argument is moot insofar as this Initial Decision is concerned. Consequently we do not decide it. We note that Intervenor's second argument is essentially correct. FEMA's witnesses testified that were a finding to be made, it would be negative. Tr. 8645-46, 8650-52. However, our finding that fundamental flaws exist also moots that argument.

C. Definition of "Fundamental Flaw"

In CLI-86-11, 23 NRC 577 (1986), the Commission directed that this phase of the Shoreham litigation be confined to contentions that satisfy the requirements of 10 C.F.R. §2.714 and which, if substantiated, would demonstrate a fundamental flaw in LILCO's emergency plan. The Commission based its direction on the proposition that:

[u]nder [its] regulations and practice, Staff review of exercise results is consistent with the predictive nature of emergency planning, and is restricted to determining if 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 581.³

Intervenors urge that we follow this definition of fundamental flaw, noting that it is close to that which they urged at the close of the hearing.⁴ Intervenors' Proposed Findings at 7-8. Moreover, as Intervenors point out, the Commission's definition closely parallels FEMA's definition of deficiencies: "demonstrated and observed inadequacies that would cause a finding that offsite emergency preparedness was not adequate to provide reasonable assurance that appropriate protective measures can be taken to protect the health and safety of the public living in the vicinity"

LILCO takes the position that:

A fundamental flaw is a pervasive, systemic, conceptual flaw in a plan that, because it substantially affects public health and safety, would prevent issuance of a license if left untended. A fundamental flaw is not readily correctable by equipment or training or simple, straightforward plan changes, but requires more basic changes to a plan because it is a fundamental defect in the way an emergency plan is conceived.

LILCO's Proposed Findings at 8.

LILCO urges that we apply a three-part test in determining whether a fundamental flaw has been established:

First, . . . the alleged flaw must be "fundamental." The heart of an emergency plan is the protection of the public health and safety. Therefore, the threshold test is this: If the exercise had been a real emergency, would the alleged "flaw" have substantially affected the health and safety of the public?

Second, the problem must be systemic or pervasive, rather than merely one or more isolated and essentially independent problems. Intervenors must have shown that an essential component of the Plan is flawed conceptually; "minor or *ad hoc* problems occurring on the exercise day" are not fundamental flaws in an emergency plan. *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), LBP-85-49, 22 NRC 899 (1985); LBP-86-11, 23 NRC 294 (1986). Problems "which only reflect the actual state of emergency preparedness on a particular day in question" are not fundamental flaws. *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), *cert. denied*, 469 U.S. 1132 (1985).

³ Prior to this Commission decision, a Licensing Board had applied the fundamental flaw standard to the admission of contentions. *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-85-49, 22 NRC 899, 908-13 (1985); *aff'd*, ALAB-843, 24 NRC 200, 215 n.71 (1986).

⁴ The intervenors defined this term as

"exercise results, events . . . and/or omissions which singularly or with other results, events or omissions, preclude a finding of reasonable assurance that adequate protective measures can and will be taken on the basis of the LERO Plan. Thus, they reflect problems in the Plan and/or its implementation that would preclude a reasonable assurance finding."

Tr. 8919-20.

Third, the alleged problem must not be readily correctable by means of additional training, the purchase of new equipment, or some other reliable and verifiable method. Rather it is a problem that is susceptible of correction only through substantial, potentially far-reaching revision of the written emergency plan. Even so, there is no obvious reason why a fundamental flaw should be thought of as being irremediable; as with any other shortcoming, whether it has been corrected turns on the facts of the remedial action taken.

Id. at 8-9.

In the last element of its test, LILCO appears to make a distinction between ordinary fundamental flaws and bad fundamental flaws. This distinction is based on LILCO's perception that a FEMA deficiency describes "a present condition that is 'not adequate' to provide reasonable assurance, but that does not necessarily require a far-reaching change to a plan to remedy," while a fundamental flaw precludes a finding of reasonable assurance and thus requires basic plan changes. *Id.* at 10.

While there is indeed a difference between the NRC definition of a fundamental flaw and the FEMA definition of a deficiency, we believe that LILCO misperceives that difference. The former definition speaks of a condition that "precludes" a finding of reasonable assurance, while the latter speaks of a condition that "would cause" a finding that there is not reasonable assurance. Thus, while the NRC definition contemplates a situation in which a finding cannot be made, the FEMA definition contemplates a situation that requires a negative finding. Consequently, it appears that the situation described by a FEMA deficiency is more serious than that described by an NRC fundamental flaw. We see no basis for LILCO's position.

Be that as it may, we can find no basis on which to draw any meaningful distinction between a fundamental flaw and a deficiency. Both definitions describe conditions in which there is a lack of reasonable assurance that the public can be protected. That is a situation that the Commission is chartered to prevent. A hearing that is designed to discover any such conditions is fully consistent with the predictive nature of emergency planning. It is of no consequence whether the condition is correctable only through substantial and far-reaching changes to the plan. These considerations only affect the amount of effort required to eliminate the condition.

We agree with the first element of LILCO's test. Indeed, it does little more than restate the definition of a fundamental flaw found in CLI-86-11, *supra*. We also agree with the second element to the extent that it stands for the proposition that the failure demonstrated by the exercise must be pervasive as opposed to a minor or *ad hoc* problem. In this connection, we find Staff's discussion at pages 5 to 7 of its proposed findings instructive. There, Staff points out that the demonstration in an exercise of a pervasive failure to carry out a portion of the emergency plan might preclude a finding of reasonable assurance, whereas an isolated failure would not. This view appears to coincide with FEMA's

definition of a deficiency in that the latter speaks of “demonstrated and observed inadequacies” that would cause a negative finding. Thus, while it might be argued that an isolated failure of communications in an exercise demonstrates a failure to comply with the planning standard set out in 10 C.F.R. § 50.47(b)(6), it would not give rise to the finding of a fundamental flaw. But where, as we have found here, that failure is not isolated but pervades LERO’s performance in the Exercise, a fundamental flaw is demonstrated.⁵

II. THE CONTENTIONS

A. Public Notification

Contention EX-34 alleges that the Exercise revealed a fundamental flaw in the LILCO Plan in that LERO was incapable of providing prompt notification to the public in the event of siren failure, as required by 10 C.F.R. § 50.47(b)(5), 10 C.F.R. Part 50, Appendix E, ¶ IV.D, and NUREG-0654, ¶ II.E and Appendix 3 thereto. Intervenors maintain that these provisions require that a backup system be in place which is capable of notifying the residents of a failed siren area within 45 minutes.

Under the LILCO Plan, Route Alert Drivers are relied upon to notify the hearing impaired and to provide backup to the LILCO siren system. OPIP 3.3.4; LILCO EX-34 Testimony, ff. Tr. 1327, at 6; Tr. 1361-62 (Daverio). Upon learning of any siren malfunction from among any one or more of LILCO’s eighty-nine fixed sirens, these Route Alert Drivers are dispatched to drive through the areas surrounding the failed sirens broadcasting a message to the public through loudspeakers. *See* Plan at 3.3-4; OPIP 3.3.4; Suffolk EX-34 Testimony, ff. Tr. 1495, at 5.

During the Exercise, FEMA observed LERO’s response to message indicating a failed siren in each of the three Staging Areas. The results were as follows:⁶

Staging Area	Time (Minutes)
Port Jefferson	90 ⁶
Patchogue	70
Riverhead	78

⁵ In their definition of fundamental flaw put forward at the close of the hearing, Intervenors took the position that a single failure might amount to a fundamental flaw. *See* note 4, *supra*. That may be so. However, the single failures presented in this record clearly do not rise to that level. Consequently, we need not address that position.

⁶ Approximately one-half of the assigned area was covered in this period.

FEMA concluded that these times were excessive and assigned an ARFI.⁷ FEMA Exh. 5 at 141-42.

LILCO moved to strike Suffolk's testimony on this contention on the ground that the testimony was barred by *res judicata*.⁸ LILCO based its position on the proposition that the question whether backup notification was required to be completed in 45 minutes had been decided in this proceeding in LBP-85-12, the Partial Initial Decision on Emergency Planning (PID). Specifically, LILCO relied on language in the PID, 21 NRC at 758-59, that looked with favor on the conclusion reached in *Kansas Gas & Electric Co.* (Wolf Creek Generating Station, Unit 1), LBP-84-26, 20 NRC 53, 67 (1984), that there was no requirement for backup notification procedures. The PID concluded that if there was no requirement, then there could be no time limit. We denied LILCO's motion because the contention that had been decided in the PID asserted that backup notification must be accomplished in 15 minutes. The holding of the PID was that NUREG-0654 contained no such requirement. The statement relied on by LILCO is *dicta*. See Tr. 1002, 478-500.

Now we must decide whether Intervenor's are correct that there is a requirement that backup notification take place within 45 minutes. Intervenor's take the position that LILCO was required to demonstrate that its route-alerting personnel had the capability of providing notification, within 45 minutes after the simulated failure of LILCO's siren system, to any segments of the EPZ population that would not have been initially notified of an emergency at Shoreham. See NUREG-0654, ¶ I.I.E and Appendix 3 thereto. They state that the language of NUREG-0654 is clear and unambiguous: it requires that, within 45 minutes of initial siren notification, any segments of the EPZ population who may not have received notification must be alerted to the emergency. See NUREG-0654, Appendix 3, ¶ B.2.c; see also Tr. 1505 (Michel).

The provision of NUREG-0654 in question states:

B. *Criteria for Acceptance*

1. Within the plume exposure EPZ, the system shall provide an alerting signal and notification by commercial broadcast (e.g., EBS) plus special systems such as NOAA radio. A system which expects the recipient to turn on a radio receiver without being alerted by an acoustic alerting signal or some other manner is not acceptable.

⁷ This is an Area Recommended for Improvement, which FEMA defines as a problem area which does not affect the public health and safety. Although correction of an ARFI is not required, it would enhance an organization's level of emergency preparedness. FEMA Exh. 1 at 8.

⁸ LILCO's Motion to Strike Direct Testimony . . . on Behalf of Suffolk County Regarding Contention EX-34, March 5, 1987.

2. The minimum acceptable design objectives for coverage by the system are:

- a) Capability for providing both an alert signal and an informational or instructional message to the population on an area wide basis throughout the 10 mile EPZ, within 15 minutes.
- b) The initial notification system will assure direct coverage of essentially 100% of the population within 5 miles of the site.
- c) Special arrangements will be made to assure 100% coverage within 45 minutes of the population who may not have received the initial notification within the entire plume exposure EPZ.

. . . The lack of a specific design objective for a specified percent of the population between 5 and 10 miles which must receive the prompt signal within 15 minutes is to allow flexibility in system design. Designers should do scoping studies at different percent coverages to allow determination of whether an effective increase in capability per unit of cost can be achieved while still meeting the objective of item 2.a. above.

Intervenors maintain that, up until the time of the Shoreham Exercise, it had been FEMA Region II's position that, based upon the above language, backup route alerting was required to be performed within 45 minutes. Tr. 8005-06, 8713 (Kowieski). Because none of the Route Alert Drivers observed by FEMA completed his route-alerting task within the 45-minute period, FEMA found that Objective Field 5 was only partially met, and initially identified the performance observed as an ARCA.⁹ See FEMA Exh. 1 at 57, 64, and 74; Tr. 8000 (Baldwin). See also Suffolk EX-34 Testimony, ff. Tr. 1495, at 7.

Intervenors maintain that, subsequent to the Exercise, FEMA Region II was instructed by FEMA's Washington Headquarters that the failure of LILCO's Route Alert Drivers to complete their assigned routes within 45 minutes could not be identified as an ARCA; rather, only an ARFI was permitted. See Suffolk Exh. 104; FEMA Exh. 5 at 142-43; Suffolk EX-34 Testimony, ff. Tr. 1495, at 7; LILCO EX-34 Testimony, ff. Tr. 1327, at 8-9. Intervenors believe that this "instruction" was made specifically with respect to FEMA's evaluation of the Shoreham Exercise and despite the fact that in other exercises in New York State, backup route alerting in excess of 45 minutes had been identified as a serious problem. They cite Suffolk Exh. 105 at 5; Suffolk Exh. 65 at 62-63, 67 (backup route alerting for Indian Point should be completed within 45 minutes of initial siren notification). They also cite Tr. 1520-21 (Roberts); Tr. 8010 (Kowieski); Tr. 8013, 8604-05 (Keller); Suffolk EX-34 Testimony, ff. Tr. 1495, at 7-8. They maintain that, but for the "instruction" from Headquarters, Region II would

⁹FEMA assigns ARCAs, or Areas Requiring Corrective Action, to "demonstrated and observed inadequacies of performance," which, although they require correction, do not, by themselves, adversely impact public health and safety. FEMA Exh. 1 at 8.

not have taken a contrary position in the final Post-Exercise Assessment, citing Tr. 8019 (Kowieski).

Staff takes the position that:

No preclusion of a reasonable assurance finding could be based on the amount of time taken during an exercise to complete backup route alerting. *See* FEMA Exh. 1 at 8; FEMA Exh. 5 at 142-43; Tr. 8004-05 (Baldwin, Kowieski). Such backup alerting, while required to be in place, is essentially discretionary as to the time in which it need be completed. *See id.* A fundamental flaw in the plan, therefore, cannot be based on excessive route alert driver time.

Staff Proposed Findings at 87.

LILCO argues that licensing boards have consistently held that NRC regulations and guidelines do not require any backup notification system. It relies on the PID, 21 NRC at 759 ("If no such [backup] procedures are needed, *a fortiori*, no standard time limit need be met."), and *Wolf Creek, supra*. It urges that, because NRC regulations and NUREG guidelines do not require any backup to the prompt notification system,¹⁰ the 15-minute and 45-minute time limits for public notification, set out in 10 C.F.R. § 50.47, 10 C.F.R. Part 50, Appendix E, and NUREG-0654/FEMA REP-1, do not apply to the discretionary backup route alerting provided under the LILCO Plan. It cites: LILCO EX-34 Testimony, ff. Tr. 1327, at 4-6; Tr. 8004-05, 8008 (Kowieski); Tr. 8004 (Baldwin). It urges that the FEMA "instruction" to Region II, and the subsequent guidance embodied in FEMA Guidance Memorandum AN-1 (GM AN-1), are fully consistent with this position.

We do not agree with Intervenor that NUREG-0654 requires that backup alerting be accomplished within 45 minutes. Rather, we believe a more reasonable interpretation to be that initial notification of residents in certain hard-to-reach areas of the EPZ which are more than 5 miles from the plant must be accomplished within 45 minutes. This is the position adopted in GM AN-1. Requiring the same speed for backup route alerting would not make regulatory sense. Under the interpretation urged by Intervenor, a licensee would be required to provide a discretionary backup notification system that essentially meets the criteria of the mandatory primary system that has failed. Tr. 1413-14 (Daverio).

GM AN-1 "elaborate[s] upon the accepted FEMA interpretation and application of alert and notification system design objectives" in NUREG-0654 and discusses backup route alerting. FEMA Exh. 4, Attach. I-1, I-5. It is consistent with this interpretation. It states that there is "no hard and fast time requirement for completing the backup route alerting process." *Id.* at I-5.

¹⁰ In this respect, LILCO position is contrary to that of Staff. The latter states that NRC requires that provision for backup alerting be made. Because the LILCO Plan provides for backup alerting, we need not decide whether a requirement exists.

We find that there is no requirement that backup route alerting be completed within 45 minutes; consequently we decide Contention EX-34 in LILCO's favor.

B. Evacuation of the EPZ

1. Removal of Roadway Impediments

Contention EX-41 alleges that the Exercise revealed a fundamental flaw in the LILCO Plan in that LERO failed to demonstrate an ability to remove impediments, in the form of traffic accidents, from roadways until long after evacuation had begun. It alleges, further, that the Exercise demonstrated that the LERO players were incapable of responding to and removing such impediments. The contention also alleges that the addition of a traffic engineer in the EOC will not eliminate the problems revealed by the Exercise. Finally, Suffolk contends that FEMA introduced an insufficient number of accidents into the February 13 Exercise.

In order to understand these allegations, it is necessary to have an appreciation of the scheme of operations laid out in the Plan. Under the Plan, the Evacuation Coordinator, who reports to the Manager of Local Response, directs actions in the areas of traffic control, transportation, and evacuation from the EOC in Brentwood. The Evacuation Coordinator is responsible for seeing that sufficient resources exist to carry out this responsibility. OPIP 2.1.1, 3.6.3.

The Traffic Control Coordinator, also located at the EOC, reports to the Evacuation Coordinator. The Traffic Control Coordinator's responsibilities include establishing and maintaining Traffic Control Posts, coordinating the road logistics aspects of a public evacuation, overseeing evacuation routes, and overseeing traffic flow considerations. Specifically, the Traffic Control Coordinator must ensure that sufficient manpower and material exist to perform these functions rapidly. In order to implement these activities, the Traffic Control Coordinator supervises and directs the Traffic Control Point Coordinator, the Road Logistics Coordinator, and the Evacuation Route Coordinator. The Traffic Control Coordinator is required to make status reports to the Evacuation Coordinator. *See* LILCO Plan at 2.1-4; OPIP 2.1.1, 3.6.3.

The Traffic Control Point Coordinator is stationed at the EOC and is responsible for coordinating the field activities of Traffic Guides, whose function is to facilitate the flow of evacuating traffic through intersections. He is also responsible for distributing directions to, and receiving information from, the Traffic Guides. This includes receipt of information about road blockages and unexpected traffic flow. The Traffic Control Point Coordinator is to make status reports regarding these data to the Traffic Control Coordinator. *See* OPIP 2.1.1, 3.6.3, Attach. 1 (at 2 of 2).

The LILCO Plan relies on so-called "Road Crews" to remove accidents and stalled vehicles from evacuation routes, furnish fuel to vehicles that have run out, and, in one instance, to convert a section of roadway to one-way flow.¹¹ The Road Logistics Coordinator is responsible for coordinating the field activities of Road Crews by receiving information from and issuing directions to Road Crews. The Road Logistics Coordinator determines which Road Crew posts to activate based upon which EPZ zones have been ordered to evacuate, and determines the Road Crews to be deployed. The Road Logistics Coordinator reports to the Traffic Control Coordinator and is required to keep the latter apprised of conditions through status reports. *See* OPIP 2.1.1, 3.6.3.

The Evacuation Route Coordinator also reports to the Traffic Control Coordinator. The Evacuation Route Coordinator, also stationed at the EOC, is responsible for coordinating the field activities of the Evacuation Route Spotters. The latter travel the evacuation routes, make periodic reports of their condition, and make immediate reports of any problems. The Evacuation Route Coordinator is required to relay information on evacuation traffic flow problems to the Road Logistics Coordinator and the Traffic Control Point Coordinator, as well as keep the Traffic Control Coordinator apprised of such problems through status reports. In turn, the Traffic Control Coordinator is to report such problems to the Evacuation Coordinator. The Evacuation Route Coordinator is also responsible for keeping the Transportation Support Coordinator, who is responsible for bus operations, advised of problems. *See* FEMA Exh. 1 at 36; OPIP 2.1.1, 3.6.3, Attach. 3, § 3.

1.a. Road Crew Performance

Subcontention EX-41A correctly alleges that during the Exercise, and according to the LILCO Plan, Road Crews were not notified of the emergency or required to report until after the Site Area Emergency had been declared. *See* OPIP 3.3.2, 3.3.3, 3.6.3. It alleges that although the Site Area Emergency was declared at 8:19, most Road Crews did not arrive at the staging areas until after 10:00 a.m., and goes on to allege specific numbers of Road Crew members responding at specific times. It alleges that, when the evacuation was ordered, only about 65% of LERO's Road Crews had been mobilized, in spite of the fact that the Exercise had been preannounced. Finally, Subcontention EX-41A alleges that pursuant to LILCO's Plan, Road Crews were not dispatched from the Staging Area until after the evacuation had been ordered and dispatch was not completed at Riverhead until about 11:00, was not completed at Port Jefferson

¹¹ Although it was not raised directly by the contention, Intervenor's testimony touched on the last function, converting a roadway to one-way flow. This testimony is covered in connection with Contention EX-40E, which deals with the traffic control activities of Traffic Guides.

until about 12:40, and was not completed at Patchogue until about 11:28. Thus, LERO personnel essential to the implementation of the evacuation according to the LILCO Plan were not fully mobilized until after the evacuation was under way.

The LILCO Plan provides for the dispatch of a maximum of twelve Road Crews assigned to remove roadway obstructions, to be stationed at different locations throughout the EPZ. During the February 13 Exercise all twelve Road Crews were dispatched. Revision 6 of the Plan (in effect on February 13, 1986) provided that the Traffic Control Coordinator was initially to instruct the Road Logistics Coordinator to implement Road Crew operation. After an order to evacuate, the Road Logistics Coordinator was to determine, in light of the evacuation recommendation, which Road Crew posts should be staffed and then notify the Lead Traffic Guides in the three staging areas of the staffing decision. The Lead Traffic Guides then were to brief and dispatch the appropriate Road Crews. Upon arriving at their vehicles, Road Crews were required to check in on their radios with the Evacuation Support Communicator at the EOC and then to maintain periodic contact with the Communicator following their arrival at their posts. LILCO Testimony of Messrs. Lieberman, Weismantle, and Wilm on Contention EX-41 (LILCO EX-41 Testimony), ff. Tr. 272, at 5-6; *see* OPIP 3.6.3.

Pursuant to the Plan, LERO Road Crew members were notified of the Site Area Emergency at the plant shortly after it was declared at approximately 8:19. More than 40 minutes later, at 9:00, only one Road Crew member had reported to the Riverhead Staging Area and none had reported to Port Jefferson or Patchogue. Under the LILCO Plan, Riverhead is supposed to have ten Road Crew members, and Port Jefferson and Patchogue are supposed to have fourteen each. Direct Testimony of Assistant Chief Inspector Richard C. Roberts, Inspector Richard Dormer, Inspector Philip McGuire, and Deputy Inspector Edwin J. Michel on Behalf of Suffolk County Regarding Contention EX-41 — Mobilization and Dispatch of Road Crews and Removal of Impediments from the Roadways During the February 13, 1986 Shoreham Exercise (Suffolk EX-41 Testimony), ff. Tr. 1134, at 19. By 9:40, an hour and 20 minutes after notification to report, only five had reported to Riverhead, none had reported to Port Jefferson, and only four had reported to Patchogue. Thus, when a General Emergency was declared at 9:39, less than 25% of the Road Crew personnel needed to implement LILCO's Plan had been mobilized. *Id.* at 20; LILCO EX-41 Testimony at 22. By 10:20, approximately 2 hours after a Site Area Emergency was declared, there were thirteen Road Crew members at Riverhead, nine at Port Jefferson, and thirteen at Patchogue.¹² *Id.* Suffolk's witnesses believe that

¹² There is no explanation in the record as to why there were thirteen Road Crew members at the Riverhead Staging Area at 10:20 when Riverhead is supposed to have only ten Road Crew members.

in a real emergency, mobilization times would be even longer, because LERO personnel knew in advance that the Exercise would be carried out on February 13 and therefore should have been prepared in advance to report for emergency duty the day of the Exercise. Suffolk EX-41 Testimony at 21.

LILCO's witnesses argue that it is necessary for only some Road Crews, not all Road Crews, to be dispatched shortly after the order to evacuate because they predict that there will be only four minor accidents during the evacuation. LILCO EX-41 Testimony at 23. LILCO's witnesses Weismantle and Lieberman, however, acknowledged that there was a possibility that early in the evacuation, before the buildup of heavy and slow traffic, severe accidents might occur because evacuating vehicles could travel at high speeds. Tr. 982. At 10:24, when the order to evacuate was given, there were nine two-man Road Crews ready to be dispatched into the EPZ. Four Road Crews left the staging area for field locations at 11:00; four more left at 11:28; and two more left at 11:58. LILCO EX-41 Testimony at 23. During the time from 10:24 until the Road Crews were finally dispatched, presumably they were obtaining equipment and being briefed. After arriving at the staging area, Road Crew personnel had to obtain emergency kits, obtain and put on dosimetry equipment, complete the Emergency Worker Dose Form, attend a briefing given by the Lead Traffic Guide, receive instructions from the Lead Traffic Guide regarding deployment locations, be assigned LILCO vehicles as those vehicles arrived, be instructed as to field procedures by the Lead Traffic Guide, and when instructed by the Lead Traffic Guide, depart for designated field locations. Road Crew personnel assigned to specialized functions, such as dispensing fuel or one-way traffic responsibilities, had other preparation responsibilities as well. Suffolk EX-41 Testimony at 22.

Suffolk's witnesses testified that unless LERO's Road Crews are in place at the outset of the evacuation, roadway impediments that occur at the outset would likely result in significant delays or even complete blockage of evacuation traffic. They believe that once an impediment is in place for any period of time, evacuees would take "self-help" measures in an endeavor to get around the impediment, such as driving on the road shoulder or using other traffic lanes. Consequently it would be difficult and perhaps even impossible for Road Crews to get to the scene. Moreover, if Road Crews succeeded in reaching the scene of an impediment that has been in place for some time, traffic patterns around the impediment would already have been set by the actions of evacuees before the Road Crews arrived; the heavy traffic could make the maneuvering required to remove the impediment impossible. *Id.* at 27-28.

FEMA stated in its direct testimony that no problems were identified by FEMA regarding the ability of LERO to mobilize staff and dispatch Road Crews from the staging areas. FEMA Exh. 5 at 16. The NRC Staff, in its proposed findings, likewise stated that it found no basis upon which to agree with the

Intervenors' allegation that the mobilization of Road Crews was untimely, thus demonstrating a fundamental flaw in the LILCO Plan. Staff Proposed Finding 158 at 57. Staff agrees with LILCO that not every Road Crew is needed at the moment an evacuation order is issued. Staff Proposed Finding 157. Since some were promptly dispatched, Staff believes that these crews could handle the expected frequency of early accidents with the later-ready crews responding to those occurring later in time. *Id.*

Dispatch of the Road Crews to their field locations did not begin until 36 minutes after the evacuation order was issued. We believe that this initial dispatch should have been accomplished more quickly, particularly in light of the testimony that, in the early stages of an evacuation, any accidents that occurred might be severe. Tr. 982. However, we do not find that it was so untimely as to demonstrate a fundamental flaw. Moreover, we agree with LILCO and Staff that the four crews dispatched initially could handle any early accidents and other problems, leaving the following crews free to respond to subsequent problems. Consequently, we find for LILCO on Contention EX-41A.

1.b. Response to Roadway Impediments

Subcontention EX-41B focuses principally on the response at the Emergency Operations Center (EOC) to two roadway impediments injected into the Exercise by means of so-called "free-play" messages.¹³ The first of these informed the players at the EOC of an evacuation route blocked by an accident involving a gravel truck, and the second informed them of a second evacuation route blocked by an accident involving a fuel truck. The contention alleges that, although FEMA's free-play messages were given to the Evacuation Route Coordinator at about 10:40 for the gravel truck impediment and at about 11:00 for the fuel truck impediment, the LERO Evacuation Coordinator was not informed of either impediment until told by a FEMA Controller at about 12:13. As late as 12:40 the Transportation Support Coordinator had not been informed that the gravel truck was potentially blocking a bus evacuation route, and as of 13:48 the Road Logistics Coordinator had not been informed that there might be a need for equipment at the fuel truck site.

In addition, Contention EX-41B alleges that the Evacuation Route Coordinator failed to provide the Evacuation Support Communicator for Route Spotter/Road Crews with all essential information about the impediments, including the fact that the gravel truck impediment involved three cars as well as the truck, that the fuel truck accident presented a fire hazard because the truck was leaking fuel, and that the overturned fuel truck was blocking both shoulders of

¹³ "Free-play" messages are messages that inject problems into the Exercise that are not known in advance by the Exercise players. Thus they provide realism to the Exercise. Tr. 8197-98, 8489 (Kowiczki).

the road. The contention alleges that as a result of the foregoing delays and oversights, the Road Crew dispatched to the fuel truck did not arrive at the scene until approximately 14:10, over 3 hours after FEMA informed LERO of the impediment, and only one tow truck was dispatched to move the four vehicles involved in the gravel truck impediment. We deal with these two problems individually.

GRAVEL TRUCK IMPEDIMENT

The chronology of events associated with the gravel truck impediment is as follows:

- 10:40 hours** The following written free-play message was handed by FEMA to the Evacuation Route Coordinator:

A loaded gravel truck with a broken driveshaft, which is up-right, but turned sideways in the road is blocking the north and south-bound lanes and both shoulders of Yaphank-Middle Island Road, approximately fifty (50) yards north of the caution light at the "Y" intersection of Yaphank-Middle Island Road (in the vicinity of TCP #124). This is a multiple vehicle accident also involving three passenger cars that are blocking both the north and southbound shoulders of the road. There are no injuries to any individuals.

The LERO responder to the site of this impediment should locate the FEMA evaluator who will be wearing a red armband.

- 10:45 hours** The Evacuation Route Coordinator sent the following written message to the EOC Communicator:

Have Route Spotter 1004 verify a gravel truck is blocking the north and south bound lanes of Yaphank-Middle Island Road, approximately 50 yards north of the caution at the "Y" intersection of Yaphank-Middle Island Road, Main Street and Mill Road.

- 10:56 hours** EOC Communicator reported that Route Spotter had not found FEMA evaluator at gravel truck site.

- 11:04 hours** FEMA Controller at EOC gave EOC Communicator a note describing precise location of FEMA evaluator.

- 11:40 hours Route Spotter #1004 met FEMA evaluator at gravel truck site.
- 11:50 hours Route Spotter reported to EOC that gravel truck was east of the "Y" intersection.
- 12:00 hours Road Crew departs to respond to gravel truck impediment.
- 12:13 hours Evacuation Coordinator informed of impediments by FEMA Controller.
- 12:20 hours Traffic Control Point Coordinator, after consulting with Evacuation Coordinator, advised Patchogue Staging Area to reroute traffic around gravel truck impediment.
- 12:40 hours Road Crew reported they were unable to find FEMA evaluator and were returning to field location.
- 12:45 hours After being dispatched again, Road Crew found FEMA evaluator on Main Street.
- 13:30 hours Road Crew reported that gravel truck had been cleared from roadway and traffic flow past site had resumed.
- 13:45 hours EBS message advising public about gravel truck impediment was approved by Director of Local Response.

(Citations to the record for the foregoing times and events are given in the text below.)

The free-play message about the gravel truck impediment was introduced at the LERO EOC by the FEMA Exercise Controller, who gave it to the LERO Evacuation Route Coordinator. Suffolk EX-41 Testimony at 33; FEMA Exh. 1 at 30. According to LILCO's Plan, the Evacuation Route Coordinator should have immediately transmitted the message to the Road Logistics Coordinator and the Traffic Control Point Coordinator as well as to his supervisor, the Traffic Control Coordinator. *See* OPIP 2.1.1. He failed to do so, however, choosing instead to try to verify the reported impediments before informing his LERO associates. LILCO EX-41 Testimony at 19-20; Suffolk EX-41 Testimony at 34; Tr. 966-67. Nor was the Evacuation Coordinator informed about the impediments as required by the LILCO Plan, until advised by a FEMA Controller after about 12:13. FEMA Exh. 1 at 36; *see* OPIP 3.6.3. The late notification of the Evacuation Coordinator resulted in delays in LERO's response to the impediments. FEMA Exh. 1 at 36. Moreover, Contention EX-41B is correct in asserting that the Transportation Support Coordinator had not, as of 12:40, been informed that an evacuation bus route was blocked by the gravel truck impediment. *Id.*

The LERO message form sent by the Evacuation Route Coordinator to the Evacuation Support Communicator for Route Spotters/Road Crews at 10:45, reporting the gravel truck impediment, failed to include the information that the gravel truck impediment included three cars as well as the truck. Nor did the message include the instruction that the LERO responder should locate the FEMA evaluator at the impediment site. Suffolk EX-41 Testimony at 37-38. The message merely stated as follows:

Have Route Spotter 1004 verify a gravel truck is blocking the north and south bound lanes of Yaphank-Middle Island Road, approximately 50 yards north of the caution [light] at the "Y" intersection of Yaphank-Middle Island Road, Main Street and Mill Road.

LILCO EX-41 Testimony at 8. Subsequently the EOC Communicator reported back that the Route Spotter had found no one at the gravel truck location and therefore had returned to his route at 10:56. Because of this report that the Route Spotter failed to find the FEMA evaluator at the gravel truck site, the FEMA Controller in the EOC gave the EOC Communicator a note at 11:04 indicating that the FEMA evaluator was located 50 yards east of Yaphank-Middle Island Road at Everett Drive and Main Street. *Id.* at 9. Route Spotter #1004 was again dispatched to meet the FEMA evaluator, which he succeeded in doing about 11:40. FEMA Exh. 1 at 36.

A Road Crew was dispatched and departed from its field post at 12:00 to respond to the gravel truck impediment. LILCO EX-41 Testimony at 9. The Road Crew was not informed that the impediment was a multiple-vehicle accident, however, and only one tow truck was dispatched. FEMA concluded that this equipment would have been inadequate for removal of the loaded gravel truck plus three automobiles; in addition, no scraper truck was dispatched to remove spilled gravel, nor was a determination made as to whether any gravel had been spilled. FEMA Exh. 1 at 37, 65. Suffolk's witnesses agree with FEMA that the equipment dispatched to clear the gravel truck impediment was inadequate to tow anything larger than passenger vehicles and small commercial vehicles. Suffolk EX-41 Testimony at 38.

After the FEMA Controller brought the gravel truck impediment to his attention at 12:13, the Evacuation Coordinator consulted with several of his subordinates and was told by them that the accident was reported to be east of the "Y" intersection. He concluded that it would not affect evacuation flow because it was on a route that carried little or no evacuation traffic. When he advised the FEMA Controllers of this decision they informed him that the impediment was north of the intersection. The Evacuation Coordinator then consulted with the Traffic Control Point Coordinator, who dispatched a message at 12:20 to the Patchogue Staging Area advising that southbound traffic on Middle Island Road must be rerouted westbound on Bartlett Road. LILCO EX-41 Testimony

at 10. Thus LERO did not act to route traffic around the gravel truck impediment until well over an hour after the free-play message was injected by FEMA, and then only after prompting by FEMA. FEMA Exh. 1 at 65.

FUEL TRUCK IMPEDIMENT

The chronology of events associated with the fuel truck impediment is as follows:

11:04 hours The following free-play message was handed by FEMA to LERO's Evacuation Route Coordinator:

On Route 25A, approximately 75 yards east of the intersection with Miller Place-Yaphank Road, (in the vicinity of traffic control post #41), a fuel tank-truck has jackknifed and turned over on its side blocking both eastbound and westbound traffic lanes, as well as both shoulders of the road. In the course of the accident, the fuel tank was ruptured and leaking fuel. There is a possibility that the fuel could ignite causing a fire. There is no fire at present and there are no injuries to any individuals.

The LERO responder to the site of this impediment should locate the FEMA Evaluator who will be wearing a colored arm band.

11:06 hours Evacuation Route Coordinator gave the following message to the the EOC Communicator:

Have Route Spotter #1005 proceed to 25A, 75 yards east of the intersection with Miller Place-Yaphank Road. Fuel truck turned over on side, blocking both east and west bound lanes.

11:15 hours Unable to contact Route Spotter #1005 by radio, Evacuation Route Coordinator asked Port Jefferson whether Route Spotter #1005 had been dispatched to his route and was advised that he had not been dispatched.

11:30 hours FEMA Evaluator arrived at site of fuel truck accident.

11:40 hours Transportation Support Coordinator in EOC informed Port Jefferson Bus Dispatcher about the fuel truck impediment.

11:49 hours Port Jefferson Staging Area advised EOC Communicator that all Route Spotters had been dispatched.

- 12:02 hours Route Spotter #1005 instructed by EOC Communicator to proceed to scene of fuel truck impediment.
- 12:05 hours Port Jefferson Bus Dispatcher informed Transportation Support Coordinator that a visual check of fuel truck site indicated no problem.
- 12:13 hours Evacuation Coordinator was informed of the fuel truck impediment by FEMA Controller.
- 12:23 hours Route Spotter #1005, who had met with the FEMA evaluator, was released by the evaluator.
- 12:32 hours Attempts to get Miller Place Fire Department to respond to fuel truck accident were initiated.
- 12:37 hours Port Jefferson Lead Traffic Guide instructed to dispatch dosimetry equipment to support Miller Place Fire Department.
- 12:47 hours Traffic Control Point Coordinator, having conferred with the Evacuation Coordinator, directed Lead Traffic Guide at Port Jefferson to begin rerouting traffic around the fuel truck impediment.
- 12:50 hours Route Alert Driver with dosimetry dispatched.
- 12:57 hours Traffic Control Point Coordinator was informed that traffic was being rerouted.
- 13:10 hours Traffic Guide at TCP #40, where traffic was being rerouted, advised Lead Traffic Guide at Port Jefferson that another Traffic Guide and additional traffic cones were needed.
- 13:32 hours Additional guide and equipment dispatched from Port Jefferson Staging Area.
- 13:48 hours Road Logistics Coordinator advised of need to send equipment to site of fuel truck accident.
- 13:50 hours Road Crew dispatched to scene of fuel truck accident.
- 14:00 hours Traffic Control Coordinator instructed Logistics Support Coordinator to contact owner of fuel truck.
- 14:00 hours FEMA Evaluator left site of fuel truck accident to proceed to other assignments.
- 14:10 hours Road Crew arrived at site of fuel truck accident.

- 14:15 hours Logistics Support Coordinator reported that fuel truck owner had arranged to offload wrecked tanker.
- 14:45 hours Evacuation Support Communicator informed Road Logistics Coordinator that fuel truck accident had been cleared and road was open.

(Citations to the record for the foregoing time and events are given in the text below.)

As was the case with the gravel truck impediment, after the Evacuation Route Coordinator was handed the free-play message about the fuel truck impediment, he attempted to have the impediment verified before ordering a response to it. Thus at 11:06 he instructed the EOC Communicator to:

Have Route Spotter #1005 proceed to 25A, 75 yards east of the intersection with Miller Place-Yaphank Road. Fuel truck turned over on side, blocking both east and west bound lanes.

This message, like the one concerning the gravel truck, did not include pertinent information. It failed to mention the facts that fuel was leaking from the overturned truck, that there was the possibility of fire, and that the truck was blocking both shoulders of the road. Also, it failed to include the instruction for the LERO responder to locate the FEMA evaluator. FEMA Exh. 1 at 30; LILCO EX-41 Testimony at 19-20.

The EOC Communicator was unsuccessful in his attempts to contact Route Spotter #1005 by radio. Therefore at 11:15 he inquired of the Port Jefferson Staging Area whether Route Spotter #1005 had been dispatched to his route. Port Jefferson responded that he had not been dispatched. LILCO EX-41 Testimony at 14.

At 11:40 the Transportation Support Coordinator in the EOC informed the Port Jefferson Bus Dispatcher about the reported fuel truck impediment. Subsequently, at 12:05 the Port Jefferson Bus Dispatcher informed the Transportation Support Coordinator that a visual check of the fuel truck problem on Route 25A had indicated no problem to traffic control or evacuation completion.¹⁴ LILCO EX-41 Testimony at 14. At 11:49 the Port Jefferson Staging Area advised the EOC Communicator that all Route Spotters had been dispatched, and at 12:02 Route Spotter #1005 was instructed by the EOC Communicator to proceed to the scene of the fuel truck impediment. The Route Spotter found and met with the FEMA evaluator, who released him at 12:23. *Id.* at 15.

¹⁴ FEMA criticized this 12:05 message from the Bus Dispatcher because it "was partially illegible and was not written on a standard LERO message form." FEMA Exh. 1 at 30.

The Evacuation Coordinator, who learned about the fuel truck accident when finally told about both road impediments by a FEMA Controller at 12:13, did not begin discussing the fuel truck impediment with his associates until after the rerouting scheme for the gravel truck had been determined and actions had been taken to implement that decision. Eventually, at 12:47, the Traffic Control Point Coordinator directed the Lead Traffic Guide at Port Jefferson to have the Traffic Guide at TCP #40 stop all west-bound traffic on Route 25A and reroute it around the fuel truck accident via North Country Road and Echo Avenue. At 12:57 the Traffic Control Point Coordinator was informed that traffic was being rerouted. *Id.* At 13:10, however, the Traffic Guide at TCP #40 radioed the Lead Traffic Guide at Port Jefferson and advised that an additional Traffic Guide and six additional traffic cones were needed to effectuate the rerouting. The additional guide and the necessary equipment were dispatched from Port Jefferson at 13:32. *Id.* at 16.

At about 12:32, attempts were initiated to get the Miller Place Fire Department to respond to the fuel truck accident; at 12:37 the Port Jefferson Lead Traffic Guide was instructed to dispatch dosimetry equipment to assist the fire department; and at 12:50 a Route Alert Driver with this equipment departed. *Id.*, Attach. C.9, C.10. The Road Logistics Coordinator was advised of a need to send equipment to the site of the fuel truck accident at about 13:50, when a Road Crew was finally dispatched to the fuel truck accident. It arrived at the scene at approximately 14:10. By this time, the FEMA evaluator, who had been waiting at the site since 11:30, had left (at 14:00) when it became necessary for him to proceed to other assignments. FEMA Exh. 1 at 36-37, 58.

At 14:00 the Traffic Control Coordinator instructed the Logistics Support Coordinator to contact Hess Oil Company to advise them that one of their trucks had overturned and was leaking, and to request that they send another truck to the scene for offloading. At 14:15 the Logistics Support Coordinator reported that Hess had arranged with a local contractor to transfer the load, and at 14:45 the Evacuation Support Communicator informed the Road Logistics Coordinator that a Road Crew had reported that the fuel spill had been cleared, that the truck was off the roadway, and that the road was clear. LILCO EX-41 Testimony at 18.

DISCUSSION

There is little if any dispute regarding the facts recited above. The parties differ markedly on the interpretation to be placed on them. LILCO witnesses argued that LERO largely demonstrated its ability to respond to roadway impediments. LILCO EX-41 Testimony at 19. They pointed out that during the Exercise (1) the Evacuation Route Coordinator immediately attempted to verify both accidents; (2) following verification of the gravel truck impediment,

a tow truck was promptly dispatched; (3) after verification of the fuel truck impediment, steps were taken to eliminate the fire hazard and to offload the vehicle; (4) once the Evacuation Coordinator became involved, decisions were promptly made on rerouting schemes; (5) rerouting schemes were rapidly and effectively implemented in the field and then removed once the impediments were cleared; (6) an EBS message on the impediments was prepared and broadcast (simulated); and (7) the Transportation Support Group recognized the potential impact of the impediments on bus operations and promptly informed the appropriate field personnel of the possible problems. *Id.*

LILCO witnesses acknowledged the existence of delays in LERO's response and attributed them to two causes: first, the Evacuation Route Coordinator's failure to perform as effectively as he should have and second, the manner in which FEMA introduced the impediment messages into the Exercise. *Id.* at 19-22. The witnesses admitted that the Evacuation Route Coordinator's failure to inform his co-workers and superiors in the EOC of the roadway impediments delayed LERO's response. *Id.* at 20; Tr. 966-67 (Wilm). They testified that his omission of information in transmitting the original free-play messages to field personnel resulted in delays and confusion because field personnel were unaware of the need to meet with the FEMA evaluators. LILCO EX-41 Testimony at 20. This led to incorrect reports either that no impediment existed or that the impediment had been cleared. *Id.*

In presenting their case, Intervenor's claimed that LILCO's response to the two impediments was wholly inadequate. According to the Suffolk County's testimony, for example, LILCO: took too long to respond to the impediments; failed to demonstrate that it could effectively communicate crucial information about the impediments within the LERO organization; failed to allocate sufficient manpower and equipment or material to deal with the impediments; and failed to reroute traffic properly around the impediments. See Suffolk EX-41 Testimony at 33-37, 43-48. In the County's view, these problems, as revealed during the Exercise, demonstrated that LILCO's organizational structure, Plan design, and response personnel are unable to protect the public health and safety.

FEMA assigned a Deficiency, an ARCA, and an ARFI on account of LILCO's performance. In its proposed findings, Staff concluded that LILCO's performance demonstrated a fundamental flaw in implementation of the Plan.

Although the various elements of LERO's response called into question by this contention are closely related, for purposes of discussion we have divided them into three parts: Communications, Actions to Clear the Impediments, and Traffic Rerouting.

COMMUNICATIONS

FEMA concluded that the lack of timeliness in LERO's response to the two evacuation impediments was the result of a failure in lateral and downward communication in the EOC. Tr. 8259. As a result of this and other communication problems at the EOC, FEMA identified a Deficiency in its Post-Exercise Assessment, FEMA Exh. 1:

DEFICIENCY

Description: Delays in responding to the two (2) evacuation impediment free-play messages inserted at the LERO EOC were caused by the failure to inform the Evacuation Coordinator in a timely manner. In addition there was a lack of internal communication in response to these impediment problems. Pertinent information was not included on the 1045 and 1106 LERO Message Forms from the Evacuation Route Coordinator to the Evacuation Support Communicator for Route Spotters/Road Crews regarding the simulated impediment involving the gravel truck and fuel truck problems. As a result of this lack of information, the impediment problems were not analyzed in a timely fashion and incomplete equipment was dispatched to handle the gravel truck impediment in the field. NUREG-0654, II, J.10.k.

Recommendation: Internal communications procedures should be reviewed and revised as necessary to ensure that information on impediments is promptly passed both up the chain of command to the Evacuation Coordinator and downward and laterally to all lead coordinators under the Evacuation Coordinator and their staffs. Additional training is needed to ensure that the procedures, whether new or current, are properly implemented. All coordinators at the EOC, and those who initiate messages, must be trained to include all pertinent information on the LERO message forms and to analyze the equipment requirements to clear impediments.

FEMA Exh. 1 at 39.

In addition, FEMA identified one ARCA that resulted from LERO's responses to the impediments. We view the ARCA as also raising communications problems. It states:

AREA REQUIRING CORRECTIVE ACTION

Description: There was a delay of about forty-five (45) minutes between the LERO EOCs [sic] first attempt to have Route Spotter #1005 verify the fuel truck impediment and the dispatch of that spotter from the Port Jefferson Staging Area. This delayed timely verification of the impediment. NUREG-0654, II, E.2.

Recommendation: Personnel need to be trained in the development of alternative approaches when delays are reasonably anticipated in the field verification of impediments to evacuation. Development of alternatives should include consultation between, at a minimum, the Evacuation Coordinator and the Evacuation Route Coordinator.

Id. at 41. Finally, FEMA also identified one ARFI that similarly raises communications issues. It states:

AREA RECOMMENDED FOR IMPROVEMENT

Description: The 1205 message concerning the "visual check" of the fuel truck impediment from the Bus Dispatcher at the Patchogue Staging Area to the Transportation Support Coordinator was partially illegible and was not written on a standard LERO message form.

Recommendation: LERO should consider whether operations could be improved by additional training stressing the mandatory use of standard message forms and the importance of legibility.

Id. at 42.

The NRC Staff, in its proposed findings, agreed with FEMA that LERO's responses to the fuel truck impediment, and to a lesser extent the gravel truck impediment, were generally ineffective and failed to demonstrate that LERO could deal with impediments to evacuation on roadways. It also agreed with FEMA that the deficiencies in regard to the removal of impediments were the result of a failure of communication and training. Staff's view is that these problems do not show the Plan to be flawed, but rather they demonstrate that if LERO members do not follow required procedures and promptly and accurately communicate evacuation problems, as called for by the Plan, the Plan will not work. Staff Proposed Finding 229 at 83. Nevertheless, Staff concluded that "the 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" in regard to the removal of roadway impediments. *See* CLI-86-11, 23 NRC at 581. Before a finding of reasonable assurance is made that the Plan "can and will be implemented" a FEMA remedial drill or exercise is necessary, after further training, to demonstrate that the LERO personnel have the skill and ability to implement the Plan. Staff Proposed Finding 231 at 83-84.

In their proposed findings, Intervenor's have raised, in somewhat more detail, the same communications problems identified by FEMA.¹⁵ *See* Intervenor's Proposed Findings at 183-90, 198-205.

LILCO recognized that there were problems revealed in LERO's communications. Its position is perhaps best summed up by the following findings that it asks us to make:

237. Clearly, the Evacuation Route Coordinator's failure to communicate immediately information about the two impediments to his co-workers and his superiors in the EOC represented poor judgment and significantly delayed LERO's response to the two impediments. To a lesser degree, his failure to communicate all information to field workers also delayed the response, particularly to the extent field workers were confused about the need to find a FEMA evaluator.

¹⁵ Additionally, they have raised the matter of the timeliness of the simulated EBS messages concerning these impediments. *See* Intervenor's Proposed Findings 262, *et seq.*, at 187, *et seq.* We deal with this subject in connection with Contentions EX-38 and EX-39, *infra*.

238. In addition, we agree with LILCO that the manner in which FEMA input the free play messages, and the way they graded them in the field, affected LERO's response. LILCO correctly notes that had accidents of the severity hypothesized actually occurred, reports of their existence would have flowed to the EOC from numerous sources and would have highlighted the need for immediate action. FEMA should reevaluate its procedures for injecting impediment messages into exercises to try to make the process more realistic.

LILCO's Proposed Findings at 88.

LILCO attacks the Staff's position on the basis that the examples relied on by the Staff to reach its conclusion do not, on the grounds of timeliness, support that conclusion. LILCO supports its attack with the following, all of which relates to the fuel truck impediment:

First, the delay in the dispatch of a Route Spotter to verify the accident would not in fact have delayed verification if the accident had been real, or if FEMA had employed some means to identify the accident in the field, because then LERO workers would have observed the accident (or its simulation) and reported it;

Second, after being informed of the two impediments, the Evacuation Coordinator acted promptly to reroute traffic and summon the fire department;

Third, the Traffic Guides were prompt in assessing the need for additional equipment and assistance in rerouting traffic, and the Staging Area was prompt in its response to that need; and

Fourth, the timing of LERO's actions in sending a Road Crew and in contacting the owner of the truck to have it offloaded may not be criticized because no message was inserted by FEMA to indicate when the fire hazard was brought under control so as to permit these activities. See LILCO's Reply Findings at 29.

Finally, LILCO asserts that the Staff never explains how these allegedly untimely actions would adversely affect the public health and safety. LILCO notes that Staff has accepted the position that, in a real emergency, the existence of the impediments would come to light much earlier. Consequently, LILCO believes that Staff must also accept LILCO's position that, in that situation, prompt action would be taken as it was in the Exercise once the Evacuation Coordinator was informed of the impediments. *Id.* at 30.

Intervenors' proposed findings, LILCO asserts, are defective in that they do not fairly present what in fact occurred at the Exercise and consequently create the impression that many more problems were uncovered than was the case.

We can in large part accept LILCO's arguments as factually accurate. We recognize that artifacts of the Exercise influenced the timeliness of LERO's response to these impediments and that to a certain extent, the lack of a timely response is attributable to FEMA's handling of the Exercise scenario. Nonetheless we cannot accept LILCO's conclusion.

Accepting LILCO's arguments summarized above, the fact remains that LERO's communications were inadequate in the following respects:

First, the Evacuation Route Coordinator did not inform his superior or his co-workers of the two traffic impediments on receipt of the free-play messages. While we recognize that the Plan gives the Coordinator the discretion to verify the impediments if he believes that necessary, as he did during the Exercise, nonetheless we can see no justification for his withholding of information pending verification. Where, as here, the messages postulate the complete blockage of evacuation routes by major accidents involving heavy trucks, one of which posed a risk of fire, the Coordinator should at a minimum have informed his superior and his co-workers of the information contained in the messages and the action he was taking.

Second, the information contained in the messages that the Coordinator had transmitted to the Route Spotters was incomplete in that it did not give details concerning the two accidents. While LILCO may well be correct that this information was readily obtainable by the Route Spotters on observation of the accidents, nonetheless its inclusion would have served as a prompt to ensure that the information contained in the free-play messages was verified and, more importantly, relayed to those who would need it in mounting a response. It is a fact that LERO responded to the gravel truck accident with inadequate equipment. While, in a real situation, the Route Spotter might well have observed and relayed information that would have prompted a response with adequate equipment, inclusion of the details contained in the free-play messages would have ensured that critical information was noted and passed on.

Third, the inquiry directed to the Staging Area as to whether Route Spotter #1005 had been dispatched should have included the information contained in the fuel truck free-play message and a request that that Spotter be dispatched quickly to the scene of the accident. This would have prevented a delay in verification.

These inadequacies demonstrate a fundamental flaw. Further, the fundamental flaw involved is, Staff notwithstanding, a flaw in the Plan itself, revealed in the implementation but not simply engendered by it. We note that communications problems persisted in subsequent drills. Suffolk County introduced evidence to the effect that in a June 1986 training drill, which was evaluated by a LILCO contractor, Impell Corp., the two impediments used were identical to those used in the Exercise. Suffolk EX-41 Testimony at 65. Impell criticized LERO's response to the impediments as follows:

The Transportation Support Coordinator should have done a better job of keeping control and managing his group during the road impediment scenarios. No one individual was assigned

to be in charge of handling these impediments. Because practically all groups in the EOC need to be made aware of such a problem it is important that one individual be responsible for coordinating this effort.

The RHC [Radiation Health Coordinator] was not made aware of the impediment to evacuation until 2:15 PM; 1 hour and 30 minutes after the event had occurred.

The EBS message telling of the road impediment was issued at 1:29 PM, almost 45 minutes after the event had occurred. In addition this important piece of information was included with the entire EBS message and might have been missed by the general public. A special EBS message should have been issued.

The message for the second road impediment was called into the EOC and was properly logged on the message form, however when the information was related to the field, the wrong road was mentioned; Route 25-A vs Route 25. The word came back from the Controller, simulating a route spotter, that there was no impediment at the location indicated. As that time it was assumed that the impediment was either a false alarm or had been cleared, and no follow up action was taken. It was not until the Controller in the EOC prompted the players three times to review the original message that any action was taken.

Id. at 65-66.

Suffolk's witnesses point out that during the June drill LERO personnel confused Route 25 and Route 25A, which led to an incorrect response and delays in responding to simulated roadway impediments; this situation was similar to the confusion over the location of the gravel truck and the resultant delays that occurred during the February drill. *Id.* at 67-68. Suffolk's witnesses attribute the communication problems in the EOC to LERO's "cumbersome, complex, and vertical decisionmaking and communication hierarchy. . . ." *Id.* at 67.

Indeed, FEMA found that, in order to correct a discovered Deficiency:

Internal communications procedures should be reviewed and revised as necessary to ensure that information on impediments is promptly passed both up the chain of command to the Evacuation Coordinator and downward and laterally to all lead coordinators under the Evacuation Coordinator and their staffs.

FEMA Exh. 1 at 120.

We are fully aware that the OL-3 Board gave its blessing to the communications scheme incorporated in the LILCO Plan. But that blessing was scarcely an enthusiastic one, recognizing as it did the difficulty the scheme would encounter if faced with impromptu problems. The OL-3 Board said:

We found in our resolution of Contention 65 that traffic guides are only required to facilitate traffic flow at their assigned intersections and to guide traffic in preferred directions. . . . They have no specific assignment to alleviate traffic jams or to engage in *ad hoc* problem solving. . . . LILCO's planning shows a realistic grasp of the fact since its communications system is not intended to aid in a routine problem-solving function. . . . We conclude, however, that a timely evacuation of the EPZ could be accomplished even if there were no communication whatever among traffic guides. That being the case, we find

that LILCO's administrative communications system is a useful provision for emergency response, even though there can be little doubt that the broadly versatile system the police advocate is in the final analysis a superior one.

21 NRC 644, 736-37.

Thus that Board gave the Plan its qualified approval, an approval based on inherent assumptions that traffic guides need only carry out preplanned actions, that "problem-solving" would not be required, and that *ad hoc* responses were not called for. Clearly, the Exercise, with its accompanying free-play messages, indicated that a response to an emergency-within-an-emergency was in fact a natural requirement for an adequate plan. In short, the OL-3 Board's approval was based on an assumption that the Exercise proved untenable. And, as that Board clearly implied, if one accepts the "free-play" conditions of the exercise (and in deference to FEMA's standard practice we do) the communication system in LILCO's plan is fundamentally flawed in that it inherently hampers response to unexpected events.

We agree with FEMA that the communications system should be reviewed and revised, and that additional lateral lines of communication should be considered, and we recommend that the extent to which lateral communication may be incorporated should be examined in the light of a need to respond to unexpected and untoward occurrences during a radiological emergency.

ACTIONS TO CLEAR THE IMPEDIMENTS

FEMA assigned an ARCA to the Patchogue Staging Area with respect to its response to the gravel truck impediment. FEMA did not observe the response to the fuel truck impediment. FEMA Exh. 5 at 75. The ARCA states:

Description: Appropriate personnel and equipment were not dispatched to clear the multiple vehicle accident simulated as an impediment to evacuation. . . .

Recommendation: The appropriate personnel at the Patchogue Staging Area should be trained to request more information from the LERO EOC when impediments to evacuation are indicated.

FEMA Exh. 1 at 67.

Staff did not specifically address this point.

Intervenors essentially agree with FEMA that LERO did not dispatch adequate equipment to the gravel truck accident (*see* ¶ 19 at 15, *supra*), and that some attention should have been paid by LERO to the possibility that gravel had been spilled on the roadway (Intervenors' Proposed Finding 275 at 193). Suffolk's witnesses testified that the Road Crew's response to the fuel truck accident was inadequate because only one 10,000-pound tow truck was dispatched to

the scene. This vehicle would have been too small to remove an overturned tanker truck from the roadway. Suffolk EX-41 Testimony at 48. LILCO believes that the equipment dispatched to the gravel truck was adequate in that it could have opened one lane to traffic and called for assistance, and that the spilled gravel was an afterthought in that the free-play message did not mention that possibility. LILCO EX-41 Testimony at 26-27; Tr. 1019-20 (Wilm). LILCO notes that the Road Crew dispatched to the fuel truck was to stand by to render assistance if necessary, not to remove the truck from the roadway. Tr. 1024-25 (Wilm).

Given its mission, we agree with LILCO that the equipment sent to the fuel truck impediment was adequate. The equipment sent to the gravel truck was not adequate to completely clear the roadway. While that Road Crew could call for assistance as LILCO points out, it would have been better to have sent the proper equipment initially. We do not regard this failure, by itself, as a fundamental flaw. Moreover, we find that it resulted from inadequate communications discussed above.

Intervenors also assert that the responses to the two impediments were untimely. *See* Intervenors' Proposed Findings 270-273, 297-300, at 191-92, 207-09. LILCO disagrees with this assessment. *See* LILCO's Reply Findings, Vol. II, at 58-59, 64-66. We do not believe that LERO may properly be charged with a delayed response to the gravel truck impediment beyond that occasioned by its lapses in communications. The chronology reveals that, once the accident was verified, LERO's response was timely. The delays in responding to the fuel truck impediment are less easily explained. LILCO believes that they were necessary in view of the nature of the accident, and, in any event, were not of any consequence to the public health and safety in light of the rerouting of traffic. Assuming Intervenors are correct that LERO should have acted more promptly to complete the removal of this impediment, we do not find that this failure rises to the level of a fundamental flaw.

TRAFFIC REROUTING

FEMA reached no conclusion with regard to the efficacy of LERO's traffic rerouting around the two impediments. Staff, in its Proposed Finding 230 at 83, found both LERO's rerouting schemes and those alternative schemes put forward by Intervenors to be reasonable and workable.

Intervenors spent a great amount of time exploring this topic at the hearing. Suffolk's witnesses testified that LERO's rerouting around the gravel truck impediment was improper first, because better schemes were available, and second, because the delay in implementing rerouting would likely have made rerouting ineffective because of the traffic congestion that would already have occurred at the impediment site. Suffolk EX-41 Testimony at 50-51. They

described, with the aid of aerial photographs and a map, a simple one-block detour around the impediment via Waters Street and Everett Road, which would have returned the traffic to Main Street and the route it was traveling; this would have enabled the evacuating vehicles to reach the Long Island Expressway or the Sunrise Highway to exit the EPZ. *Id.* at 52-53.

LILCO's witness, Mr. Lieberman, a traffic engineer, testified that, while Suffolk's scheme was "viable," LERO's rerouting scheme was preferable because the Suffolk scheme would reroute traffic within sight of the accident, whereas the LERO scheme would divert traffic before the accident came into view. He stated that rubber-necking can reduce traffic flow rate by as much as one-half, saying, further, "Every policeman I've talked with is aware of the hazards associated with the rubber-necking phenomenon." Tr. 1089-91. Suffolk's witnesses, Inspector Dormer and Deputy Inspector Michel of the Suffolk County Police Department, testified that traffic would be moving so slowly as it approached the impediment and as it turned left to enter the detour route, that rubber-neckers would have ample time to satisfy their curiosity, and rubber-necking would not significantly affect the flow rate of traffic. Tr. 1210-13. Witness Lieberman also stated that the simpler detour would have required more manpower than was there at the time the impediment took place. Tr. 1111. He acknowledged, however, that the simpler detour could have been implemented with two Traffic Guides. Tr. 1112. Traffic Control Post (TCP) #124, situated at the intersection of Main Street and Yaphank-Middle Island Road, is required to be staffed by two Traffic Guides. Suffolk EX-41 Testimony at 31 n.15. Thus, had it been staffed in a timely manner two Traffic Guides would have been available within sight of the accident when it occurred. During the Exercise, however, TCP #124 was not staffed until 11:30, 50 minutes after LERO learned of the gravel truck impediment. Suffolk EX-40 Testimony, ff. Tr. 2180, at 26.

In addition, the rerouting scheme around the fuel truck impediment via North Country Road and Echo Road was not the most effective alternative, according to Suffolk's witnesses, because these roads serve an extremely congested area of the EPZ; consequently no more traffic than is absolutely necessary should be put onto North Country Road west of its intersection with Route 25A. A better rerouting scheme, according to Suffolk's witnesses, would have been to detour traffic on Route 25A south on Radio Avenue to Whiskey Road, then west on Whiskey Road to Canal Road, and Canal Road back to Route 25A. Suffolk EX-41 Testimony at 56-58. LILCO's Mr. Lieberman also regards this scheme as "viable," but preferred LERO's scheme because it was shorter, involved fewer turns and a higher class of roadway, was more generally familiar, and would have returned traffic to its original route. Tr. 2274-86, 2317 (Lieberman). Moreover, Mr. Lieberman testified that rerouting schemes are generally not unique, that highway networks generally offer multiple possibilities for diverting traffic. Tr. 2273-74 (Lieberman).

We agree with Mr. Lieberman that rerouting schemes are generally not unique, and that both LERO's and Suffolk's solutions are workable. It is interesting that in the case of the gravel truck, Suffolk's scheme seemed to be the better of the two, while in the case of the fuel truck, LERO's seemed superior. No fundamental flaw was demonstrated in this regard.

TRAFFIC ENGINEER

Subcontention EX-41E alleges that LILCO's proposal to add a Traffic Engineer to the LERO personnel at the EOC will not eliminate the problems in the Plan that were demonstrated by the exercise. The Traffic Engineer is supposed to assist in evaluating road impediments and developing alternative routing. The Subcontention alleges that such assistance would have no impact on the basic problems with the Plan and the incapacities of LERO personnel described in Contention EX-41.

LILCO's witness Lieberman, who testified that he had served as the LERO Traffic Engineer in drills following the exercise, stated that he believed the addition of a traffic engineer to the EOC staff has improved the LILCO Plan by bringing new insights into the decisionmaking process. Because of the Traffic Engineer's understanding of traffic flows and potential sources of congestion during an evacuation and his familiarity with computer projections of traffic flow, witness Lieberman believes that the Traffic Engineer should help LERO respond more quickly and with more confidence to any roadway impediment or other traffic problems. LILCO EX-41 Testimony at 29-30.

Suffolk's witnesses, on the other hand, testified that the only way to identify, respond to, and solve traffic problems is to have trained and experienced field personnel who are able and authorized to quickly evaluate a traffic problem, consult with other field personnel to determine other problems and ramifications to be considered, and then reach and quickly implement a decision. Under LILCO's Plan, field personnel for the most part do not confer with each other. Traffic Guides, for example, cannot inform each other of problems that require joint response. LILCO's Plan calls for most decisions to be made at the EOC by coordinating personnel who are neither trained nor adequately informed in subjects necessary to respond to traffic problems. Suffolk EX-41 Testimony at 77-78. LILCO's witness Weismantle testified that the reason LILCO wanted rerouting decisions to be made at the EOC was to ensure that the decisions are coordinated and made by people who have the overall information about traffic posts and evacuation patterns, rather than being made by people in the field. Tr. 1102.

The NRC Staff, in its proposed findings, indicated that it did not consider the addition of a Traffic Engineer to the EOC to be relevant to the problems that arose during the Exercise. While it believes that the Traffic Engineer should be

able to assist in evaluating road impediments and developing alternate routing schemes, these areas were not the principal source of problems on the day of the Exercise; rather, needed and useful information was not flowing to the persons who required it, with the result being an inadequate field response. Staff Proposed Finding 232 at 84.

During a drill held on October 1, 1986, the Traffic Engineer was present in the EOC. In its evaluation of LERO's performance, the Impell Corp. report on the drill made the following statement about the EOC performance:

[o]ne of the major areas of concern during this drill continues to be the communications between the EOC and the Staging Areas. Long delays in getting information to the Staging Areas were experienced throughout the drills. Much more emphasis needs to be placed on communications both in accuracy and timeliness. . . . It appears that the common denominator in communication delays is the EOC and emphasis must be placed in training that facility.

Id. at 78. Clearly the problem that was demonstrated to be a fundamental flaw in the LILCO Plan by the February 13, 1986 drill continued to plague LERO's performance as late as the October 1, 1986 drill. With regard to the performance of the Traffic Engineer during the post-Exercise drills, Impell said the following in its report on the June 1986 training drill:

The position of the Traffic Engineer was utilized for the first time. Their exact responsibilities was [sic] not very clear in their own minds. They became too involved in traffic engineering details, *i.e.*, extent of the crown on the road and its effect on traffic flow, rather than quickly advising the Evacuation group of alternative evacuation routes and their effect on evacuation time estimates.

Id. at 79-80. The Impell report on a drill held on September 17, 1986, during which a Traffic Engineer was again present in the EOC, stated as follows with regard to the response to impediments:

Improvement could be made in generating the information and arriving at new evacuation time estimates.

A somewhat similar criticism was directed at the Traffic Engineer in Impell's report on the October 1, 1986 drill: The Traffic Engineer, however, had to be prompted to develop revised evacuation time estimates based upon the rerouted traffic.

Id. at 80. The foregoing evaluations of post-Exercise drills, in the opinion of Suffolk's witnesses, provide no basis to conclude that the addition of a Traffic Engineer has done anything to solve the problems in removing impediments and rerouting traffic as demonstrated by the February 13 Exercise. *Id.* In their view, there is no reason to believe that the presence of a Traffic Engineer in the EOC, not in the field and therefore dependent upon field workers and staging

area personnel to provide him with information necessary for making informed rerouting decisions, will improve performance of LERO personnel. *Id.* at 79. The Traffic Engineer in the EOC represents an additional position and another communication layer in LERO's complex, vertical communications and decisionmaking hierarchy, and it does nothing to address the communications problems within the EOC and between the EOC and the field. *Id.* at 76, 78.

Conclusion on Contention EX-41E. FEMA found the poor communication within the EOC and between the EOC and the field during the February 13, 1986 Exercise to be a deficiency. It recommended that LILCO revise its internal communication procedures and train coordinators and others to more effectively transmit messages. Three drills and more than 6 months later, the Impell Corp. found that the October 1, 1986 drill demonstrated that LERO needed to place much more emphasis on training EOC personnel in accurate and timely communications. Clearly, whatever steps LILCO took during the 6 months following the Exercise to fix the problems noted by FEMA, including the addition of a Traffic Engineer to the EOC, the fixes did not succeed in curing the fundamental flaw in the Plan, viz., the deficient communication structure and procedures.

It may be difficult for LILCO to cure this fundamental flaw because of the training and experience of the personnel used to implement the Plan. As emergency workers, LILCO personnel are amateurs; this fact may be the root cause of the communication problems. While both FEMA and Impell call for more and better training in the area of communication, it is questionable whether utility personnel can ever achieve the level of performance that professional emergency workers, such as the police, display. Nor can Traffic Guides and Route Spotters, communicating with Staging Areas which in turn must communicate with the EOC for decisions, deal with evacuation traffic problems as efficiently and effectively as police who evaluate problems on-the-spot, solicit assistance by lateral communication, and make and implement decisions. Moreover, Traffic Guides and Route Spotters who must be mobilized and briefed before being dispatched to the field will probably never be able to respond as quickly to an emergency as police who are already on duty in the field. Consequently, the LERO approach is generally and fundamentally unsatisfactory, and it may be inherently so.

1.c. Exercise Realism

Contention EX-22I was not admitted separately but was dealt with under Contention EX-41. It challenged FEMA's injection of only two road impediments into the Exercise, on the grounds that LILCO itself has estimated that there would be four accident/breakdowns during an evacuation of the EPZ.

Suffolk County, on the other hand, claims that the reported accidents from the Sixth Precinct of the Police Department, which includes most of the EPZ, indicate that there were over twenty-two reported accidents per day during the period February 6-20, 1986, with more than four, on average, requiring one or more tow trucks and approximately two and a half requiring an ambulance. Suffolk EX-41 Testimony at 70-71. Suffolk's witnesses believe that given LERO's problems with handling only two impediments, there is no way that LERO could effectively deal with even more impediments during a real Shoreham accident. *Id.* at 72.

LILCO argues that while the Sixth Precinct is roughly the size of the EPZ, the population of the Sixth Precinct is about 1.5 times that of the Shoreham EPZ. Thus, to make the Sixth Precinct statistics applicable to the EPZ, Suffolk's accident statistics should be divided by 1.5. Dividing 22 accidents per day by 1.5 gives 14.3 accidents per day predicted for the EPZ, or 0.61 accident per hour.¹⁶ From this prediction, 3.05 accidents would be expected during a 5-hour evacuation. Of these, only 0.61 would be predicted to require tow truck assistance, based on the Sixth Precinct statistics. LILCO EX-41 Testimony at 30-31. LILCO's witness Lieberman calculated another prediction, based on data for the date of the Exercise from Precinct Six police tour two, the 8-hour police shift running from 8:00 to 16:00 hours. Tr. 1051, 1054-55. The total of eleven accidents was divided by 8 hours and gave 1.375 per hour, which was then divided by 1.5 to normalize it to the population within the EPZ. The result, multiplied by 5 hours, yielded a prediction of 4.58 accidents during the evacuation. Less than one would require a tow truck. Tr. 1055.

Witness Lieberman acknowledged that a better prediction might be obtained if normalization of Precinct Six statistics to the EPZ was based on number of vehicle miles traveled rather than population, but that information was not available to him. Tr. 1059. He also acknowledged that there is considerable uncertainty associated with his predictions, but expressed his belief that with twelve Road Crews in the EPZ, eight or ten accidents during an evacuation could be adequately handled. Tr. 1061. Furthermore, because many accidents and more severe accidents tend to occur during periods or in locations of low traffic volumes, witness Lieberman argued that normal accident rates probably overstate the number of accidents that would occur during an evacuation, when traffic would be heavy and moving slowly. LILCO EX-41 Testimony at 31; Tr. 1061.

¹⁶ Dividing the number of accidents in the Sixth Precinct by 1.5 because the population of the Sixth Precinct is 1.5 times that of the EPZ seems to us to be inconsistent with witness Lieberman's other testimony that the traffic fatality rate in areas of high population density is lower than in low-population-density areas. See LILCO EX-41 Testimony at 31; Tr. 1061.

Conclusion on Contention EX-22I. The Board gives more weight to the uncertainty associated with predictions of number of accidents to be expected during an evacuation than to the predictions themselves. We agree that once evacuation traffic has reached heavy volume and is moving slowly, any accidents would probably not be very severe. On the other hand, early in the evacuation, we would expect frightened evacuees to drive at high rates of speed and perhaps be willing to take risks they might not normally take. Therefore, severe accidents might well occur early in the evacuation, creating impediments that would cause delays for the heavy traffic to follow. In any event, there is no basis on which to conclude that FEMA injected an insufficient number of impediments into the Exercise.

2. Staffing of Traffic Control Posts

LERO's Traffic Guides, according to the LILCO Plan, are to guide evacuees and encourage them to adhere to the evacuation routes prescribed by the Plan. They are to accomplish this by using traffic control strategies and techniques such as blocked lanes, barricades, and the channelization of selected portions of the evacuation network. Direct Testimony of Assistant Chief Inspector Richard C. Roberts, Inspector Richard Dormer, Inspector Philip McGuire, and Deputy Inspector Edwin J. Michel on Behalf of Suffolk County Regarding Contention EX-40 — Mobilization, Dispatch, and Staffing of Traffic Control Posts During the February 13, 1986 Shoreham Exercise (Suffolk EX-40 Testimony), ff. Tr. 2180, at 16; *see* Plan, Appendix A, at IV-5 through IV-72e and V-2; OPIP 3.6.3. They are also expected to expedite traffic flow out of the EPZ by controlling and routing traffic flow through intersections, using hand and arm movements. Suffolk EX-40 Testimony at 16; *see* OPIP 2.1.1. They help facilitate the traffic strategy outlined in the Plan and are available to perform other needed duties that fall outside the preplanned traffic strategy, such as reporting road impediments. Tr. 1563. The evacuation time estimate for controlled (i.e., guided by Traffic Guides) evacuation is based on the assumption that "[r]equired personnel to control traffic are mobilized and in place at outset of evacuation process or soon thereafter." Plan, Appendix A, at V-2.

Contention EX-40 alleges that the Exercise demonstrated a fundamental flaw in the LILCO Plan because the Plan fails to provide traffic guidance for evacuees until long after they are likely to be on the roads attempting to evacuate. It alleges that the evacuation time estimates are based on the assumption that the Traffic Guides are at their Traffic Control Posts (TCPs) guiding motorists and implementing traffic control strategies during the entire evacuation process. The contention also alleges that beginning with the simulated 10:24 EBS message recommending evacuation, all EBS messages broadcast

every 15 minutes thereafter stated that the Traffic Guides were in place to guide evacuees. *Id.* at 12.

Contention EX-40A focuses on the time it took the guides to report to their staging areas after callup. It points out that during the Exercise, pursuant to the Plan, the Traffic Guides were not notified to report to the staging areas until after the declaration of a Site Area Emergency at 08:19. *Id.*; see OPIP 3.3.3 and 3.6.3. It then alleges the numbers of Traffic Guides who had reported to the three staging areas at 09:00 and 09:40, when a General Emergency was declared.

Contention EX-40B points out that during the Exercise, pursuant to the Plan, Traffic Guides were not dispatched from the staging areas until after the evacuation recommendation had been made to the public by simulated EBS message. It alleges that it took substantial amounts of time for Traffic Guides to reach and staff their posts.

Contention EX-40B also alleges that the Exercise demonstrated that the LILCO Plan fails to provide evacuation assistance and guidance until long after evacuees would be on the roads, even if no one attempted to evacuate prior to the announcement at 10:24. It asserts that LILCO lacks the capability to provide such assistance because the Plan as written provides that no Traffic Guides, except for those assigned to posts within 2 miles of the plant (see discussion of Subcontention EX-40E), are to be dispatched until after there has been an evacuation recommendation. *Id.* at 13-14.

Contention EX-40C alleges that EBS messages, beginning with the 10:24 evacuation recommendation, contained statements indicating that Traffic Guides were available to assist evacuees long before the Guides were, in fact, at their posts. It was litigated with Contentions EX-38 and EX-39 and is considered and decided in our discussion of those contentions.

Contention EX-40D was not admitted for litigation. Contention EX-40E alleges that the dispatch of Traffic Guides to TCPs within 2 miles of the plant (2-mile zone) upon the issuance of an evacuation order, even if dispatch were accomplished more expeditiously than it was during the Exercise, would not correct the defect in the LILCO Plan. Because of the notification and reporting provisions for Traffic Guides, and the fact that an evacuation order can swiftly follow a Site Area Emergency declaration, this attempted "fix" to the defect in the Plan is ineffective. Consequently, the LILCO Plan is, according to Suffolk, fundamentally flawed in that it fails to comply with 10 C.F.R. § 50.47(b)(10) and NUREG-0654, ¶ II.J. Suffolk EX-40 Testimony at 40.

FEMA's Findings

FEMA found that the objective to demonstrate that TCPs can be established and staffed by Traffic Guides in a timely manner (Field 6) was met at the Patchogue Staging Area and partly met at the Port Jefferson and Riverhead

Staging Areas. Riverhead was the only Staging Area at which FEMA found TCP staffing to be tardy. FEMA Exh. 5 at 9.

FEMA observed eight TCPs in the Riverhead Staging Area's jurisdiction and found that the time between deployment of Traffic Guides and their arrival at TCPs was excessive, taking between 50 and 70 minutes. FEMA Exh. 1 at 74. Following the 10:24 EBS message recommending the initial evacuation, Traffic Guides were given their assignments between 10:53 and 11:01. They did not arrive at their TCP assignments until between 11:50 and 12:10. FEMA noted that travel times from the staging area to the TCPs were up to 20 minutes, and, on average, each Guide spent 30 minutes receiving briefings and field kits. *Id.* Consequently FEMA judged the procedure for deployment of Traffic Guides to be a deficiency, which it stated as follows in the FEMA Report:

DEFICIENCY

Description: The time between deployment of Traffic Guides from the staging area and their arrival at TCPs was excessive, taking between fifty (50) and seventy (70) minutes; approximately thirty (30) minutes was spent in line at the staging area receiving field kits and procedures (NUREG-0654, II, J.10.j).

Recommendation: A more expeditious means of dispatching the Traffic Guides from the staging area to the field should be developed.

FEMA Exh. 1 at 75.

LILCO's Arguments

LILCO regards the major dispute among the parties to center on the standard to be applied in determining whether the TCPs were timely staffed. LILCO's Proposed Findings at 98. LILCO does not regard the time it took to implement the various steps in the mobilization process to be important so long as the TCPs were timely staffed. LILCO EX-40 Testimony at 4. LILCO's witnesses put forward two standards against which mobilization should be judged: first, 3 hours (based on the finding contained in the PID that mobilization of all field workers, including Traffic Guides, could be substantially completed in this time (LBP-85-12, 21 NRC at 723)), and second, 1 hour (based on LILCO's assumption that the onset of congestion of the roadways will occur 1 hour following an evacuation recommendation to the public (*see id.* at 720)). However, the witnesses also testified that not all TCPs need to be staffed

at this point. Rather, only the so-called critical TCPs must be operational.¹⁷ LILCO EX-40 Testimony at 6-8.

LILCO argues that both the 3-hour and the 1-hour tests should be employed. The first test should be applied with flexibility. LILCO believes that the second test measures whether Traffic Guide mobilization occurred quickly enough to effect a controlled evacuation. Therefore it should be applied only to the critical TCPs. LILCO's Proposed Findings at 101. LILCO then addresses the mobilization times observed in the exercise.¹⁸

In the Patchogue Staging Area, eighteen of twenty-eight TCPs, including all critical ones, were staffed by 11:25, about 1 hour after evacuation was first recommended, and about 3 hours after callup. By 11:30, 1 hour and 6 minutes after the evacuation recommendation was first broadcast, twenty-six of the twenty-eight TCPs were staffed. *Id.* at 13. The last Patchogue TCP was staffed at 11:40, 1 hour and 15 minutes after the first evacuation recommendation was broadcast. LILCO believes that the Exercise results show that the Patchogue Traffic Guides can be mobilized in time to ensure a controlled evacuation. *Id.* at 14.

The Port Jefferson Traffic Guides began arriving at their TCPs at 11:25, 61 minutes after the evacuation recommendation was broadcast. By 12:00, twenty-seven of seventy-two Port Jefferson Traffic Guides had arrived at their TCPs, and by 13:00, sixty had arrived. The last Port Jefferson Guide arrived at his TCP at 13:26.

LILCO argues that it is the staffing times of critical TCPs that are relevant to whether mobilization and dispatch at Port Jefferson was timely. *Id.* Seventeen critical TCPs are listed in LILCO's testimony, of which twelve were staffed by 11:45. LILCO believes that this would be only 20 minutes after the anticipated onset of traffic congestion. The last critical TCP was staffed at 12:13, almost 2 hours after the evacuation recommendation was broadcast.

LILCO believes that at Port Jefferson the delays in staffing TCPs would have lengthened evacuation time by an insignificant amount, less than 19 minutes. Although these mobilization times do not satisfy the tests advocated by LILCO, nonetheless it believes that the Port Jefferson Traffic Guides were mobilized in a timely manner. *Id.* at 15.

¹⁷ A "critical" TCP is one whose operation is intended to: (1) be capacity-enhancing for the highway — that is, increase the maximum number of vehicles that the highway can service — and thereby reduce evacuation time; (2) serve a heavy volume of traffic and, in addition, serve traffic evacuating from within 2 miles of the plant; and (3) in a few instances, serve more than one evacuation path in order to ensure that the capacity of each path is fully utilized. LILCO EX-40 Testimony at 10. LILCO classifies 47 of the total of 128 TCPs as critical. *Id.* at 10-11.

¹⁸ The mobilization times stated by LILCO are accurate. However, it should be borne in mind that the difference of a few minutes can mean a substantial difference in the number of Traffic Guides mobilized. Thus while LILCO accurately states that as of 11:25, eighteen of twenty-eight TCPs assigned to Patchogue were staffed, Intervenor can, with equal accuracy, state that as of 11:24, 1 hour after the evacuation recommendation, only ten were staffed. We do not regard the difference of 1 minute to be significant.

In addition, Mr. Weismantle testified that on the day of the Exercise, the Traffic Guides at Port Jefferson parked in a lot that was about a 10-to-15-minute walk from the building. In an actual emergency they would park much closer to the building. He concludes that this difference should reduce mobilization time at Port Jefferson by as much as 20 to 30 minutes. *Id.* at 16.

LILCO's witnesses testified that they had lost the documents recording the times at which Riverhead Traffic Guides staffed their TCPs. The only times they could report were staffing times recorded by a LILCO observer for seven of the eight TCPs observed by FEMA; the observer did not actually observe the arrival of the Traffic Guides but recorded times that were reported to him verbally by the Guides. *Id.* at 16 and Attach. D. These arrival times do not altogether agree with those contained in the FEMA Report. LILCO's times ranged from 11:15 to 12:10. *Id.* at 18. FEMA's times, on the other hand, which were recorded by FEMA observers at the eight TCPs in the Riverhead Staging Area, ranged from 11:50 to 12:10. FEMA Exh. 1 at 74. LILCO argues that the staffing of all TCPs by 12:10 would not have resulted in a significant lengthening of evacuation times. Therefore they argue that, for the same reasons advanced for Port Jefferson, the Riverhead Traffic Guides were mobilized in a timely fashion. LILCO EX-40 Testimony at 18. LILCO acknowledges, however, that the Traffic Guide for TCP 26 had not arrived by 12:50, but states that this TCP is not critical to meeting the controlled evacuation time estimates. *Id.* at 19.

LILCO also argues that when FEMA's observed equipment issuance and travel times are added to the dispatch times from Riverhead, it is evident that the mobilization was timely. LILCO notes that the Traffic Guides who responded following the first evacuation recommendation were given their assignments between 10:52 and 11:08. *Id.* at 17, Attach. E3; Suffolk EX-40 Testimony at 22; see Tr. 1658 (Weismantle). FEMA noted that equipment issuance took on average 30 minutes¹⁹ and that travel time took up to 20 minutes. FEMA Exh. 1 at 74. Thus LILCO argues that mobilization from Port Jefferson would have been in time to meet substantially the controlled evacuation time estimates.

For the above reasons, LILCO believes that the Exercise results refute the FEMA finding of a deficiency in the Riverhead deployment process. LILCO EX-40 Testimony at 19.

In its Proposed Findings (at 109-10), LILCO takes the position that, having demonstrated that no fundamental flaw exists with respect to the mobilization of Traffic Guides, it is unnecessary to address Contention EX-40E.

¹⁹ LILCO notes that backups at the equipment trailer resulted because that trailer had only one door. It testified that this problem has been eliminated by the addition of a second door. LILCO EX-40 Testimony at 20-21.

Suffolk's Arguments

Intervenors agree that, in the PID, the Licensing Board concluded that mobilization of all field workers should be substantially completed in 3 hours and Traffic Guides should be in place approximately 1 hour after an evacuation recommendation. Intervenors' Proposed Findings at 283-84. Intervenors disagree with LILCO that its failure to meet these standards is insignificant. They assert that LILCO's position is contrary to both the PID and the Plan, and they rely on FEMA's testimony to the effect that Traffic Guides are to be in place at the time contemplated by the Plan, 1 hour following an evacuation recommendation. *Id.* at 288; Tr. 8590-92, 8136, 8569. Moreover, they regard LILCO's identification of certain TCPs as critical to be a *post hoc* attempt to avoid the consequences of its performance at the Exercise. Intervenors' Proposed Findings at 288-89. Even if one accepts LILCO's position, Intervenors point out that LERO failed to staff the critical TCPs in a timely manner. *Id.* at 289-90. Further, Intervenors take issue with LILCO's position that this failure would not have significantly affected total evacuation time. *Id.* at 291-93.

Although Intervenors do not contend that it is a Plan requirement that the Traffic Guides be in place prior to an evacuation recommendation (Intervenors' Proposed Findings at 280), Suffolk's witnesses disagree with the assumption that no one would have attempted to evacuate prior to the evacuation recommendation at 10:24.²⁰ Suffolk EX-40 Testimony at 30; Tr. 2196-97. Based on their experience as police officers, they believe that traffic throughout the EPZ would become congested rather quickly, even prior to the time evacuees begin to evacuate, both because of preevacuation trips necessary to prepare for evacuation and because of early evacuation. In their view, this congestion would delay Traffic Guides in getting to their posts even more than they were delayed on the day of the Exercise, when there was no unusual traffic confronting the Guides and the date of the Exercise had been announced in advance. Suffolk EX-40 Testimony at 31; Tr. 2255-56.

In addition, the LILCO Plan calls for LERO Traffic Guides to use techniques such as blocked lanes, continuous flow treatments, and traffic channelization treatments in order to increase capacity on roadways and at intersections where traffic demand is high.²¹ Channelization treatments involve controlling a traffic stream by adding a lane through use of roadway shoulders, closing existing

²⁰ Indeed, given the circumstances during the Exercise, a shadow evacuation might well have occurred. The Licensing Board in the PID found that if confused or conflicting information was disseminated at the time of an accident, a large excess evacuation on Long Island could materialize. PID, 21 NRC at 670. We find, in our consideration of Contentions EX-38 and EX-39, that confusing and conflicting information was, in fact, disseminated during the Exercise.

²¹ A 2-mile section of roadway including portions of Lower Rocky Point Road and North Country Road is to be converted to one-way westbound flow by a Road Crew. Suffolk EX-41 Testimony at 29. Our conclusion with respect to the timeliness of the dispatch of the Traffic Guides also applies to this Road Crew.

lanes, and/or adding lanes as turn pockets. These treatments are achieved by placing signs, barriers, cones, and vehicles on the roadway. Suffolk EX-40 Testimony at 32-33; Tr. 1583-84. Suffolk's police witnesses believe that trying to implement this strategy after an evacuation had begun would be difficult if not impossible. Suffolk EX-40 Testimony at 36. Not only is it virtually impossible to set up traffic cones and barriers in the middle of traffic congestion, it is very dangerous to attempt to do so. Tr. 2250-51.²² Moreover, to establish and maintain traffic flow, especially through intersections, requires special training and experience which Suffolk's witnesses believe LERO's Traffic Guides do not have. *Id.* at 35. If Traffic Guides do not arrive until traffic is already congested, it may be impossible for them to implement their traffic control strategies; as the police put it, "if you don't get in there early and get a handle on things before traffic begins to congest, you simply lose it." Tr. 2251, 2268-69.

Intervenors argue that the Exercise demonstrated that the tardy staffing of TCPs has other important impacts on LERO's performance. They point out that the gravel truck impediment, which was introduced into the Exercise at 10:40, was located 50 yards north of TCP 124. Suffolk EX-40 Testimony at 24-26. However, that TCP was not staffed until 11:30. LILCO EX-40 Testimony, Attach. B. Thus that TCP would not have been of assistance until 40 minutes following the accident. Moreover, the TCPs relied on to reroute traffic once that action was taken, TCPs 35, 53, and 54, were not staffed until 11:00, 11:30, and 11:15, respectively. *Id.*; LILCO EX-41 Testimony at 10. Thus rerouting could not have been implemented promptly following this accident.

Intervenors make the same arguments with respect to the fuel truck impediment, which was introduced at 11:04. This accident was located 75 yards east of TCP 41, which was not staffed until 11:45. TCP 40, which LERO utilized to reroute traffic, was not staffed until 12:14. TCP 57, which was also utilized in the rerouting, was not staffed until 12:00. Suffolk EX-40 Testimony at 28; LILCO EX-40 Testimony, Attach. C.

Intervenors do not regard the so-called "fix" of the FEMA deficiency, which is the subject of Contention EX-40E, to be effective. The "fix" requires that Traffic Guides who are assigned to posts within the 2-mile zone be equipped and briefed separate from and in advance of other Traffic Guides, so that they can be dispatched upon the issuance of an evacuation order. LILCO testified that FEMA has concluded that this modification is adequate. LILCO EX-40 Testimony at 20. Intervenors point out that FEMA's approval is contingent upon satisfactory performance at another exercise. Tr. 8116-17 (Kowieski,

²² An example of the danger associated with attempts to set up traffic control strategies after evacuating traffic has become congested can be envisioned in the strategy for the interchange of the Long Island Expressway (LIE) and the William Floyd Parkway. The Plan calls for Traffic Guides to block the outside lane of the LIE upstream of the interchange, to expedite the merge of traffic coming on to the LIE from the William Floyd Parkway. Tr. 1584-85, 2227.

Keller). They believe that dispatching the Guides after the evacuation order has been broadcast would not enable the Guides to be in place to render assistance to evacuees or implement traffic control strategies until after evacuation had begun. Suffolk EX-40 Testimony at 40-41.

Moreover, they also contend that LILCO's "fix" ignores many important intersections in the EPZ beyond the 2-mile zone which, because of their significance to the evacuation scheme, would need to be manned early in the evacuation process if not before evacuation began. They listed several, including the following:

LIE & William Floyd Parkway;
Route 25A & Miller Place-Yaphank Road;
LIE Exit 66 w/bound ramp & Patchogue-Yaphank Road;
North Country Road & Mt. Sinai-Coram Road;
North Country Road & Main Street; and
Route 347 & Old Town Road.

Id. at 41-42. The witnesses state that evacuation traffic through these and other intersections would need to be kept moving during an emergency at Shoreham; otherwise LILCO's evacuation time estimates would be significantly lengthened. The LILCO Plan depends on the LERO Traffic Guides to implement the Plan's traffic control strategies; they can carry out such strategies only if they are mobilized and dispatched early enough to arrive at and set up their posts prior to or at the time of the evacuation order. As written, the Plan does not have the capability to accomplish this. *Id.* at 42.

Nonetheless, Intervenor's contend that, for purposes of Contention EX-40, the Traffic Guides should have been in place shortly after the evacuation recommendation was issued. Because they believe LERO's performance was untimely under any party's view, they do not regard the issue of when the evacuation process would have begun to be important. Intervenor's Proposed Findings at 280-81.

Staff's Position

Staff believes that we are bound by the PID with respect to the time when TCPs should be staffed. It regards this time to be set at 1 hour following an evacuation recommendation, citing LBP-85-12, 21 NRC at 720-24. Staff's Proposed Findings at 50. Thus, Staff believes that only the Patchogue TCPs were staffed in a timely manner. It views the staffing of both ordinary and critical TCPs assigned to Port Jefferson and Riverhead to have been tardy. *Id.* at 48-49.

Staff rejects LILCO's argument that this tardy staffing should be ignored because it has an insignificant effect on total evacuation time. Staff points out that under the Plan as approved in the prior litigation, LILCO must be capable

of effectuating a controlled evacuation. Thus the significance of the effect on total evacuation time is irrelevant. *Id.*

Because the question of the adequacy of LILCO's fix of the problems identified must be evaluated by FEMA in another exercise, Staff does not believe that we should decide Contention EX-40E. *Id.* at 49-50.

LILCO's Response

LILCO takes issue with the Staff's position that the significance of any delay in total evacuation time is not to be considered in judging whether a fundamental flaw exists. It points out that in the PID, the Board concluded that some evacuation time estimates were based on optimal conditions and that those estimates were not highly sensitive to moderate deviations from this assumption. LILCO argues that the significance of any delays must be considered and that, when considered, it dictates not only that no fundamental flaw exists, but that FEMA was in error in assigning a deficiency. LILCO's Reply Findings, Vol. 1, at 39.

LILCO criticizes Intervenor's position for the same reasons, arguing that the effect that its tardiness might have on the public health and safety must be considered. LILCO denies that its designation of critical TCPs is a *post hoc* rationalization, pointing out that it presented testimony in the prior proceeding that a schedule for staffing TCPs in order of their importance had been devised. *Id.* at 42. LILCO regards the remainder of Intervenor's arguments to raise matters that were decided in the PID. *Id.* at 43. LILCO correctly points out that, while we denied its motion to strike Suffolk's testimony on these matters, we ruled that the testimony was admitted only as "necessary background to understand Suffolk's position." Tr. 1003-04 (Judge Frye).

Discussion

For purposes of this Decision, all parties agree that the Traffic Guides are to be substantially in place at the onset of traffic congestion, which is assumed to occur 1 hour following an evacuation recommendation. We accept this as the standard against which LERO's performance is to be judged.

Applying this standard, we conclude that the mobilization of Traffic Guides from Patchogue was timely, but that mobilization from Port Jefferson and Riverhead was not. In the case of Patchogue, 64% of the Guides were at their posts in about 1 hour, and 93% in about 1 hour and five minutes. However, at Port Jefferson, only 38% were mobilized in 1 hour and 35 minutes, and only 83% in 2 hours and 35 minutes. At Riverhead, although the records were lost,

FEMA placed the activation of TCPs between 1 hour and 25 minutes and 1 hour and 45 minutes. Accordingly, it assigned a deficiency.

LILCO attempts to rationalize this performance by arguing first, that the so-called critical TCPs were timely staffed, and second, where they were not, the delay would not have a significant impact on total evacuation time and consequently on the public health and safety. We cannot accept this position. We do not believe that, in drafting the PID, the Board premised its conclusions on the proposition that a controlled evacuation could be effected by the timely staffing of only a portion of the TCPs. Nor can we accept LILCO's invitation to consider whether the delay would have had a significant effect on public health and safety. Staff has correctly characterized that position as follows:

LILCO's Proposed Findings (at 105-06) seem to argue that it does not matter if Traffic Guides did not arrive at TCPs in a timely manner as the differences in time between a "controlled" and an "uncontrolled" evacuation are not very substantial. However, this litigation examined the exercise of a plan which provided for a "controlled," and not an "uncontrolled" evacuation. The Licensing Board in its PID ruled that the traffic control procedures in the LILCO Plan are required by 10 C.F.R. 50.47(a)(1) and (b)(10). 21 NRC at 917. The Appeal Board in ALAB-818, 22 NRC 651, 676-77 (1985), faced LILCO's arguments that the need for such traffic control procedures was "immaterial" in the case of Shoreham. It indicated that provisions for the evacuation of the public, including traffic control, in the event of a radiological emergency are a necessary part of an emergency plan. The Commission, in CLI-86-13, stated that while there is no specific mention of traffic control procedures in NRC's regulations, traffic controls may nevertheless be necessary for the protection of the health and safety of the public. 24 NRC at 32. It stated that the question of whether these measures are necessary is principally a question of fact and remanded the question for further hearing in connection with proceedings on "realism." *Id.* The proceeding here was not conducted under that Commission order to see if provisions of the plan were "immaterial," but rather under CLI-86-11 wherein the focus was on whether the exercise of the LILCO Plan revealed any deficiencies which preclude a finding of reasonable assurance that protective measures can and will be taken. Indeed, the question of whether a "controlled" evacuation is needed is not before this Licensing Board whose sole charge is to examine the emergency planning exercise, but is before the Licensing Board considering other Shoreham issues.

Staff's Proposed Findings at 49 n.11.

Clearly, large numbers of TCPs were not staffed until well after traffic congestion would have occurred. Consequently, a controlled evacuation would probably not have been achieved. We agree with FEMA that a deficiency should be assessed, and conclude that LERO's performance demonstrates a fundamental flaw.²³

²³ During the course of hearing this contention, we requested that LILCO calculate the change in total population dose that would have been experienced as a result of the tardy mobilization of the Traffic Guides. Tr. 2017-18, 2022-28. LILCO supplied its calculations on May 4. On June 8, Intervenor's opposed our consideration of LILCO's

(Continued)

We noted above that LILCO correctly pointed out that much of Suffolk's testimony on the difficulties that would have been encountered as a result of the tardy mobilization of Traffic Guides was admitted as background only. That testimony is not a necessary underpinning for our conclusion. However, it was offered by Suffolk County Police Officers with considerable experience. We agree with the conclusion that they are "experts in the practical problems of the streets . . ." (PID, LBP-85-12, 21 NRC at 807), and therefore regard their testimony that it would be difficult, perhaps impossible, and dangerous to attempt to set up traffic cones and barricades in heavy traffic as very convincing. This testimony lends considerable credence to the conclusion that, given LERO's performance, a controlled evacuation probably would not have been achieved.

Intervenors have not asked us to decide when Traffic Guides must be dispatched from the Staging Areas in order to reach the TCPs in a timely manner. Moreover, we recognize that there could be an accident that progressed so rapidly that complete mobilization of Traffic Guides was not possible and that this fact does not dictate that the Plan be disapproved. PID, LBP-85-12, 21 NRC at 723-24. Nonetheless, we note that LILCO's "fix" of the Plan made in response to the FEMA deficiency moves in the direction of a more prompt dispatch.

Pursuant to the "fix," all Traffic Guides posted within the 2-mile zone plus any beyond 2 miles that are considered necessary to the evacuation of the 2-mile zone will be equipped and briefed before an evacuation is ordered. They are to be dispatched immediately on issuance of an evacuation recommendation. Tr. 5818-20. If future exercises do not reveal a significantly improved performance on LERO's part as a result of this change, it may well be that the Plan must be changed further. At that point, consideration should be given to requiring mobilization and dispatch of Traffic Guides in advance of the decision to evacuate, at a time in the development of an accident when it appears likely that an evacuation may be imminent.

However, for purposes of this Decision, we conclude only that the mobilization of Traffic Guides at the Exercise demonstrated a fundamental flaw. We leave it to the emergency planners to devise a means to eliminate this flaw.

calculations absent an opportunity for discovery and cross-examination. Intervenors also assert that many of the assumptions employed in making the calculations are suspect.

The calculations raise a complex issue which, as noted above, was remanded by the Commission in CLI-86-13, 24 NRC at 31-32, and is pending before another board. Consequently, it would have been inappropriate for us to have considered them in this proceeding.

C. Reception Center and Monitoring

1. Reception Center

The Allegations

Contention EX-22A alleges that a finding of reasonable assurance may not be made because, on the day of the Exercise, LILCO and FEMA assumed that the Nassau Veterans Memorial Coliseum was available as a reception center for evacuees lacking special needs. In fact, that facility is not available. The contention alleges that Nassau County has expressly refused to permit the use of Nassau County facilities as part of, or to implement, the LILCO Plan. Because their underlying premise is legally and factually incorrect, FEMA's conclusions that objectives EOC 16 and Field 9, 17, 19, and 21 were met or partly met are without basis and are invalid.²⁴ Direct Testimony of David Harris and Martin Mayer on Behalf of Suffolk County Concerning Contentions EX-47, EX-22A, and EX-49 (Suffolk EX-47, EX-22A, and EX-49 Testimony), ff. Tr. 2992, at 36-37.

The objectives referenced in the contention are:

EOC 16. Demonstrate the organizational ability to manage an orderly evacuation of all or part of the 10-mile EPZ including the water portion.

Field 9. Demonstrate a sample of resources necessary to implement an orderly evacuation of all or part of the 10-mile EPZ.

Field 17. Demonstrate the ability to mobilize, staff and activate the Reception Center in a timely manner.

Field 19. Demonstrate through rosters the ability to maintain staffing at the Reception Center on a 24-hour basis.

Field 21. Demonstrate the adequacy of procedures for registration, radiological monitoring, and decontamination of evacuees and vehicles including adequate provision for handling contaminated waste at the Reception Center.

Id. at 38.

²⁴ The October 3, 1986 Prehearing Conference Order (at 27) provided that the substance of Contention EX-46 was to be dealt with under Contention EX-22A. *See also* December 11, 1986 Memorandum and Order at 8. Contention EX-46 alleges that the Exercise demonstrated that the availability of the Nassau Coliseum (a) was the essential premise of the LILCO Plan as exercised, and (b) was an essential premise of the LERO players in attempting to implement the Plan during the Exercise. It also alleges that since LILCO did not demonstrate during the Exercise that it could implement critical aspects of its Plan if the Coliseum were not available, the Exercise demonstrated that LILCO did not comply with 10 C.F.R. § 50.47(b)(8) and (b)(10), and NUREG-0654, §§ IIA.3, J.9, 10, and 12; hence the contention alleges that a reasonable assurance finding is precluded.

Intervenors' Position

Suffolk's witnesses attested that they were unable to address whether the basic premise underlying FEMA's conclusions was legally correct.²⁵ With respect to objectives EOC 16 and Field 9, however, they believe that it cannot be said that an "orderly evacuation" can be accomplished if there is no facility available to be the end point of the evacuation. In the absence of a facility where services would be performed to protect the health of evacuees, such as monitoring them for radioactive contamination, Suffolk's witnesses believe there is no basis for a conclusion that an orderly evacuation would or could be implemented. *Id.* at 39. Finally, the witnesses noted that objectives Field 17, 19, and 21 each expressly refer to a "Reception Center." They argue that conclusions based upon a nonexistent facility are not valid. *Id.* at 40.

In their proposed findings (at 336-37) Intervenors assert that the FEMA witnesses agreed that certain of their conclusions were no longer valid and that the LILCO witnesses similarly conceded that FEMA had evaluated certain functions that would not remain the same because of the unavailability of the Coliseum.

LILCO's Position

LILCO's witnesses testified that at the time of the February 13, 1986 Exercise, the Nassau Veterans Memorial Coliseum was identified as the Reception Center for evacuees in the LILCO Plan. Therefore it was included in the scenario and activities in the Exercise. LILCO's Testimony on Contentions EX-22A and EX-49 (Monitoring at Nassau Coliseum) (LILCO EX-22A and EX-49 Testimony), at 3-4. They argue that the Exercise tested organizational functions, not merely resources, so that the exchange of one resource in a plan does not invalidate the results of the Exercise. Provisions for setting up a monitoring system, training people to monitor evacuees, transporting evacuees who need transportation to a place where they can be monitored and, if necessary, decontaminated, documenting the monitoring and decontamination effort, planning ahead so a place is provided for these activities, and notifying the public were all items that were tested in the February 13 Exercise. *Id.* at 4. The subsequent withdrawal by Nassau County of the Coliseum for use in LILCO's Plan necessitated changes in the Plan to make arrangements for other facilities to be used. Those changes, however, are being litigated before the OL-3 Board and are outside the scope of this proceeding. *Id.*

²⁵ Suffolk's witnesses were both medical doctors. Dr. Harris is the Commissioner of Health Services for Suffolk County, New York. Dr. Mayer is Deputy Director of Public Health in the Suffolk County Department of Health Services.

FEMA's Testimony

FEMA testified that the Nassau County Coliseum was available for use as a reception Center the day of the Exercise, and the fact that it became unavailable 4 months after the Exercise has nothing to do with the results of the Exercise. Moreover, FEMA believes that an orderly evacuation does not depend on the specific location of a reception center, because any reception center must be beyond the 10-mile EPZ, and evacuees would already have evacuated the risk zone before they arrived at the reception center. FEMA Exh. 5 at 21-22. FEMA also notes that the issue of the new reception center is being litigated before the OL-3 Board. *Id.* at 22.

Staff's Position

The NRC Staff, in its proposed findings, stated that the testimony of Suffolk's witnesses failed to address the issue admitted and was "little more a than the witnesses' *ipsi* [sic] *dixit* that without a facility for use as a Reception Center, that function cannot be accomplished." Staff went on to point out that the FEMA Report found that the Reception Center at the Nassau Coliseum was fully mobilized by 10:15, that the capabilities for 24-hour staffing were demonstrated, and that procedures for monitoring evacuees were generally good. Staff Proposed Findings 391 and 392 at 139-40; *see* FEMA Exh. 1 at xvii, xix, and 79-81. Moreover, Suffolk failed to present any evidence that would show the Coliseum as a Reception Center to be any different from any other large facility that could be used as a Reception Center. Staff Proposed Finding 390 at 139.

Conclusion

We agree with FEMA, the Staff, and LILCO. The fact that 4 months after the February 13 Exercise the Nassau Coliseum was made unavailable for use in LILCO's Plan does not invalidate the findings of FEMA during the Exercise. The Nassau Coliseum was the designated Reception Center on the day of the Exercise, and there is no evidence to suggest that LERO's performance there would be any different from LERO's performance at another facility. As Staff points out, there is no evidence that there is anything unique about the Nassau Coliseum as a Reception Center. We conclude, therefore, that Contentions EX-22A and EX-46 are without merit.

2. General Population Monitoring

The Allegations

Contention EX-49 alleges that during the Exercise, LERO demonstrated that it has insufficient staffing and equipment to perform the necessary registration, monitoring, and decontamination of evacuees to comply with 10 C.F.R. § 50.47(b)(1), (b)(8), and (b)(10). The contention is divided into three subparts, each of which will be considered separately. Suffolk EX-47, EX-22A, and EX-49 Testimony at 40.

Contention EX-49A, which subsumes Contention EX-31, notes that the LILCO Plan requires LERO's personnel assigned to radiological monitoring to monitor one evacuee every 90 seconds. It alleges that during the Exercise, monitoring frequently took up to 5 minutes per evacuee. At that monitoring rate, Suffolk contends that the seventy-eight monitors assigned to the Reception Center could monitor only 11,232 evacuees in 12 hours. NUREG-0654 § II.J.12 requires that evacuees be registered and monitored within 12 hours. Suffolk EX-47, EX-22A, and EX-49 Testimony at 40. The contention notes that LERO's simulated EBS messages advised all evacuees from zones A, B, F, G, K, and Q, more than 100,000 individuals, to report to the Nassau Coliseum for radiological monitoring. Such a number of anticipated evacuees could not be monitored within 12 hours. *Id.* at 40-41.

Contention EX-49B alleges that features of the "alternate" monitoring plan specified in OPIP 4.2.3, § 5.11, which involve telephoning the Institute of Nuclear Power Operations (INPO), other power plants, and other entities to obtain additional monitoring personnel, were not implemented during the Exercise. *Id.* at 41. Thus there was no demonstration of the capability of those entities either to provide the personnel or equipment needed or to provide them in a timely manner. *Id.*; see FEMA Exh. 1 at 81. Intervenor's conclude that the Exercise provides no basis to find that the alternate monitoring plan can be implemented or, if it can be, that it would result in an ability to perform the necessary monitoring of the number of evacuees expected to report to the Reception Center. Suffolk EX-47, EX-22A, and EX-49 Testimony at 41.

Contention EX-49C deals with voluntary evacuees who might go to the Reception Center to seek radiological monitoring. It was litigated and considered with Contentions EX-22F and EX-44.

Intervenor's Position

Suffolk's witnesses testified that the two FEMA evaluators assigned to observe the radiological monitoring at the Reception Center both noted that the LERO monitors spend 4-5 or 4-6 minutes per person, which is considerably longer than the 90 seconds called for in the procedures. *Id.* at 45. They believe

that the 90-second monitoring rate is essential if there is to be any reasonable ability to process evacuees through the center in a timely manner. They attest that if one assumes that only 32,000 evacuees arrived at the Reception Center for radiological monitoring, it would take the seventy-eight LERO monitors 10.25 hours to monitor them at the rate of one every 90 seconds, provided no one took a break.²⁶ *Id.* at 46. Suffolk's witnesses argue that if some evacuees take more than 90 seconds to monitor and if the monitors take reasonable breaks, LERO would not meet the 12-hour monitoring requirement contained in NUREG-0654. *Id.* Further, they quote a FEMA admission stating that, based on its evaluation of LERO's performance during the Exercise, FEMA inferred that LERO did not have sufficient personnel to handle evacuees in excess of 32,000. *Id.* at 46-47.

Suffolk's witnesses further argue that with tens of thousands of people lined up waiting long periods of time to be monitored, contamination could easily be spread, for example by children who may not know they should not touch persons or things prior to being monitored, or who may be unable to refrain from doing so. In addition, the witnesses state, people will need to eat and use restrooms and other facilities, which could also result in the spread of contamination. *Id.* at 47. Furthermore, they argue that anxiety levels will be high when the evacuees reach the Reception Center because they may have been exposed to radiation during their evacuation. Suffolk believes their anxiety levels will rise even more, potentially to the point of panic, if they are forced to wait long periods of time before they are monitored. *Id.* at 47-48.

Suffolk stated that during discovery depositions LILCO witnesses asserted that during a real accident, LERO monitors would perform their jobs faster than they did during the Exercise. *Id.* at 48. Suffolk's witnesses suggest that if the pressure of a real accident caused LERO monitors to work faster, there would be reason to be concerned about the accuracy and adequacy of the monitoring. They believe that, if anything, the knowledge that people were potentially really contaminated should make the monitors be more careful rather than cause them to speed up. They point out that individual citizens, having no monitoring equipment of their own, would have no way of knowing if they are contaminated except through the LERO monitors. *Id.* at 49.

Suffolk's witnesses testified that the allegation of Contention EX-49B that the alternate monitoring plan for evacuees was not implemented or demonstrated during the Exercise was based on a statement in the FEMA Report that the alternate evacuee monitoring plan was not evaluated at the Exercise. Suffolk EX-47, EX-22A, and EX-49 Testimony; see FEMA Exh. 1 at 81. They state,

²⁶ We checked this calculation and found it to be correct. Because Suffolk stated that LERO's EBS message advising people to report to the Reception Center actually addressed 100,000 evacuees, we calculated how long it would take seventy-eight monitors to monitor that many people at the rate of 90 seconds per person. It would take them slightly over 32 hours, provided they took no breaks. Obviously, to monitor that many people in 12 hours, LERO needs far more than seventy-eight monitors.

however, that apparently there were telephone calls during the Exercise to INPO and simulated calls to other organizations to request additional monitoring personnel, but none of these organizations participated in the Exercise or actually provided personnel. Suffolk EX-47, EX-22A, and EX-49 Testimony at 50. Consequently, Suffolk argues that the Exercise provides no basis for concluding that additional personnel would be available or could get to the LILCO Reception Center in a timely manner. *Id.* at 50-51.

Suffolk's witnesses conclude by arguing that LERO failed to demonstrate during the Exercise that it could monitor, register, and decontaminate the large numbers of individuals that must be expected at a reception center. Consequently, Suffolk believes that the Exercise provides no basis for concluding that Exercise objective Field 21 was met or even partially met. Moreover, since on several occasions LERO monitors were not able to perform their monitoring function in the time prescribed by their procedures, Suffolk thinks that there is no basis to conclude that LERO could do so in an actual emergency. *Id.* at 51.

LILCO's Position

LILCO's witnesses testified that occasions when monitoring took up to 4 or 5 minutes occurred only a few times when federal evaluators were the individuals being monitored. LILCO EX-22A and EX-49 Testimony at 8-9; Tr. 2777-78. Consequently, they believe that 32,000 evacuees could be monitored within 12 hours. *Id.* at 9. They testified that the whole-body frisking technique used by the monitors can be accurately accomplished in an average of 90 seconds or less per person. *Id.*; Tr. 2774-75. Moreover, they state that the FEMA Report makes it obvious that the vast majority of the monitoring at the Reception Center was completed in 90 seconds or less per person during the Exercise. LILCO's witnesses believe that the fact that there were relatively few evacuees (simulated) to be monitored, as a result of which the monitors were under no pressure to perform their jobs expeditiously, caused the monitors to scan more slowly than was necessary. LILCO EX-22A and EX-49 Testimony at 9.

LILCO believes that a modified monitoring technique provided in OPIP 4.2.3, § 5.11 (Rev. 6), would have enabled 100,000 people to be monitored on the day of the Exercise. The modified monitoring technique calls for monitors to monitor the hands and thyroid of the driver of each car coming to the Reception Center and to take a swipe sample of the car hood and wheelwell. The result of these observations determine whether additional monitoring is indicated. This modified monitoring was initiated during the Exercise when it was learned that approximately 100,000 evacuees had been directed to the Reception Center. LILCO's witnesses believe that the 100,000 evacuees could have been monitored the day of the Exercise by utilizing the modified monitoring technique. *Id.* at 10; Tr. 2787-2801 (Watts).

With regard to Contention EX-49B, LILCO's witnesses testified that INPO provides for mutual aid by participating utilities in a radiological emergency. It maintains a 24-hour emergency number for requests for assistance. Because INPO's agreement is with LILCO and not LERO, the initial requests for assistance by LERO are relayed through the LILCO EOF. Subsequently, LERO and INPO communicate directly. LILCO EX-22A and EX-49 Testimony at 11.

On the day of the Exercise, The Manager of Local Response requested at approximately 12:00 that the EOF contact INPO and make arrangements for additional monitoring resources. At approximately 12:30, INPO called the LERO EOC and was informed by the Manager of Local Response of the potential need for assistance. At 13:00 the Manager called INPO and was told that eighty-eight people from five utilities would be available in about 6 hours. At 13:40 the Manager called INPO again and requested 200 more people. At 14:45, INPO called and told LERO that the additional people would be available in approximately 12 hours.²⁷ *Id.* at 11-12. When asked whether this information was valid, witness Weismantle replied in the affirmative. He stated that during the January 30, 1986 practice exercise LERO requested assistance from INPO, and INPO actually contacted senior management personnel at numerous utilities to obtain details on the numbers of personnel actually available and their expected arrival times. INPO used those data on February 13 because it felt it would be inappropriate to call the utilities again after only 2 weeks. *Id.* at 12.

FEMA's Findings

FEMA found that the facilities at the Reception Center were capable of handling 32,000 evacuees within the required 12-hour time limit. FEMA Exh. 1 at 80; FEMA Exh. 5 at 29; Tr. 7723-24. FEMA's witnesses acknowledged that the overly long monitoring sessions occurred when the individual being monitored was a FEMA evaluator. FEMA Exh. 5 at 29; Tr. 7729. Nevertheless, FEMA assigned an ARCA to the fact that on several occasions radiological monitoring took 4 to 5 minutes per individual, and recommended that all monitoring personnel assigned to the Reception Center be trained to monitor individuals within 90 seconds as prescribed in the LERO procedures. FEMA Exh. 1 at 81. On cross-examination, the witnesses pointed out that LILCO's modified procedure for monitoring evacuees in excess of 32,000 was acceptable as an *ad hoc* solution, and that it was not evaluated at the Exercise. Tr. 7721-23 (Keller).

²⁷ At least some of these phone calls were observed by the FEMA evaluators. The FEMA witnesses, however, testified that they had no way of knowing whether the calls were really being made to INPO and other utilities or whether they were just simulated calls. Tr. 7734-39.

FEMA also noted that the decontamination facility at the Reception Center was set up according to the Plan and that the operational activities generally ran well. On one occasion, however, the FEMA evaluators observed that an evacuee with a contaminated hand (simulated) was told to don plastic booties, which could have resulted in their contamination. Then he was told to put on anticontamination gloves after he had put his booties on using his contaminated hand. FEMA noted that the booties were not necessary, because his feet were not contaminated. This faulty decontamination procedure was rated an ARFI, and FEMA recommended that the decontamination staff be given additional training on evacuee decontamination procedures. *Id.*

Staff Position

In its proposed findings the Staff agreed with FEMA's recommendation that additional training be given the decontamination personnel. It did not, however, see this problem as rising to the level of a fundamental flaw in LILCO's Plan.

Conclusion

We agree with FEMA and the NRC Staff on the monitoring time and decontamination issues. Since from the evidence before us we can identify only three instances of monitors spending 4 to 5 minutes monitoring an individual, and all three of those were FEMA evaluators, we do not find that the monitoring time problem rises to the level of a fundamental flaw. Nor were the faulty decontamination procedures used with one evacuee of sufficient severity to reflect a fundamental flaw in the Plan. We join FEMA and the Staff in recommending additional training for the monitoring and decontamination personnel, however, so that the minor flaws that occurred during the Exercise will not be repeated in the future. We conclude that the Exercise demonstrated that LERO can monitor up to 32,000 people within a 12-hour period as it is required to do. *See* the concluding PID, LBP-85-31, 22 NRC 410, 422-23 (1985).

A more difficult issue emerged from the testimony on LERO's ability to monitor in excess of 32,000 evacuees. The concluding PID obligates LILCO to plan for monitoring all evacuees who seek it. *Id.* at 430-31. The question of the number of evacuees that LILCO should provide for is currently pending before the OL-3 Board. During the Exercise, the population of the zones advised to seek monitoring totalled about 100,000. LILCO's testimony that its modified monitoring plan could have accommodated this number in a 12-hour period stands uncontradicted. However, during the Exercise, LERO sought assistance in performing the monitoring task through the Institute for Nuclear Power Operations (INPO). LILCO's witnesses testified that at 13:00 hours LERO was

advised by INPO that an additional eighty-eight radiological monitors would be there in 6 hours, i.e., at 19:00 hours. After requesting an additional 200 to assist in monitoring the expected 100,000 evacuees, INPO advised LERO at 14:45 that it would take 12 hours for them to arrive, i.e., they would arrive at 02:45 the next morning. Clearly, if these additional monitoring personnel were needed for large numbers of evacuees, it would be difficult or impossible for LERO to comply with NUREG-0654 § II.J.12, which states:

12. 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 of monitoring within about a 12 hour period all resident and transients in the plume exposure EPZ arriving at relocation centers.

In their proposed findings on this issue (at 350-52), Intervenor take the position that we must reject LILCO's position that it adequately demonstrated the ability to implement its alternative monitoring system because FEMA did not evaluate LERO's performance in this regard. We believe that this position misperceives our charter, which is to determine whether the Exercise demonstrated fundamental flaws, not whether LILCO adequately demonstrated each element of its Plan called into play by the Exercise. While, on this record, we cannot conclude that the ability to monitor in excess of 32,000 evacuees in 12 hours was adequately demonstrated, neither can we conclude that the demonstration that took place revealed a fundamental flaw in this regard. Clearly, the additional monitors from INPO at best would have arrived late in the monitoring process and, by themselves, probably would not have been in time to enable LERO to monitor 100,000 evacuees in 12 hours.²⁸ However, LILCO's uncontradicted testimony is that its alternative monitoring system could have accommodated the 100,000 in 12 hours. We suspect that that system, if help from the INPO personnel were available, might have come close to achieving that goal.

3. *Registration, Monitoring, and Decontamination for Special-Facility Evacuees*

The crux of Contention EX-47 is that the Exercise provides no basis for evaluating the adequacy or implementability of LILCO's proposals for registration, radiological monitoring, or decontamination of the evacuees from special facil-

²⁸ The timeliness of the arrival of these monitors depends to some degree on when the 12-hour period begins to run. The EBS message recommending that this number of evacuees seek monitoring was approved at 13:45. Tr. 2542-44 (Weismantle); Attach. B to LILCO's Testimony on Contentions EX-38 and EX-39, ff. Tr. 3300. If the period begins at that time or sometime after, these monitors would have had a substantial impact before the 12 hours expired.

ities who would be transported to special reception centers during a Shoreham accident. It is premised on the NUREG-0654 requirement of an ability to register and monitor evacuees at reception centers within approximately 12 hours, as well as other cited regulations requiring an ability to implement an evacuation of mobility-impaired EPZ residents. It is undisputed that, during the Exercise, LERO personnel did not separately demonstrate the registration, monitoring, or decontamination of special-facility evacuees. LILCO EX-47 Testimony, ff. Tr. 2879, at 2; Tr. 7740 (Kowieski); Suffolk EX-47 Testimony, ff. Tr. 2992, at 8. Furthermore, there was no dispute that Revision 6 of the LILCO Plan, which was exercised, contains no detailed procedures concerning how evacuees sent to special reception centers would be registered, monitored, or decontaminated.

Contention EX-47 also alleges in Subparts A-E, that a LILCO proposal in Revision 7 of its Plan, generated after the Exercise to address the lack of planning for special-facility residents, was inadequate, unworkable, potentially dangerous, and failed to take into account the practical realities involved in dealing with and caring for individuals with special needs. This proposal has been superseded. *See* LILCO Brief at 126. Consequently, we do not rule on Contention EX-47A-E.

Intervenors' position is that the Exercise revealed the existence of a fundamental flaw in the LILCO Plan — the failure of the Plan to include implementable provisions for registering, monitoring, and decontaminating special-facility evacuees — because this capability was not demonstrated during the Exercise. Thus Intervenors contend that the Exercise results preclude a finding of reasonable assurance that LILCO could or would adequately evacuate, or register, monitor, and decontaminate special-facility residents in the event of a Shoreham emergency. *See generally* Harris and Mayer, ff. Tr. 2992, at 8-9, 21-22.

LILCO points out that Intervenors have not raised any issue under this contention which is related in any way to the Exercise. LILCO Reply Findings, Vol. 1, at 48-49.

FEMA's witnesses testified that objective Field 21 specifically limited its evaluation to the Reception Center which, at the time of the Exercise, was the Nassau Coliseum. FEMA Exh. 5 at 26. FEMA found that the objective of demonstrating procedures for the registration, radiological monitoring, and decontamination of evacuees and vehicles, including adequate provisions for handling contaminated wastes, was partly met at the Reception Center (Field 21). FEMA Exh. 1 at 80.²⁹ FEMA's witnesses further testified that the exercise objectives did not include any demonstrations of registration, monitoring, and decontamination of evacuees from special facilities who would have been transported to reception centers other than the Nassau Coliseum. FEMA Exh. 5

²⁹ We discuss FEMA's findings on Field 21 in our consideration of Contentions EX-22A and EX-49A and EX-49B. That discussion need not be repeated here.

at 26. Objective Field 13 pertains to the demonstration of resources necessary to effect an orderly evacuation of the institutionalized mobility-impaired individuals within the EPZ. FEMA's evaluation of that objective was addressed in response to Contention EX-21D. *Id.*

In its proposed findings, the NRC Staff agrees with FEMA that the February 13, 1986 Exercise objectives did not include a demonstration of registration, monitoring, and decontamination of evacuees from special facilities. Staff Proposed Finding 379 at 134; *see* Tr. 8532 (Keller, FEMA witness). Staff argues that since these functions were not exercised, it must follow that the Exercise did not demonstrate a fundamental flaw in the Plan with regard to these functions. Staff Proposed Finding 380 at 135. Moreover, Staff argues that neither objective Field 13 nor 21 required a demonstration of registering, monitoring, and decontamination of mobility-impaired individuals at the Reception Center. *Id.* In addition, Staff points out that the PID adequately treats LILCO's failure to designate reception centers for special-facility evacuees.³⁰ Staff Proposed Finding 381 at 135.

Conclusion on Contention EX-47. We agree with the NRC Staff and FEMA. The registration, monitoring, and decontamination of special population evacuees was not one of the objectives in the February 13, 1986 Exercise. Nor do we find that FEMA's failure to require these functions as objectives of the Exercise indicates that FEMA's review procedures are defective. We also agree that Intervenor's perception of the scope of objectives Field 13 and 21 was incorrect; those objectives do not apply to special population evacuees. Moreover, Intervenor is incorrect in their position that the failure to demonstrate the capability to register, monitor, and decontaminate special-facility evacuees precludes a finding of reasonable assurance. That position would be correct only if such a demonstration had been called for by the Exercise objectives. We conclude, therefore, that Contention EX-47 is without merit.

D. Protective Action Decisionmaking

Contention EX-36 alleges that LERO personnel made protective action recommendations that were inappropriate and failed to consider alternative protective measures that could have resulted in more dose savings; consequently LILCO failed to satisfy Exercise objectives EOC 8 and 12. Specifically, the contention alleges that EBS messages broadcast every 15 minutes between 12:06 and 15:48 contained the recommendation that persons in the downwind zones (A-M, Q, and R) leave their homes and evacuate. It alleges, further, that

³⁰ In the PID, the OL-3 Board ruled: "It will be necessary for LILCO to identify reception centers for special facilities that could be evacuated in an emergency at Shoreham and to support this identification with letters of agreement prior to operation of Shoreham at full power." 21 NRC at 840.

documents generated in the EOC fail to show that LERO personnel in the EOC ever considered whether the recommendation to evacuate continued to be the most appropriate protective action throughout this entire period of time. The contention alleges that while these messages were being broadcast, the EOF was projecting a wind shift to occur about 15:00, which would carry the plume away from the original downwind zones. In light of that projection, it may have been more appropriate for people who had not left their houses by 14:00 or 15:00 to remain sheltered until after the wind shift occurred. They could then evacuate with less exposure and smaller doses. Finally, the contention alleges that the failure to consider such an alternative was significant because the LERO players knew that as of 14:40 there were still 20,550 people who had not yet evacuated. Direct Testimony of Gregory C. Minor on Behalf of Suffolk County Concerning Contention EX-36 (Suffolk EX-36 Testimony), ff. Tr. 2612, at 4-5.

Exercise objectives EOC 8 and 12 state:

EOC 8: Demonstrate that the appropriate official is in charge and in control of an overall coordinated response including decisions on protective action recommendations.

EOC 12: Demonstrate the ability to receive and interpret radiation dosage projection information, and to determine appropriate protective measures, based on PAGs³¹ and information received from the Brookhaven Area Office (BHO).

FEMA Exh. 1 at 9-10.

Suffolk's witness testified that specific factors that should be considered prior to the recommendation of protective actions are set forth in OPIP 3.6.1, as follows:

The dose saving effectiveness of protective actions can be influenced by many variable factors such as expected duration of the releases, involved population, weather conditions, projected evacuation times, and plant conditions. Whenever possible, the factors shall all be considered prior to the recommendation of protective actions.

Suffolk Exh. 1 at 7-8, *citing* OPIP 3.6.1, § 3.1. In addition, OPIP 3.6.1 describes actions to be taken by the Nuclear Engineer using data concerning plant status, meteorological conditions, survey data, dose projections, release data, and evacuation time estimates to determine protective action recommendations for review by the Radiation Health Coordinator. *Id.* at 8, and Attachs. 2, 3, and 4; LILCO's Testimony on Contention EX-36 (Wind Shift) (LILCO EX-36 Testimony), ff. Tr. 2364, at 5-6.

The information available to EOC personnel during the Exercise included: data on plant conditions, including projected release rates and measurements;

³¹ PAGs is the abbreviation for EPA Protective Action Guides.

dose projections and protective action recommendations from the EOF; current and projected meteorological data, including wind direction; and smear and air samples from field surveys. *Id.* at 9-10; Tr. 2480-83.

At 10:10 on the day of the Exercise, LERO's Director of Local Response made the initial evacuation decisions for zones A-M, Q, and R after consulting with the Nuclear Engineer, the Radiation Health Coordinator, the Manager of Local Response, and the person simulating the County Representative in the EOC. He was advised by the Nuclear Engineer that if the situation at the plant continued there could be a core failure and dramatic release of radioactive material. Applying the guidance set forth in Attachs. 5 and 6 of OPIP 3.6.1, the Director of Local Response, Radiation Health Coordinator, and Manager of Local Response conferred and agreed that the appropriate protective action was the evacuation of zones A-M, Q, and R. LILCO EX-36 Testimony at 6-7; Tr. 2414-18.

Intervenor's Position

Suffolk's witness, Mr. Minor, testified that at the time the evacuation recommendation was made, the Radiation Health Coordinator had not performed computer calculations using release data to determine appropriate protective action recommendations, although the EOC did perform a calculation using hypothetical release data shortly afterwards and another later using data from the Exercise scenario. Suffolk EX-36 Testimony at 10. When the evacuation recommendation was made at 10:24, the wind was blowing from the ENE toward the WSW at 5 miles per hour, and it was projected to shift about 18:00 to blow from the WNW toward ESE. *Id.* at 11. At 11:46 the Director of Local Response, on the recommendation of the Radiation Health Coordinator, decided to extend the evacuation recommendation to include zones N, O, P, and S, because of the expected wind shift and the long duration of the anticipated release. *Id.* at 11-12.

The meteorological data changed with respect to the timing of the projected wind shift. As of 10:29 the wind shift was expected about 16:00. As of 11:09 the shift was predicted between 15:00 and 18:00. Finally, at 11:52 it was projected that the wind shift could occur as early at 15:00. Release data and dose projections also changed during the accident. The initial evacuation recommendation was based on plant condition and a single reading from the plant's reactor building standby ventilation system. Subsequently, field survey data from air and smear sampling as well as additional dose projections became available. *Id.* at 13. According to witness Minor, the Radiation Health Coordinator recorded the results of a smear reading taken at 14:00, 7 miles WSW of the plant; the reading was 2700 cpm/cm². *Id.* at 17. At 12:45, he recorded an

air dose of 3130 mR/hr located 0.5 mile downwind of the plant, and at 12:10 another air dose reading of 180 mR/hr 2 miles WSW of the plant. *Id.* at 18.

People in the original downwind zones were subject to both a ground dose and a cloud dose once the plume arrived over these zones and before the wind shift. Witness Minor testified that in a car they would receive no shielding from the cloud dose and only a small reduction in ground dose. In the average house, on the other hand, they would have received a 30% reduction in cloud dose and an 80% reduction in ground dose. After the wind shift, these individuals would continue to receive a ground dose but a smaller potential cloud dose. *Id.* at 17. Witness Minor acknowledged, however, that the appropriate dose pathway for consideration in assessing the protective actions was the child thyroid inhalation dose, and that the 0.7 reduction for cloud dose and 0.2 reduction for ground dose do not necessarily apply to the child thyroid dose pathway. Tr. 2615-16.

Witness Minor stated that "EBS messages repeated every 15 minutes from 10:23 through the end of the Exercise recommended that people in the original downwind zone should evacuate if they had not already done so." He alleges that these messages went out without any apparent calculation based on updated data or other confirmation that evacuation was still the response that would likely result in maximum dose savings. Suffolk EX-36 Testimony at 18. When LERO personnel learned that 20,000 people in the original downwind zones had not left their homes as of 14:40, with a projected wind shift away from those zones anticipated about 15:00, Suffolk's witness believes that LERO should have reassessed the relative dose savings from sheltering versus evacuation.³² *Id.* at 18-19. He does not attest that LERO should have necessarily rescinded the original evacuation recommendation, but rather that LERO should have performed updated calculations of relative dose savings from sheltering versus evacuation. *Id.* at 19. He admits that the decision to continue with evacuation may have been correct, but he contends LERO never performed an analysis that would justify its decision. *Id.* at 20; Intervenor's Proposed Finding 455 at 314-15.

In addition, witness Minor believes that rather than relying throughout an accident on precalculated evacuation times for the dose calculation, the Radiation Health Coordinator should analyze the real data on traffic. For example, when the roadway impediments became known to LERO, the Radiation

³² In the Intervenor's proposed findings, LILCO's witness Watts, LERO's Radiation Health Coordinator during the Exercise, is alleged to have acknowledged that the effect of shelter on overall dose savings "continues for at least six hours." Intervenor's Finding 463 at 321. Dose reduction figures, with which witness Watts agreed during cross-examination, are quoted for successive hours from 1 to 6. These dose reduction figures, however, do not reflect a dose savings that "continues" for 6 hours; in fact, the dose reduction during the 6-hour period is based on a 50% dose saving during the first hour and none thereafter, as witness Watts attempted to make clear during his cross-examination. Tr. 2489-90.

Health Coordinator should have been consulted. Suffolk EX-36 Testimony at 21. Additionally, LERO was continuing to recommend evacuation of the original downwind zones at 15:45 when evacuees could have been delayed in traffic by impediments; it may have been more dose-saving to keep them in their homes for a few more hours and then ask them to leave when the plume was no longer in the vicinity. *Id.* at 22.

LILCO's Position

LERO's Radiation Health Coordinator testified that it is not correct that he did not perform updated calculations throughout the Exercise. He attested that they ran computerized dose projections at the EOC throughout the Exercise. LILCO EX-36 Testimony at 7; Tr. 2425-40. Moreover, a wind shift projected for sometime between 15:00 and 18:00 was not a sufficiently compelling reason to change the protective action from evacuation to sheltering, because other factors unequivocally indicated that continued evacuation was appropriate. LILCO EX-36 Testimony at 8.

The other factors that had to be considered were, first, the fact that LERO knew it was faced with a probable long-term release. The release was projected to continue for approximately 9 hours. Tr. 2445. Second, plant release rates and offsite dose rates resulting from the exercise scenario reached much higher levels than those assumed earlier in formulating the original decision to evacuate. Tr. 2508-09; Intervenor's Proposed Finding 296 at 114. Third, sheltering would not have been an effective protective action for people who had not left their homes by 14:00 or 15:00, because by then their homes had already been immersed in the plume for at least an hour, and there was substantial contamination in the downwind portions of zones A-M, Q, and R. LILCO EX-36 Testimony at 8; Tr. 2419-20; Tr. 2445, 2447.

The degree of protection offered by sheltering depends upon the source of the radiation. For a thyroid dose received by inhalation, the protection afforded by sheltering in a house decreases as outside air infiltrates into the house. LERO considered the critical dose pathway to be the child thyroid dose. After a house has been in a plume for over an hour, the inside air can become almost as radioactive as the outside air. Moreover, sheltering was never advised and, consequently, ventilation controls probably had not been implemented in many of the occupied houses, which would render them an ineffective shelter even more quickly.³³ By 14:40 the houses in the downwind area had been immersed

³³ Ventilation control in houses was not recommended during the Exercise because sheltering was never recommended. A ventilation control recommendation is part of the EBS message only when sheltering is the protective action recommendation (PAR). Tr. 2494. This Board believes that house ventilation control should be recommended in EBS messages whenever there has been a release of radioactive material to the atmosphere, regardless of whether the principal PAR is evacuation or sheltering.

in the plume for at least an hour and there was substantial contamination in the area; hence homes no longer afforded effective protection from inhalation of radioactive iodine. LILCO EX-36 Testimony at 10; Tr. 2488-94; 2511-12. If the remaining population had sheltered and waited until after the wind shift to evacuate, the dose actually received would have been greater than that received with evacuation. LILCO EX-36 Testimony at 10-11; Tr. 2505-07, 2519.

After the initial recommendation, the Radiation Health Coordinator performed periodic calculations based on information being received at the EOC which showed that plant releases and resulting dose projections would be much higher than first projected. LILCO EX-36 Testimony at 4, 7, Attachs. D, E, and F; Tr. 2446, 2451-52, 2508 (Watts). As a result, the Coordinator concluded that there was no reason to perform additional calculations to see if sheltering rather than evacuation should be recommended. Tr. 2508-09 (Watts). The EOC protective action decisionmaking team continued to receive and exchange information on weather conditions (including wind shift projection) and road conditions during the day. Tr. 2566, 2594 (Weismantle); Tr. 2604 (Kessler); Tr. 2568-71 (Watts). The projected wind shift led, in fact, to the recommendation to evacuate additional zones at 11:46 a.m. Tr. 2567 (Kessler). Monitoring of the situation continued in order to confirm the validity of earlier evacuation decisions. Tr. 2576 (Watts).

In addition to the foregoing considerations, LILCO's witnesses testified that if LERO had changed its protective action recommendation from evacuation to sheltering when large numbers of people were already evacuating, it would have created public confusion. Both evacuees and persons sheltering would have heard that others in their geographical area were being advised to engage in a different protective action. Consequently some evacuees may have sought shelter and some people advised to shelter may have begun to evacuate. Still others may have waffled, starting one protective action and then changing their minds and beginning the other. In the judgment of LILCO's witness Mileti, the purpose of emergency planning is to minimize the potential for confusion in emergency response. LILCO EX-36 Testimony at 12-13; Tr. 2529-33; Intervenor's Proposed Finding 295 at 114.

LILCO's witnesses believe that evacuation was clearly the appropriate protective action, given the probability of a long-term release. LILCO EX-36 Testimony at 15-16; Intervenor's Proposed Finding 296 at 114. Indeed, FEMA in its postaccident assessment found that appropriate protective action recommendations were made by EOC personnel. LILCO EX-36 Testimony at 15-16; *see* FEMA Exh. 1 at 30-31.

FEMA's Testimony

FEMA testified that LERO personnel made appropriate protective action recommendations, both with respect to the original evacuation recommendation issued at 10:24, and the second evacuation recommendation issued at 12:00 in anticipation of the wind shift. FEMA Exh. 5 at 24-25. The NRC Staff agrees that LERO's Radiation Health Coordinator used good judgment in making protective action recommendation decisions and made proper recommendations based on the consideration of appropriate factors. Staff Proposed Findings 251-260 at 91-95.

Conclusion

The Board finds the evidence presented by LILCO's witnesses to be persuasive on Contention EX-36. We agree with Intervenor's that "the consideration of the relative dose savings from alternative protective actions is the fundamental premise and basis of LILCO's protective action recommendation procedure. . . ." Suffolk EX-36 Testimony at 21-22. We find that LERO engaged in that process in a fundamentally sound manner.

According to the findings in the PID, sheltering would provide a 50% thyroid dose reduction for the first hour and much less after that time. *See* PID, 21 NRC at 772-74. LERO personnel in the EOC did consider updated information and based their recommendations on adequate evaluations of this information. Specifically, they considered the fact that the actual releases were several times greater than those they had assumed when the evacuation recommendation was made initially; in light of this fact LERO decided that it was appropriate to get the people out, and we agree. Moreover, by 14:40, when LERO learned of the people remaining in the downwind zones, their homes had already been immersed in the plume for an hour or more and hence sheltering afforded little protection from inhalation of radioactive iodine. In addition, we agree that a recommendation to shelter at 14:40 when much of the population in the original downwind area was already responding to the earlier recommendation to evacuate would have caused confusion. We find Contention EX-36 to be without merit.

E. Public Information

1. Overview

These contentions are closely related and were heard together. In Contention EX-38, Intervenor's argue that the Exercise demonstrated that LERO was unable to provide timely, accurate, consistent, and nonconfusing information to the

news media at the ENC, thus failing to implement § 3.8.B and OPIP 3.8.1 of the LILCO Plan. Contention EX-39 alleges that the Exercise revealed that LILCO is incapable of dealing with rumors or responding to inquiries from the public during an emergency as required by 10 C.F.R. § 50.47(b)(7) and NUREG-0654 § II.G. Intervenor believes that the Exercise demonstrated that there are fundamental flaws in the Plan as it relates to LERO's public information functions.

The Emergency News Center (ENC) Exercise objectives that Intervenor asserts were not satisfied are:

1. Demonstrate the ability to mobilize staff and activate LERO functions at the ENC in a timely manner;
3. Demonstrate the ability to brief the media in a clear, accurate, and timely manner;
4. Demonstrate the ability to share information with other agencies at the ENC prior to its release;
5. Demonstrate the ability to establish and operate rumor control in a coordinated manner; and
6. Demonstrate that the ENC has adequate space, equipment, and supplies to support emergency operations.

The LILCO and Suffolk witnesses hold different views concerning the media's role during an emergency. While LILCO witnesses cite the importance of providing accurate information to the media, they believe that the top priority in an emergency public information network is the Emergency Broadcast System (EBS), which uses EBS network radio broadcasts to disseminate emergency information directly to the public. LILCO EX-38 and EX-39 Testimony, ff. Tr. 3207, at 8. LILCO attempts to focus the public's attention on the EBS messages because they contain the information that is essential to the public, such as the status of the emergency, the potential risk associated with emergency events, and protective action recommendations. *Id.* at 8-9; Tr. 3236, 3261 (Mileti). LILCO witnesses assert that the primacy of the EBS network in the overall emergency public information scheme is underscored by the NRC requirement that EBS messages go out in 15 minutes (LILCO EX-38 and EX-39 Testimony at 9; Tr. 3234 (Daverio)), and by the lack of any comparable requirements for press conferences or news releases.

In LILCO's view, other means of communicating emergency information to the public are of secondary importance when compared with EBS messages. LILCO EX-38 and EX-39 Testimony at 12. Thus, although the LILCO Plan provides detailed procedures for operating a news center, conducting joint LILCO/LERO press conferences, and disseminating both LERO and LILCO news releases, the LILCO witnesses consider these functions a less important

means of communicating emergency information to the at-risk public. *Id.* They view the media mainly as a vehicle to follow up and elaborate on EBS messages. *Id.* at 13. LILCO witnesses testified that the media's primary function during an emergency is to cover the event, not to provide information to enhance the public's health and safety. Tr. 3357 (Patterson).

Intervenors assign much more importance to the media's role in an emergency situation. Suffolk witnesses testified that it is the media's responsibility "to provide the public with timely, precise and easily understood information on the basis of which members of the public can make rational individual decisions on the best course of action to insure their personal health and safety." Suffolk EX-38 and EX-39 Testimony, ff. Tr. 3786, at 38. Intervenors assert that LILCO has put too much emphasis on the EBS system (Tr. 4087, 4089-90 (Rowan)), and that "the media is now and would be in a crisis the primary conduit to the public." Suffolk EX-38 and EX-39 Testimony at 88. In short, Intervenor witnesses argue that LILCO "does not understand the media, does not really want to deal with the media, and does not comprehend how good media relations would be essential in a real crisis." *Id.* at 79.

FEMA in general agrees with LILCO that the EBS system is the "primary means of giving necessary emergency information to the public." FEMA Exh. 5 at 32. Staff, citing 10 C.F.R. § 50.47(b)(5) and Appendix E, ¶ IV, agrees with LILCO that the regulations designate the EBS system as the primary means for notifying the public. Staff Proposed Findings at 97, 99.

We find that both LILCO's and Intervenors' arguments have some merit. Clearly, LILCO is correct that the EBS system is the primary means for conveying information to the public and LILCO is correct in placing its principal reliance on it. However, Intervenors are correct to the extent that they assert that the media have a larger function than simply to report the event. EBS messages are, of necessity, limited to furnishing the public with essential information needed to properly respond to an emergency. Consequently, there is little room in the EBS format for much background information or elaboration that would place that essential information in context. The media will step into this void. If they are provided with clear, accurate, and timely information, they will be able to supplement the EBS system and help to ensure an orderly public response. On the other hand, if such information is not provided, the media will at best be a neutral influence and at worst detrimental to an orderly response. Consequently, 10 C.F.R. § 50.47(b)(7) requires that the principal points of contact for the media and procedures for the coordinated dissemination of information to the public be established. We have considered these contentions in this light.

2. Activation of the Emergency News Center

Contention EX-38A correctly notes that the ENC was declared operational at 08:25, and that there was no contact with the media by LERO personnel at the ENC until after that time. Tr. 3443. The first press briefing was held at 08:40. Thus, the ENC provided no information at all to the media until almost 3 hours after the alert was declared, and long after the 6:52 EBS message announcing the Alert condition and school closings had been broadcast. Intervenor maintain that, in a real emergency, such a delay would result in substantial confusion, speculation, rumor generation, lack of confidence in LILCO's ability to deal with the emergency, and refusal to believe information, advice, or instructions subsequently disseminated by LILCO personnel. Suffolk EX-38 and EX-39 Testimony at 40, *et seq.*

Although it concedes that a serious radiological emergency at Shoreham would spur great media interest (LILCO Proposed Findings at 136; Intervenor's Proposed Findings at 382-83), LILCO maintains that the ENC was activated in a timely manner. It notes the lack of regulatory guidance on this issue. LILCO also maintains that there is no substance to the argument that the delay in opening the ENC would have had adverse consequences. LILCO notes there are other sources of information available. In that period, LILCO issued two press releases (which, in a real emergency, would have been carried by AP and UPI) and an EBS message was simulated. Further, it is well known to the media that the LILCO Corporate Communications Department makes a professional available to answer telephone inquiries on an around-the-clock basis. LILCO EX-38 and EX-39 Testimony at 16-18; Tr. 3441.

Intervenor do not agree that the information that was available would have been adequate. Suffolk EX-38 and EX-39 Testimony at 49-60. They postulate an immediate and intense interest on the part of the media following the first word of a problem at the plant. This would, in the Suffolk witnesses' view, mean that many reporters would be clamoring for information prior to the activation of the ENC. Because this thirst for information could not be satisfied at the ENC, these reporters would seek other, less reliable sources of information. Thus not only would the media be forced to rely on and consequently report inaccurate information, they would quickly grow to mistrust LERO as a reliable source. *Id.* at 44-46, 50, 61-62.

FEMA concluded that objective ENC 1, mobilization of staff and activation of the ENC, was demonstrated and that "[o]verall activation of the ENC was done well." FEMA Exh. 1 at 52. FEMA noted that mobilization of the ENC began at the Alert stage (which is consistent with the practice at other nuclear plants in FEMA Region II), that ENC personnel began arriving about 06:41 (22 minutes later), and that mobilization was completed in about 2 hours. FEMA considers this a reasonable amount of time and consequently believes the activation was

timely. FEMA testified that a press briefing held within 15 minutes of activation of the ENC is adequate. FEMA Exh. 5 at 33; Tr. 7756-66. Staff believes that the information that was available was adequate. It points out that the public received timely information via the EBS network, so that activation of the ENC at 08:25 does not constitute a flaw. Staff Proposed Findings at 102.

We agree with FEMA's conclusions. Obviously, a function such as the ENC cannot spring into operation instantaneously, and nothing in the record indicates that activation was tardy. The flaw in the Suffolk witnesses' testimony is their assumption that at the initiating event of an accident, a large and intensely interested press corps would instantly materialize. We do not find this assumption credible. First, we believe that the interest of the media would develop over a period of time as the accident unfolded. Second, it is obvious that, just as it takes some time to mobilize the ENC staff, it will also take some time to mobilize the press at the ENC. Moreover, Staff's point that the public would have received timely information from the EBS system is well taken.

LILCO correctly points out that other sources of information were available during this time. While, from the media's point of view, these sources were less than ideal, we find that they were adequate considering their timing prior to the recommendation of any protective actions (other than the closing of schools for the day) and prior to any release to the environment. Suffolk witnesses paint a dire picture of the reaction of the media. While we agree that activation of the ENC at 08:25 would create some problems for the media, we find that Suffolk witnesses have greatly overstated those problems. No fundamental flaw is demonstrated on this account.

3. Distribution of LERO News Releases and EBS Messages

3.a. Timeliness

Contention EX-38B concerns LERO News Release No. 1, which announced the Alert declared at 06:17 and the fact that there had been no release of radiation to the environment. This release was not provided to the press by the ENC until sometime after 08:25. LILCO EX-38 and EX-39 Testimony at 19; Tr. 3445. Although a Site Area Emergency had been declared at 08:19 and the ENC was informed of that declaration between 08:21 and 08:25 (LILCO EX-38 and EX-39 Testimony at 19-20; Tr. 3445-46), apparently no mention was made to the media of the Site Area Emergency, the fact that a minor release of radiation had occurred, or of the recommendation to place dairy animals on stored feed until the first press briefing at 08:40 (LILCO EX-38 and EX-39 Testimony at 20-21). Thus, the first LERO press release contained dated information at the time it was released to the media at the ENC.

Contention EX-38C concerns LERO News Release No. 2 covering the Site Area Emergency, radiation release, and dairy animal recommendation. These were announced in EBS Message No. 2 broadcast at 08:38. LERO News Release No. 2, which included the information in that EBS message, was not available to the media at the ENC until sometime after 09:15. Tr. 3466. The media were orally informed of the content of EBS 2 at the first press briefing which began at 08:40.

Contention EX-38G concerns LERO News Releases 3 through 7. It alleges that these were distributed much too late, and were inaccurate and in conflict with other data in the public domain by the time they were provided to the media. Although the ENC received LERO Press Release No. 3 at 10:15, it was not posted at the ENC for the press until 11:10. LERO Release No. 4 was received by the ENC at 10:45, but was not posted until 11:56. LERO Release No. 5 covered the 10:24 evacuation recommendation for zones A-M, Q, and R. It was approved by the LERO Director at 11:02, but did not even arrive at the ENC until 11:36, and was not made available to the press until sometime later. LERO Release No. 6, approved by the Director at 12:25, was not posted at the ENC until 14:10; LERO Release No. 7, approved at 13:11, was received by the ENC at 13:47, but not posted for the press until 15:07.³⁴

Contention EX-39A raises a related point. There, Intervenor alleges that during the Exercise, the LILCO District Offices and Call Boards, which are part of the Rumor Control organization, consistently had incorrect or superseded information concerning the emergency and the protective action recommendations, resulting in the provision of inaccurate and incomplete information to members of the public. Intervenor also alleges that this information was incomplete and inconsistent with that being released by other LILCO personnel at other locations (for example, in EBS messages or press releases). The specific factual allegations of the contention, about which there is no dispute (*see* Intervenor's Proposed Finding 601; LILCO Proposed Finding 389, *et seq.*), are as follows.

(i) The logs kept by all the LILCO Call Board operators, including, for example, those kept by the Port Jefferson, Patchogue, and Brentwood Customer Call Board operators, indicate that the information available to them until approximately 11:00 stated that a Site Area Emergency existed, even though a General Emergency had been declared at 9:39.

(ii) The logs kept by the Call Board operators indicate that the operators did not receive word that people in zones A-M, Q, and R had been advised to evacuate until approximately 12:35, even though that advisory had first been issued to the public at 10:24.

³⁴ The times of arrival and posting at the ENC for press releases 5, 6, and 7 are not revealed by the record. However, there does not appear to be any dispute regarding the times alleged. *See* LILCO EX-38 and EX-39 Testimony at 28-30.

(iii) The logs kept by the Call Board operators indicate that the operators did not receive word that LERO had recommended evacuation of the entire EPZ until approximately 2:00, even though that advisory had first been made at approximately 12:00 noon.

(iv) The logs kept by the Call Board operators indicate that the operators did not receive word of the declaration of an Unusual Event until approximately 8:15, although that declaration was in fact made at 5:40; similarly, the Call Board operators did not receive word that an Alert had been declared until approximately 8:30, although the declaration was made at 6:17 and an EBS message was simulated at 6:52.

(v) The Call Board logs indicate that most Call Board operators did not receive word that schools were supposed to be implementing early dismissals until approximately 8:50, although an EBS message regarding early school closings was simulated at 6:52.

Contention EX-38D correctly notes that insufficient copying capabilities at the ENC contributed to delays in the distribution of information. Copier breakdowns delayed the posting of EBS messages, and the posting and distribution of press releases to both the media and Rumor Control. LILCO EX-38 and EX-39 Testimony at 23-24. FEMA assessed a deficiency as a result of the delays in providing EBS messages to the media and up-to-date information to Rumor Control. FEMA Exh. 1 at 53. It noted that there is no time requirement for the distribution of news releases. FEMA Exh. 5 at 36.

Contention EX-38Q alleges that neither LILCO's proposal to expedite the dissemination of information by substituting summary information for press releases and transmitting it by computer to the ENC, nor its proposal to add an extra LERO spokesperson at the ENC, would resolve the deficiencies revealed during the Exercise. Nor would replacement of copying machines. This subcontention misstates the improvements in the information distribution system put in place by LILCO. First, summary sheets are not intended to replace news releases, which will continue to be available and will contain information almost identical to that in the EBS messages. Rather, the summary sheets will contain the basic protective action information found in the EBS messages and will be available almost immediately after each EBS broadcast. They are a substitute for the marked-up EBS messages. Second, there is no plan to add a LERO spokesperson at the ENC. Rather, that position has been made official. During the Exercise, the spokesperson was referred to as a member of the Public Information Staff. LILCO EX-38 and EX-39 Testimony at 49-50; Intervenor's Proposed Findings at 401 n.367.

In their testimony, the Suffolk witnesses begin by saying that the news releases are little more than a regurgitation of the EBS messages. This, in their view, means first, that the news releases are useless because they provide no information not already available, and second, that by the time they were made available the contained information was outdated, inaccurate, and inconsistent with subsequent information. As a result, the witnesses believe that the news

releases were counterproductive. Suffolk EX-38 and EX-39 Testimony at 66-67. The witnesses go on to note, however, that the media at the ENC would either hear or be told of the EBS messages as they were broadcast. This would prompt the media to demand the text of each message in order to relay it immediately and accurately. The failure of the ENC to provide such information would create inaccuracies in the reporting and distrust of the ENC as a source of information. *Id.* at 69-71.

The Suffolk witnesses' criticism appears addressed to two points: first, the failure of the press releases to provide a timely source of information in addition to that contained in the EBS messages, and second, the failure to provide the text of the EBS messages themselves on a timely basis. In their proposed findings (at 396-400), Intervenor's argue that it is necessary to provide accurate, timely, and consistent information to the media, that LILCO failed to do so through the use of news conferences and EBS messages, and that therefore we must find that the delayed issuance of press releases, the only remaining way of communicating with the media, constitutes a fundamental flaw. LILCO takes the position, and FEMA agrees, that the news releases are of secondary importance and are compiled mainly for historical purposes rather than to provide a timely source of information. LILCO EX-38 and EX-39 Testimony at 8-9, 13, 20-23, 28-30; FEMA Exh. 5 at 35. LILCO agrees with the County that the news releases provide essentially the same information as that contained in the EBS messages. *Id.* at 13.³⁵

Essentially, LILCO attributes the problems in the distribution of EBS messages and press releases to copier breakdowns.³⁶ LILCO EX-38 and EX-39 Testimony at 59-60. To avoid a recurrence of this sort of problem, LILCO now proposes to electronically transmit summary sheets containing key emergency information to the Call Boards and District Offices simultaneously with the broadcast of EBS messages. News releases will also be electronically transmit-

³⁵ In view of the fact that the news releases in question are little more than a restatement of rather than a supplement to the EBS messages and were late, we agree with the County's witnesses that they are largely useless as a current source of information. We also agree that the text of the EBS messages should be furnished to the media on a timely basis. However, Intervenor's argument in their proposed findings that the failure of the primary means of informing the media requires that a fundamental flaw be found with respect to the news releases is itself flawed in that it seeks to put the news releases in the place of the EBS messages as the primary means. If the primary means failed, it (not the backup) would be found fundamentally flawed.

³⁶ LILCO regards EX-39A(iv) and (v), which concern events that occurred prior to 08:25, as requiring the Call Boards to be able to furnish up-to-date information even before they are activated. It notes that under approved onsite procedures, Call Boards and District Offices are required to be activated when the ENC is. Thus, there was no requirement that they be able to answer inquiries before the ENC was activated at 08:25. LILCO EX-38 and EX-39 Testimony at 58-59. Intervenor's believe that this position is inconsistent with LILCO's testimony that the Call Boards and District Offices are continuously available to the public to answer inquiries regardless of any emergency. Tr. 3632. Regardless of whether LILCO's position is entirely consistent, we may not fault Exercise performance that substantially comports with approved procedures. Here, whether or not the Call Boards and District Offices are in operation at the earliest stages of the emergency, they may not be held accountable for providing information before the Plan contemplates. Of course, they must be prepared to answer inquiries when the public is advised to call them, whenever that may be.

ted. *Id.* FEMA has withheld its review of LILCO's corrections pending the latter's evaluation of the copier problem, and, once approved, must evaluate it at another exercise. FEMA Exh. 3, Attach. 1 at 6-7, and Table 3.4 at 1-2; Tr. 7851-53 (Keller). Although Staff recognizes that the failure to provide current information to the Call Boards is a problem, it views LILCO's corrective actions as adequate. Hence it finds no fundamental flaw. Staff Proposed Findings at 120. Similarly, it does not view the failure to timely distribute press releases to the media as a fundamental flaw because other sources of information would be available and because LILCO has taken steps to correct this problem. *Id.* at 105.

In support of the allegations that LILCO's corrective actions will not work, Suffolk witnesses testified that, although the ENC was aware at 12:22 that evacuation of the entire EPZ had been recommended, this information was not passed on to the media until the next briefing at 12:47. Moreover, they argue that insufficient copying capability should have been compensated for by more frequent briefings, and that LILCO does not understand how to deal with the media and does not wish to do so. Suffolk EX-38 and EX-39 Testimony at 77-78. In their proposed findings (at 400-04), Intervenor also argue that the copier problems recurred at a drill held after the Exercise, that there has been no change in the way news releases are distributed, and that the summary sheets contain substantially less information than the EBS messages themselves.

We agree with Intervenor that the failure to keep the Call Boards and District Offices advised with respect to the current state of emergency response recommendations issued by LERO constitutes a fundamental flaw. The examples cited in Contention EX-39A(ii)-(iii) reveal that the Call Boards were provided protective action recommendations about 2 hours late. Consistent with our view that the media have an important role to play in ensuring an orderly public response to an emergency, we agree with FEMA's assessment of a deficiency with regard to the failure to promptly provide the EBS messages to the media, and regard that failure as an integral part of the above-mentioned fundamental flaw.³⁷ However, we do not agree that we should pass on the efficacy of LILCO's corrections. We noted above that FEMA has withheld its review of LILCO's corrections pending the latter's evaluation of the lack of copying capability for distribution of EBS messages to the media and, once it has approved the corrections, must evaluate them at another exercise. If we were to rule on the contention that these corrections are not efficacious, our ruling would either improperly bind FEMA to a particular result in advance of its review or would have to be viewed as having no effect. Therefore, it would be inappropriate

³⁷ We find that the circumstances surrounding the distribution of news releases are not fundamentally flawed or a contributing factor to the fundamental flaw we have found.

for us to determine whether LILCO's corrections will remedy this fundamental flaw.

3.b. Clarity

Contention EX-38F alleges that copies of EBS messages provided to the media contained extraneous information that should have been deleted, and thus were unclear, confusing, and inconsistent with radio broadcasts. It relies on FEMA Exh. 1 at 53, 54. There, FEMA stated that "some hard copies of EBS messages that were provided to the press contained extraneous information (clearly marked for deletion) that should have been omitted to avoid possible confusion." *Id.* at 53. FEMA identified this as an ARCA. In its testimony, FEMA reiterated that the extraneous information was marked for deletion and that its concern was that possible confusion could result, although none did. FEMA Exh. 5 at 38. LILCO asserts that the EBS messages posted during the Exercise were not confusing and that, in any event, corrective action has been taken in that summary sheets highlighting pertinent protective action information have been substituted for the marked-up EBS messages. LILCO EX-38 and EX-39 Testimony at 26-28. Staff believes that LILCO has solved this problem. Staff Proposed Findings at 107. Suffolk witnesses believe that this situation could raise questions regarding LILCO's competence in the minds of the reporters at the ENC. Suffolk EX-38 and EX-39 Testimony at 75-76.

We agree with Suffolk and FEMA that the EBS messages need to be cleaned up before distribution. These messages are the primary means for communicating with the public; hence it is important that the copies made available to the media are clear in order to prevent the reporting of inaccurate or inconsistent information. The copies used during the Exercise are replete with handwritten insertions and deletions which made them confusing. However, because no confusion was shown to have resulted from the EBS messages given the media during the Exercise, we do not conclude that this problem by itself rises to the level of a fundamental flaw. Nor do we view it as a contributing factor to the fundamental flaw discussed above.

4. Communications with the Media

4.a. Timeliness

Contention EX-38H states that the LERO Director recommended evacuation of the entire EPZ at 11:46 and that that recommendation was broadcast in a 12:00 noon EBS message. However, the ENC did not inform the media of the Director's decision, or the content of the 12:00 EBS message, which was supposedly repeated every 15 minutes thereafter, until 12:47. Suffolk

witnesses believe that this was a calculated decision that illustrates a systemic problem. *Id.* at 77-78, 84-87. LILCO concedes that it would have been better to have informed the media on learning of the recommendation (LILCO Proposed Findings at 141), but notes that the media would have been informed by the EBS broadcast (LILCO EX-38 and EX-39 Testimony at 31) and that it is the LERO spokesperson's responsibility to determine when to make herself available to the press based on consultations with other public information officers and the demands of the press (Tr. 3511). Staff does not believe that LERO's delay would have poisoned its relations with the media. Staff Proposed Findings at 108-09. FEMA agrees that the media would have been informed by the EBS broadcast and notes that it assessed a deficiency based on LERO's inability to promptly furnish copies of EBS messages. FEMA Exh. 5 at 40.

Clearly, in an actual emergency, the media would have learned of the evacuation recommendation and demanded information from the LERO spokesperson. Nonetheless, we believe that the spokesperson should have immediately informed the media of the recommendation. Waiting until asked does not inspire confidence and may give rise to the inference that information is being withheld. However, we conclude that this failure by itself does not rise to the level of a fundamental flaw.

4.b. Candor

Contention EX-38I concerns the fact that although LERO workers were instructed to simulate ingesting KI tablets at 9:45, LERO ENC personnel did not inform the media of that fact. Intervenor's characterize this as the concealment of pertinent information about the health-threatening effects of the accident which, if found out, would result in further reductions in LILCO's credibility.³⁸

LILCO and FEMA, on the other hand, take the position that, in light of New York's policy not to make KI available to the general population (a policy that LERO will follow), there was no reason to inform the public through the media. The information would be of no value to the public, although the ENC was prepared during the Exercise to answer questions had any arisen. LILCO EX-38 and EX-39 Testimony at 32-34; FEMA Exh. 5 at 41; Tr. 7838-42, 8564. Staff concurs. Staff Proposed Findings at 110. This position is clearly correct.

³⁸ The subcontention originally alleged that the media were informed and asked not to report the story, although in their direct testimony the County's witnesses have accepted LILCO's version which is given above. Suffolk EX-38 and EX-39 Testimony at 71-75; Intervenor's Proposed Findings at 409.

4.c. Accuracy³⁹

RESPONSES TO QUESTIONS ON EVACUATION

Contention EX-38J alleges that, during press conferences, the LERO spokesperson was unable to respond satisfactorily or accurately to questions about evacuation, specifically traffic conditions, conditions or evacuation activity on the water portion of the EPZ, protective actions for the correctional facility in the EPZ, manpower at bridges and tunnels on evacuation routes, or the activities of the Nassau County Police. In addition, this subcontention alleges that LERO Public Information personnel were unable to contact Marketing Evaluations, Inc., in a timely manner and therefore had no information concerning siren activation failure.⁴⁰

Suffolk's testimony touches on these allegations at 97, *et seq.*, while LILCO discusses them at 35-43. Staff does not believe that this contention is well taken. Staff Proposed Findings at 110-12. FEMA states that it has no basis on which to form an opinion as to the accuracy of these allegations. FEMA Exh. 5 at 42.

We have reviewed the transcript of the press briefings and conclude that LILCO's characterization of the situation is accurate. With the exception of the fuel and gravel truck incidents, discussed below, the LERO spokesperson appears to have furnished accurate information. The fact that that information was not adequate to respond to the media's needs clearly results from the fact that the spokesperson was reporting simulated events and thus did not have detailed information.

RESPONSE TO QUESTIONS ON TRAFFIC IMPEDIMENTS

Contention EX-38L alleges that the log kept by ENC personnel recorded that at 12:01, the gravel truck impediment was being removed. In fact, as of that time, no equipment had yet arrived at the site of the gravel truck impediment, and when it eventually did arrive, it was inadequate to remove the impediment. Thus, it is alleged, ENC personnel had inaccurate information which, if released, would have misled the public into believing the intersection was clear when in fact it was not. At the hearing, the LILCO witness acknowledged that at the 12:47 news conference, the gravel truck impediment was erroneously reported by the LERO spokesperson to have been cleared.⁴¹ Staff does not regard this to be significant because the erroneous information would not have significantly affected the

³⁹ All of the allegations dealt with under this topic concern LERO's performance in press conferences.

⁴⁰ Because the sirens were not sounded, Market Evaluations did not participate in the Exercise, and Intervenor's have not addressed this particular allegation in their proposed findings.

⁴¹ This matter is also raised by Contention EX-38N.

public. Staff Proposed Findings at 112. It is unclear precisely what information had been received at the ENC with respect to this impediment. Tr. 3538-45.

Contention EX-38M notes that at the 1:48 press conference, the LERO spokesperson was not able to respond to detailed questions about the fuel truck impediment, although that impediment had arisen almost 3 hours earlier. Suffolk EX-38 and EX-39 Testimony at 97. LILCO takes the position that in noting that the fuel truck was blocking the roadway and that traffic was being rerouted, it provided all the information necessary, and that it was unnecessary to inform the media of the condition of the truck and whether fuel was leaking. LILCO EX-38 and EX-39 Testimony at 44-45. Staff concurs. Staff Proposed Findings at 113. FEMA takes no position. FEMA Exh. 5 at 44. We agree with Intervenor's that the LERO spokesperson should have been able to respond to detailed questions on these traffic impediments to the extent that those details were contained in the free-play messages.

ALLEGED MISSTATEMENTS

Contention EX-38N asserts that at press conferences, LERO personnel frequently misstated facts and provided inaccurate information. Suffolk witnesses testified that, although the ENC had learned of the recommendation regarding milk-producing animals between 08:21 and 08:25, at the 08:40 press briefing the LERO spokesperson incorrectly stated that the only protective action recommendation concerned the schools. Suffolk EX-38 and EX-39 Testimony at 81-82. Also, it was incorrectly announced at the first briefing that the Site Area Emergency had been declared at 8:23. The correct time was 8:19. Similarly, at the 11:38 briefing, LERO incorrectly announced that the winter population of the EPZ is higher than the summer population.

Dr. Brill, a scientist from Brookhaven National Laboratory, was present and commented on the health effects of the simulated release. In so doing, he made an error in assuming that the "weathering factor" was threefold when the factor stated in the Plan is 0.7. This led him to state a dose of 60 millirem/hour instead of 126. Also, he contradicted LERO's evacuation recommendation by stating that although he lived in the affected zone, in all likelihood he would not evacuate. *Id.* at 91-93.

We agree with LILCO and Staff that the misstatements concerning the time of the Site Area Emergency and the population of the EPZ are trivial. LILCO EX-38 and EX-39 Testimony at 45-46; Staff Proposed Findings at 113. The misstatement concerning the protective action recommendation is more serious and was not addressed by LILCO in its direct testimony. Clearly, the LERO spokesperson should have been able to relay complete and accurate information with regard to this matter. Equally clearly, either LILCO or LERO should have corrected Dr. Brill's calculation based on his assumption of an incorrect

"weathering factor," and should have taken precautions to ensure that he would not contradict the protective action recommendations made by LERO.⁴² These failures, together with the inability to provide accurate responses to questions on the traffic impediments, do rise to the level of a fundamental flaw.

5. Rumor Control

The main function of Rumor Control is to spot potential rumors (usually indicated by two or more questions on the same topic) and dispel them with corrective announcements at the ENC, although Rumor Control personnel answer every inquiry received. LILCO EX-38 and EX-39 Testimony at 51-56. LILCO's Rumor Control network is headquartered in the ENC, with personnel in each of LILCO's eleven District Offices and four Customer Service Call Boards. Rumor Control is an onsite function run exclusively by LILCO personnel. *Id.* at 52. LILCO instructs members of the public to call any of the District Offices or Call Boards with their questions during an emergency; if the Rumor Control personnel at those offices cannot answer the questions they forward them up an established chain of command to the ENC, and, if necessary, the EOC (for LERO-related matters) or onsite facilities (for LILCO matters) for answers. *Id.* at 52-56.

5.a. Promptness of Responses

Contention EX-39B alleges that during the Exercise, LILCO Rumor Control personnel were unable to provide prompt responses to simulated telephone inquiries from members of the public to LILCO Call Boards and District Offices. The contention provides the following examples. LILCO does not dispute the times stated.

(i) A rumor message inquiring whether the appliances in the caller's home were radioactive was given to the Patchogue Call Board operator at 13:45; a response was not relayed to the caller until 14:24.

(ii) A rumor message inquiring what to do about a daughter not yet home from Shoreham-Wading River High School was given to the Patchogue Call Board operator at 10:00; a response was not relayed to the caller until 10:52.

⁴² Staff points out (Proposed Findings at 114-15) that the LILCO witnesses asserted that Dr. Brill's statement concerning evacuation was immediately corrected by the News Manager and that the purpose of the news center is not to prevent contradictory statements, but to provide a forum in which to deal with them. Tr. 3572-74 (McCaffrey, Robinson). However, the transcript of the news conference does not confirm the first assertion. *Id.* While we concur with the second assertion that the news center is not to engage in censorship, the provision of inconsistent information by LERO, LILCO, or its consultants in an emergency situation is detrimental to the public health and safety.

(iii) A rumor message inquiring whether the caller, from Bellport, should evacuate was given to the Patchogue Call Board operator at 12:05; a response was not relayed to the caller until 13:00.

(iv) A rumor message inquiring about how extensive evacuation will be, and what to do about trucks going into the Shoreham area, was given to the Hicksville Call Board operator at 07:51; a response was not relayed to the caller until 08:20.

(v) A rumor message inquiring whether the cooling towers on the Shoreham plant had blown up was given to the Riverhead Call Board operator at 13:30; a response was not relayed to the caller until 13:53.

(vi) A rumor message inquiring if lobsters caught off the Shoreham jetty that morning were safe to eat was received by the Riverhead District Office at 11:30; a response was not relayed to the originating party until 12:28.

(vii) A rumor message from a caller whose husband works at the plant and was not home yet, inquiring whether he had been hurt, was given to the Brentwood Call Board operator at 12:43; a response was not relayed to the caller until 13:30.

(viii) A rumor message inquiring whether the plant had been taken over by Arab terrorists was received at 09:54; a response was not relayed to the caller until 10:37.

(ix) A rumor message inquiring what to do with a horse was given to the Port Jefferson Call Board operator at 10:14; a response was not relayed to the caller until 10:47.

(x) A rumor message inquiring how to get off Shelter Island because the ferry had been cancelled was given to the Hampton Call Board operator at 14:51; a response was not relayed to the caller until 15:24.

(xi) A rumor message from a caller who lived in Medford, but worked in Melville, inquiring what he should do was given to the Huntington Call Board operator at 14:32; a response was not relayed to the caller until 15:05.

(xii) A rumor message inquiring if he could eat the food in his refrigerator was given to the Babylon Call Board operator at 11:59; a response was not relayed to the caller until 12:29.

(xiii) A rumor message from a dairy farmer asking what to do if he is asked to evacuate was received at 09:38; a response was not relayed to the caller until 10:12.

The above are thirteen examples out of a total of thirty-five inquiries made to Call Boards, District Offices, and Rumor Control at the ENC. LILCO EX-38 and EX-39 Testimony at 63. The responses in these examples took from 23 to 58 minutes, and averaged 39 minutes.

Suffolk witnesses attributed the delays to the rigidity and inefficiency inherent in LILCO's "cumbersome system" for responding to public inquiries. Suffolk EX-38 and EX-39 Testimony at 128. Callers would not wait for responses during a real emergency, Suffolk witnesses testified; they would ignore LILCO's instructions and act on their preexisting fears instead. Moreover, these delays would, in these witnesses' opinion, foster the development of rumors and damage LILCO's credibility. *Id.* at 128-30, 138. LILCO witnesses, however, testified

that Rumor Control's responses were timely, emphasizing accuracy over speed, and that the timeliness of response depends on the nature of the information sought in the question. LILCO EX-38 and EX-39 Testimony at 61. FEMA witnesses agreed that accuracy of response is more important than immediacy of response. FEMA Exh. 5 at 51. We find no fundamental flaw with respect to this matter.⁴³

5.b. Adequacy of Responses

ALLEGED LACK OF GOOD JUDGMENT

Contention EX-39C alleges that Rumor Control personnel were unable to provide accurate, satisfactory, or reasonable advice or information to simulated public inquiries; instead, they frequently provided inaccurate or superseded information or demonstrated poor judgment in responding. The contention provides seven examples.⁴⁴ We address those examples covered in Intervenor's proposed findings, dealing first with the purported examples of poor judgment.

(ii) In response to an inquiry at 11:30 (Rumor Control Question No. 11) whether lobsters caught that morning on the Shoreham jetty were safe to eat or touch, the Riverhead Call Board operator responded (at 12:28) that there was no reason to believe, and no data to indicate, that anything was wrong with the lobsters. As of 12:28, however, there had already been a major release of radiation, and the entire EPZ had been advised to evacuate. In light of these facts, it was inappropriate to advise the simulated caller to eat the lobsters, without even inquiring as to when that morning they had been caught, and where the caller was located.

LILCO maintains that this response was correct given the facts that the simulated release was airborne and that the lobsters were taken early in the morning. LILCO EX-38 and EX-39 Testimony at 67. Intervenor's do not quarrel with the accuracy of the answer given, rather they point out that it did not go far enough. The call was placed from Rocky Point, within the area in which evacuation had been ordered. Thus Intervenor's maintain that the caller should have also been advised to evacuate but was not. Tr. 3657-58, 3667; Attachments R and S to LILCO EX-38 and EX-39 Testimony. We agree with Intervenor's that this failure illustrates poor judgment.

⁴³ We agree with Staff's observation that Rumor Control personnel should have basic information on radiation, the plant, the EPZ, and the protective action recommendations readily at hand. Staff Proposed Findings at 121. See our conclusion on Contention EX-39C.

⁴⁴ In their proposed findings, Intervenor's have specifically abandoned EX-39C(vii) (Proposed Findings at 440 n.411), and have not addressed three others (EX-39C(i), (iii), and (iv)). Additionally, they have added three examples: EX-39B(i), (iii), and (xii).

(v) A rumor message simulated at 11:45 was purportedly from Dan Rather, who wanted "to take a TV crew into the Shoreham plant," and inquired how to get there. In response, the Rumor Control responder stated "We don't advise going to the plant. There is a Site Area Emergency. You will be in the way." The responder then gave directions to the plant. At 9:39, however, a General Emergency had been declared and as of 11:45, LILCO was recommending that almost all of the EPZ be evacuated. (At 11:46, the decision was made to evacuate the entire 10-mile EPZ.) The suggestion that going to the plant was inadvisable but nonetheless possible was incorrect, and such suggestion, combined with the giving of road directions to the plant, indicated extremely poor judgment.

The controversy over this contention is more complex. The facts are not disputed. LILCO maintains that the response was proper because:

1. LERO could not prevent anyone from entering the EPZ and going to the plant, although LILCO could prevent entry to the plant; and
2. The operator's advice was proper in the circumstances even though a General, rather than a Site Area Emergency was in effect.

LILCO EX-38 and EX-39 Testimony at 68.

Intervenors maintain that the response was deficient because Rather should have been advised that:

1. A General Emergency was in effect and evacuation of the area surrounding the plant had been advised;
2. LILCO would prevent his entry to the plant site; and
3. He should go to the ENC for more information. Tr. 3701-04.

We find that good judgment would have dictated that the information specified by Intervenors be supplied in addition to that supplied.

The allegations of Contentions EX-39B(i) and (iii) were also cited by Intervenors as an example of inadequate responses by Rumor Control. The first of these concerns the answer to an inquiry whether the caller's appliances, located in Patchogue, were radioactive, and the second concerns the answer to a question whether a caller, living in Bellport, should evacuate. Both inquiries were referred up to the EOC prior to being answered. LILCO EX-38 and EX-39 Testimony, Attachs. R and S. Intervenors maintain that both inquiries should have been handled on a lower level and more promptly by reference to a map of the EPZ. See Tr. 3645-51.

The allegations of Contention EX-39B(xii) concern the answer to an inquiry whether a caller, living in Coram, could eat the food in his refrigerator. That answer was affirmative, and included the advice that if the caller was within the EPZ, he should evacuate. LILCO EX-38 and EX-39 Testimony, Attachs. R and S. Intervenors maintain that the caller should have been told whether he needed to evacuate.

Again, we agree that good judgment would have produced the kind of response that Intervenor says should have been made. However, the lack of that judgment illustrated by all of these instances does not rise to the level of a fundamental flaw in the Plan.

5.c. Alleged Inaccurate Information

The contention cites the following as examples of inaccurate or superseded information:

(iii) In response to a rumor message from *The New York Times*, simulated at 8:45, and inquiring "what's going on" at the Shoreham plant, the Rumor Control responder related that at 5:40 an Unusual Event had been declared, and at 6:17 an Alert had been declared. By 8:45, however, a Site Area Emergency had been declared, schools had been closed and simulated EBS messages had advised that dairy animals be put on stored feed. Thus, the information provided by LILCO's Rumor Control personnel was inaccurate, misleading, and inconsistent with information being disseminated by other LILCO personnel.

(vi) In response to a rumor message simulated at 1:17 inquiring "what areas are to be evacuated," the Rumor Control responder at 1:21 related that zones A-M, Q and R should evacuate. By 12:00, however, a simulated EBS message had advised that the entire 10-mile EPZ was to evacuate. Thus, the information provided by LILCO's Rumor Control personnel was inaccurate, misleading, and inconsistent with information being disseminated by other LILCO personnel.

LILCO concedes the facts stated in these two examples and attributes the delay to the copier problem. LILCO Proposed Findings at 154. These matters were considered earlier with respect to Contention EX-39A.

Except to the extent noted in connection with Contention EX-38, we find that the allegations of Contention EX-39 do not demonstrate a fundamental flaw.

6. Miscellaneous

Contention EX-38E reflects FEMA's comment that there were insufficient and inadequate maps and displays in the media briefing room at the ENC; FEMA identified this as an ARCA. FEMA Exh. 1 at 52, 54. LILCO asserts that this shortcoming has been corrected. LILCO EX-38 and EX-39 Testimony at 25-26. Suffolk did not address this point in its direct testimony, and Intervenor has accepted LILCO's representation that the matter has been corrected. See Intervenor's Proposed Findings at 423.

Contention EX-38O notes that although LILCO Press Releases 4 and 5 were received by the ENC at 8:45 and 9:05, respectively, they were not given to the Media Monitoring personnel at the ENC until 9:31. Intervenor addresses this point at 421-22 of their proposed findings. LILCO notes that it is acceptable

to delay transmitting news releases to the media monitors because the news reports that they monitor for accuracy are necessarily delayed accounts of past events. Thus their function is not impaired if the delivery of the news releases is delayed. LILCO EX-38 and EX-39 Testimony at 47-48. The facts alleged in this contention do not rise to the level of a fundamental flaw.

7. *Summary of Fundamental Flaws — Contentions EX-38 and EX-39*

We find that the following matters, discussed above, constitute fundamental flaws:

First, the inability of LERO to furnish timely information on the protective action recommendations in the form of copies of the EBS messages to the media at the ENC and to Rumor Control. Although the contentions do not squarely raise the question of the tardiness of the EBS messages given the media, we believe that this issue was aired in terms of the failure to provide copies of Press Releases and agree with FEMA's conclusion that a deficiency should be assessed. Moreover, to ignore the delays in providing EBS messages to the media while finding a fundamental flaw in the delay in providing the same messages to Rumor Control would exalt form over substance to the detriment of the public health and safety. Contention EX-39A clearly raises the timeliness of the information furnished the Call Boards and District Offices, and Contention EX-39C(iii) and (vi) provide examples of inaccurate information being given out as a result.

Second, the provision of inaccurate information at press conferences. Specifically, the failure to:

- (1) respond fully to questions concerning the fuel truck impediment (Contention EX-38M);
- (2) respond accurately to questions concerning the status of the gravel truck impediment;
- (3) respond accurately concerning protective action recommendations (Contentions EX-38L and EX-38N);
- (4) correct Dr. Brill's assumption concerning the "weathering factor" and his consequent miscalculation of the population dose; and
- (5) correct Dr. Brill's contradictory advice concerning protective actions (Contention EX-38N).

Together, these failings constitute a fundamental flaw.

8. Shadow Phenomenon

In the remaining contentions considered with EX-38 and EX-39, Intervenor assert that there would be a substantial shadow evacuation that would further hinder LILCO's ability to carry out its Plan. These contentions are: EX-44, EX-49C, EX-22F, and EX-40C.⁴⁵

Only the first sentence of Contention EX-44 was admitted and it was consolidated with Contentions EX-38 and EX-39. It alleges that, because accurate, clear, consistent, and nonconflicting information was not provided during the Exercise, a substantial evacuation shadow would have developed. Contention EX-49C asserts that, for the same reasons set forth in Contention EX-44, a substantial monitoring shadow would also develop.

Contention EX-22F was not separately admitted, but its allegations were set down for consideration with Contentions EX-38 and EX-39. It alleges that the assumption employed during the Exercise — that the public would follow LERO's protective action recommendations and no evacuation shadow would occur — was false and that consequently FEMA's conclusions on Exercise objectives EOC 12, 16; SA 9; and Fields 6, 9, 10, 11, 13, 14, 21, and 22 are invalid. As a result, the contention asserts that no finding of reasonable assurance can be made and that accordingly, the Plan is fundamentally flawed.

Finally, Contention EX-40C alleges that LILCO's fifth and succeeding EBS messages falsely stated that Traffic Guides were in place to assist the public in evacuating, when in fact they were not. Intervenor take the position that while this allegation does not in itself rise to the level of a fundamental flaw, it does support their public information allegations. Intervenor's Proposed Findings at 482. In its testimony (FEMA Exh. 5 at 70), FEMA suggested that the EBS messages be reworded to state that Traffic Guides are being dispatched to assist with the evacuation. LILCO regards the messages used at the Exercise as carrying some potential for misleading the public and suggests that we direct that they be reworded as suggested by FEMA. LILCO Proposed Findings at 158. We adopt LILCO's suggestion and do not further consider this contention.

In the planning phase of this litigation, the Licensing Board heard extensive testimony on the shadow phenomenon, including sociological data on human behavior in emergencies and several public opinion polls taken on Long Island by Intervenor and offered in support of their assertion that people would evacuate even when it was not recommended that they do so. The Licensing Board concluded that

⁴⁵ FEMA takes the position that Contentions EX-22F and EX-44 state planning issues and thus, apparently, should not have been admitted. It believes that Contention EX-49C is being addressed by the OL-3 Board.

a rational public will behave predominantly in accordance with public information that is disseminated at the time an emergency happens.

PID, LBP-85-12, 21 NRC at 670. It also concluded that public opinion polls

have no literal predictive validity because the residents of Suffolk and Nassau Counties do not now have that additional information [that would become available at the time of an accident] that respondents would need to determine their actions in an emergency.

Id. at 667. However, these conclusions were not unqualified:

The Board's ultimate finding on this contention strongly depends on there being clear nonconflicting notice and instructions to the public at the time of an accident. If for any reason confused or conflicting information was disseminated at the time of an accident, the Board accepts that a large excess evacuation on Long Island could materialize.

Id. at 670. *See generally id.* at 655-71. In its concluding Partial Initial Decision, LBP-85-31, 22 NRC 410, 429, the Board reiterated these conclusions.

The parties are in agreement that EBS messages should include specific, clear, and understandable information about the risk involved in a radiological accident. They agree that messages should describe the risk agent (radiation); explain where it is located and where it will be in the future; tell people its potential effect on their health and safety, what they should do to protect themselves, and how much time they have to do it. *See* Intervenor's Proposed Finding 631 at 455, *citing* LILCO EX-38 and EX-39 Testimony at 8-9, 11; Tr. 3242-44, 3264 (Mileti); Suffolk EX-38 and EX-39 Testimony at 190-91.

The Suffolk witnesses testified that the Exercise EBS messages were seriously flawed on this score. They asserted that the messages were vague; that they did not attempt to explain the health effects of what had occurred or what was projected to occur during the emergency; that they failed to tell the public what was happening, or why particular LILCO recommendations should be followed; and that the information about radiation releases and doses was expressed in terms either so ambiguous, or so technical, as to be essentially unintelligible. Suffolk EX-38 and EX-39 Testimony at 188-218.

LILCO's EBS messages speak for themselves. They appear in Attachment B to LILCO's prefiled testimony, ff. Tr. 3300. Intervenor's maintain that LILCO conceded that the EBS messages contain little explicit information on the radiation risk, including where the radiation is, where it is going to be, or its potential health impact, *citing generally* Tr. 3237-80. It is true that the EBS messages do not contain statements such as "The radiation is in Zone X" or "A dose of X amount may cause cancer." However, a perusal of the cited testimony reveals that LILCO maintains that such information is implicit in the messages. Thus, for example, according to LILCO, the public would have concluded where

the radiation was going to be from the statements in the EBS messages about which zones needed to evacuate. *See* Tr. 3263-68 (Mileti). Intervenors ask us to find this method of communication inadequate and inappropriate. We decline to do so. We conclude that the EBS messages convey the necessary information effectively, and we would be extremely reluctant to reach a conclusion that could have the effect of making these messages more complex.

Intervenors ask us to find that the Exercise EBS messages are deficient in failing to provide clear reasons for the recommended protective actions. They assert that the lessons learned from TMI suggest that to get the public to respond to a recommendation, particularly when it runs counter to their natural instincts or firmly held beliefs or fears, the public must be given reasons for taking the actions recommended. Suffolk EX-38 and EX-39 Testimony at 214-15. Thus, they regard this alleged flaw in LILCO's EBS messages as particularly significant with respect to the early messages that told the public there was no need to evacuate. *Id.* at 208. Intervenors assert that their data demonstrate that such advice would conflict with the natural inclination of the majority of Long Island residents — to evacuate upon first learning of a Shoreham accident. *Id.* at 159-60, Attach. 14, at 10-11, 20.

We agree that more information could be provided the public regarding the nature of the risk requiring protective action. However, we believe that this matter was adequately addressed in the PID, where the Board considered the adequacy of the radiological information furnished to the public in LILCO's public information brochure and concluded that the brochure did not provide any real guidance on the effects of radiation at the levels that might be expected in an accident. It therefore directed that these effects be quantified to the extent of indicating "that a few hundreds of rem could cause acute illness or death and that a few tens of rem could increase the risk of cancer and genetic effects." It deemed this important because of the quantitative mention of projected doses in the EBS messages before it. The Board obviously was concerned that there be a source of information readily available to the public which would provide some explanation of the doses given in the EBS messages. However, the Board refused to order "anything near the detail that Suffolk County's witnesses provide. . . ." LBP-85-12, 21 NRC at 769-70.

Intervenors could not question LILCO's compliance with this direction.⁴⁶ Because the EBS messages do provide for dose information, we believe that compliance with this direction should provide the information that Intervenors believe is necessary.

Intervenors highlighted several inconsistencies in the EBS messages that would detract from their effectiveness and decrease the likelihood that LERO's protective action recommendations would be followed.

⁴⁶The Public Information Brochure was not evaluated in the Exercise. *See* LBP-87-32, 26 NRC at 491 n.13.

EBS No. 2 stated that "[a] very minor release has occurred . . ." and then, in the same message, stated that a release was "not imminent." LILCO admitted that this could have been confusing and that it was not "trivial." LILCO EX-38 and EX-39 Testimony at 14-15; Tr. 3212-13, 3365-66 (Mileti). Dr. Mileti argued, however, that in his opinion, the confusion arising from EBS No. 2 would have only made the public "more vigilant" and more likely to keep tuned to LILCO's EBS system. LILCO EX-38 and EX-39 Testimony at 15; Tr. 3376-77 (Mileti).

Intervenors disagree. First, they note that the only basis Dr. Mileti gave for this conclusion was his assertion that "early on in an emergency like this, people initially when they get emergency information try to seek out more information" Tr. 3376 (Mileti). Intervenors believe that even if people were to seek to have their confusion removed, there is no reason to believe they would choose to do so by continuing to listen to a source that generated the confusion in the first place. Moreover, any subsequent "vigilance" to LILCO's EBS network during the Exercise would only have been rewarded by hearing the same message broadcast every 15 minutes until EBS No. 3 was aired about 56 minutes later. See Suffolk EX-38 and EX-39 Testimony, Attach. 10.

LILCO also conceded that there was a problem with EBS No. 7. The message stated that the expected thyroid dose was 40% of the EPA evacuation guidelines "at 10 miles downwind of Shoreham"; it went on to advise, however, that "If you are outside the 10-mile emergency planning zone, there is no reason to take action." EBS No. 7. LILCO acknowledged that this message contained conflicting information. Tr. 3391-92 (Mileti). Dr. Mileti said that more explanation of why a 40% risk at the EPZ border required no action, when the entire EPZ was being advised to evacuate, could have resulted in "better understanding" on the part of people on the EPZ border. He also acknowledged that EBS No. 7 was inconsistent with LERO News Release No. 7, which stated that people outside the EPZ need not take any action because the released radiation was not expected to reach beyond the 10-mile EPZ. LILCO EX-38 and EX-39 Testimony at 15; Tr. 3382-83, 3889-90, 3393 (Mileti).

EBS No. 2 was also recognized to be internally inconsistent and confusing. It tells the public they need take no action beyond figuring out what zone they reside in, but at the same time recommends sheltering milk-producing animals. This information clearly raises a question whether, if animals need shelter for protection, humans are in some danger. Suffolk EX-38 and EX-39 Testimony at 206-207; see EBS No. 2; Tr. 3245-46, 3256-59.

The Suffolk witnesses testified about additional problems with the Exercise EBS messages. See generally Suffolk EX-38 and EX-39 Testimony at 191-222. Their testimony was essentially uncontroverted. We find the following problems to be significant.

First, some of those messages give dose projections while the LILCO news releases and Mr. McCaffrey in the news conferences spoke in terms of dose

rate projections. See LILCO EX-38 and EX-39 Testimony, Attachs. E and P; Tr. 3695, 3699 (McCaffrey). There is a difference between the two, and that difference needs to be explained to the press.

Second, the messages described the releases in terms such as "small," "minor," "major," and "significant." Some quantification of these terms needs to be provided, perhaps in the public information brochure, and they must be consistently applied. See Intervenor's Proposed Findings at 192.

Third, the messages state the emergency classification that has been declared and that it is one of four classifications. Some explanation needs to be given of where the current classification stands in the hierarchy. *Id.* at 198.

While there is much information that is well presented in the EBS messages, we agree with Intervenor's that the above inconsistencies detract from the effectiveness of the EBS messages and are likely to confuse the public. We view this matter as an integral part of the fundamental flaw found under Contentions EX-38 and EX-39.

Contention EX-49C alleges that there is no basis to assume that only those persons expressly advised by LERO to report to the reception center for monitoring because of potential exposure during evacuation activities would actually seek such monitoring. It alleges that, upon hearing that residents of so many zones had potentially been exposed, and in light of the large voluntary evacuation likely to occur for the reasons set forth in Contention EX-44, substantially more people than the number expressly advised to report would be likely to seek such monitoring.

Intervenor's maintain that considerably more people would seek monitoring for many reasons. For example, the County's witnesses testified that large numbers would be likely to discount the zone concept altogether; individuals' fear of radiation, combined with a lack of understanding of its effects, would make them seek monitoring; some people might focus on only the parts of the EBS messages stating that "the public" will be monitored for radioactive contamination, or that "they may have been exposed"; and people who were not residents of the named zones might seek monitoring because they might not know which zones they had gone through, or traveled near, during their trips out of the EPZ. Suffolk EX-38 and EX-39 Testimony at 279-81.

We decline to decide this contention. The issue of the number of persons whom LERO should be prepared to monitor is currently pending before the OL-3 Board. Hence it would be inappropriate for us to consider this issue.

The October 3, 1986 Prehearing Conference Order ruled on Contention EX-22F as follows:

The substance of basis F will be dealt with under Contention EX-38 or EX-39, and need not be admitted here.

Id. at 14. Later in that same Order, Contention EX-44 was discussed at length.

The factual question raised by this contention is whether or not an evacuation shadow phenomenon will arise in an evacuation as a result of an inability of LILCO to provide clear nonconflicting information to the public. This contention is therefore of a contingent nature. Its resolution is dependent on the outcome of litigation on the information contentions numbered EX-38 and EX-39. An acceptable basis for the contention is traceable to our initial decision where the Board found:

The Board's finding on this contention strongly depends on there being clear non-conflicting notice and instructions to the public at the time of an accident. If for any reason confused or conflicting information was disseminated at the time of an accident the Board accepts that a large excess evacuation on Long Island could materialize. 21 NRC 644, 670 (1985).

Other than a citation to our initial decision, Intervenors provide nothing more in their discussion of Contention EX-44 that would provide an acceptable basis for admission of matters that have been previously litigated. We need not look again at consequences of shadow evacuation because this was previously litigated and decided and because Intervenors have shown no basis for believing they could learn anything new on this subject from an exercise that did not include a public evacuation.

We find no basis for assertions of Intervenors that we must require LILCO to test its preparedness for a large shadow evacuation or to plan for an *ad hoc* expansion of the EPZ. . . . If Intervenors prevail on Contention EX-38 and EX-39 and the evidence is sufficient to conclude that a large shadow evacuation will occur, Intervenors will be free to claim that this constitutes a fundamental flaw in the plan because the evacuation could not be controlled. We see no value in taking the matter further than that. . . .

Id. at 25-26.

In their proposed findings (at 448), Intervenors argue that the ruling quoted above is the law of the case and that, under it, they needed only to demonstrate that LERO disseminated unclear, confusing, or inconsistent information "in order to prevail on their contention that the Exercise assumption of no voluntary evacuation was false, rendering the Exercise results invalid."

We agree with the Intervenors that the quoted ruling is the law of the case. However, we do not entirely agree with the remainder of their statement. We have found that confusing and conflicting information was promulgated during the Exercise. That finding brings the PID's conclusion that an excess evacuation could occur into play. In such an event, a controlled evacuation, which is required by the Plan, probably could not be achieved.⁴⁷ Thus, we conclude that a fundamental flaw was demonstrated.⁴⁸

⁴⁷ See our discussion of the requirement that a controlled evacuation be achieved in connection with Contention EX-40 at 130-32.

⁴⁸ Aside from the requirement that a controlled evacuation be achieved, we have concluded that the weaknesses demonstrated in the public information program demonstrate a fundamental flaw in LERO's capability to
(Continued)

The existence of this fundamental flaw does not justify the conclusion that the Exercise results are invalid. Indeed, the Prehearing Conference Order relied on by Intervenor expressly held that there was no basis to require LILCO to test its preparedness for a large shadow evacuation or to plan for an *ad hoc* expansion of the EPZ. To the extent that these contentions argue that the Exercise results must be thrown out because LERO's ability to deal with a large shadow was not tested, they are denied.

In light of the conclusions we have reached above, we find it unnecessary to consider the survey and focus group data offered by Intervenor in support of these contentions.

F. Training

1. Overview

Contention EX-50 consists of nine subparts (A-I) which allege, based on references to the FEMA Report and to other contentions, that the Exercise revealed a fundamental flaw in the LILCO Plan in that LERO personnel are unable to carry out the Plan effectively or accurately because they have been inadequately trained. The Contention alleges that the bulk of LERO personnel had undergone training annually for 3 years prior to the February 13, 1986 Exercise. It alleges, further, that the large number of training problems revealed during the Exercise demonstrates LILCO's lack of compliance with 10 C.F.R. § 50.47(b)(14) and (15).⁴⁹

The Shoreham OL-3 Licensing Board found, in the PID, that "the LILCO Plan training program meets the regulatory standards," but went on to state that "[t]his conclusion is made subject to confirmation by a finding, to be made by FEMA after a graded exercise, that the Plan can be satisfactorily implemented with the training program submitted and that LILCO possesses an adequate number of LERO workers." LBP-85-12, 21 NRC 644 (1985), 756. Thus, the issue of the adequacy of LILCO's training program was left open and subject to test in the Exercise. FEMA identified a significant number of training problems and inadequacies in its Report on the Exercise, and it did not make a finding that the Plan can be satisfactorily implemented with the training program in use at the time of the Exercise. Tr. 8296-98.

communicate emergency information and protective action recommendations to the public. Moreover, these weaknesses appear to be a part of a pervasive problem in LERO's communications generally.

⁴⁹ Contentions EX-42 and EX-45 and the factual allegations in Contentions EX-23, EX-27, and EX-28 were consolidated with Contention EX-50 and will therefore be considered here.

2. The Purpose of Training

Suffolk's witnesses, all of whom were either university professors or police experienced in police training, presented testimony on the purpose of training emergency workers. A successful emergency response organization must be comprised of individuals who work individually and together in an efficient and effective manner in confronting both the routine and nonroutine demands that arise during a response to an emergency. Training is the process by which an organization and its constituent members learn to work individually and together so that the organization can perform in an integrated manner. Suffolk Exh. 95 at 25-26. Training for organizations responding to a nuclear emergency must go beyond the training required for some other organizations. Any organization must train to perform routine tasks, and some tasks under the LILCO Plan, such as driving a bus or reading a dosimeter, would fall into the routine category. For an emergency, however, training must also prepare personnel to perform nonroutine, unexpected tasks. In fact, Suffolk's witnesses believe that it must become "routine" for LERO personnel to perform as necessary in dealing with nonroutine events. *Id.* at 26-27; Tr. 6390-91.

Training to achieve this goal is especially necessary for LERO, because its personnel do not routinely perform the emergency functions to which they are assigned under the LILCO Plan. It has been found that organizations whose daily operations can be switched to the emergency at hand perform better than organizations that must change their predisaster functions to perform in a disaster. NUREG/CR-3524 (Suffolk Exh. 57) at A-2; Tr. 6421-25. For example, if police are required to direct traffic during a nuclear emergency, they are applying skills that they routinely use in their work; it is reasonable to assume that they can do the same thing successfully in a nuclear emergency. LERO Traffic Guides, on the other hand, are not skilled at directing traffic, although it is assumed that they can do so during an emergency at Shoreham. The only way to give them such skill is through adequate training. Tr. 6539-40, 6774-78.

Effective emergency response training involves the use of several training techniques. The first can be called "basic training," which uses instruction and other rote methods to teach people how to respond to predictable, repetitive events. The next training level involves "learning by doing" and includes training through drills and exercises, training gained through experience, and training gained by interacting with others and by responding to particular events. Suffolk Exh. 95 at 28-29. Learning by doing should focus on unusual events and teaching persons to perform tasks that require communication, coordination, and cooperation. Communication should include information exchange among personnel and dealing with the media. The final training hurdle is teaching persons to deal with unanticipated and unrehearsed events, including teaching them how to use good, independent judgment. This type of training occurs in

exercises or drills, where complex exceptions to the routine are simulated (as in free-play messages) or occur naturally. *Id.* at 30-32.

3. LILCO's Training Program

LILCO's training program for offsite emergency response personnel involves classroom presentations, drills/tabletop sessions, and exercises. The classroom instruction provides basic training, utilizing video presentations, workbook materials, and instructor discussions and demonstrations. It covers radiation protection and basic dosimetry for everyone, and then job-specific training for LERO personnel. *Id.* at 22-23; *see also* Plan at 5.1-3 through 5.1-5 and Figure 5.1.1. LILCO employees annually participate in drills and tabletop sessions. The purpose of drills/tabletop sessions may vary, depending on the level of training of the trainees or the difficulty of a given task. Early in LILCO's training, LILCO observers critique trainees as they go through the drill/tabletop session, to correct inappropriate performance or to reinforce appropriate performance. Suffolk Exh. 95 at 23-24; *see* Plan at 5.1-2, 5.2-1 through 5.2-6. The final phase of LILCO's training program involves specific preparation for a FEMA-graded exercise, in which a full-scale dress rehearsal is conducted. During the 2 months prior to the February 13, 1986 Exercise, LILCO held at least three full-scale dress rehearsals. Suffolk Exh. 95 at 25, 37; Tr. 5477-84, 8292.

4. Standards for Evaluation

The standards that should be used by the Board in evaluating LILCO's training program were addressed by LILCO, the Intervenor, and by the NRC Staff in its proposed findings. LILCO took the position that the Board should determine whether the alleged problems with training establish a systemic problem or pattern of defects with the LERO training program, rather than a group of isolated, independent problems. LILCO Testimony on Contention EX-50 (LILCO EX-50 Testimony), ff. Tr. 4368, at 12-13. LILCO argues that organizational performance is the standard by which its training program should be evaluated. *Id.* at 11.

LILCO's witnesses acknowledged, however, that to draw conclusions about the ability of an organization to accomplish its tasks, functions and goals, it is necessary to look at individual behavior. Tr. 4979-80; 4693-94. Moreover, they also acknowledge that errors in the performance by individual members of an organization can be the result of an inadequate training program. Tr. 4983. Indeed, LILCO's witness Dr. Mileti, who was an author of NUREG/CR-3524 (which deals with organizational effectiveness), stated that individual performance and

actions must be used to measure organizational behavior and effectiveness because:

The only real unit that exists are [sic] individuals. I mean you can't really observe an organization if you take the individuals out of it. There is nothing left.

Tr. 4978-79.

The Intervenor took the position that the FEMA Report identified a large number of training inadequacies. Tr. 6542-43. They acknowledged that a much larger number of LERO workers were mobilized than were observed by FEMA, but of the small number observed, more had problems than they would have expected. Tr. 6544-45. Considering the large amount of training provided for the LERO workers prior to the Exercise, Suffolk's witnesses believe that the large number of problems observed by FEMA reflects the fact that the training program was inadequate. Suffolk Exh. 95 at 37-38. Intervenor also argue that the drills conducted since the February 13, 1986 Exercise have revealed that the serious inadequacies that became apparent during the February 13 Exercise continue to exist. *Id.* at 44-46.

FEMA's witnesses testified that in those instances where participants demonstrated inadequate actions, the effectiveness of the training program must be enhanced to assure that the LERO personnel will be able to carry out their assigned roles. FEMA Exh. 5 at 73.

The Staff emphasized the necessity of looking to the provisions of the regulations that deal with training, principally 10 C.F.R. § 50.47(b)(15), and the criteria used by the NRC and FEMA in evaluating compliance with that standard, NUREG-0654, Rev. 1. In addition, Appendix E to Part 50 establishes required elements of training, notably those related to the participation in training and drills and the testing of this implementation of procedures, equipment, communications, and notification through an exercise. Staff Proposed Finding 406 at 146-47. Staff also agreed with LILCO that to indicate a breakdown in the training program that would preclude the finding of reasonable assurance that adequate protective measures could be taken in the event of a radiological emergency at SNPS, the training problems would have to be pervasive or systemic in nature. Staff Proposed Finding 414 at 150.

There is merit to some of the arguments from all the parties about the standards we should use to evaluate the success of LILCO's training program. The position we are taking with respect to the standards by which LILCO's training program shall be judged is somewhere between the positions taken by the parties, and of course we agree with the Staff that we must consider the regulations. We agree with LILCO that it is appropriate for us to look for a systemic problem or pattern of defects, and we believe this can be done only by noting the performance of individuals. We agree with Suffolk that we must

analyze the results of the Exercise and additionally determine whether problems found during the Exercise have recurred during post-Exercise drills. With these standards in mind, we turn now to testimony on the subcontentions.

5. Subcontention EX-50A

Subcontention EX-50A alleges that the LILCO training program has not adequately trained LERO personnel to respond properly to unanticipated and unrehearsed situations. An unanticipated situation is one that is not expected to occur and which therefore takes one by surprise. Since it is unexpected, it is a situation for which specific training is not given. An unrehearsed situation is an occurrence for which a response has not been practiced; it may or may not be also unanticipated. Thus, during the Exercise the overturned fuel truck probably presented both an unanticipated traffic impediment, because presumably it was unexpected, as well as an unrehearsed situation, because a response to an overturned fuel truck had not been practiced prior to the Exercise. Suffolk Exh. 95 at 55-56.

LERO's response to the two evacuation impediment free-play messages is considered in detail by us under Contention EX-41, where we found that the vertical communications chain called for by the Plan constituted a fundamental flaw. We also noted there that LERO personnel were not adequately trained in emergency decisionmaking and communication. FEMA, which found a Deficiency in LERO's response to the road impediments, recommended additional training, in the following words:

Additional training is needed to ensure that the procedures, whether new or current, are properly implemented. All coordinators at the EOC, and those who initiate messages, must be trained to include all pertinent information on the LERO message forms and to analyze the equipment requirements to clear impediments.

FEMA Exh. 1 at 39. FEMA identified a significant number of training problems and inadequacies in the FEMA Report. Tr. 8297.

LILCO's witnesses testified that they considered just about everything that happened during the Exercise to have an element of surprise. They stated that LERO players did not know the time events would be declared, the progression of the accident, the free-play messages that would be injected, or the area to be evacuated. LILCO EX-50 Testimony at 34. With regard to the responses to the impediment free-play messages, they argue that during an actual emergency there would be no delays in response, because the impediments would be visible to LERO workers and others and hence reported promptly. They believe that much of the delay in responding to them during the Exercise resulted from artifacts of the scenario that hindered detection or verification of the impediments.

Id. at 37. They also argue that their Traffic Engineer, Mr. Lieberman, believes that any accidents during the evacuation would probably be minor and would not block major roadways. Consequently their training focused on less severe accidents than were presented in the Exercise. *Id.* at 38. Finally, LILCO's witnesses argue that some of the examples of misinformation dispensed by LERO during the Exercise, which are cited in Contention EX-50A, are so isolated and trivial that they cannot be considered to demonstrate a flaw in the LERO training program. *Id.* at 40.

Suffolk's witnesses, on the other hand, interpreted the delays in response to the impediments, the incomplete messages about them, the improper rerouting schemes used, and the inadequate road-clearing equipment dispatched to remove the impediments all to demonstrate inadequate training of LERO personnel. They believe that the response by LERO to the road impediments demonstrates that LILCO's training program has been ineffective in training personnel to respond to unanticipated and unrehearsed situations. Suffolk Exh. 95 at 61-65. They listed a number of actions that they said were not carried out but would have been had the training been effective: followup to ensure that instructions were being carried out; redundant communications along parallel channels to ensure that communications got through; getting people to the scene to verify the logic of rerouting schemes; and verification that proper equipment had been sent. *Id.* at 65-66. Finally, Suffolk's witnesses testified that as experienced trainers they had learned that when mistakes are made they usually reflect how well the individuals who made the mistakes were trained. They recognize that different people possess differing levels of competence, so that it cannot be assumed automatically that an entire training program is inadequate because of a few mistakes by a few individuals. However, because so many basic mistakes were made by so many different people during the Exercise, the witnesses believe that the most reasonable conclusion is that the training program was flawed. *Id.* at 68.

In addition to finding a Deficiency in LERO's response to the impediment free-play messages, FEMA also found an Area Requiring Corrective Action (ARCA) in connection with the response to the impediments. The ARCA resulted from the delayed dispatch from Port Jefferson of the Route Spotter assigned to verify the fuel truck impediment. FEMA recommended additional training in response to this ARCA just as it did in response to the Deficiency, in the following words:

Personnel need to be trained in the development of alternative approaches when delays are reasonably anticipated in the field verification of impediments to evacuation. Development of alternatives should include consultation between, at a minimum, the Evacuation Coordinator and the Evacuation Route Coordinator.

FEMA Exh. 1 at 41. FEMA found the impediment response as evidence that at the time of the Exercise LILCO's training program was inadequate. Tr. 8298.

Finally, the NRC Staff, in its proposed findings, concluded that the evidence on LERO's response to the road impediments during the Exercise supports the allegation in EX-50A that LERO personnel are not sufficiently trained to effectively deal with unanticipated events that have the potential to disrupt the taking of protective actions. Staff Proposed Finding 429 at 160.

Conclusion on Subcontention EX-50A. We conclude that the training of LERO personnel in responding to unanticipated and unrehearsed events, in communicating information about such events, in analyzing the kind of equipment needed to respond to serious roadway accidents, and in the development of alternative actions when actions called for by the Plan do not or will not work effectively, has been inadequate. We have already found that the communication problem constitutes a fundamental flaw in the Plan; this flaw resulted in part from the long chain of communication and in part from inadequate training. We believe that LILCO must significantly expand and improve its training program in communications before there can be reasonable assurance that adequate protective measures can and will be taken in the event of a Shoreham emergency (*see* Conclusion on Subcontention EX-50C).

6. Subcontention EX-50B

Subcontention EX-50B alleges that the Exercise demonstrated that LILCO's training program has been ineffective in teaching LERO personnel to follow and implement the LILCO Plan and procedures, and in imparting basic knowledge and information essential to implementing the procedures. As a basis for these allegations, the contention cites several other contentions and the FEMA Report. Suffolk Exh. 95 at 99.

Suffolk's witnesses testified that an ability to follow and understand the Plan and procedures is "absolutely critical" if LERO personnel are to be able to then improvise in response to unanticipated and unrehearsed situations. If routine tasks cannot be done by rote, then performing them will take all the time and intellectual energy that LERO personnel have, leaving none to deal with nonroutine problems of a real emergency. *Id.* at 101-02; Tr. 6400-01. The witnesses listed the following examples from the Exercise that they believe demonstrate the ineffectiveness of the training program to teach LERO personnel the basic knowledge needed to follow and implement the Plan and procedures:

The difficulties experienced by LILCO's Bus Drivers in locating residences and going to wrong locations (*e.g.*, FEMA Report at xv, xvi, 65 and 66);

Erroneous announcements of pertinent information by personnel (*e.g.*, FEMA Report at 33, 68 and 69);

Mr. Brill, the BNL scientist assisting LILCO at the ENC, provided answers inconsistent with the EBS Messages (Videotapes of Press Briefings held at ENC during the Exercise);

Inadequate use and readings of dosimetry equipment and failure to know excess exposure levels, excess exposure authorization procedure, KI ingestion procedures (e.g., FEMA Report at 59, 68-70, 76 and 77);

Excessive route alerting times (e.g., FEMA Report at xiv, xv, and xvii);

Delayed dispatching of personnel (e.g., FEMA Report at xvi, xviii, 37, 41, 57-58, 62, 66-67, 74-75);

Use of wrong security procedures (e.g., FEMA Report at xv, 61 and 63);

Incorrectly completing message forms (e.g., FEMA Report at xvii, 42, 71-73);

Excessive time in monitoring personnel (e.g., FEMA Report at xvii, 80-81);

Confusion in contacting the FAA (e.g., FEMA Report at 29, 39);

Pertinent information not included on message forms (e.g., FEMA Report 30, 37, 39, 65);

Untimely internal communications of information (e.g., FEMA Report at 36-37, 39);

Failures to provide press information in timely manner (e.g., FEMA Report at 52-53);

Extraneous information included in EBS messages (e.g., FEMA Report at 53);

Dissemination of outdated information by rumor control personnel (e.g., FEMA Report at 53);

Traffic Guides not knowing location of reception center or where public was to be directed for monitoring and decontamination (e.g., FEMA Report at 64);

Personnel not reporting to assigned location or where directed to go (e.g., FEMA Report at 64-65);

Failures to update status boards (e.g., FEMA Report at 72, 73);

Personnel directed to wrong places by their superiors (e.g., FEMA Report at 65, 67).

Id. at 102-04.

In addition, Suffolk's witnesses cited a number of instances during LERO's responses to the impediments that, they believe, represent failures to follow or implement the Plan and procedures. For example, the Evacuation Coordinator is supposed to direct LERO's actions in the areas of traffic control, transportation, and evacuation. During the Exercise, however, he was never informed by LERO personnel about the impediments, even though such communication is required by OPIP 3.6.3. *Id.* at 105; *see* FEMA Report at 36. This and other allegedly similar failures to follow the Plan or implement its procedures led to substantial delays by LILCO in responding to the impediments. Suffolk Exh. 95 at 105.

Moreover, LERO personnel in the EOC failed to include on LERO message forms essential information communicated to them in the free-play impediment messages, nor did they otherwise communicate such critical information to

LERO personnel expected to respond to the impediments, as required by OPIP 3.6.3 and 4.1.2. For example, the Evacuation Route Coordinator's message to the Evacuation Support Communicator for Route Spotter/Road Crews about the gravel truck impediment failed to mention that three cars as well as the truck were involved. Similarly, the message to the Communicator about the fuel truck impediment failed to mention that fuel was leaking from the truck, that there was danger of a fire, and that both shoulders of the road were blocked. LILCO's Plan requires that such essential information be communicated. Suffolk Exh. 95 at 105-07; *see* FEMA Report at 30, 37, 39.

Another example of LILCO's failure to teach personnel to follow the Plan and procedures, according to Suffolk's witnesses, was the failure of LERO personnel to use LERO message forms to communicate essential information correctly or to use LERO message forms at all. FEMA noted this problem during the Exercise, and listed it as an ARFI. FEMA Exh. 1 at 30, 42, 71-72. FEMA recommended additional training that stresses the mandatory use of standard message forms and the importance of legibility. *Id.* at 42, 39. This problem recurred during the June 6, 1986 drill and also during the September 10, 1986 drill, when messages often were written on scraps of paper. Suffolk Exh. 96, Attach. 7 at 3; Attach. 8 at 3. During the September drills, messages written on paper were often later transcribed to LERO message forms, which caused delays in delivering the messages and caused transcription errors. *Id.* Some messages were not written at all, but were delivered verbally to the communicator for transmittal. *Id.* at 11. Again during the December 2, 1986 drill an estimated 20% of the message writers used scraps of paper rather than the standard LERO message forms. Suffolk Exh. 96, Attach. 9 at 3. Intervenor's argue that the fact that this problem occurred not only during the Exercise but also during most of the subsequent drills supports the conclusion that the LILCO training program is incapable of teaching LERO personnel the LILCO Plan and procedures. Suffolk County, State of New York, and Town of Southampton Proposed Findings of Fact and Conclusions of Law on the February 13, 1986 Shoreham Exercise (Intervenor's Proposed Findings), Vol. II, at 564. Suffolk's witnesses attributed this continuing problem in performance to an underlying major problem in LILCO's training methodology. Tr. 6506.

As an example of the failure of the LILCO training program to impart the basic knowledge necessary for Plan implementation was the fact that only one Traffic Guide out of fourteen from the Patchogue Staging Area interviewed by FEMA knew the location of the Nassau Coliseum Reception Center, and one Traffic Guide believed that the public was to be directed to LILCO's Emergency Worker Decontamination Facility (EWDF). Suffolk Exh. 95 at 117; *see* FEMA Exh. 1 at 64. FEMA found this to be an ARCA and recommended improved training as the appropriate corrective action. *Id.* at 67. Suffolk's witnesses argue that this lack of basic knowledge on the part of Traffic Guides indicates that

the LILCO training program has failed to impart the basic knowledge to LERO personnel that they need to implement the LILCO Plan. Suffolk Exh. 95 at 118. The NRC Staff agreed that this lack of knowledge was "clear evidence of a failure to provide adequate training." Staff Proposed Finding 467 at 175.

Suffolk's witnesses allege that the performance of LERO personnel during drills held since the February 1986 Exercise reinforces the conclusion that LILCO's training program has been unsuccessful in teaching personnel to follow the LILCO Plan and implement its procedures. Suffolk Exh. 95 at 118. For example, during the Exercise some personnel failed to demonstrate an understanding of procedures regarding allowable exposure levels, a problem that basic training should be able to correct easily. *Id.*; see FEMA Report at 68, 76. During the June 6 and again during the September 10 drills, a number of Traffic Guides were still unclear as to the maximum allowable doses and the procedures governing the use of KI. Suffolk Exh. 95 at 119; Suffolk Exh. 96, Attach. 7 at 6; Attach. 8 at 4-5, 6. Yet again, during the October 1 drill, Traffic Guides were unclear as to the maximum allowable doses. Suffolk Exh. 95 at 120; Suffolk Exh. 96, Attach. 8 at 11. Suffolk's witnesses argue that learning the maximum allowable doses is a relatively easy task that is relevant to the workers' own health and safety, and if these procedures have not been learned, other material not as crucial to personal safety surely has not been learned. Suffolk Exh. 95 at 120.

There were numerous other problems during drills that Suffolk's witnesses believe reflect inadequate training. During the September 10 drill there was poor coordination between the Director of Local Response and Coordinator of Public Information over the coordination of siren activation and the broadcast of EBS messages (*id.* at 121); the Radiation Health Coordinator ordered the ingestion of KI without performing the required calculations needed to justify this action (*id.*); the personnel who reported to establish the EWDF were unfamiliar with their jobs, failed to use a checklist as required by the Plan, and took no action until prompted by the Controller (*id.* at 121-22); personnel at the staging areas were unfamiliar with their duties and had to be prompted and trained during the drill by the Controllers (*id.* at 122-23).

Drills conducted on December 2 and 10 involved Shift 1, which had last participated in the February 13 Exercise (Suffolk Exh. 96, Attach. 9 at 1); the December 2 drill was intended to allow the participants to use the first drill as a learning process to become familiar with the latest procedures, and the December 10 drill was intended to reinforce the knowledge gained the preceding week (*id.*); in both drills, as was the case during the February 13 Exercise, some Traffic Guides did not arrive at their posts until more than an hour after the EBS broadcast recommending evacuation (Suffolk Exh. 95 at 123 n.54; Suffolk Exh. 96, Attach. 9 at 19-21, 24, 27-28; Suffolk Exh. 95 at 124, Attach. 9 at 32, 35, 39-40); once again, as was the case in the February 13 Exercise, pertinent

information concerning a simulated impediment on the Long Island Expressway was not properly communicated during the December 10 drill, resulting in confusion and delays in responding to the impediment (Suffolk Exh. 95 at 124; Suffolk Exh. 96, Attach. 9 at 4).

Suffolk's witnesses conclude that the many mistakes made and many examples that exist of failures by LERO personnel to follow and implement the Plan demonstrate that the problems revealed during the Exercise are the rule and not the exception. The drills demonstrated that despite the training, LERO personnel still have not been successfully trained to carry out the functions they are assigned under the LILCO Plan. Consequently, they believe that LERO personnel would be unable to implement the actions called for by the Plan to protect the public health and safety in the event of an emergency at the SNP. Suffolk Exh. 96 at 125.

LILCO's witnesses testified that in view of the fact that over 1000 LERO personnel participated in the Exercise over an 11-hour period the incidents cited by the Intervenors are sporadic and not representative of a pervasive failure in training. In addition, they state that many of the instances cited are either not relevant to the training issue or are without merit because they are factually baseless. LILCO EX-50 Testimony at 41; Tr. 5523-25. With respect to the other contentions listed in Subcontention EX-50B as providing bases, LILCO's witnesses state that of the contentions cited, Contentions EX-36, EX-38, EX-39, EX-45, and EX-49 contain allegations that have nothing to do with training. LILCO EX-50 Testimony at 41. Contention EX-49 alleges that the radiological monitoring procedure frequently took longer than the prescribed 90 seconds, which indicates that the training program did not effectively train the monitoring personnel to follow procedures. LILCO's witnesses state, however, that monitoring occasionally, not frequently, took longer than 90 seconds, and this occurred when FEMA evaluators were being monitored. *Id.* at 42. Apparently it was true that the only times when monitoring was observed to take more than about 90 seconds was when FEMA evaluators were being monitored. Tr. 7982-85. Nevertheless, FEMA found that taking 4 to 5 minutes to monitor some individuals was an ARCA. FEMA Exh. 1 at 81; Tr. 7985. Finally, LILCO's witnesses maintain that, of the contentions cited in Subcontention EX-50B, Contentions EX-37D, EX-38N, and EX-45E and PSA-ARCA-3 raise issues that are insignificant or minor. As an example they cite PSA-ARCA-3, which states that LERO personnel used second-floor telephones at the staging area, contrary to OPIP 4.7.1. LILCO claims that this incident was a practical solution to the need for telephones even though it meant LERO personnel did not follow procedures to the letter. LILCO EX-50 Testimony at 43.

FEMA did not explicitly address Subcontention EX-50B; indeed, FEMA chose not to address any of the subcontentions EX-50A through H, on the grounds that they accurately reflected the contents of the FEMA Report by

citing various Deficiencies of ARCA's directly from the Report. FEMA stated in general, however, that most of the Exercise inadequacies that were identified as either Deficiencies or ARCA's were attributable to breakdowns in the LILCO training program. FEMA Exh. 5 at 73.

The NRC Staff, in its proposed findings, noted that enough workers made errors to indicate a pattern related to deficiencies in training. Staff suggested that until the ability to maintain emergency response skills has been demonstrated, it retained serious doubts about the adequacy of the LILCO training program. Staff Proposed Finding 468 at 176.

Conclusion of Subcontention EX-50B. While we recognize that the absolute number of instances a LERO player was observed to fail to follow the LILCO Plan and procedures may be small relative to the total number of LILCO personnel that participated in the Exercise, this comparison is not the appropriate one. The appropriate comparison is the number of failures in the total sample of observed participants. Viewed from this perspective, the proportion of LERO workers observed failing to follow the Plan or procedures was disturbingly great.⁵⁰ These failures occurred frequently enough to suggest that there is, indeed, a pervasive problem in training LERO workers to follow the Plan. We conclude, therefore, that the allegation made in Subcontention EX-50B is valid; LILCO's training program has not adequately trained LERO personnel to follow the LILCO Plan and procedures.

7. Subcontention EX-50C

Contention EX-50C (along with Contention EX-23 and the bases for EX-45) alleges that LILCO's training program has failed to teach LERO personnel to communicate necessary and sufficient data and information, to inquire and obtain such information, or to recognize the need to do so. Contention EX-50C cites a number of other contentions and FEMA findings that are alleged to describe Exercise events that support this contention. Suffolk Exh. 95 at 125-26.

Suffolk's witnesses identified a number of examples of breakdowns in communications during the Exercise which they attribute to a failure in LILCO's training program. The first and "most glaring example" is that of the communication difficulties that occurred during LERO's handling of the free-play impediments. *Id.* at 127. This has been discussed in detail in our consideration of Contention EX-41 and need not be described again here. Suffice it to say that FEMA found those communication problems to be a Deficiency, and we found

⁵⁰ To illustrate the point, FEMA observed eight bus drivers for the general population, of which three either got lost or missed part of their route. Tr. 8547-48. Thus approximately 37% of the sample of eight failed to carry out their function properly. If the eight observed by FEMA were a truly representative sample of the total of 333 general-population bus drivers who were mobilized during the Exercise, then one might expect 37% of 333 bus drivers, or approximately 125, to fail to carry out their function properly. Tr. 8548.

them to constitute a fundamental flaw in the Plan. As we have noted above, similar communication problems occurred during the response to a simulated impediment during the June 6 and December 10, 1986 drills.

Suffolk's witnesses cited some other Exercise events that they believe illustrate breakdowns in communications between LERO personnel. One involved LERO's response to the free-play message requesting LERO to provide a bus and driver to assist in transporting forty children from the Ridge Elementary School. The request was communicated to the Special Population Bus Dispatcher within about 10 minutes, but Suffolk alleges that the staging area personnel did not respond quickly or appropriately in processing the communication. *Id.* at 128. Suffolk's witnesses believe that LILCO's training program has failed to instruct LERO personnel on the need to communicate information in a timely manner and to follow up on communications to make sure that tasks are completed. *Id.* at 128-29.

Additional examples of communication breakdown cited by Suffolk include the following:

- LERO was unsuccessful in attempting to communicate with the FAA in order to get air traffic diverted from the EPZ [*id.* at 130; see FEMA Report at 29];
- The Long Island Railroad (LIRR) was not contacted during the Exercise in order to divert trains from the EPZ [*id.*];
- The downwind distance of a sample taken by a DOE RAP field monitoring team for one of the thyroid dose projections was incorrectly reported as 7000 meters rather than 700 meters. The error was corrected in about five minutes, but it meant that the initial calculation of thyroid dose was 9000 mRem/hr at 4.3 miles downwind instead of 9000 mRem/hr at about 0.5 miles downwind [Suffolk Exh. 95 at 130; FEMA Exh. 1 at 33];
- Several extrapolated doses at various distances were reported on the dose assessment status board as actual measurements rather than as projected doses, an error which went uncorrected for two and one-half hours [Suffolk Exh. 95 at 130-31; FEMA Exh. 1 at 33];
- Several times the Director of Local Response was not in the command room and not available to take calls over the RECS telephone or the dedicated telephone. His secretary, who took the calls in the Director's absence, told the callers that the Director would call back. Because both telephones are used to communicate vital emergency information, FEMA found this situation to be an ARFI and recommended that persons answering the telephone when the Director was busy elsewhere be trained to take the message in writing and then deliver it to the Director immediately upon completion of the transmission [Suffolk Exh. 95 at 131; FEMA Exh. 1 at 31, 42].⁵¹

⁵¹ Suffolk's witnesses included two other examples involving status boards that were mentioned in the FEMA Report, but our reading of the Report indicates that those were more in the nature of equipment problems. See
(Continued)

Suffolk's witnesses also list the following examples of what they believe to be the failure of LILCO's training program to effectively train personnel to communicate necessary and sufficient data and information, as evidenced by the inability of LERO personnel at the staging areas to accurately, appropriately, or in a timely manner obtain, record, or transmit, or act upon emergency data:

- At the Riverhead Staging Area, LERO Personnel did not properly record or identify event status information on the Emergency Event Status Forms or on the status board [Suffolk Exh. 95 at 132; FEMA Exh. 1 at 72];
- The Bus Dispatcher at the Patchogue Staging Area repeatedly announced incomplete and misleading information to bus drivers about the dose levels at which they should call in [Suffolk Exh. 95 at 132; FEMA Exh. 1 at 68];
- The bus Transfer Point Coordinator at Brookhaven National Laboratory Transfer Point directed one bus driver to proceed to the EWDF despite an earlier message transmitted by the Bus Dispatcher to all Transfer Point Coordinators requesting that all drivers arriving before 16:00 be directed to the Reception Center [Suffolk Exh. 95 at 133; FEMA Exh. 1 at 65];
- At 9:19 the LERO Manager was informed that no County resources would be available to assist in the Exercise, with confirmations coming at 10:15, 10:26, and 10:36. Despite this fact, the Evacuation Coordinator recorded in his log at 9:20 that the SCPD had offered its assistance on traffic control, and between 10:02 and 10:15 the Traffic Control Coordinator informed the staging areas that they should expect a large number of SCPD officers to report for briefing. This misinformation was transmitted to Lead Traffic Guides, Dosimetry Recordkeepers, and various other staging area personnel. The erroneous information was finally corrected sometime between 10:26 and 10:50 [Suffolk Exh. 95 at 133-34].

Suffolk's witnesses testified that communication problems have occurred repeatedly during post-Exercise drills. For example, during the June 6 drill LERO personnel relayed inaccurate information about the location of a traffic impediment, as occurred in the Exercise, again resulting in delays in responding to that impediment. *Id.* at 139-40; Suffolk Exh. 96, Attach. 7 at 5. In our discussion of Contention EX-50B, we have already noted that a similar situation occurred during the December 10 drill. There were also delays in issuing EBS messages in the June 6 drill. For example, the EBS message announcing the Alert was not broadcast until 48 minutes after the Alert was declared, which resulted in the early dismissal of schools being delayed, and the EBS message informing evacuees of the road impediment was not broadcast until 45 minutes after the simulated accident had occurred. Further, it took LERO 25 minutes to

Suffolk Exh. 95 at 130, 131; and FEMA Exh. 1 at 29-30. Therefore we are not considering those two examples here.

issue the EBS message for the General Emergency after the decision to initiate protective action. Suffolk Exh. 95 at 140; Suffolk Exh. 96, Attach. 7 at 2, 4-5.

During the September 10 drill, the EBS messages for the traffic impediments were slow in being generated, and the messages were ambiguous and not concise. Suffolk Exh. 95 at 141; Suffolk Exh. 96, Attach. 8 at 2. Further, there was approximately a 1/2-hour delay by the Road Crew Communicator in getting the message transmitted to respond to one of the road impediments. Suffolk Exh. 95 at 141-42; Suffolk Exh. 96, Attach. 8 at 3. Moreover, the dose assessment staff at the EOC and the dose assessment staff at the EOF had problems communicating. According to the Impell Report, "the lines of communication for technical data was [sic] almost nonexistent." Suffolk Exh. 96, Attach. 8 at 3; Suffolk Exh. 95 at 141-42. At the Riverhead Staging Area it took 20 minutes for a message from the EOC to go from the Administrative Support Staff to the Lead Traffic Guide, as a result of which the dispatch of Route Spotters was delayed. *Id.* at 142; Suffolk Exh. 96, Attach. 8 at 5. A Road Crew from the Port Jefferson Staging Area dispatched to respond to a traffic impediment never arrived at the impediment site. *Id.*

During the September 17 drill, information flow from a Staging Area to the EOC needed improvement. Messages were often left on the communicator's desk for 10 to 15 minutes before they were transmitted to the proper individual at the EOC. Suffolk Exh. 95 at 143; Suffolk Exh. 96, Attach. 8 at 6-7. In addition, the message from the EOC indicating that an alert had been declared was sent at 10:38, after the alert was declared at 10:14. Suffolk Exh. 8 at 143; Suffolk Exh. 96, Attach. 8 at 7. Another communications problem was the fact that telephones of key coordinators would go unanswered when they were at staff meetings. Suffolk Exh. 95 at 143. Finally, LERO personnel often failed to use message forms; as we have already noted, many messages were written on plain paper and later transcribed onto message forms, which resulted in delays and the transmission of erroneous information because of transcription errors. *Id.*

Communication problems recurred during the October 1 drill. The distribution of RECS messages from the Patchogue Staging Area to the EOC staff was very slow. Suffolk Exh. 95 at 144; Suffolk Exh. 96, Attach. 8 at 11. A message from the EOC to the Staging Area concerning failed sirens was sent at 9:48. Apparently because of inefficient message handling at Patchogue, however, the Route Alert Drivers were not dispatched until 10:25. The message to dispatch traffic guides at the Port Jefferson Staging Area was not transmitted until 13 minutes after the decision to recommend evacuation was known to the EOC personnel. *Id.* Moreover, three separate dispatch messages arrived in the Staging Area within a few minutes of each other, causing confusion and further delaying the dispatch of the Traffic Guides. Suffolk Exh. 95 at 144; Suffolk Exh. 96, Attach. 8 at 11-12. The message to dispatch the bus drivers did not reach the Riverhead Staging Area until 13:30, despite the fact that a release of radiation

had occurred at 12:35, and even then only after the Riverhead Bus Dispatcher had requested it from the EOC. And the Staging Area was not told of the 12:35 release until 13:40; thus the bus drivers were dispatched into the plume without knowledge of it. Suffolk Exh. 95 at 144; Suffolk Exh. 96, Attach. 8 at 12.

The Impell Report on the September and October drills came to the following conclusions with regard to communications:

One of the major areas of concern during this drill series continues to be the communications between the EOC and the Staging Areas. Long delays in getting information to the Staging Areas were experienced throughout the drills. Much more emphasis needs to be placed on communications, both in accuracy and timeliness.

Delays in the response by the Staging Areas can be traced back to delays in transmitting information or instructions by the EOC. The information flow from the EOC to the ENC also proved to be [the] major deficiency in one particular drill. It appears that the common denominator in communications delays is the EOC, and emphasis must be placed in training that facility.

* * *

Another area of communications that has been a problem in the past, and is still a problem with certain shifts, is the communications link between the EOC and the EOF in the area of dose assessment. The exchange of information from the EOF to the EOC needs to be improved. This will continue to be examined in future drills where the EOF and EOC are both participating.

Suffolk Exh. 96, Attach. 8 at 13-14.

Problems with communications also occurred during the drills on December 2 and 10. During the December 2 drill, as we noted in our discussion of Contention EX-50B, approximately 20% of the players wrote messages on scraps of paper rather than on standard LERO message forms. Suffolk Exh. 95 at 145; Suffolk Exh. 96, Attach. 9 at 3. Also, the EOC issued status reports containing conflicting information. Suffolk Exh. 95 at 145; Suffolk Exh. 96, Attach. 9 at 4. Further, EOC personnel receiving calls for/about LERO workers did not return the confirmations of delivery of the messages to Family Tracking pursuant to procedures but were instead returning them to the original caller. Procedures call for the EOC to deliver the messages to Family Tracking; Family Tracking will then make the confirmatory call after the message has been delivered to the LERO worker. Suffolk Exh. 95 at 145; Suffolk Exh. 96 at 12.⁵²

⁵² Some Traffic Guides were more than an hour getting to their TCPs, a fact that Suffolk's witnesses attribute to untimely communications. It is not clear from the record, however, that the delayed arrivals of Traffic Guides during the December 2 drill resulted from communication delays. Suffolk Exh. 96 at 20. In addition, Suffolk's witnesses discuss three Traffic Guides who were unable to communicate with their Staging Areas. The record is not clear, however, as to the cause of this inability to communicate. Finally, one TCP could not be reached with a rerouting message by either the EOC, Port Jefferson Staging Area, or an adjacent TCP. The Traffic Guide at that TCP reported later that he had attempted to radio the Staging Area to verify his re-routing responsibilities but could not get through because the frequency was busy. *Id.* These communication failures are certainly communications problems, but it is not clear that they resulted from inadequate training.

The December 10 drill scenario included four road impediments, and communications problems arose in LERO's response to two out of the four. The most serious problem involved a pretended brush fire on the Long Island Expressway (LIE); information in the internal communications about the brush fire changed as the message was transmitted through the LERO organization. The initial message stated that the brush fire was causing a complete blockage of the east- and westbound lanes of the LIE and also the north- and southbound lanes of Patchogue-Mt. Sinai Road. The Lead Controller at the EOC decided to initiate the message at the ENC rather than EOC as the message dictates. When the information was transmitted at 09:30 from the ENC to the LERO EOC, the information on which roads were blocked was omitted. After being prompted by the Public Information Controller, the Public Information Group in the ENC recontacted the EOC at 09:42 with the complete information. Then at 10:25 the Patchogue Traffic Controller, simulating a Route Spotter, reported that only the westbound lanes of the LIE were blocked. Suffolk Exh. 95 at 146-47; Suffolk Exh. 96, Attach. 9 at 4. The other impediment about which LERO had problems communicating was a simulated duck truck accident. The message was introduced to the ENC at 12:00, and again the ENC transmitted erroneous information; this time it incorrectly stated that the EOC was already aware of the impediment. After being prompted by the Public Information Controller, the ENC gave the message to the Evacuation Coordinator at 12:23. At 12:52 he called for a Road Crew to remove the impediment. The Road Crew did not arrive at the scene until 13:53, and the duck truck was moved from the road at 14:00. In this drill the evacuation recommendation was issued about 12:54. Since the impediment occurred prior to the evacuation recommendation, LERO did not respond promptly because it initially considered the duck truck to be a Suffolk County problem.⁵³ Suffolk Exh. 96, Attach. 9 at 10; Tr. 5793-97.

Suffolk's witnesses concluded that the recurrence of communications problems and the repeated instances of communication failures, in spite of dress rehearsals, drills, and tabletops over a period of 3 years, demonstrates that LILCO's training program has been ineffective in training personnel to communicate properly. Moreover, the repeated instances of communications failures show a failure to instill necessary communications discipline, which also indicates a flawed training program. They conclude that the Exercise demonstrated

⁵³ The December drill report gives a generally more favorable impression of LERO's performance than the reports on the June, September, and October drills. The earlier reports were all prepared by the Impell Corporation, under contract with LILCO. The December drill report, on the other hand, was prepared by an in-house consultant for LILCO, working full-time for and under the supervision of LILCO. Tr. 5739-41. When asked why LILCO had changed contractors, LILCO's witness Daverio answered that it was his understanding that LILCO's Emergency Preparedness Division wanted to have "more input and control in formulating the report." Tr. 5740. Suffolk's witness Cosgrove testified that many negative comments that were in the observer reports from the December drill never got into the December drill report. Tr. 6739.

fundamental flaws in LILCO's training program, and that nothing since the Exercise leads to any different conclusion. Suffolk Exh. 95 at 148.

Suffolk's witnesses argue that timely, accurate, and commonsense communications provide the backbone of a successful response to an emergency situation. Such communications are important not only in terms of the abilities of emergency response personnel to perform their tasks, but also in terms of the media and the public having confidence in those responses. Successful communications depend upon detailed training and extensive learning by doing. Suffolk Exh. 95 at 136. The police witnesses attested that for police personnel, effective communication is perhaps the most difficult task to be learned, requiring repeated learning-by-doing experiences before an adequate proficiency is reached.⁵⁴ *Id.* at 136-37.

LILCO's witnesses argue that the contentions cited as having bases that support Subcontention EX-50C are actually irrelevant to whether the Exercise revealed a flaw in the training program that renders LERO personnel incapable of communicating effectively. With regard to Contention EX-45, which was consolidated with Contention EX-50, LILCO's witnesses argue that not one of the eight subparts of the contention supports the allegation that the training program failed to train LERO personnel to communicate effectively. LILCO EX-50 Testimony at 45. Subcontention EX-45A alleges that the delay in responding to traffic impediments resulted from communication failures. LILCO ascribes the delay to: (1) the fact that the Evacuation Route Coordinator failed to transmit all of the information contained in the free-play messages to staging area and field personnel, and he failed to inform co-workers and superiors in the EOC of the impediments; and (2) the manner in which FEMA introduced the free-play messages. *Id.* at 45-46. LILCO's witnesses argue that LERO responded appropriately to the traffic impediments and therefore the responses do not reflect adversely on the communication training program. *Id.* at 46.

LILCO's witnesses acknowledged that there was a problem in communication, but they argued that it should not be blamed entirely on deficient training. LILCO argued further that the Evacuation Route Coordinator's actions were not really inconsistent with his procedures, but resulted from the fact that he failed to appreciate the severity of the accident and what the consequences were, and also initially he took the message to be a rumor. They acknowledged, how-

⁵⁴ As experienced trainers, the police witnesses were able to describe how police recruits are taught to communicate successfully. One technique that has been used effectively in training recruits in proper communication skills involves having the instructor tell one recruit a story involving numbers, dates, etc. This recruit then tells the story to a second recruit, who tells it to a third recruit, and so on. The entire process is videotaped. The results the first time recruits go through this process are distortion of critical information due to inattention to detail and failure to listen carefully. The recruits learn the consequences of these mistakes. The needed communication skills are emphasized through frequent, almost daily, role-playing, drills, and written exercises. Through training of this type, the recruit learns both the proper methods of communicating and the consequences of improper communication. Suffolk Exh. 95 at 137 n.58.

ever, that he should have communicated information about even the suspected impediments to his superiors and co-workers. Moreover, LILCO attributes the delays in communications about the impediments to artifacts of the scenario and FEMA's unrealistic simulation; they argue that in the real world information about the accidents would have been communicated back to the EOC by LERO workers in the field who saw the accidents, which would have resulted in a more timely response. LILCO EX-50 Testimony at 36-38; Tr. 966-68, 973-74, 5497-98, 5549-52; *also see* LILCO's Proposed Findings at 164.

With regard to the free-play message requesting dispatch of a bus to pick up students at the Ridge Elementary School, LILCO's witnesses testified that the bus driver was dispatched at 11:23, 33 minutes (rather than 40 minutes) after the Special Populations Bus Dispatcher received the request. LILCO believes that this was not an inordinate delay considering that the Dispatcher was concurrently handling the dispatch of approximately forty-four other vehicles. The driver, after picking up his bus, arrived at the school at 12:14. He then traveled to the Nassau Coliseum Reception Center where he arrived at 13:51. LILCO EX-50 Testimony at 46-47. The Public School Coordinator at the EOC called the school Superintendent (simulated) at 11:28 and requested that the Superintendent call him when the bus arrived. After waiting for the call from the Superintendent until 13:23, the Public School Coordinator again called the Superintendent (simulated) who confirmed that the bus had already arrived and had left for the Reception Center. The Public School Coordinator called the Reception Center at 16:11 requesting confirmation. LILCO's witnesses argue that it is not surprising that the Reception Center personnel called the Public School Coordinator at 16:23 to tell him that they could not confirm the arrival of the bus, because the bus had come and gone 3 hours earlier. *Id.* at 47. LILCO's witness does not believe that the failure of the Reception Center personnel to advise the EOC of the arrival of the bus was a communications breakdown because the Reception Center personnel were unaware that the bus had arrived. Tr. 5564-65. There was nothing to distinguish that particular bus from the other buses that arrived at the Reception Center. LILCO EX-50 Testimony at 47-48.

With regard to the alleged failure of LERO to notify the FAA and the LIRR, LILCO's witnesses testified that the Evacuation Coordinator did contact the FAA, but the number listed in the procedure was "not the best number to call." Procedures existing at the time of the Exercise did not call for notification of the LIRR. Since the Exercise, procedures for notifying the FAA have been modified and procedures for notifying the LIRR have been included in the Plan. *Id.* at 48; Tr. 5571-74. FEMA found that the confusion regarding the method for notifying the FAA and the absence of procedures for notifying the LIRR were ARCAs and stated that procedures should be reviewed and revised and the LERO staff trained accordingly. Tr. 5574; FEMA Exh. 1 at 29, 39. Thus, LILCO's witnesses do not consider this situation to result from a training problem. Tr. 5574.

With regard to the Director sometimes not being available to answer the RECS telephone, LILCO's witness Daverio testified that FEMA was wrong because the RECS phone isn't in the command room. Tr. 5575. FEMA mentioned both the RECS phone and the dedicated telephone, however, and the dedicated phone is in the command room. Tr. 5576; FEMA Exh. 1 at 42. The witness does not believe any urgent calls came in on the dedicated line while the Director was absent. Tr. 5576. Moreover, LILCO believes that had an urgent call come in, the caller would have stated that the call was urgent. LILCO EX-50 Testimony at 176. LERO has not changed any procedures to respond to this problem, even though as we noted, *supra*, FEMA judged it to be an ARFI. Tr. 5577; FEMA Exh. 1 at 42.

Finally, LILCO attributed the misinformation about assistance from the Suffolk County police to FEMA. LILCO's witnesses testified that FEMA personnel simulating Suffolk County personnel gave inconsistent input to the LERO EOC. LILCO EX-50 Testimony at 50-51. LILCO's witness Behr testified that he was in the command cell and observed the confusion, which he stated was caused by the simulators and also possibly by a "lack of consistency" by the FEMA Controller who, he opined, really did not know what their position was going to be on the issue. Tr. 5587. Because of confusion coming from the county executive simulator and the Suffolk County Police simulator, at one point the Lead Controller in the command cell stopped operations in the command cell to make sure it was clear to everybody what FEMA's position was on the use of Suffolk County Police for LERO emergency response activities during the Exercise. Tr. 5588. At that point it was communicated to the EOC that the information about police assistance had been wrong and that the police would be used only for crime control. Tr. 5589-90.

LILCO's witnesses also testified on the post-Exercise drills. The drills are analyzed to evaluate the effectiveness of the LERO organization and to determine whether changes in procedure or training need to be made. They also serve as training experiences for the LERO personnel. Tr. 5733-34. The witnesses testified that in general they did not dispute the statements in the drill reports, although they might find individual comments that they felt were overly critical. Tr. 5745.

LILCO's witnesses do not take issue with Impell's conclusion from the September and October drills that emphasis must be placed on training the EOC to communicate in a more timely manner. Tr. 5770, 5772. During the October drill, information flow from the EOC in accident status reports was not timely, as a result of which field personnel were working with information and data that was up to 30 minutes old. Tr. 5767-69. The witnesses also agreed that LERO took too long to issue EBS messages during some of the drills, notably the June 6 drill, although they noted that the shift that participated in the June 6 drill did a better job issuing EBS messages during the October 1 drill. Tr. 5750-51. The

time required to dispatch Traffic Guides has been too long because the Traffic Control Point Coordinator must refer to the OPIP and, based on the protective action recommendation, make a list of the zones to be evacuated; he then gives the list to the Evacuation Support Communicator who transmits the information to the staging area. An additional delay may result from messages backing up at the communicator's desk. To try to solve this problem, LERO intends to have the administrative support staff transmit information directly to the staging areas rather than turning them over to the communicator when a backup occurs. This practice may sometimes cause a problem, however, such as occurred in the October 1 drill when three messages reached a staging area at the same time. Tr. 5763-64, 5780-83.

LILCO's witnesses were unable to explain why the Road Crew dispatched from Port Jefferson to an impediment during the September 10 drill never arrived at the impediment site. When asked whether they could identify the people who were on the missing Road Crew, the witnesses answered that they thought they could do that but apparently no one had done so. Tr. 5786-87. Similarly, the witnesses were unable to explain why, during the December 2 drill, a Traffic Guide took 75 minutes from dispatch at Patchogue to reach his TCP. Tr. 5810, 5813. They testified that this was another problem that LERO intended to attack in the coming months. *Id.*

FEMA's witnesses attested that they agreed with the facts presented in Contention EX-45, but in many instances they disagreed with the conclusions or analyses presented in the contention. Tr. 8251. They believe that the FEMA Report accurately reflects the seriousness of the problems it identified, whereas the contention in many cases goes beyond that. *Id.* The root of the Deficiency that FEMA identified as causing LERO's delayed response to the impediment free-play messages during the Exercise was the performance in the EOC. FEMA Exh. 5 at 75; Tr. 8252. The poor performance involved a failure in communicating information about the impediments to the Evacuation Coordinator in a timely manner and a lack of internal communication in that pertinent information was not included in messages from the Evacuation Route Coordinator to the Evacuation Support Communicator for Route Spotters/Road Crews. Thus the root of the deficiency was failed communications in the EOC. FEMA's recommendation for correcting the Deficiency included additional and improved training. FEMA Exh. 1 at 39.

Several of the ARCA's identified by FEMA likewise involved communication, and, in two of those, additional or different training was recommended by FEMA as all or part of the corrective action. The confusion regarding the notification of the FAA was identified as an ARCA, and FEMA recommended that the EOC staff be trained so that the FAA can be notified in a timely manner. *Id.* The failure to notify the LIRR was also identified as an ARCA, and part of the recommendation to correct it was training the EOC staff in revised

procedures so that the LIRR can be notified in a timely manner. *Id.* at 39-40. Another ARCA that resulted at least partially from a failure in internal communication was that given because of the delay in the dispatch of Route Spotter #1005 to verify the fuel truck impediment. FEMA's recommended corrective action involved training personnel in the development of alternative approaches when delays are anticipated, with consultation between at least the Evacuation Coordinator and the Evacuation Route Coordinator. *Id.* at 41.

The NRC Staff, in its proposed findings, found that the evidence adduced with regard to LERO's response to the evacuation impediments supports Suffolk's Subcontention EX-50C. Staff Proposed Finding 470 at 176-77. The other situations described by Suffolk as being examples of inadequate training in communication, however, do not, in Staff's view, support Subcontention EX-50C. But in its consideration of EX-50C, Staff did not address the communication failures that have recurred during the post-Exercise drills.

Conclusion on Subcontention EX-50C. LERO EOC and/or ENC personnel failed to communicate accurate and complete information about roadway impediments not only during the February 13, 1986 Exercise, but also during the June 6, 1986 drill and again during the December 10, 1986 drill. This recurrence of a problem that produced a Deficiency in FEMA's assessment of the Exercise strongly suggests that LILCO's training in the area of communications, at least, is woefully inadequate in that it has failed to teach LERO personnel how to improve their performance.

Other less serious, but nonetheless bothersome, communication defects likewise persisted during post-Exercise drills. For example, internal communication between the EOC and one or more staging areas was often slow and occasionally erroneous or incomplete during the June 6, September 10 and 17, October 1, and December 2 and 10 drills, as well as during the February 13 Exercise. Communication between the EOC and the EOF in the area of dose assessment was poor during the September and October drills. Some important EBS messages were slow to be generated during at least the June 6 and September 10 drills, as well as during the Exercise.

LILCO argued that the communication problems during the Exercise, to the extent that they were attributable at all to LERO, resulted from poor judgment on the part of their Evacuation Route Coordinator. LERO shift 1, which participated in the February 13 Exercise, participated in only the December 2 and 10 drills. Shift 2 participated in the June 6 and October 1 drills and shift 3 participated in the September 10 and 17 drills. The fact that shift 1 demonstrated the same kind of communication problems in December 1986 that they demonstrated in February 1986 indicates that either the training program taught them little about effective communications between February and December, or that the EOC personnel on shift 1 are incapable of learning. The fact that the same kind of communication problems occurred in other drills, on the other

hand, suggests that the level of training in other shifts is comparable to that in shift 1. The conclusion that must be drawn is that the training program as conducted before and since the Exercise has failed to teach LERO personnel how to communicate emergency information effectively.

Because the consequences of poor communication during the Exercise resulted in a finding of a Deficiency by FEMA and a Fundamental Flaw by us, and because we agree with Suffolk's witnesses that timely and accurate communications provide the backbone of a successful emergency response, we conclude that LILCO's training program is fundamentally flawed in the area of communications. We recommend that LILCO institute a training program in emergency communications modeled after that described in note 54, *supra*.

8. Subcontention EX-50D

Subcontention EX-50D alleges that the Exercise demonstrated that LILCO's training program has not successfully or effectively trained LERO personnel to follow directions given by superiors during an emergency. Suffolk Exh. 96 at 148; LILCO EX-50 Testimony at 51. As bases for the allegation, the subcontention cites several other contentions and a number of the findings in the FEMA Report. Suffolk Exh. 96 at 148; LILCO EX-40 Testimony at 51.

Suffolk's witnesses testified that they were not in a position to agree or disagree with the contention because of insufficient data. They cited two examples of LERO workers failing to follow directions: (1) bus drivers who failed to read their dosimeters every 15 minutes in spite of directions to do so, and (2) a Transfer Point Coordinator who directed a bus to go to the EWDF in spite of instructions to direct buses to the Reception Center. On the basis of the data available to them, the witnesses testified that they could not provide additional bases to support this subcontention. They stated, however, that their lack of support for the subcontention should not be construed as constituting an agreement that LILCO's training program has been successful in this regard. Suffolk Exh. 96 at 149-50.

LILCO's witnesses, citing as an example FEMA's favorable evaluation of the performance of the Port Jefferson Staging Area Coordinator, argue that good performance by supervisors must mean that those they are supervising are following their directions. *See* FEMA Exh. 1 at 56. They also argue that the fact that LERO succeeded in deploying approximately 1000 workers indicates that LERO personnel are correctly responding to directions. LILCO EX-50 Testimony at 51-52. The few instances of failure of LERO workers to follow directions cited by the Intervenor are, in the opinion of LILCO, isolated, minor incidents that do not demonstrate a flaw in the LILCO training program. *Id.* at 53-54.

Staff likewise does not believe that enough incidents have been cited by Intervenor to support this subcontention. Staff Proposed Finding 476 at 178-79.

Conclusion on Subcontention EX-50D. The parties are in agreement that there is insufficient evidence to support the allegation that LILCO's training program failed to teach LERO workers to follow the directions of their superiors. We agree; therefore we find Subcontention EX-50D to be without merit.

9. Subcontention EX-50E

Subcontention EX-50E alleges that LILCO's training program has not successfully or effectively trained LERO personnel to exercise independent or good judgment, or to use common sense, in dealing with situations encountered during an emergency or in implementing the LILCO Plan and procedures. The subcontention cites several other contentions and the FEMA Report as providing bases and support for EX-50E. Suffolk Exh. 95 at 150.

Suffolk's witnesses stated that examples of failure of LERO workers to exercise independent or good judgment or common sense can be found in LILCO's inability to handle unanticipated or unrehearsed situations as discussed in EX-50A, as well as in EX-38/39. In addition, they cite a number of other situations that they believe demonstrate a failure by LERO workers to use independent or good judgment or common sense. For example, they consider the failure of LERO personnel to obtain additional information about the gravel truck impediment, which resulted in LERO's dispatching a single tow truck that was incapable of clearing a loaded gravel truck from the roadway, to demonstrate poor judgment on the part of LERO players. Similarly for the fuel truck, LERO again failed to dispatch a truck that could have handled the job, again demonstrating poor judgment by the LERO personnel. *Id.* at 152; *see* FEMA Exh. 1 at 37, 65. Suffolk's witnesses cited still other examples of the exercise of poor judgment by LERO workers, as follows:

- The decision by the Evacuation Coordinator to choose a traffic rerouting strategy without consulting persons familiar with the roadways in the area of the impediments, which resulted in a decision to employ an illogical rerouting strategy. [Suffolk Exh. 95 at 153.]
- A field monitoring team stopped to report dose assessment data while still within the plume. [*Id.*]
- A simulated evacuee who had been found to have contaminated hands while being monitored at the Reception Center was advised to put on rubber booties before he was advised to put on anticontamination gloves. [*Id.*]
- In response to an inquiry from a person who had trucks going to Suffolk about how extensive the evacuation would be, a LERO Call Board operator advised that

the only protective action was closing of schools, and that evacuation had not been recommended. Suffolk contends that it would have been better judgment to have as few people and vehicles as possible in the EPZ and suggests that it would have been more appropriate had the operator exercised such judgment independently. [*Id.* at 154.]

- In response to an inquiry whether lobsters caught that morning on the Shoreham jetty were safe to eat, a Call Board operator responded at 12:28 that there were no data to indicate that anything would be wrong with the lobsters. Suffolk contends that a response advising caution would have shown better judgment, and that giving a response without even asking what time the lobsters had been caught demonstrated a further lack of judgment and common sense. [*Id.* at 155.]
- In response to a simulated call from Dan Rather, who wanted to take a TV crew to the SNPS, the LERO responder advised against going to the plant because "You will be in the way" and then gave directions to the plant. Suffolk contends that the fact that the responder advised against going to the plant yet told Rather how to get there demonstrates poor judgment and lack of common sense. [*Id.* at 155-56.]
- LERO's failure to contact the LIRR in order to tell the railroad to divert its trains from the EPZ resulted from a failure by LERO personnel to use independent judgment. [*Id.* at 156.]
- The Emergency News Manager delayed opening the ENC from 8:08 to 8:25 because one apparently nonessential staff member had not arrived. He showed poor judgment in delaying the operation of the ENC until roll call had been completed. [*Id.*]
- Although the EBS message ordering evacuation of the entire EPZ was broadcast (simulated) at 12:00 and the LILCO spokesperson in the ENC received this information at 12:22, she waited until the 12:47 press briefing to release this information to the press. Suffolk contends that there was no reason for this delay, which reflected both poor judgment and defective training. [*Id.* at 156-57.]
- Another error in judgment was displayed in the ENC when Dr. Brill from Brookhaven National Laboratory, whom LILCO had available in the ENC, told reporters that he would not follow LERO's evacuation recommendation. [*Id.* at 157.]
- Suffolk contends that LILCO showed poor judgment in not checking the compatibility of the electrical system in the ENC with the copying equipment to be used there in advance of the graded exercise. Moreover, given the failure of the copying machines, LERO personnel in the ENC showed poor judgment by not attempting to compensate for the useless copying machines by relaying information from the EOC to reporters orally. [*Id.* at 157-58.]
- Finally, the public information staff at the EOC displayed poor judgment in preparing EBS messages by filling in the "sample" fill-in-the-blank EBS message contained in the LILCO Plan, which resulted in unintelligible or confusing messages. Common sense and good judgment dictated the rewriting of the messages to tailor them to specific situations. [*Id.* at 158-59.]

Suffolk's witnesses attested that their review of LILCO's training program indicated that the training program was so procedure-specific that LERO workers

are taught, if anything, not to use independent judgment. Suffolk's witnesses believe emergency personnel must be taught to think on their own, because to be able to handle unexpected occurrences, emergency response personnel must be able to "think on their feet." *Id.* at 159-60.

LILCO's witnesses testified that LERO's training program is not intended "to train a group of free thinkers; LERO personnel, particularly in non-management roles in LERO, are to implement the Plan, not develop *ad hoc* responses in the field." LILCO EX-50 Testimony at 55. Further, they believe that many of the examples of use of poor judgment or lack of common sense cited by Suffolk from other contentions or in remarks by FEMA were not, in fact, examples of such. Rather, the LILCO witnesses believe that LERO's response to the traffic impediments demonstrated, in several instances, the use of good judgment in response to unanticipated events; they noted as examples the Traffic Guide who called for traffic cones and another Traffic Guide at his TCP; the telephone calls to Hess Oil Company and the Miller Place Fire Department; and the dispatch of a Route Alert Driver to monitor the radiation exposure of fire department personnel. *Id.* at 56.

LILCO's public information consultant Dr. Mileti testified that he believed people could be trained to use better and more informed judgment and probably independent judgment. He did not think you could teach people common sense, however; either they have it or they don't, in his view. Tr. 5169-70. He agreed that flexibility was important in an emergency response organization, because in an emergency, circumstances arise when workers need "to exercise good judgment and not go by the letter of the book." Tr. 5170-71.

FEMA witnesses Keller and Baldwin agreed that the failure of LERO personnel to contact the LIRR showed a lack of independent judgment, although they acknowledged that the Plan did not call for notification of the railroad. Tr. 8273-74. Witness Baldwin added that it would have been good judgment for LERO to notify the railroad, even though such notification was not called for in the Plan. Tr. 8274. It is FEMA's position that this inadequacy, as with most of the Exercise inadequacies that it identified, is attributable to a breakdown in the LILCO training program. FEMA Exh. 5 at 73.

The NRC Staff accepted FEMA's findings on Contention EX-50E and stated that LERO failed to show redundancy and diversity in its response to the road impediments. Staff Proposed Finding 444 at 167.

Conclusion on Subcontention EX-50E. We conclude that the weight of the evidence supports Suffolk's contention that LERO workers are not adequately trained to use independent and good judgment in response to unanticipated events. LILCO itself admits that its training program is intended to teach LERO workers to implement the Plan and not to make *ad hoc* decisions during an emergency. We are convinced, however, that situations would arise during a radiological emergency at SNPS that could be dealt with effectively only if

the emergency workers are able to make good, independent judgments and *ad hoc* decisions. Professional emergency workers, such as the police, are certainly required to make independent, *ad hoc* decisions. LILCO should expect the same for its emergency workers. LILCO's training program should be modified to teach LERO personnel that they can and should exercise independent judgment and common sense when faced with unanticipated events that require a prompt, effective response.

10. Subcontention EX-50F

Subcontention EX-50F alleges that the Exercise demonstrated that LILCO's training program has not successfully or effectively trained LERO personnel to deal with the media, or to otherwise provide timely, accurate, consistent, and nonconflicting information to the public through the media during an emergency. Several contentions and comments by FEMA are cited as supporting Subcontention EX-50F. Suffolk Exh. 95 at 166. Suffolk's witnesses stated that they would cite only several examples of exercise events that support the subcontention; other examples, they said, are considered under Subcontention EX-38/39. *Id.* at 167.

The first example presented by Suffolk dealt with the time of activation of the ENC. Although the first EBS message was broadcast at 6:52, it was not until 8:25, an hour and a half later, that the ENC became operational. Suffolk's witnesses believe that the media would have begun pressing LILCO for information shortly after the 6:52 EBS broadcast, and that the delay would probably have resulted in confusion, speculation, rumor generation, and a lack of confidence in LERO's ability to deal with the emergency. *Id.* They argue that LERO's hour and a half delay in setting up the ENC reflects a lack of adequate training and a "substantial lack of good judgment." *Id.* at 168.

Suffolk's second example was LERO News Release No. 1, announcing an Alert Condition and stating that there had been no release of radiation; this announcement was made at 8:21. At 8:19, however, the ENC had been informed that a Site Area Emergency had been declared, that a minor release of radioactive material had occurred, and that LILCO recommended that dairy animals be placed on stored feed. Suffolk's witnesses think that the short time between the ENC's notification of the Site Area Emergency and the issuance of News Release No. 1 makes it somewhat explainable that News Release No. 1 reported the earlier condition. *Id.* That they consider inexcusable, however, is the fact that no prompt correction was released; the Site Area Emergency and radiation release was not made known to the press until the issuance of News Release No. 2, which still had not been released to the press as of 9:15. LERO News Release No. 3 was received at the ENC at 10:15, but it was not posted for the press until 11:10. News Release No. 4 was received at 10:45, but was not

posted until 11:56. News Release No. 5, which covered the 10:24 evacuation recommendation for zones A-M, Q, and R, was approved by the Director at 11:02 but did not arrive at the ENC until 11:36, and was made available to the press some time later. *Id.* at 169. News Release No. 6 was approved by the Director at 12:25 but was not posted until 2:10, and Release No. 7 was approved by the Director at 1:11, received by the ENC at 1:47, but was not posted until 3:07. Finally, although the decision to evacuate the entire EPZ was reached by the Director at 11:46 and announced in an EBS message at 12:00, the ENC did not inform the media of the decision or the content of the EBS message until 12:47. *Id.* at 170.

Suffolk's witnesses argue that these examples demonstrate that LERO personnel were unable to provide timely, accurate, consistent, and nonconflicting information to the public through the media. They believe that during an emergency the ability to provide timely and accurate information to the media is essential to ensure that the public is kept informed concerning the status of the emergency and the protective actions being recommended. The witnesses suggest, further, that fear of nuclear hazards could cause the public to react irrationally if it is not kept informed and up-to-date regarding the status of the emergency. *Id.* at 170-71.

The police witnesses testified that they frequently confront situations in which immediate media contact is likely, and therefore they have trained respondents to deal with the media on a rapid basis. From experience with natural disasters, hostage-taking situations, and technological disasters such as chemical spills, the police witnesses attested that the media immediately seek out officials who are in charge and demand information from them about what has happened and what to expect in the future. If the officials are not prepared to respond immediately, the media publicize the lack of preparation and seek other, potentially unreliable, sources of information. *Id.* at 172.

Suffolk's witnesses testified that from their review of the documents, LERO personnel had no understanding of how important it was to have the ENC in operation at the earliest possible time or consider a meaningful alternative means of communicating with the media prior to ENC activation. They believe that this lack of understanding by LERO personnel demonstrates that LILCO's training has been inadequate. Adequate training would have stressed to LERO personnel the need to take charge of information flow to the news media almost from the minute the first EBS message was broadcast. *Id.* at 173. Suffolk believes that the Exercise revealed that LERO personnel had not been trained to realize or understand the importance of appearing to be a credible source, or how one goes about presenting that image to the media. *Id.* at 174.

Suffolk's witness Colwell testified that he had personally held numerous local, statewide, and national news conferences, and that he had appeared "live" on national news networks, where he was interviewed concerning events such

as aircraft hijackings, kidnappings, shooting incidents, fugitive apprehensions, bombings, and major legal cases such as ABSCAM. He stated that if a spokesperson for a news-disseminating organization is to be effective, the spokesperson must instill a sense of confidence that full disclosure is being made. Once the media believe that the most current and accurate information is not available at the news center, they will leave to pursue other lines of inquiry and other sources. *Id.* at 181-82. In addition, witness Colwell pointed out that the ability to deal effectively with the media could be gained only through experience or through extremely realistic role-playing exercises, and that in these simulated situations the role player should be put under pressure because he will be under intense pressure from the media in a real emergency. He stated that the media in this country are known for, and pride themselves on, asking the hard questions and refusing to be put off by vague or ill-informed answers. *Id.* at 182-83.

Finally, witness Colwell attested that while he was unaware of the specific training that the LILCO spokesperson had received for her job, nevertheless her performance during the Exercise indicated that the training had been inadequate. He testified that the ENC continually lagged behind the EBS station in releasing information, at least in part because the spokesperson would await the next scheduled press briefing to release information rather than issue a news release immediately. Witness Colwell attested that he had viewed the ENC videotapes made during the Exercise, and that the spokesperson frequently appeared flustered by the questions she was asked. *Id.* at 183. In witness Colwell's opinion, the spokesperson's performance made it clear that, although she was the LERO spokesperson, she exhibited little understanding of the operational details of LERO, little access to higher levels in the organization and the information flowing from them, and little skill in establishing rapport with the media and effectively fielding their questions. *Id.* at 184-85.

LILCO's witnesses believe that the Exercise demonstrated that LERO personnel were capable of providing the public with timely, accurate information about the emergency. They attribute delays in transmitting information to the media to the breakdown of the copying machines at the ENC rather than to the training of LERO personnel, and they further state that there are now five copying machines available to the ENC. LILCO EX-50 Testimony at 57; Tr. 5652. The witnesses contend that the public was given accurate information directly and in a timely manner through the EBS messages, and the media received essential information through periodic news conferences held at the ENC by LERO and LILCO personnel. *Id.* at 57-58.

As we noted in our consideration of Subcontention EX-38, prior to activation of the ENC, information could have been provided to the press by the Corporate Communications Department (CCD), which maintains a telephone line that is covered 24 hours a day, 7 days a week. *See id.* at 49-60; Tr. 3435-41. The

role of the CCD in an emergency is described in EPIP 4-3. See Suffolk Exh. 47. In addition, in discussing EX-38, we noted that FEMA had concluded that activation of the ENC was done well. We agreed with FEMA, and we also concluded that other sources of information would have been available to the media prior to activation of the ENC.

With regard to the lapse of time between issuance of the EBS messages and the news releases, we noted in our consideration of EX-38 that the first LERO News Release contained dated information at the time it was released, although FEMA did not consider this to be a serious problem. We also mentioned the fact that FEMA noted that there is no time requirement for the distribution of news releases.⁵⁵ FEMA's position is that news releases are of secondary importance because EBS messages are the primary means by which essential emergency information and instructions are communicated to the public. See FEMA Exh. 5, at 35.

Both Suffolk and FEMA criticized LERO for providing the press with hard copies of EBS messages which contained extraneous information marked for deletion. They thought that confusion might result. In our consideration of EX-38 we agreed with Suffolk and FEMA that the EBS messages should be cleaned up before being distributed to the press. The fact that they were not, during the Exercise, probably reflects an inadequacy in the training program.

It took the ENC 47 minutes following the first broadcast of the EBS message containing the evacuation recommendation to get that information to the press in a news release. Suffolk and FEMA agree that the media would have been informed of the evacuation recommendation via the EBS messages. We observed in our discussion of EX-38 that upon thus learning about the evacuation, the media would have demanded more information from the ENC. But the media's confidence in the ENC would have been eroded, and it might even appear that the ENC was withholding information. LILCO's spokesperson should have made it a point to get the evacuation recommendation out to the press as promptly as possible. Her failure to do so probably reflects another inadequacy in the training program.

In its proposed findings the NRC Staff concluded that while the ENC lagged behind the EBS messages in giving out information, the media had the same access to EBS messages as the public and therefore it seems unlikely that confusion would have resulted from the lag. Staff Proposed Finding 483 at 180. Further, Staff believes that the detailed information that the spokesperson

⁵⁵FEMA's witnesses were uncertain whether the media were given the content of EBS messages verbally shortly after they were received by the ENC. The evaluator at the ENC stated EBS messages were received by phone at the ENC in a timely fashion, but there was a delay in getting hard copy posted in the press area. Tr. 7823-24. Our reading of the Exercise Evaluation Critique Form prepared by the ENC Evaluator suggests that EBS messages were not promptly read to the press. The Evaluator commented that the time "lag means that reporters do not have an accurate picture of the protective actions." Suffolk Exh. 101.

could not provide correctly was not essential information, and therefore there is no evidence that there was a failure to properly train the spokesperson. Staff Proposed Finding 474 at 180-81.

In our consideration of EX-38 we agreed with Suffolk that LILCO's spokesperson should have been able to respond to detailed questions about the fuel truck impediment, to the extent that details were contained in the free-play message. FEMA took no position on this issue. We also found in our consideration of EX-38 that the LILCO spokesperson should have been able to relay accurate information about the gravel truck impediment; instead, she incorrectly reported that it had been cleared approximately 45 minutes before it was, in fact, cleared. The fact that the spokesperson was unable to respond adequately to questions about either roadway impediment probably results from inadequate training.

Conclusions on Subcontention EX-50F. The delays and inaccuracies in communicating information about exercise events to the media is undoubtedly another reflection of the inadequate training LERO personnel have received in communication skills. If and when LILCO follows the advice we offered, *supra*, regarding note 54, the ability and skill of the LILCO/LERO spokespersons in communicating with the media should improve.

11. Subcontention EX-50G

Subcontention EX-50G alleges that LILCO has failed to provide training to persons and organizations who are not employed by LILCO but who are relied upon for implementation of the LILCO Plan. Suffolk Exh. 95 at 186; LILCO EX-50 Testimony at 59-60. Contentions EX-27 and EX-28 plus several EOC-ARCAS are cited as support for EX-50G.

Suffolk's witnesses cited the FEMA Report that assigned several ARCAs because bus drivers used for school evacuation had not been trained in dosimetry, because neither ambulette drivers nor the bus drivers had been trained in KI policy and the use of KI, and because neither ambulette drivers nor bus drivers used for school evacuation had been trained regarding who can authorize exposure in excess of the general public Protective Action Guides (PAGs). Suffolk Exh. 95 at 188-89; *see* FEMA Exh. 1 at 45-46.

Another example cited by Suffolk was the performance of Dr. Brill, LERO's scientist from Brookhaven National Laboratory, who appeared at the ENC press briefings and who (1) gave out technically incorrect information, and (2) contradicted the LERO evacuation recommendation when asked by the press what he would do given that recommendation. Suffolk Exh. 95 at 189. Suffolk alleges that LERO members in the ENC when Dr. Brill made the latter statement failed to correct it immediately. Suffolk argues that Dr. Brill's performance

demonstrates that LILCO has failed to provide adequate training for non-LILCO employees who are relied upon to help implement the Plan. *Id.* at 190.

LILCO's witnesses testified that the ambulance and ambulette drivers had received training prior to the Exercise in radiological protective procedures. They attested, further, that their investigation of the problem noted by FEMA during the Exercise had determined that it resulted from attrition among drivers who had been trained. To combat this attrition problem, training of ambulance and ambulette drivers has been conducted monthly since the Exercise. LILCO EX-50 Testimony at 60; Tr. 5685-88. LILCO's witnesses also stated that while some school bus drivers had been trained before the Exercise, training of all school bus drivers had not been accomplished because only the Shoreham-Wading River School District was going to participate in the Exercise. They testified, further, that procedures were being developed to facilitate the participation of all school bus drivers in the radiological training sessions, but as of May 12, 1987, plans had been formalized with the Shoreham-Wading River School District only. LILCO EX-50 Testimony at 61; Tr. 5682-84.

FEMA's findings with regard to the allegations of Subcontention EX-50G were that dosimetry and training had not been provided to the school bus drivers, which was identified as an ARCA. FEMA found that some of the ambulette drivers were not aware of when to take their KI, which was identified as an ARCA. FEMA also found that school bus drivers had not been trained in KI policy, nor was the supply of KI for bus drivers sufficient; this, too, was identified as an ARCA. FEMA Exh. 1 at 45, 76. Finally, FEMA found that neither all ambulette drivers nor any of the school bus drivers had been trained regarding who can authorize exposure in excess of the general public PAGs; each of these inadequacies was identified as an ARCA. *Id.* at 46.

Staff does not consider the failure to provide dosimetry training to personnel belonging to organizations not participating in planning to be an inadequacy in the LILCO training program, although Staff acknowledges that it nevertheless could be a problem. Staff Proposed Finding 462 at 174-75.

Conclusions on Subcontention EX-50G. We agree with Suffolk that the training problems identified by FEMA resulted from an inadequate training program prior to the Exercise. Whether the post-Exercise training of ambulette drivers and the proposed training of school bus drivers will solve the problems remains to be seen. In its review of Revision 7 and 8 of LILCO's Plan (the February 13, 1986 Exercise was based on Revision 6) FEMA's Regional Assistance Committee (RAC) found that LILCO had adequately addressed the ambulette driver problem, but it found LILCO's response to training the bus drivers to be inadequate. Tr. 5688; *see* FEMA Exh. 3 at 16. Whether the problems cited in Subcontention EX-50G have been adequately solved must be demonstrated in another graded exercise.

12. Subcontention EX-50H

Subcontention EX-50H alleges that LERO personnel are not adequately trained in the area of dosimetry, radiation exposure control, KI use, understanding of radiation terminology, and related areas. Consequently LERO personnel cannot assist members of the public and non-LILCO personnel who are relied upon to help implement the Plan during an emergency as SNP, and who would expect LERO personnel to be able to respond accurately and effectively concerning these subjects. Suffolk cites Contentions EX-42 and EX-45 and several ARCAs identified by FEMA as providing support for Subcontention EX-50H. Suffolk Exh. 95 at 186-87.

Other examples cited by Suffolk in support of EX-50H were the following:

- A LERO Route Alert Driver who thought he would receive KI authorization in an EBS message. [*Id.* at 192; *see* FEMA Report at xvi, 69-70.]
- Traffic Guides at two TCPs who did not know dose authorization limits. [Suffolk Exh. 95 at 193; *see* FEMA Report at 70.]
- Traffic Guides at two TCPs who did not fully understand the chain of command for excess exposure authorization, plus some Traffic Guides who indicated that they might question the authority of the Lead Traffic Guide to issue the authorization for excess exposure. [Suffolk Exh. 95 at 193.]
- Two of the eight Traffic Guides observed by FEMA who did not fully understand the difference between low-range and mid-range direct reading dosimeters (DRDs). [*Id.*; *see* FEMA Report at 76.]
- The Patchogue Bus Dispatcher who misinformed bus drivers when instructing them via bull horn on how to read their dosimeters. [Suffolk Exh. 95 at 193; *see* FEMA Report at 68, 69.]

Suffolk's witnesses argued that these few examples are significant because of the small number of LERO workers observed by FEMA. They believe that the existence of so many training deficiencies in the small number of workers evaluated by FEMA suggests that such problems are widespread. Suffolk Exh. 95 at 193-94.

LILCO's witnesses contend, on the other hand, that Suffolk has cited only minor examples of individual failures, and argue that instances of field workers not reading the dosimetry or ingesting their KI would not impair protection of the public health and safety. They do not believe that these breaches in personal radiological procedures by LERO personnel individually or collectively demonstrate a flaw in the LILCO training program. LILCO EX-50 Testimony at 62. Nevertheless, because LILCO is concerned about the safety of its personnel, it has made several modifications in its personnel dosimetry and exposure control training to emphasize to trainees the importance of reading dosimetry,

of knowing when to take KI, and of knowing who and by what means excess radiation exposure is authorized. *Id.*

LILCO's witnesses argue also that dosimetry and related areas are generally a problem at FEMA exercises because people find it difficult to remember detailed information that they rarely use. LERO's post-Exercise approach to correcting this problem has been to issue Identification Badges to all LERO workers to be worn on the outer garments for easy identification. On the back of the badges, personal radiological protection procedures are listed for quick reference in the field. *Id.* Thus, eliminating the need to memorize dose limits plus increasing the emphasis in training on personal radiological procedures will, LILCO's witnesses believe, be an effective solution to the problem. *Id.* at 62-63.

LILCO's witnesses also do not believe that Contention EX-42, one of two contentions cited by Suffolk as supporting Subcontention EX-50H, in fact supports EX-50H. LILCO points out that only subpart D of EX-42 is relevant. It notes that three Traffic Guides did not understand the procedures for excess exposure. *Id.* at 63; Tr. 5705. Since FEMA questioned thirty-three Traffic Guides about dosimetry, these three isolated instances do not demonstrate a programmatic flaw in LERO training, according the LILCO. LILCO EX-50 Testimony at 63.

Similarly, LILCO believes that the other contention cited by Suffolk, Contention EX-45, has a single relevant subpart, subpart H, dealing with personal radiological procedures. It alleges that the Bus Dispatcher at Patchogue made inaccurate announcements to bus drivers about dosimetry. LILCO argues that it is untrue that he made inaccurate statements; rather he failed to be complete and precise. Moreover, they state that the Dispatcher was only quickly refreshing the drivers' memories just before their departure about comprehensive dosimetry instructions they had received only minutes earlier. But even if Suffolk's allegations were true, LILCO does not believe that Contention EX-45G, either alone or in combination with other "sporadic instances" demonstrates a flaw in LERO's training in dosimetry, KI use, or procedures for excess dose authorization. *Id.* at 63-64.

Although FEMA found that most of the emergency workers it evaluated demonstrated knowledge of use of dosimetry and actions required in response to certain radiation-level readings, it nevertheless did not view the Patchogue Bus Dispatcher's instructions to drivers as lightly as LILCO would have us view them. It assigned an ARCA because of his performance. FEMA Exh. 1 at 68-69. It also assigned an ARCA because one evacuation route Bus Driver read DRDs only twice, when instructed to do so by the Transfer Point Coordinator, while another read his DRDs only when it was convenient. *Id.* FEMA also assigned ARCAs because Traffic Guides at two TCPs did not know dose authorization limits, because a Route Alert Driver believed that he would receive KI authorization in an EBS message, and because Traffic Guides at two TCPs did

not fully understand that the Lead Traffic Guide had the authority to authorize excess exposure by radio and some Traffic Guides indicated that they might question this authority. *Id.* at 70. FEMA also assigned ARCAs because two of eight Traffic Guides observed at Riverhead did not fully understand the difference between low- and mid-range DRDs. *Id.* at 77. An ARCA was also assigned at Riverhead because one Bus Driver simulated ingestion of his KI prematurely, before he was assigned an evacuation route. *Id.* For all of these ARCAs, FEMA's recommendation called for additional training. *Id.* at 69-70, 77. Under cross-examination, FEMA's witnesses stated that the problems with knowledge of dosimetry and use of KI observed during the Exercise were similar in nature to those identified at other sites in New Jersey and New York State.⁵⁶ Tr. 8535. In response to LILCO's claim that problems with dosimetry are a general problem in FEMA exercises, which FEMA's testimony would seem to suggest, Suffolk stated that a review of all other Region II exercises demonstrated that there were more dosimetry-related problems at Shoreham than at virtually any other exercise. Suffolk Proposed Finding 792 at 570; *see* Suffolk Exhs. 62-80.

The NRC Staff would have us find that the lack of knowledge concerning personal radiation protection was pervasive, but these problems do not directly affect the health and safety of the public. Staff suggests, further, that the problem appears to be readily correctable through the use of the ID badge information aids and more training. Staff also agrees with LILCO's witnesses Lindell and Milet, who, when asked why they thought LERO workers would look at the back of the badges when they forgot to even look at their personal dosimeters, stated that in a real emergency LERO workers would look at their badges and dosimeters because of concern for their own safety. Tr. 5200-02.

Conclusions on Subcontention EX-50H. The fact that FEMA believes that all of the ARCAs it identified with respect to radiation dosimetry, KI use, and procedures for excess dose authorization can be corrected by more and/or better training leads us ineluctably to the conclusion that LILCO's training prior to the Exercise was somewhat inadequate. The fact that most of the LERO workers demonstrated satisfactory knowledge about these matters indicates that the training program was not totally flawed, but obviously it needed to be improved. Whether the measures that LILCO has instituted to respond to FEMA's criticisms are adequate remains to be demonstrated by another graded exercise. We agree with the Staff, however, that the lack of adequate knowledge about personal radiation protection by LERO workers should not directly affect

⁵⁶ FEMA's witnesses distinguished the problems with knowledge of dosimetry and KI from the problems with the road impediments, however, because counties in the State of New York generally handle impediments very well. Tr. 8535-36.

the public health and safety. Therefore the training problem relating to personal radiation protection is not a fundamental flaw in the LILCO Plan.

13. Subcontention EX-50I

Subcontention EX-50I alleges that LILCO's post-Exercise modifications to its training program intended to correct the problems identified in the FEMA Report will not be successful in correcting the problems revealed by the Exercise. Suffolk Exh. 95 at 196; LILCO EX-50 Testimony at 64. Suffolk's witnesses testified that they were familiar with SNRC-1269, which lists the modifications LILCO has made to the training program in response to FEMA's findings, and with a few minor changes to the training program in addition to those listed in SNRC-1269. Suffolk Exh. 95 at 197.

Suffolk believes that the minor changes in the training program proposed and implemented since the Exercise will not solve the "many problems in LILCO's program" because the training program is conceptually no different than it was when first implemented 3 years ago. *Id.* at 198. Suffolk's witnesses cited several examples of changes that they think will be ineffective. For example, they state that LILCO now proposes to tell trainees during classroom lectures and tabletop drills to be "aware" of the particular jobs and the functions they need to perform. Suffolk's witnesses view this as merely repeating what the LERO workers have already been told during 3 years of prior training. Another example of a minor change is the creation by LILCO of "action diagrams" which Suffolk's witnesses characterize as nothing more than charts depicting job tasks of LERO personnel that are highlighted in different colors. They suggest that LILCO's training materials must already have contained information which depicted job tasks. *Id.* at 199. Changes such as these, in the opinion of Suffolk's witnesses, do nothing more than tell LERO personnel what to do, which LILCO has been doing for 3 years of prior training. They do not teach personnel how to accomplish their jobs or institute learning by doing, which Suffolk thinks is what is needed. Suffolk thinks that LILCO's training methodology is no different than it has been for the past 3 years, and consequently there is no basis to conclude that the training program will be any more successful in the future. *Id.* at 199-200.

Suffolk supported its view by citing several post-Exercise drills in which dosimetry-related problems occurred. Suffolk Proposed Finding 793 at 571. During the June 6, 1986 drill several Traffic Guides were still not clear on the procedure regarding reaching certain exposure levels. *Id.* at 572 n.538; *see* Suffolk Exh. 96, Attach. 7 at 6. During the September 10, 1986 drill, of nine Traffic Guides questioned, most were unaware of the maximum allowable dose and the procedures governing the use of KI. Suffolk Proposed Finding 793 at 572 n.538; *see* Suffolk Exh. 96, Attach. 8 at 4-5. In addition, two Road Crews

were unaware of the procedures for use of dosimetry and maximum exposure allowances. Suffolk Exh. 96, Attach. 8 at 6. During the September 17, 1986 drill the distribution of dosimetry was not well controlled, and many LERO workers arrived at the dosimetry briefings near the end of the session and were not afforded the benefit of a complete briefing. *Id.* at 8. During the October 1, 1986 drill again there were LERO personnel who were unclear as to dose authorization. Suffolk Proposed Finding 793 at 572 n.538; *see* Suffolk Exh. 91a at 7. Finally, during the December 10, 1986 drill it was observed that one member of a two-man Road Crew failed to use his dosimeter. Suffolk Exh. 93c at 5.

LILCO pointed out in its reply to the proposed findings of the Intervenors and Staff that the LERO badges with the dosimetry information on the back were not provided until the December 1986 drills. LILCO Reply Findings at 181. Further, during the December 10 drill a Field Controller observing two TCPs noted that the LERO workers simulated reading their dosimetry every 15 minutes and that they were aware of the information on the back of their badges. *Id.*; *see* Suffolk Exh. 93a at 6. Moreover, during both the December 2 and 10 drills, Field Controllers observing various locations (Transfer Points and TCPs) reported that LERO workers were reading their dosimeters every 15 minutes and were aware of their usage and limits. Suffolk Exh. 96, Attach. 9 at 40.

The NRC Staff, in its proposed findings, noted that LILCO had treated the problems observed during Exercise in responding to road impediments as deficiencies in training for road impediments, rather than as deficiencies in responding generically to unexpected events. Staff Proposed Finding 487 at 181-82. While the Staff agrees with Suffolk that repeated drills on slightly different road impediment scenarios introduce little in the way of surprise, this kind of repetition was in fact a form of "learning-by-doing" training that has been emphasized by Suffolk's witnesses. Staff Proposed Finding 477 at 181; *see* Suffolk Exh. 95 at 80-89, 93; Tr. 6768-72. Staff believes that this repetition has shown some positive results. It notes that, following the problems in the June 1986 drills, response to the road impediments improved substantially in the September/October 1986 drills. Staff Proposed Finding 489 at 182; *see* Suffolk Exh. 96, Attachs. 7, 8. Staff also noted that while LILCO pointed to good responses to impediments during the December 1986 drills, there was a delay in response to one of the four impediments and communication problems on another. Staff Proposed Finding 489 at 182; *see* LILCO EX-50 Testimony at 71; Suffolk Exh. 96, Attach. 9 at 4. Staff notes that LILCO's observation of Traffic Guide performance during the June, September, and October drills was favorable. Staff Proposed Finding 490 at 182; *see* Suffolk Exh. 96, Attachs. 7, 8. In the December drills, dispatch of Traffic Guides, Bus Drivers, and other field workers appeared to be timely. Suffolk Exh. 96, Attach. 9 at 18-26. Finally,

remedial "road rallies" of bus drivers continued through the December drills, but they were not evaluated. *Id.* at 42; *see* LILCO EX-50 Testimony at 72-73. Staff believes that these apparent improvements lend credence to the correctability of the deficiencies in knowledge exhibited during the Exercise and in the ability to handle road impediments. Staff also believes that the post-Exercise drill evidence tends to show greater emphasis on "learning by doing." Nevertheless, because the drills were observed by neither FEMA nor Suffolk County, but only by LILCO contractors, Staff does not think decisive weight can be accorded the evidence from the post-Exercise drills. Staff Proposed Finding 491 at 183.

Staff points out, however, that even LILCO acknowledges that training problems found in the Exercise have persisted. For example, according to LILCO's witness Behr, dispatch problems at staging areas continue to be an area of concern. Staff Proposed Finding 493 at 183; *see* Tr. 5786-87. More significantly, LILCO acknowledged that response and communication problems continued in the June, September, and October drills. Staff Proposed Finding 493 at 183; *see* Tr. 5758-59, 5769, 5784 (Behr), 5772-73 (Daverio). Staff notes that while the December drill "may have shown improvement," communications problems still occurred in dealing with the brush fire and truck impediments. Staff Proposed Finding 493 at 184.

Staff concludes by observing that over 1000 LERO personnel were mobilized for the Exercise, and this was only one of three shifts. Staff Proposed Finding 494 at 184; *see* LILCO EX-50 Testimony at 10. Although LILCO's training program conducts quarterly drills, because of the size of LERO, individuals receive training only annually. Staff Proposed Finding 494 at 184; *see* Tr. 5725. In addition to the burden of training so many, it is more difficult to train LERO personnel to be emergency response workers for a nuclear accident than it is to train persons who regularly perform emergency response work. Staff Proposed Finding 494 at 184; *see* Tr. 4465 (Behr), Tr. 5137 (Mileti). Staff observes, further, that unlike police or fire department personnel, who interact as respondents to emergencies on a regular basis, the LERO organization is intermittent in nature, drilling for emergency response only periodically. Staff Proposed Finding 495 at 184-85; *see* Suffolk Exh. 95 at 206; Tr. 6425 (Perrow). Staff believes that there is some evidence that LILCO's post-Exercise training efforts have paid dividends. Nevertheless, the FEMA Deficiency findings, and evidence of continuing problems in effective communication and in dealing with the large span of control at the staging areas, particularly in nonroutine situations, have raised substantial doubt in the minds of the Staff about whether LILCO's training program has been intense enough to overcome the burdens placed upon LERO. Staff Proposed Finding 495 at 185. Because of substantial doubt that LERO personnel have sufficient training to communicate and respond effectively to a major unanticipated problem, plus substantial questions about the timely dispatch of LERO Traffic Guides, Bus Drivers, and other emergency

workers and their prompt performance of their tasks, Staff finds that there is not at this time reasonable assurance that adequate protective measures can and will be taken in the event of an emergency at SNPS. Staff Proposed Finding 496 at 185-86.

Conclusion on Subcontention EX-50I. We agree with the NRC Staff. The evidence before us in this proceeding, while suggesting that there may have been some improvement in LERO's performance since the February 13, 1986 Exercise, generates substantial doubt that LERO personnel have been adequately trained in the areas of communication, responding to unanticipated events, and timely dispatch of and prompt performance of duties by emergency field workers, especially Traffic Guides and Bus Drivers. Although these problems can probably be corrected, we are not convinced that they have indeed been corrected. LILCO's training program, therefore, is fundamentally flawed in teaching emergency communication and the timely dispatch and response of field personnel.

14. Overall Conclusion on Contention EX-50

Deficiencies in the following areas, which are significant to the ability of LERO to implement the LILCO Plan, were found during the Exercise and were not demonstrated to have been compensated for or corrected:

- (1) training for, and execution of internal communications within the LERO command structure and between that structure and field personnel in response to unexpected events;
- (2) basic knowledge of Traffic Guides and Bus Drivers of their assigned functions; and
- (3) training for timely and prompt response of Traffic Guides, Bus Drivers, Route Spotters, and Road Crews in the performance of their emergency tasks.

These deficiencies in LILCO's training program preclude a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at SNPS and therefore constitute a fundamental flaw in the Plan. A finding of reasonable assurance must await further demonstration in a FEMA-graded exercise of those portions of the Plan where deficiencies were found that corrective measures have been adequate.

III. CONCLUSION

For the reasons indicated above, we have concluded that fundamental flaws were demonstrated by the February 13, 1986 Exercise of the offsite emergency plan for the Shoreham Nuclear Power Station. We summarize those flaws below.

1. Flaws relating to communications were demonstrated:

- a. Within the EOC in that the Evacuation Route Coordinator did not inform his superiors or co-workers of the traffic impediments on receipt of the free-play messages, did not include complete information on the impediments in the messages relayed to the route spotters, and did not request the prompt dispatch of one route spotter to verify one impediment;
- b. Among field workers in that the plan does not permit such lateral communications;
- c. At the ENC in that LERO was unable to furnish timely information on protective action recommendations in the form of EBS messages to the media and to rumor control, and was unable to accurately respond to questions concerning the traffic impediments and protective action recommendations at news conferences; and
- d. In the EBS messages in that they contained some conflicting information concerning protective action recommendations and were, in some respects, confusing in their discussion of doses, releases, and emergency classifications.

2. A flaw was demonstrated in that large numbers of Traffic Control Posts were not staffed until well after traffic congestion would have occurred.

3. Flaws in the training program were demonstrated in the areas of communications, functions of Traffic Guides and Bus Drivers, and prompt response of field personnel.

In its proposed conclusions of law, Staff urges that:

A finding of reasonable assurance must await further demonstration in a FEMA-graded exercise or drill of those portions of the Plan where deficiencies were found, in order to show the adequacy of corrective measures.

Staff's Proposed Findings at 187. Staff believes that we should retain jurisdiction until such corrective measures are completed, although it has not elaborated on this position or addressed the Commission's mandate to us contained in CLI-86-11, 23 NRC 577 (1986). The other parties have not addressed this question at all. Before reaching a decision on this limited issue, we wish to have the views of all the parties. Consequently, we retain jurisdiction in order to decide whether the Commission's mandate requires that we pass on LILCO's efforts to correct the flaws we have found, and direct that the parties, including Staff, furnish us with their views within 15 days following service of this Initial Decision.

In accord with 10 C.F.R. § 2.760(a), this Initial Decision will constitute the final action of the Nuclear Regulatory Commission thirty (30) days after its date unless an appeal is taken. In accord with 10 C.F.R. § 2.762(a), any party may

take an appeal by filing a notice of appeal within ten (10) days after service of this Initial Decision.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Frederick J. Shon
ADMINISTRATIVE JUDGE**

**Oscar H. Paris
ADMINISTRATIVE JUDGE**

Bethesda, Maryland
February 1, 1988

Separate Opinion of Judge Frye:

While I am in agreement with the bulk of the conclusions reached in this Initial Decision, I find it necessary to note my separate views with regard to the following points.

COMMUNICATIONS

I must respectfully dissent from one of the conclusions reached with regard to Contention EX-41B. This conclusion concerns the communications breakdown experienced by LERO in its response to the two traffic impediments inserted into the exercise by free-play messages. While I concur that such a breakdown did occur and that it amounts to a fundamental flaw, I believe that one of the conclusions reached with respect to that fundamental flaw is not supported by the record. Specifically, I find no support in the record for the conclusion that the exercise demonstrated that the communications structure set up by the plan is itself flawed.

In reaching this conclusion, my colleagues correctly note that the communications system approved in the PID is an administrative one that permits communication vertically only, rather than laterally among field workers. I agree that the endorsement of this system in the PID was less than enthusiastic. However, I part company with my colleagues with respect to their conclusion that the exercise demonstrated that lateral communications among field workers are necessary in order to adequately respond to an "emergency-within-an-emergency."

The Exercise demonstrated that both lateral and vertical communications *within the EOC* were flawed. The communications breakdowns all occurred within the EOC. Once the problems that resulted from those breakdowns were overcome, LERO's response to the impediments was adequate. There simply is no indication in this record that the plan requirement that field workers communicate only with their superiors, rather than with each other, in any way hampered the response to the impediments. Indeed, FEMA's deficiency assigned to this matter is carefully limited to communications within the EOC.

While I can readily agree that the plan's vertical communications system is less desirable than a system that permits both lateral and vertical communications, I cannot conclude that the exercise demonstrated that the plan is fundamentally flawed because of its failure to provide for the latter.

Similarly, I must also dissent from my colleagues' conclusion on Contention EX-41E. In doing so, I note that all parties to this proceeding appear to agree that the addition of a Traffic Engineer at the EOC has nothing whatever to do with the communications problems revealed by the exercise. Moreover, this appears to be so even under the view of those problems adopted by my colleagues. Consequently, Contention EX-41E does not present a dispute that warrants a conclusion.

TRAINING

In their discussion of Contention EX-50, my colleagues correctly note that the issue of the adequacy of LILCO's training program was a question left open by the prior Licensing Board. In the PID, the Licensing Board tentatively concluded that LILCO's training program met the regulatory standards, but that conclusion was expressly:

made subject to confirmation by a finding, to be made by FEMA after a graded exercise, that the Plan can be satisfactorily implemented with the training program submitted and that LILCO possesses an adequate number of trained LERO workers.

PID, 21 NRC at 756. No such finding was made by FEMA. Tr. 8296-97 (Kowieski); FEMA Exh. 1; Suffolk Exh. 95 at 35 n.16. Intervenors maintain that we must decide whether LILCO's Plan can be satisfactorily implemented with the training program that is part of that Plan. Intervenors' Proposed Findings at 494-95. LILCO and Staff believe that this position amounts to a relitigation of planning issues resolved in the PID. LILCO Reply Findings, Vol. II, at 153 (Reply to Intervenors' Proposed Finding 678); Staff Proposed Findings at 147.

In my opinion, this proceeding is not concerned with whether the LILCO training program meets each aspect of the regulatory standard. That issue was addressed in the PID, where that program was found to be adequate subject to

confirmation by FEMA. The condition imposed in the PID that FEMA verify that the plan can be satisfactorily implemented with the existing training program remains in full force and effect; FEMA's failure to make such a finding does not dictate that we take that responsibility on ourselves.

Rather, in this proceeding, the inquiry is whether there are systemic or pervasive problems in performance, amenable to correction by training, that raise legitimate doubt as to whether there is reasonable assurance that in the event of an emergency, LERO could implement adequate protective measures to protect the public. Existence of such doubt would indicate that the training program was fundamentally flawed.

In their discussion of Contention EX-50, my colleagues appear to have accepted Intervenor's position and reviewed the training program for adequacy. In addition, they have concluded that the exercise demonstrated that LILCO's training program is fundamentally flawed. Their ultimate conclusion is stated as follows:

Overall Conclusion on Contention 50. Deficiencies in the following areas, which are significant to the ability of LERO to implement the LILCO Plan, were found during the Exercise and were not demonstrated to have been compensated for or corrected:

- (1) training for, and execution of internal communications within the LERO command structure and between that structure and field personnel in response to unexpected events;
- (2) basic knowledge of Traffic Guides and Bus Drivers of their assigned functions; and
- (3) training for timely and prompt response of Traffic Guides, Bus Drivers, Route Spotters, and Road Crews in the performance of their emergency tasks.

These deficiencies in LILCO's training program preclude a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at SNPS and therefore constitute a fundamental flaw in the Plan. A finding of reasonable assurance must await further demonstration in a FEMA-graded exercise of those portions of the Plan where deficiencies were found that corrective measures have been adequate.

While I do not concur in all of the conclusions reached with respect to Subcontentions EX-50A through I, I do concur with the ultimate conclusion stated above. I view this conclusion as the definitive statement of the ways in which the training program is fundamentally flawed, and offer the following additional views in its support.⁵⁷

In my view, the failures that are not encompassed by the above statement are not significant enough to demonstrate fundamental flaws in the training

⁵⁷ My colleagues concur with these additional supporting views.

program. Indeed, many of them have been reviewed in connection with the performance contentions and found not to constitute fundamental flaws.

In their approach to Contention EX-50, Intervenor's have viewed virtually every failure that occurred during the Exercise as illustrating the need for improved training. They have addressed these failures under the subcontentions, each of which alleges that the training program is flawed in a particular manner. There is, as a result, a considerable amount of redundancy in that particular failures are cited as supporting more than one subcontention. The failures which, in my opinion, rise to the level of indicating a flaw in the training program are summarized by my colleagues' statement quoted above. I do not believe it significant that Intervenor's may have cited these failures as support for more than one subcontention.

LILCO's communications problems were highlighted by the exercise. Indeed, all of the fundamental performance flaws revealed by the exercise save one were directly related to communications problems.⁵⁸ Accurate communication is essential to an effective emergency response. Clearly LILCO has much to do to remedy its communications problems. Whether it can do so will depend upon whether its training program can be significantly improved.

LILCO believes that the flaws found with respect to the basic knowledge of Traffic Guides and Bus Drivers and the promptness of the former as well as Road Crews and Route Spotters in the performance of their tasks are based on matters not explored on the record. It views the flaw related to the delayed dispatch of Traffic Guides, Bus Drivers, Road Crews, and Route Spotters to be based on an inappropriate aggregation of mobilization and response tasks, which, when properly viewed, do not reveal a pattern of failures. It believes that the delays in mobilizing Traffic Guides and Bus Drivers were *ad hoc* and not a part of a pattern. LILCO Reply Findings, Vol. 1, at 63-65.

LILCO may be correct that the promptness of Route Spotters was not extensively discussed in the record. The delay in staffing Traffic Control Points by the Traffic Guides resulted in our finding a fundamental flaw. We considered Road Crew performance under Contention EX-41A and found their response tardy, although we did not conclude that a fundamental flaw was demonstrated. There is evidence in the record concerning the promptness of Bus Drivers. See FEMA Exh. 1 at 62-63. In these circumstances, LILCO's objection is not well taken. While it may be true that these matters were not discussed under the rubric of a particular subcontention to which LILCO believes they relate, they were discussed. It would be inappropriate to ignore them on the ground that they were mislabeled.

⁵⁸ The fundamental flaw not related to communications concerned the staffing of Traffic Control Posts raised by Contention EX-40B.

While the evidence with regard to the Road Crews, Bus Drivers, and Route Spotters considered separately is not, in my opinion, sufficient to fault the training program for any particular category of emergency worker, the evidence must be considered as a part of a whole. To consider evidence with regard to each emergency worker category in isolation would create an artificial distinction. There is ample evidence that emergency field workers did not respond promptly to support the finding of a fundamental flaw; improvements in the training program in this regard should not be limited to particular categories of workers.

Similarly in my opinion, LILCO's arguments regarding the inappropriate mixing of mobilization and response tasks also would create an artificial distinction. LILCO may well be correct that such distinctions need to be made in considering specific improvements to the training program. However, they are not appropriate in considering whether that program is flawed. The record demonstrates that the training program needs to be improved; distinctions between mobilization and response tasks can be considered in addressing the details of the improvements.

LILCO concedes that problems were revealed with respect to the Bus Drivers' knowledge of their jobs but argues that these failures do not fall into a pattern and, in any event, because of the plan's redundant and diverse response mechanisms, do not impact the public health and safety. LILCO Reply Findings, Vol. 1, at 66. While redundancy and diversity are useful concepts to mitigate the consequences of such failures, they do not excuse faulty training. A substantial number of the drivers observed failed to adequately perform their tasks; a flaw in their training was demonstrated.

Although it concedes that the Traffic Guides were largely unable to direct evacuees to the Nassau Coliseum, LILCO does not think it appropriate to charge the Traffic Guides with this responsibility. It states that the Guides' procedures have never covered the provision of information to evacuees and that these procedures have never been criticized on this score. LILCO points out that, at most, the Guides are a backup to the EBS system in this respect. *Id.* at 66.

LILCO may well be correct that Traffic Guides are not considered a source of information for the evacuating public under the plan. Nonetheless, Staff observes that their inability to provide such basic information as the location of the Nassau Coliseum indicates a failure in their training. *See* Staff Proposed Findings at 175. This observation appears to me to be beyond question.

Subject to the above exceptions, I fully endorse this Initial Decision.

John H Frye, III, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland
February 1, 1988

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judge:

Charles Bechhoefer

In the Matter of

Docket No. 30-12688-MLA
(ASLBP No. 87-556-02-MLA-R)

RADIOLOGY ULTRASOUND NUCLEAR
CONSULTANTS, P.A.
(Strontium-90 Applicator)

February 2, 1988

In response to a remand from the Commission to consider whether certain new information warranted reopening the record in an informal byproduct materials license proceeding, the Presiding Officer rules that, technically, the record should be reopened to admit new information submitted by the Applicant and responsive information submitted by the Staff, but that the new information is not sufficient to warrant a change in the result reached by the Presiding Officer in his earlier Decision (LBP-87-4, 25 NRC 79 (1987)). The Presiding Officer also rules that the Applicant failed to provide adequate justification for holding an oral presentation. The Presiding Officer reaffirms his earlier affirmation of the Staff's denial of a proposed license to authorize use of a strontium-90 applicator by a physician for the treatment of malignant skin lesions.

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

In an informal proceeding, it is appropriate to refer to the standards set forth in 10 C.F.R. § 2.734 to determine whether a record should be reopened.

RULES OF PRACTICE: INFORMAL HEARINGS

A hearing based solely upon written submissions is the preferred method for developing the record in an informal proceeding. An oral presentation may be used when necessary or desirable for a full development of the record.

MATERIALS LICENSE UNDER PART 35: STANDARDS

Under the Commission's February 9, 1979 Statement of General Policy, a proposed therapeutic use of strontium-90 must be demonstrated to be "safe and effective."

MEMORANDUM AND ORDER (Reaffirming Decision)

This proceeding involves an application by Radiology Ultrasound Nuclear Consultants, P.A. (RUNC or Applicant) for a license amendment to its existing byproduct materials license to permit it to use a strontium-90 (Sr^{90}) plaque applicator for the treatment of malignant skin lesions. Pending before me is a motion to reopen the record, filed subsequent to the issuance of my February 9, 1987 Decision, LBP-87-4, 25 NRC 79, which affirmed the NRC Staff's license denial.

For reasons set forth below, I find that there is not enough new substantive information before me to warrant a change in my prior Decision. I am reopening the record for technical reasons, to admit the additional information submitted by both RUNC and the NRC Staff. Based on the enhanced record, I am modifying my previous Decision to make some nonsubstantive changes and, as so modified, am reaffirming my earlier Decision.

I. PROCEDURAL DEVELOPMENTS

The procedural background of this proceeding is set forth in my previous Decision, 25 NRC at 81-83, and need not be repeated. Suffice it to say that, in issuing my February 9, 1987 Decision, I noted that RUNC had failed to respond to questions that I had previously posed to it and that those answers were necessary for me to reach an informed decision on RUNC's application. Thereafter, on February 24, 1987, RUNC belatedly responded to my questions. Because I had lost jurisdiction to consider those answers, I forwarded the information to the Commission, which still retained jurisdiction. See my Memorandum to the NRC Docketing and Service Branch, dated March 3, 1987.

By Order dated September 11, 1987, the Commission construed the responses to my questions as a motion to reopen the record and remanded the proceeding to me to consider whether the record should be reopened. The Commission Order cited the standards in 10 C.F.R. § 2.734 as those to be utilized by me in making that determination. In my Memorandum and Order (Information Relative to Motion to Reopen Record), dated September 29, 1987 (unpublished), I treated RUNC's responses to my questions as a motion to reopen the record,¹ and I invited the Staff's response. I also posed several questions to the Staff.

The Staff filed its response on October 20, 1987. That response, which was supported by the affidavit of Dr. John E. Glenn, Chief, Nuclear Materials Safety Section B, Region I, U.S. Nuclear Regulatory Commission,² recommended against reopening the record. It also responded to my questions and advanced a suggestion for a technical change in one footnote of my February 9, 1987 Decision.

By Order dated October 22, 1987, I invited RUNC to file a reply to the Staff's filing. Additionally, I specified three particular matters in the Staff's response that RUNC should address. RUNC's reply was to be filed by November 6, 1987. By letter dated October 29, 1987, RUNC sought a 1-month extension of time to file its reply. It also reiterated a request (earlier filed on October 5, 1987) for an oral presentation. By Order dated November 4, 1987 (unpublished), I granted RUNC's request for an extension of time to reply to the Staff, until December 7, 1987. I also requested RUNC to amplify its reasons for seeking an oral presentation and to spell out in detail the substantive information that it could "develop more effectively at an oral presentation than it could otherwise present in writing."

By letter dated November 23, 1987, RUNC set forth additional reasons, largely procedural in nature, why it wished an oral presentation. RUNC did not identify any substantive information that it would attempt to develop at an oral presentation. Moreover, RUNC has not filed a reply to the Staff's response — notwithstanding its having obtained an extension of time to do so — and also has not addressed in any of its filings the three particular matters about which I inquired in my October 22, 1987 Order.

II. ADDITIONAL REGULATORY REQUIREMENTS

The regulatory requirements set forth in Part II of my earlier Decision, 25 NRC at 83-86, remain applicable to this proceeding. The standards governing

¹ Hereinafter "RUNC Motion."

² Hereinafter "Staff Aff. III." The first two Staff affidavits (also by Dr. Glenn) were filed earlier in the proceeding. See Decision, LBP-87-4, *supra*, 25 NRC at 81 n.1.

motions to reopen the record which I am to apply to this proceeding (by virtue of the Commission's September 11, 1987 Order) are set forth at 10 C.F.R. § 2.734. The substantive criteria for reopening a record (which are set forth in that section and which I previously quoted in my September 29, 1987 Memorandum and Order) are as follows:

- (1) The motion must be timely, except that an exceptionally grave issue may be considered in the discretion of the presiding officer even if untimely presented.
- (2) The motion must address a significant safety or environmental issue.
- (3) The motion must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially.

Certain other regulatory provisions of § 2.734 relate to the format and certain other technical aspects of motions to reopen, rather than to the substantive criteria for reopening. As the Staff observes (October 20, 1987 Response at 3 n.2), because RUNC's submission is not in fact a motion but is being considered as such by virtue of the Commission Order, the technical requirements relating to motions are not applicable and need not be addressed.

III. Opinion

A. The first two of the three standards for reopening a record are not difficult to apply to this proceeding. It is clear, with respect to the first criterion, that RUNC's motion to reopen the record was not timely submitted. If RUNC had answered the questions that I posed in a timely fashion, there would have been no need for me even to consider reopening the record. The delay of more than 2 months in answering my questions — indeed, until after I had issued my Decision that denied RUNC's license partially on the basis of a lack of information from RUNC on aspects of its application as to which I had inquired in my questions — was patently excessive.

However, as the Staff points out,³ by directing that RUNC's responses to my questions be treated as a motion to reopen the record, the Commission appears to have taken the position that the timeliness question should not be controlling. That being so, for the purposes of RUNC's motion, I will consider the first of the reopening criteria to have been satisfied.

It is also clear that RUNC's motion satisfies the second of the reopening criteria. The information provided bears on how lesions to be treated are to be selected and, hence, for the particular lesion, whether the treatment will satisfy the "safe and effective" licensing standard. The failure of RUNC's application

³ NRC Response to Memorandum and Order, dated October 20, 1987 (NRC Staff Response), at 3 n.2.

to demonstrate that the proposed use of the Sr⁹⁰ applicator met that standard was the primary reason why I affirmed the Staff's license denial.

B. The significant inquiry for determining whether this record should be reopened is whether a materially different result would have been likely had the proffered evidence been considered prior to the rendering of my earlier Decision. On its face, the material submitted by RUNC purports to establish a method or methods for ascertaining which lesions can be treated effectively, and hence would be selected for treatment with the Sr⁹⁰ applicator. If I had before me information suggesting that lesions for which treatment might be effective could be readily differentiated from those for which treatment would not likely be effective, I might well have reached a different result in my earlier Decision. That being so, the record should be reopened to admit this potentially significant information. But the responsive information submitted by the Staff raises substantial questions concerning the efficacy of the methods proposed by RUNC and hence effectively undercuts the information provided by RUNC. The record should similarly be reopened to admit the Staff's responsive information.

The questions posed to RUNC in my Order of October 22, 1987, sought to resolve certain of the matters raised by the Staff. RUNC has not responded to those questions, despite my having granted it an extension of time to do so (until December 7, 1987, the date sought by RUNC). (RUNC never sought a further extension of that filing date.)

For the reasons set forth below, I find that RUNC has not met its obligation to demonstrate that its proposed usage of the Sr⁹⁰ applicator is "safe and effective":

1. In my earlier Decision, I determined that the Sr⁹⁰ therapy proposed by RUNC would be "safe and effective" for thin lesions of up to 1 or 1.5 mm in thickness, but not for lesions of a greater thickness. 25 NRC at 92. I also observed that RUNC had not proposed a satisfactory method of segregating lesions for which the proposed treatments would be effective — noting that certain of my questions that RUNC failed to answer were directed toward ascertaining whether RUNC would rely on an appropriate methodology for segregating the lesions. *Id.* at 93. In its response which forms the basis for the motion to reopen, RUNC sets forth two methods of determining which lesions are to be treated with Sr⁹⁰ applicator.

The first method is by a "biopsy specimen of *one* of the lesions," with review by a pathologist.⁴ The Staff indicates that this method is reliable but that no justification had been advanced for assuming the thickness of multiple lesions based on the measurement of a single lesion.⁵ In my Order of October 22, 1987, I asked RUNC whether it intended to measure each individual lesion by biopsy. RUNC has provided no response to this inquiry. Given the statement in

⁴ RUNC Motion at 2 (emphasis supplied).

⁵ Staff Aff. III, ¶ 6.

RUNC's motion, as well as the potentially disfiguring appearance which (in my opinion) might result from multiple biopsies in close proximity to each other, I will assume (as did the Staff) that RUNC does not intend to perform separate biopsies on such multiple lesions. The record, as it stands, can support no other conclusion. Indeed, in my opinion, the multiple biopsies might produce effects similar to those produced by alternate surgical methods for treating cancerous lesions and hence could eliminate the most persuasive reason advanced by RUNC for using the Sr⁹⁰ applicator to treat multiple skin lesions.

The other method advanced by RUNC for segregating lesions suitable for treatment with the Sr⁹⁰ applicator is described as follows:

An experienced radiotherapist can grossly estimate the thickness of a superficial tumor by plicating the skin and feeling it with the finger.⁶

RUNC adds, however, that "[t]he estimation of the thickness of the lesion by palpation with the finger is approximative."⁷

The Staff views this method as too inaccurate to serve as an appropriate method for identifying those lesions that can be appropriately treated with the Sr⁹⁰ applicator. It asserts that plicating cannot distinguish potentially significant variations of 0.5 mm (approximately 0.02 inch) or less between lesions; absent further explanation, the Staff had an insufficient basis to accept that method of measuring.⁸

To explore whether such a basis might exist, I invited RUNC to provide "additional explanation of how variations in thickness of up to 0.5 mm may be detected" by plicating.⁹ As noted earlier, RUNC has not responded to my inquiry.

Based on the record before me, I cannot accept as effective either of the two methods proposed by RUNC. The first, although sufficiently accurate for individual lesions, would appear not to be feasible for use with multiple lesions. Indeed, RUNC indicates that it intends to measure only "one of the lesions." And the record indicates that use on a single or even a few lesions would not be meaningful with respect to the totality of a group of multiple lesions. The second method is simply not accurate enough to establish the likely effectiveness of the Sr⁹⁰ applicator on particular lesions, as required by the Commission's Policy Statement.¹⁰

C. In reaching my conclusion that RUNC has not demonstrated an effective means for segregating those lesions that may be effectively treated with a

⁶ RUNC Motion at 2.

⁷ *Id.*

⁸ Staff Aff. III, ¶ 6.

⁹ Order (Reply to NRC Staff), dated October 22, 1987 (unpublished).

¹⁰ See my earlier Decision, LBP-87-4, *supra*, 25 NRC at 85.

Sr⁹⁰ applicator from those that cannot be effectively treated, I have carefully considered whether the record is developed sufficiently for me to make this determination. In particular, I have considered whether it would be useful for me to grant RUNC's request for an oral hearing. I have concluded that an oral hearing would not be warranted given the reasons set forth by RUNC for seeking such a hearing.

In my earlier Decision, I pointed out that, under the Commission's October 9, 1986 Order authorizing this proceeding, a hearing based solely upon written submissions was the preferred method for developing the record in an informal proceeding of this type. I also observed that I was authorized to entertain "oral presentations" from the parties but that, in response to my inquiry, RUNC had made no request for an oral presentation and the Staff had concluded that an oral presentation would serve "no useful purpose." I found no subject area where further development of the record was called for and accordingly rendered my Decision based on the written submissions of the parties. LBP-87-4, *supra*, 25 NRC at 86.

In its letter of February 24, 1987, which is being treated as a motion to reopen the record, RUNC asked for a hearing (assuming that I did not find the information in the letter sufficient for me to award the requested license). No substantive reasons were advanced for the holding of such a hearing. Thereafter, by letter dated October 5, 1987, RUNC reiterated its request for an oral hearing, stating that "[s]uch a complicated matter cannot be resolved by letters with short deadlines."¹¹ By letter dated October 29, 1987, RUNC again asked for a hearing. It asserted that it wished to use the hearing to "strongly object" to the allegedly "derogatory" remarks that one of the Staff's consultants had made concerning the capability of RUNC's President, Dr. G. Anthony Doener, as a radiotherapist. RUNC also stated that it had a "legal right" to an oral hearing.

As part of my November 4, 1987 Order, I pointed out that, in an informal proceeding such as this one, there is no "legal right" to an oral presentation but, rather, that any such presentation was discretionary, to be utilized "only where necessary or desirable for a full development of the record." I requested RUNC to spell out in detail the substantive information that it believed it could develop more effectively at an oral presentation than it could otherwise present in writing, and to specify the basis for such belief.

RUNC responded by letter dated November 23, 1987. It cited five reasons for an oral presentation — namely, the length of time the application has been on file, the size of the record of the proceeding, the "numerous misconceptions"

¹¹ In my earliest Order in this proceeding, I pointed out that extensions of time could be obtained for "good cause." Memorandum and Order (Requesting Specification of Claims), LBP-86-35, 24 NRC 557, 558 n.2 (1986). RUNC requested one extension of time in this proceeding, and I granted it for the full amount of time requested. Order (Extension of Time), dated November 4, 1987 (unpublished).

appearing in much of the correspondence between RUNC and the Staff, the "tenor" of the letters that RUNC has received from the Staff, and the asserted reluctance of the Nuclear Regulatory Commission to reverse its previous decision denying RUNC's license.

None of the reasons advanced by RUNC for an oral presentation, either in its letter of November 23, 1987, or in its earlier letter of October 29, 1987, warrants the holding of such an oral presentation. An oral presentation would serve a useful purpose if it were to enable me to obtain additional information likely to be helpful to me in rendering my decision in this proceeding. RUNC, however, has identified no substantive information that it intends to produce which would assist me in reaching a decision. To deal specifically with the reasons RUNC has advanced:

1. RUNC on October 29, 1987, indicated that it wished to clear the record of alleged "derogatory remarks" by one of the Staff consultants concerning the "capability as a radiotherapist" of Dr. Doener (the only person who would be authorized to use the Sr⁹⁰ applicator). Although information concerning Dr. Doener's qualifications does appear in this record, I am not basing my decision on any such information. I am declining to grant RUNC's requested license *only* because of RUNC's failure to establish the effectiveness of the treatment proposed, not on the basis of lack of qualifications of Dr. Doener. An oral presentation would thus not be useful for this purpose.
2. RUNC's claims concerning the length of time for processing its application and the size of the record to date may be justified. But those claims reflect only the necessary attributes of the informal hearing process authorized by the Commission. Moreover, the complexities and length of this hearing process would not be reduced and might well be exacerbated if a formal hearing process had been followed. An oral presentation at this stage would not shorten this proceeding. Among other features, I would require prepared written testimony by both parties for any oral presentation or hearing. Cf. 10 C.F.R. § 2.743(b); proposed 10 C.F.R. § 2.1233.
3. RUNC's assertion that there are "numerous misconceptions" in the Staff's letters is no more than a naked assertion. RUNC has not identified what those misconceptions are or how they might affect the issues in this proceeding — despite my having asked RUNC to specify with particularity what evidence it wished to present at an oral presentation. Given the paucity of detail advanced by RUNC, its claim about misconceptions cannot serve as a legitimate basis for proceeding with an oral presentation.
4. Similarly, RUNC's reference to the "tenor" of the Staff's letters does not contain enough specificity for me to determine whether

any relevant information currently in the record needs to be supplemented. Without more detail, that claim is insufficient for me to authorize an oral presentation.

5. Finally, RUNC's unsupported assertion that the NRC is reluctant to reverse its earlier decision ignores the circumstance that I, as Presiding Officer, am completely independent of the NRC Staff. If the record indicated that the Staff committed error in its denial of RUNC's requested license, I would have no hesitancy in reversing the Staff's determination. And if the record even suggested that more information were needed to reach an informed decision on matters at issue, I would take the necessary steps to supplement the record, including authorizing an oral presentation if appropriate. As I have stated earlier, the record does not so indicate.

D. Both RUNC and the NRC Staff suggest a clarification of one aspect of my earlier Decision. In that portion of the Decision, I was discussing the lack of published papers on beta radiation therapy in conjunction with my consideration whether the Sr^{90} treatments proposed by RUNC were "safe and effective."¹² I observed that the one reference to literature on beta radiation therapy provided by RUNC (other than promotional literature provided by the distributor of the Sr^{90} applicator) was to portions of a 1952 paper on the clinical application of beta radiation from phosphorus-32 (P^{32}). I noted in particular that the paper on P^{32} contained the same cautions about the use of P^{32} for lesions greater in depth than 1-1.5 mm as had been raised by the Staff's consultants with respect to Sr^{90} . I also noted that the results in the paper were based on lesions assumed to be only 1 mm deep. But I further commented that Sr^{90} therapy would be less effective than P^{32} therapy because the beta energy of P^{32} was higher than that of Sr^{90} .¹³

It is true that the beta energy of P^{32} is greater than that of Sr^{90} standing alone.¹⁴ However, as is suggested by both the Staff and RUNC, Sr^{90} is always found in equilibrium with its decay product, yttrium-90 (Y^{90}).¹⁵ The maximum beta energy of Y^{90} is 2.27 MeV.¹⁶ Moreover, the Sr^{90} applicator will include the higher-energy betas from Y^{90} , resulting in a maximum beta energy from the applicator slightly higher than the maximum beta energy from P^{32} , as described

¹² LBP-87-4, *supra*, 25 NRC at 91-92.

¹³ *Id.* at 92 n.48.

¹⁴ As pointed out in my earlier Decision, the beta energy for P^{32} is 1.72 MeV, whereas that for Sr^{90} is 0.54 MeV. *Id.*

¹⁵ RUNC Motion at 3-4; Staff Aff. III, ¶5.

¹⁶ Staff Aff. III, ¶6, *citing Radiological Health Handbook*, Public Health Service, U.S. Department of Health, Education and Welfare (1970), Table I, at 268.

in the referenced article. In sum, treatment with the Sr⁹⁰ applicator would be slightly more effective than treatment with P³², as described in the article.¹⁷

Nonetheless, the treatment described in the article was carried out at a depth of 1 mm, and the article cautions against treatment at depths greater than 1-1.5 mm. These conclusions are consistent with my earlier conclusion that the Sr⁹⁰ applicator had not been shown to be effective at depths greater than 1.5 mm. They provide no basis for a change in any of my earlier conclusions concerning the effectiveness of the Sr⁹⁰ applicator.¹⁸

E. In my Decision, I pointed out that one of the Staff's consultants (Dr. Edward W. Webster), who on his second review recommended against grant of RUNC's application, had also suggested that, if its use were to be authorized, the Sr⁹⁰ applicator should be equipped with a longer handle and a plastic protective shield.¹⁹ RUNC apparently accepts these recommendations.²⁰ If I were to authorize use of the Sr⁹⁰ applicator, I would require that its handle be longer than 4 inches and that the applicator be equipped with a wide plastic shield, as recommended by Dr. Webster.

These conditions would improve the safety of the Sr⁹⁰ applicator to the personnel who would be administering doses of Sr⁹⁰, but they would do nothing to improve its effectiveness. Since lack of effectiveness for the uses proposed is the reason I am denying the requested license, these conditions would not change the result that I reached in my earlier Decision.

F. RUNC, in its motion, repeatedly emphasizes its view that use of the Sr⁹⁰ applicator entails a low risk for patients.²¹ Whether or not that assessment might have merit, it is one I cannot accept, for it is contrary to the regulatory assumptions that underlie the licensing of the Sr⁹⁰ applicator. As I mentioned in my earlier Decision, the Commission, through its Policy Statement on the Medical Uses of Radioisotopes, has explicitly declared that the risk to patients from the therapeutic use of radioactive drugs (as well as certain diagnostic uses) "is not low," and that the "risk of tissue or organ damage (or even death) is inherent in the use of therapeutic levels of radioactive drugs."²² Under the Policy Statement, the Commission therefore imposes the "safe and effective" criterion on the internal and external therapeutic use of such drugs, as well as therapeutic medical devices containing byproduct material (such as Sr⁹⁰). I am bound by these regulatory assumptions in evaluating RUNC's application. In any event,

¹⁷ RUNC Motion at 4.

¹⁸ Note 48 of my earlier Decision should be modified by deleting everything following the initial citation and first full sentence (as amended, the footnote would conclude with "1 millimeter deep").

¹⁹ LBP-87-4, *supra*, 25 NRC at 89.

²⁰ RUNC Motion at 4.

²¹ *Id.* at 2-3.

²² LBP-87-4, *supra*, 25 NRC at 85, 94-95. The regulations applicable to the licensing of the human uses of byproduct material indicate that they govern both the internal and external administration of byproduct material, or the radiation therefrom. 10 C.F.R. § 35.3(a) (1987).

the dosages proposed to be administered by RUNC to certain patients, as set forth in my earlier Decision, are significant.²³

I might add that the regulatory scheme imposed by the Commission for medical uses such as is here proposed — where there is at least a potential for significant radiation exposure — is not unreasonable. That is, where such potential exists, there should be some assurance that the person exposed (the patient) will receive some benefit from the exposure. Otherwise, a needless radiation exposure will result. The “safe and effective” criterion is designed to preclude any such needless exposures.

G. In my Decision I endorsed a suggestion by the Staff that, if RUNC desired to experiment with the Sr⁹⁰ applicator, it become affiliated with an institution that is licensed by NRC to conduct original research with Sr⁹⁰ on humans. I noted that if RUNC (or Dr. Doener) were to receive approval as an authorized user at such an institution, it or he could pursue the mode of radiotherapy requested by RUNC, in accordance with the institution’s approved protocol.²⁴

In its motion, RUNC appears to equate operation under the auspices of an approved institution with using a linear accelerator to treat lesions.²⁵ My suggestion, however, does not contemplate any use of a linear accelerator. Rather, it contemplates that RUNC would use the Sr⁹⁰ applicator subject to oversight by an approved institution.

Such oversight is necessary given the experimental nature of the treatment proposed by RUNC, and in particular the lack of any identified feasible and practical means of selecting lesions appropriate for treatment with the Sr⁹⁰ applicator. An approved institution (such as a hospital or an authorized research institution) would have available continuing professional oversight of use of the Sr⁹⁰ applicator (i.e., by pathologists, dermatologists, plastic surgeons, or other specialists),²⁶ peer review by appropriate Human Use Committees, and a medical physics staff in a research setting — none of which appears to be available in the office/clinic setting in which RUNC has proposed to use the Sr⁹⁰ applicator.

In that connection, I note that I asked the Staff whether it could adequately monitor RUNC’s use of the Sr⁹⁰ applicator, assuming that RUNC had been able to identify an appropriate method for selecting lesions to be treated.²⁷ The Staff responded that it could not adequately monitor the method of patient selection suggested by RUNC, both because it did not have adequate technical expertise to

²³ LBP-87-4, *supra*, 25 NRC at 94-95; *cf.* RUNC Motion at 2-3.

²⁴ LBP-87-4, *supra*, 25 NRC at 95-96.

²⁵ RUNC Motion at 1.

²⁶ *See* Staff Aff. III, ¶ 7.

²⁷ Memorandum and Order (Information Relative to Motion to Reopen Record), dated September 29, 1987 (unpublished), at 3.

do so and because the inspection frequency for the type of license sought is one inspection every 3 years. The Staff added that, where medical research is being conducted, it is the responsibility of the licensee to "provide the medical experts who will review the selection and treatment process for adequate safeguards to protect the interest and welfare of the patient."²⁸

Such safeguards could be provided by a hospital or other authorized research institution. RUNC has not demonstrated that it has adequate resources to do so. For that reason, I renew my suggestion that, if RUNC wishes to pursue its use of the Sr⁹⁰ applicator, it seek to do so under the aegis of an authorized research institution.

IV. CONCLUSION

To summarize, the information provided by RUNC in its motion is sufficient to warrant reopening the record to include it and the Staff's response. Upon further analysis, however, the information is inadequate to change the result that I previously reached. Specifically, RUNC has failed to prove that its proposed use of the Sr⁹⁰ applicator is "safe and effective" for all of the uses proposed. Further, RUNC has failed to establish an effective and practical means to separate the uses for which the applicator may be effective from those for which it has not been demonstrated effective. That being so, I must conclude that RUNC's application is inconsistent with the Commission's regulatory standards and accordingly must be denied.

V. ORDER

For the reasons set forth above, it is, this 2d day of February 1988, ORDERED:

1. The record is *reopened* to admit RUNC's motion dated February 24, 1987, and the Staff's response dated October 20, 1987.

2. Based on the supplemented record, note 48 of LBP-87-4, 25 NRC at 92, is *modified* as provided herein. In other respects, the result reached in LBP-87-4 is *affirmed* and RUNC's license amendment application is *denied*.

3. RUNC's requests for an oral presentation are hereby *denied*.

4. In accordance with the Commission's Order dated October 9, 1986, supplemented by its Order dated September 11, 1987, the Decision dated February 9, 1987 (LBP-87-4) as modified by this Memorandum and Order (LBP-88-3), will become final agency action thirty (30) days after the date of issuance

²⁸ Staff Aff. III, § 8.

hereof, unless the Commission, on its own motion, undertakes a review of the Decision or this Memorandum and Order. No petition for review by a party will be entertained by the Commission.

PRESIDING OFFICER

Charles Bechhoefer
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 2d day of February 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

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 Operator License for
Beaver Valley Power Station,
Unit 1)

February 2, 1988

The hearing officer dismissed cross motions to reconsider the decision issued on January 11, 1988 (LBP-88-1B, 27 NRC 29).

MEMORANDUM AND ORDER
(Motions to Reconsider)

After my Decision of January 11, 1988 (LBP-88-1B, 27 NRC 29), both David W. Held (January 24, 1988) and the NRC staff (January 21, 1988) filed motions for reconsideration. The purpose of this Memorandum and Order is to consider their arguments.

Both the Staff and Mr. Held argue that the presiding officer can neither enlarge nor contract his jurisdiction, citing *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790 (1985), and related cases. The Staff accepted my decision that the case was moot but argued that it would be an enlargement of jurisdiction to provide for a 2-year period in which Mr. Held could file a motion that would reactivate the case. Mr. Held, on the other hand, argued that I have been charged to decide the merits of this case and

that deciding that the case is moot is an improper contraction of my jurisdiction from what the Commission intended.

In my Decision, I declared this case moot but recognized the possibility that the Decision could affect the ability of Mr. Held to obtain a license in the future. I recognize, as Mr. Held points out, that my dismissal of this case is not entirely without effect. Mr. Held's career at Duquesne Power and Light *could* be affected by my decision, in that Duquesne Power and Light bases a portion of its personnel system on whether or not its employees have obtained federal licenses. However, I am not prepared to consider this consequence sufficient reason to hold a hearing concerning the granting of a license that will not be used for the purpose for which it is issued — to permit Mr. Held to be a Senior Reactor Operator of Unit 1.¹

On the other hand, I have been informed of an eventuality under which Mr. Held could be refused a *federal* license based on the declaration of mootness of this case. That eventuality could occur if senior reactor operators are granted dual licenses, in the future, based on having been granted SRO licenses for both units in the past. There is sufficient possibility here, based on representations of Duquesne Power and Light, that, in declaring this case moot, I consider it necessary to provide for this eventuality.

I have read Mr. Held's arguments carefully, and I acknowledge his point that I have determined this case to be moot despite its effect on private personnel choices. (This effect will occur unless Duquesne Power and Light reinterprets its policy with respect to David Held pursuant to the invitation in my Decision.)

Given my contrasting views about the relationship between mootness and impacts on private personnel decisions or public licensing, I provided in my Decision that the case may be reopened within 2 years if the anticipated problem with public licensing should arise. If I thought it improper for me to "retain jurisdiction" in that fashion, then I would consider the case not to be moot and would hear it immediately. However, this specific situation has not been addressed by past precedent; and I consider my invitation to Mr. Held to reopen the case to be an appropriate way to effect judicial economy by not hearing this case now.

I note that there is no reason for me to determine the truth of Staff's assertion that Mr. Held will not be disadvantaged should there be dual licensing of SROs (see Staff Motion at 6 n.2). Should Staff prove to be correct in its belief, then Mr. Held will never have the grounds to reopen this proceeding and my invitation

¹ Mr. Held states, in his motion, that he has not responded to the Staff's substantive arguments because he expected to do so at oral argument. If, indeed, Mr. Held has persuasive arguments that he passed the simulator test *and he has not previously communicated those arguments to the Staff in previous stages of this litigation* then I would encourage him to communicate with the Staff. This would serve the purpose of alerting the Staff to possible deficiencies in its testing procedures and also of permitting the Staff to decide to inform Duquesne Power and Light if it were to conclude, by itself, that a mistake has been made.

will never have any effect. However, if Staff's belief is incorrect, we could have the embarrassing circumstance of having declared this case moot and then having Mr. Held denied a license based on my decision. It is this contingency against which I find it necessary to provide.

In closing, I note Mr. Held's argument that he be permitted 2 years from the completion of the first refueling of Unit 2 in which to reopen this case; however, he does not state any reason to let the time run from the first refueling, so this suggestion is not adopted.² I also note that Mr. Held is correct that he appeared to have a ripe case at the time he filed. The mootness occurred at a subsequent time. While this may seem to be unfair, it is not unusual for cases to become moot at some time after they are filed.

Order

Upon consideration of the filings of the parties and the entire record in this matter, it is, this 2d day of February 1988, ORDERED:

That both motions for reconsideration are denied.

Peter B. Bloch
ADMINISTRATIVE JUDGE

Bethesda, Maryland

²He could, of course, always file to reopen the case under the ordinary standards provided for in the rules.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Robert M. Lazo, Chairman
James H. Carpenter
Peter A. Morris

In the Matter of

Docket No. 50-133-OLA
(ASLBP No. 86-536-07-LA)
(Decommissioning)

PACIFIC GAS AND ELECTRIC
COMPANY
(Humboldt Bay Power Plant,
Unit 3)

February 9, 1988

In this Order, the Licensing Board approves a stipulation providing for the withdrawal of all admitted contentions, dismisses the proceeding, and authorizes the issuance of the requested license amendment.

LICENSING PROCEEDINGS: DISMISSAL

When settlement negotiations among the parties result in a stipulation providing for the withdrawal of all admitted contentions, and the Licensing Board has raised no significant health or safety issues *sua sponte*, no further hearings are required. The proceeding becomes uncontested and may be dismissed.

ORDER

(Dismissing Contentions and Terminating Proceeding)

Pacific Gas and Electric Company (Licensee) is licensed to possess but not operate Humboldt Bay Power Plant, Unit 3, a 65-MWe boiling water reactor located in the city of Eureka, Humboldt County, California. On July 3, 1986, pursuant to 10 C.F.R. § 2.104, the NRC published in the *Federal Register* a notice of consideration of the issuance of an amendment to the facility license and offered the opportunity for hearing on the amendment. 51 Fed. Reg. 24,458. The amendment is related to decommissioning the facility and specifically would: (1) delete license conditions related to seismic investigation, analysis, and modification; (2) approve the Licensee's decommissioning plan for 30 years of onsite storage of residual radioactivity (SAFSTOR); (3) revise the technical specifications to reflect the permanent shutdown and "possess-but-not-operate" status of the facility and to reflect the SAFSTOR status; and (4) extend License No. DPR-7 for an additional 15 years from November 9, 2000, to November 9, 2015, to be consistent with the 30-year safe storage plan.

Pursuant to that notice, the Redwood Alliance,¹ an unincorporated organization; Wesley Chesbro, an elected member of the Humboldt County Board of Supervisors; Douglas H. Bosco, a U.S. Congressman representing California's First Congressional District; Barry Keene, a member of the California Legislature representing California's Second Senate District; Daniel E. Hauser, a California State Assemblyman representing the Second Assembly District; Gaye M. Barr and the League of Women Voters of Humboldt County (Joint Interveners); petitioned for leave to intervene and requested a hearing. In a Prehearing Conference Order, dated December 3, 1986, the Board granted the requests for intervention, admitted six contentions, and set forth the schedule for discovery as commencing on December 15, 1986, and concluding 30 days after issuance of the Staff's Safety Evaluation Report (SER) and Final Environmental Statement (FES).

On May 1 and May 8, 1987, respectively, the Board was officially furnished copies of the SER and the FES concerning the decommissioning of Humboldt Bay Power Plant, Unit 3, by the NRC Staff. With regard to the proposed amendments, the Staff concluded in its SER that:

- (1) there is reasonable assurance that the health and safety of the public will not be endangered by maintenance of the facility in the proposed manner [SAFSTOR], and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of

¹The Redwood Alliance sought derivative standing based on the interests of its adequately identified members, Ralph and Nona Kraus.

[the] amendment will not be inimical to the common defense and security or to the health and safety of the public.

SER at 12-1.

In its FES (NUREG-1166, April 1987), the Staff concluded *inter alia* that: (1) a technical basis exists for decommissioning nuclear plants in a safe, efficient manner; (2) no significant environmental impacts will result from the storage of spent fuel in the spent fuel pools; and (3) Humboldt Bay Unit 3 can be placed in SAFSTOR for a 30-year period with minimum environmental impact (NUREG-1166 at 5-1).

Meanwhile, in March 1987, representatives of PG&E and the Joint Intervenor had begun settlement discussions to try to resolve the matter short of litigation. These discussions ultimately led to the execution of a Memorandum of Understanding, dated June 8, 1987, by PG&E and the Joint Intervenor which set forth terms for settlement of the litigation. Pursuant to this agreement, PG&E, Joint Intervenor, and the NRC Staff executed a Stipulation for Withdrawal of Contentions which incorporated the Memorandum of Understanding and implemented its provisions for withdrawal of Joint Intervenor's contentions.

By motion dated August 7, 1987, Licensee requested that the Board (1) enter an order providing for dismissal of all contentions, thereby terminating the adjudicatory proceeding, and (2) authorize the Director of Nuclear Reactor Regulation to issue the requested license amendment. Motion to Dismiss Contentions and Terminate Proceeding at 5-6. As grounds for the motion, Licensee states that (a) the Staff's environmental and safety review of the amendment found the request acceptable, and (b) Licensee and Joint Intervenor executed an agreement that provides terms for settlement of the proceeding, which culminated in the execution of a Stipulation for Withdrawal of the Contentions. *Id.* at 4-6. The stipulation is appended to the motion and has been signed by all the parties to the proceeding.

Because there are no longer any issues in dispute, the Board grants Licensee's motion.

DISCUSSION

Where the Board has raised no significant safety or environmental issue *sua sponte*, the only issues to be decided by a licensing board in an amendment proceeding are those issues contested by the parties. *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-796, 21 NRC 4, 5 (1985); see 10 C.F.R. § 2.760a. Accordingly, where admitted contentions are withdrawn, the matter becomes uncontested since there are no longer any matters that the parties wish to resolve in the proceeding and there is no need for further hearings. *See*,

e.g., Arizona Public Service Co. (Palo Verde Nuclear Generating Station, Units 2 and 3), LBP-85-26, 22 NRC 118 (1985) (intervention petition and contentions withdrawn by settlement agreement); *Public Service Electric and Gas Co.* (Hope Creek Generating Station), LBP-85-6A, 21 NRC 468 (1985) (board approved withdrawal of intervenor and its contentions based upon a settlement agreement); *Rochester Electric & Gas Corp.* (R.E. Ginna Nuclear Plant, Unit 1), LBP-84-34, 20 NRC 769 (1984) (withdrawal of sole intervenor); *Armed Forces Radiobiology Research Institute* (Triga-Type Research Reactor), LBP-84-15A, 19 NRC 852 (1984) (withdrawal of intervenor based upon settlement agreement).

In the instant proceeding, the stipulation, which provides for the withdrawal of all admitted contentions, effectively ends Joint Intervenors' status as a party and removes all matters in controversy in this adjudicatory proceeding. See 10 C.F.R. § 2.714a(b). Consequently, the Board has approved the stipulation and herein below enters an order dismissing the adjudicatory proceeding and authorizing the Staff to issue the requested amendment.

ORDER

For all the foregoing reasons and upon consideration of the entire record in this matter, it is, this 9th day of February 1988, ORDERED:

That Licensee's Motion to Dismiss Contentions and Terminate Proceeding is *granted*.

Is Further Ordered that the Director of Nuclear Reactor Regulation is authorized to make appropriate findings in accordance with the findings and conclusion contained in its SER and FES and the Commission's regulations approving PG&E's July 30, 1984 license amendment request for its Humboldt

Bay Power Plant Unit 3 SAFSTOR decommissioning plan. *It Is Further Ordered* that this matter be terminated.

THE ATOMIC SAFETY AND
LICENSING BOARD

Robert M. Lazo, Chairman
ADMINISTRATIVE JUDGE

James H. Carpenter
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 9th day of February 1988.

[Judge Peter A. Morris has resigned from the Atomic Safety and Licensing Board Panel and did not participate in the drafting of this Order.]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judge:

Charles Bechhoefer

In the Matter of

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

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

February 10, 1988

In an informal proceeding being conducted pursuant to proposed regulations governing informal proceedings, the Presiding Officer directs the NRC Staff to establish a local public document room, although leaving details such as location and hours of operation to the Staff.

RULES OF PRACTICE: LOCAL PUBLIC DOCUMENT ROOM

In an informal proceeding subject to proposed 10 C.F.R. § 2.1231(a), the NRC Staff must establish a local public document room, at least where requested by a party.

RULES OF PRACTICE: JURISDICTION OF PRESIDING OFFICER

A presiding officer in an informal proceeding has authority to direct the NRC Staff to establish a local public document room but not to require the Staff to perform that function in a specified manner, such as the details of operation of such a room (e.g., location or hours of operation).

MEMORANDUM AND ORDER

(Establishment of Local Public Document Room)

On January 20, 1988, Mr. Alfred J. Morabito filed a motion requesting that the Presiding Officer direct the NRC Staff to place a copy of the entire hearing file for this proceeding, together with several other named documents, in the local public document room (LPDR) for the Beaver Valley facility. By response dated February 3, 1988, the NRC Staff opposed Mr. Morabito's request. For the following reasons, Mr. Morabito's request is granted in part.

1. Mr. Morabito cites proposed 10 C.F.R. § 2.1231 in support of his request. He explains that there is much public interest in the proceeding from local news media and special interest groups and that, prior to the oral presentation scheduled for February 22, 1988, these groups should have available to them the background of this proceeding. Finally, he explains why he believes that the named documents are relevant to this proceeding and should be included in the record. In addition, he poses several questions to the NRC Staff bearing on those named documents.

For its part, the Staff points out first that all documents filed in this proceeding have been placed in the Commission's Public Document Room (PDR) in Washington, D.C. The Staff states — correctly — that placement of documents in the PDR or LPDR does not mean that they are in the record of this proceeding. The Staff observes that the circumstance that Mr. Morabito wishes to discuss certain subjects at the oral presentation does not provide a valid reason for placing documents related thereto in the LPDR. The Staff also raises a question about the relevance of the subjects described by Mr. Morabito to this proceeding. The Staff concludes that Mr. Morabito's motion for placement of documents in the Beaver Valley LPDR is baseless and should be denied.

2. Although cited by Mr. Morabito, neither party has discussed the regulatory requirements of proposed 10 C.F.R. § 2.1231(a), which are applicable to this proceeding (as guidance) by virtue of the Commission's July 1, 1987 Order instituting this proceeding and my Memorandum and Order of July 15, 1987 (unpublished). In pertinent part, that provision reads:

The hearing file . . . shall be made available for public inspection and copying during regular business hours at the NRC Public Document Room in Washington, DC, and at any appropriate local public document room. In the event no appropriate local public document room exists, the applicant must make the hearing file available for public inspection and copying during regular business hours at a location in the vicinity of the [subject of the application].

The Statement of Considerations accompanying the issuance of the proposed regulations contains little additional guidance, except to emphasize the Staff's

obligation to provide the hearing file to the LPDR and to note that, where an applicant provides space for an LPDR, it can do so "in a number of different ways, including making the file available at a local public library." 52 Fed. Reg. 20,089, 20,090 (May 29, 1987).

This provision, in my opinion, requires that there be an LPDR in any proceeding to which the proposed rules are deemed applicable. This is particularly so where one party to a proceeding requests an LPDR, and the requirement would apply irrespective of the validity of the reasons underlying the request. An LPDR is part and parcel of the Commission's methodology for ensuring that proceedings of this type are indeed public proceedings. Moreover, it is important that information on proceedings such as this one be made available to those interested in it locally — a trek to Washington, D.C., is neither requisite nor appropriate for persons in the locale of the proceeding who wish to learn of its details.

Finally, there is an additional reason for an LPDR which neither party has addressed but which is extremely important. There must be some local access to the transcript of the oral presentation. See *Duquesne Light Co.* (Beaver Valley Power Station, Unit 2), LBP-84-6, 19 NRC 393, 407-08 (1984); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), LBP-81-32, 14 NRC 381, 397-98 (1981); *Pennsylvania Power & Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-79-6, 9 NRC 291, 328 (1979). Indeed, the Licensing Board in the *TMI* case, in the course of denying requested financial assistance to intervenors, established a hearing room library of transcripts (in addition to the LPDR) to enable parties to make complete and accurate references to transcript pages in proposed findings, other pleadings and arguments. LBP-81-32, *supra*, 14 NRC at 398. For these same reasons, a transcript must be available to Mr. Morabito to prepare adequate proposed findings or statement of position following the oral presentation, and he should not be relegated to the position where he is forced either to purchase the transcript — a not inconsequential expense for an applicant such as Mr. Morabito — or travel to Washington, D.C. That is the whole purpose of an LPDR, and it should be followed in this case.

3. In view of the foregoing considerations, I am directing the NRC Staff to establish an LPDR for this proceeding, as soon as it can do so and in any event prior to the oral presentation. Because the establishment of such an LPDR is a Staff function, I have no authority to establish the details of the LPDR — i.e., its location (other than proximity to Mr. Morabito's home or place of business), or its hours of operation. All I am holding is that, under the proposed regulations which the Commission has indicated I may follow, an

LPDR must be established.¹ I also recognize that the already-existing Beaver Valley LPDR is not, and need not necessarily be, the LPDR for this entirely discreet proceeding. But it also may be the most appropriate LPDR to be utilized and, for that reason, I suggest (although I do not order) that the Staff ascertain its availability for this proceeding.

After the Staff has established an LPDR, it should include therein the hearing file for this proceeding, together with copies of the six exhibits described in my Memorandum (Documents to be Presented at Oral Presentation), dated February 4, 1988 (unpublished). It should also ensure that a copy of the transcript of the oral presentation be placed therein as soon after the oral presentation as is feasible. The Staff need not include therein any other documents, although it clearly may do so if it wishes. In particular, the Staff need not include at this time the two particular documents identified by Mr. Morabito — i.e., a checkoff sheet for Mr. Morabito's examination and the qualification notebook for Mr. Morabito's examiners. If Mr. Morabito wishes to incorporate these documents into the record of this proceeding, he may offer them into evidence at the oral presentation. Admission into evidence will depend, of course, on a demonstration that they are relevant and material to matters at issue in this proceeding.

IT IS SO ORDERED.

PRESIDING OFFICER

Charles Bechhoefer
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 10th day of February 1988.

¹ I differentiate the establishment of an LPDR — which is required by the standards being used for guidance in this proceeding — from a direction to the Staff concerning the details of a matter committed in the first instance to the Staff, which would be beyond my authority. See *Offshore Power Systems* (Floating Nuclear Power Plants), ALAB-489, 8 NRC 194, 199-208 (1978).

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-R
50-444-OL-1-R
(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)

February 17, 1988

Pursuant to the directions of the Commission set forth in CLI-87-13, 26 NRC 400 (1987), the Licensing Board renews its authorization to operate Seabrook, Unit 1, up to 5% of rated power insofar as the two contentions remanded in ALAB-875, 26 NRC 251 (1987), are concerned. This authorization is renewed because the two remanded contentions are 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. However, the Licensing Board cannot give effect to this renewed authorization in light of ALAB-883, 27 NRC 43 (1988) and the Appeal Board's Memorandum of February 10, 1988 (unpublished), and thus the Licensing Board does not authorize the Director of NRR, upon making the findings required by 10 C.F.R. § 50.57(a), to issue the low-power license.

The Licensing Board also denies an Intervenor's motion for leave to file a reply brief.

ADMINISTRATIVE TRIBUNALS: AUTHORITY

We are familiar with no legal system — judicial or administrative — that allows a lower tribunal to disregard the directives of a superior one. *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), ALAB-303, 2 NRC 858, 870 (1975).

RULES OF PRACTICE: CONTENTIONS

It is well settled that a party is bound by the literal terms of its own contention. *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-852, 24 NRC 532, 545 (1986).

RULES OF PRACTICE: AMENDED CONTENTIONS

Without leave having been sought from the Licensing Board and granted, it is impermissible for an intervenor to attempt to amend his contentions or to advance new bases for them which could have been submitted earlier. *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-565, 10 NRC 521, 523 n.11 (1979).

MEMORANDUM AND ORDER

(Renewal of Low-Power Authorization; Denying NECNP's
Motion for Leave to File a Reply)

Memorandum

I. BACKGROUND

On March 25, 1987, this Board issued a Partial Initial Decision on the onsite emergency planning and safety issues in this proceeding.¹ Therein, having resolved all onsite safety and emergency planning issues in controversy, pursuant to 10 C.F.R. §§ 50.47(d) and 50.57(c), the Licensing Board authorized issuance of a license to operate Seabrook Station, Unit 1, up to 5% of rated power. Upon appeals by the Intervenors, on October 1, 1987, the Appeal Board issued a Decision affirming in part and reversing and remanding in part.² On remand, the Appeal Board stated that this Board should admit

¹ LBP-87-10, 25 NRC 177.

² ALAB-875, 26 NRC 251.

for litigation two contentions that had been rejected in 1982 as issues in controversy. These were New England Coalition on Nuclear Pollution (NECNP) Contentions I.V (concerned with inservice inspection of steam generator tubes) and IV (addressed to the accumulation of aquatic organisms and other foreign matter in cooling systems). The Appeal Board was aware that the Commission's Order of January 9, 1987 (unpublished) had barred the Director of Nuclear Reactor Regulation from issuing a low-power license for Seabrook in the event issuance of such a license was otherwise authorized in order that the Commission might consider whether, as a matter of law or policy, low-power operations should proceed absent the submittal of an emergency plan for that portion of the plume exposure emergency planning zone that lay within the Commonwealth of Massachusetts. The Appeal Board was also aware that subsequent orders of the Commission continued the stay until the Applicants submitted a bona fide utility plan (CLI-87-2, 25 NRC 267 (1987); CLI-87-3, 25 NRC 875 (1987)). In ALAB-875, it stated that it had no way of knowing whether, and if so when, the Commission would conclude that the reasons undergirding the stay no longer obtained. Therefore, assuming that such a conclusion would be reached prior to the completion of the remand, and further assuming that the Commission might not provide controlling guidance on the subject, the Appeal Board stated that this Board should determine expeditiously the appropriateness of a renewal *pendente lite* of the low-power authorization contained in our Partial Initial Decision of March 25, 1987.

In an Order of October 16, 1987 (unpublished), we admitted for litigation the two NECNP contentions and directed that discovery be completed by December 28, 1987 and that, on or before December 7, 1987, Applicants, the Staff, and NECNP should notify us whether or not each would file a motion for summary disposition. The Board advised that, depending upon the contents of these notifications, it would subsequently set due dates for the filing of motions for summary disposition and answers or would schedule a hearing.

Having been furnished by the Applicants with their utility emergency plan for Massachusetts on September 18, 1987, the Commission issued a Memorandum and Order (CLI-87-13, 26 NRC 400 (1987)). Finding that Applicants' utility emergency plan demonstrated that adequate emergency planning for the Massachusetts portion of the emergency planning zone was within the realm of the possible, that it included measures to compensate for the absence of state and local planning, and that it had been submitted in good faith, the Commission lifted its stay of low-power operations and affirmed that, as directed by the Appeal Board in ALAB-875, "the Licensing Board shall expeditiously determine whether considering the issues that it is hearing on remand, it is appropriate to renew at this time its authorization of low power or whether low power operations must await further decisions."

The Appeal Board's directive having been affirmed by the Commission which directed us to resolve the issue of reauthorization of low power before determining the merits of the two remanded contentions or to determine that low-power operations must await further decisions, we immediately issued an Order on November 27, 1987 (unpublished). Therein, we ordered that, in order to assist us in making the expeditious determination directed by the Commission, responsive briefs by the Applicants and NECNP should be simultaneously filed upon the reauthorization of low-power issue by no later than January 4, 1988, and that the Staff should file its brief by no later than January 11, 1988.

In the meantime, on November 20, 1987, NECNP had filed a motion to extend the Board's October 16 schedule so as to allow NECNP until January 4, 1988, to inform the Board of its intentions regarding the filing of motions for summary disposition and until February 1, 1988, for the completion of discovery. In the Order of December 2, 1987 (unpublished), the Board ruled as follows:

In light of the Commission's Memorandum and Order (Lifting the Order Staying the Director of Nuclear Reactor Regulation from Authorizing Low-Power Operations Due to the Lack of an Emergency Plan for Massachusetts) dated November 25, 1987, and this Board's Order (Briefing Schedule) dated November 27, 1987 (unpublished), we do not have to reach and decide the arguments advanced in favor of or opposed to the granting of the instant motion. These two intervening circumstances require that we, upon our own motion, rescind our Order of October 16, 1987, to the extent that it directs the completion of discovery by December 28, 1987, and directs that, on or before December 7, 1987, the three parties shall give notification whether or not each will file a motion for summary disposition. It would be burdensome and unfair to require that the notification date and the completion of discovery date be met, since our Order of November 27 directed that all of the parties, other than Staff, should file briefs by January 4, 1988, addressing the issue of whether or not it is appropriate for the Board to renew at this time its authorization of low power prior to the completion of the remand proceeding, and that the Staff should file its brief by January 11, 1988.

In light of our rulings hereafter, the instant motion is denied as having been mooted. Applicants, NECNP, and the Staff shall proceed with discovery upon the two remanded issues and complete discovery by February 19, 1988. As soon as possible, after reviewing the briefs filed in compliance with our Order of November 27, 1987, and making the determination as to whether or not it is appropriate for us to reauthorize low-power operations prior to the completion of the remand proceeding, we will confer with the Applicants, NECNP, and the Staff to find out whether motions for summary disposition will be filed or whether a hearing should be scheduled.

On January 4, 1988, Applicants filed a Memorandum in Support of Low Power Operation and NECNP filed a Brief in Opposition to Renewal of Authorization to Operate at Low Power.³ Having been granted a one-day extension, on January 12, 1988, the Staff filed its Response to Licensing Board

³ On January 11, 1988, for some reason, Seacoast Anti-Pollution League filed a one-page document indicating that it joined in NECNP's January 4, 1988 statement of position and arguments.

Order of November 27, 1987. On January 14, 1988, NECNP filed, in effect, a motion for leave to file a reply to the Applicants' Memorandum of January 4 and to the Staff's Response of January 12. On January 29, the Staff responded.

II. DISCUSSION

A. The Issue of Reauthorization of Low Power

1. *The Applicants' Memorandum of January 4, 1988, and the Staff's Response of January 12*

In substance, both the Applicants and the Staff argue with respect to NECNP IV,⁴ that Applicants have now in place and in compliance with regulations a surveillance and maintenance program to detect and prevent the accumulation of mollusks, other aquatic organisms, and debris in the cooling systems, and that thus low-power operation may be safely reauthorized. With respect to NECNP I.V,⁵ Applicants argue that they have a program for inservice inspection (to be performed after 6 months of effective full power but within 24 months of initial criticality) and that thus there is nothing associated with low-power operation that would further complicate any subsequent inspection or preclude any augmentation of the current inspection program if deemed necessary by this Board following any litigation of this contention. Further, Applicants argue for various reasons that it is highly unlikely that either a tube rupture occasioned by a foreign object, which had occurred at the Ginna plant, would occur during low-power operation at the Seabrook Station or that an event like the North Anna Unit 1 tube rupture incident, occasioned by denting, would occur during low-power operation at Seabrook. The Staff argues that Applicants' program for inservice inspection of steam generator tubes meets regulatory requirements, and like Applicants, urge that it is unlikely that the Ginna and North Anna-type tube ruptures would occur during low-power operation at Seabrook.

To the extent set forth above, the Applicants' Memorandum and the Staff's Response and the attached affidavits of their experts are directed to the merits of the two remanded issues. This was error because the Commission in CLI-

⁴ NECNP 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, 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.

⁵ NECNP I.V reads as follows:

In-Service Inspection of Steam Generator Tubes

The Applicants have not demonstrated that they have met GDC 14, 15, 31 and 32 insofar as to the extent that those GDC require a program of the in-service inspection of steam generator tubes.

87-13 made it clear that the merits of the remanded contentions were not to be considered. However, the Staff's Response and a supporting affidavit with respect to NECNP IV and the Applicants' Memorandum and supporting affidavits with respect to NECNP I.V did proceed to discuss and to show that these two remanded contentions were 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.

With respect to NECNP IV, the Staff relies upon the affidavit of its expert (Masnik Affid. at 6-9). Dr. Masnik deposed as follows:

The operation of the Seabrook Station at 5% rated power level would likely result in decreased biofouling activity and in decreased intake of debris depending on the circulating water (CW) and service water (SW) flow rates. The rate of biofouling is dependent on a number of factors. Environmental conditions such as salinity, water temperatures, light, availability of food, and frequency and degree of submergence can significantly influence the growth rate of the organisms. Operation at 5% of rated power would not have a significant effect on salinity, light, availability of food or frequency and degree of submergence but would influence water temperature in many locations. Since growth rate in this geographic area is highly dependent on temperature, the operation of the facility at 5% of rated power would result in much slower growth rates in most of the CW and SW systems than at 100% power for any organisms that might attach despite the program that Applicants are undertaking to discourage attachment. Assuming that the system does not initially contain any life stages of blue mussel,⁶ assuming a high growth rate for this organism, and assuming there existed *no* water treatment (i.e., chlorine or backflushing) program, the period of time from the beginning of low power operations to the time of earliest flow blockage from biofouling could range, depending upon the time of year, from 1 to 7 months.

Dr. Masnik also deposed to the following:

The amount of debris entering the ocean intake structures is dependent primarily on the availability of debris in the water column at the level of the intake, and the flow regime in the vicinity of the intake.⁷ This regime is highly dependent on flow rate. If the flow rate is reduced due to the low power operation, the amount of debris taken into the ocean intake structure would be substantially reduced. Since debris buildup is not considered a problem by the Staff at full power operation, operation at low power and possibly a corresponding reduction in cooling water flow, would therefore not present a problem.

The Board concludes that the Staff has shown that NECNP IV 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.

⁶ The principal biofouling macroorganism in the Seabrook area.

⁷ A midwater intake, located well above the sea floor, is used at Seabrook (Masnik Affid. at 2).

With respect to NECNP I.V, we have reviewed the pertinent affidavits of Applicants' experts Peter Littlefield and Kenneth Rubin. Relying in part upon the affidavit of Mr. Rubin, Mr. Littlefield deposed as follows (Affid. at 2-3):

The thyroid dose from a tube rupture is due to a release of radioiodine. Operation of the plant during low-power testing would result in substantially decreasing the potential consequences of design basis accidents as calculated for operation at full power. Several factors account for this. (1) The reactor core iodine inventory at 0 to 5% power operation is at least a factor of 20 less than at full power operation. (2) There is less fuel gap iodine fraction available for release to the coolant due to low fuel burnup and low fuel temperature. (3) There is a low potential for a fuel cladding failure during early core life, i.e., at the low-power testing phase. A numerical analysis with conservative assumptions for operation at 5% power results in a very low thyroid dose at the exclusion area boundary of about 1.1 rem. The design limit as specified in 10 C.F.R. 100 is 300 rem.

The Board concludes that, even assuming a tube rupture occurred during low-power operation at 5% of rated power, the expected thyroid dose that would be received would be significantly less (1.1 rem) at the exclusion area boundary than the design limits (300 rem) permitted by regulation, and that thus that NECNP I.V 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.

2. *NECNP's Brief of January 4, 1988*

Most of NECNP's brief challenges the authority of the Commission and its adjudicatory boards to authorize low-power operations prior to the completion of full-power operating license proceedings or at least prior to the resolution of the remanded contentions, and argues that there is no authority in the Commission's regulations for issuance of a low-power license prior to findings on all issues relevant to full-power operation. Brief at 4-27. The short answer is that, as a trial board, we are bound by the Commission's Order of November 25, 1987, CLI-87-13, 26 NRC 400.⁸ We are familiar with no legal system — judicial or administrative — that allows a lower tribunal to disregard the directives of a superior one. *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), ALAB-303, 2 NRC 858, 870 (1975). NECNP did not attempt to have the Commission reconsider its Order of November 25, 1987, and accordingly it may not complain about it here. Moreover, as recognized by NECNP at 5 n.7 of

⁸To repeat, in CLI-87-13, the Commission lifted its stay of low-power operation, and affirmed that, as directed by the Appeal Board in ALAB-875, "the Licensing Board shall expeditiously determine whether considering the issues that it is hearing on remand, it is appropriate to renew *at this time* its authorization of low power or whether low power operations must await further decision" (emphasis added).

its brief, the Appeal Board, stating that it had no authority under Commission regulations to entertain a challenge to § 50.47(d), has declined in ALAB-875, 26 NRC at 256, to address NECNP's arguments that the Atomic Energy Act prohibits issuance of an operating license at any level of power prior to hearing and resolving contentions as to offsite emergency planning as well as onsite safety matters. *See also* ALAB-865, 25 NRC 430, 439 (1987) wherein the Appeal Board had also ruled that § 50.57(c)⁹ was not subject to challenge. We are bound by the rulings of the Appeal Board, which now constitute the law of the case.

NECNP continues its legal argument in urging that the two contentions remanded by the Appeal Board in ALAB-875 are critical to plant safety, that the serious questions raised therein may well block full-power licensure for Seabrook, and thus they must be resolved prior to low-power operations. Brief at 28-32. First, NECNP conclusionally advances in support of its argument that, since both contentions question whether certain General Design Criteria have been satisfied, no operating license can be issued at any level of power until these contested safety issues are litigated and resolved.¹⁰ However, it does not comply with § 50.57(c) in failing to show that these contentions are relevant to the requested license — i.e., NECNP has failed to show that the safety concerns alleged in the two contentions would adversely impact upon public health and safety if the plant were to be reauthorized to operate only up to 5% of rated power. Second, in support of its argument, NECNP cites *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Unit 1), CLI-83-27, 18

⁹ Section 50.57(c) provides:

An applicant may, in a case where a hearing is held in connection with a pending proceeding under this section make a motion in writing pursuant to this paragraph (c), for an operating license authorizing low-power testing (operation at not more than 1 percent of full power for the purpose of testing the facility), and further operations short of full power operation. Action on such a motion 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 his contentions are relevant to the activity to 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. 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.

¹⁰ At page 2 of its brief, NECNP stated that, in ALAB-875, the Appeal Board ordered that NECNP Contention IV be admitted which concerned "potential degrading of the plant's heat removal capability due to build-up of biological organisms" (emphasis added). Again at page 29 of its brief, NECNP asserted that the contention related "to the adequacy of Applicants' surveillance and maintenance program for preventing the accumulation of biological organisms and the degradation of the heat transfer capabilities of safety systems as a result of such accumulation, strikes to the very core of plant safety" (emphasis added). However, at page 30, it urges that General Design Criteria 2, 4, 5, 44, 45, and 46 require Applicants to institute monitoring and surveillance programs and take other measures necessary to preclude long-term corrosion and organic fouling that would tend to degrade system performance, and also require that agents used for the control of water chemistry, corrosion and organic fouling be compatible with system components and piping materials" (emphasis added). As discussed in Part B, *infra*, this attempt to amend this contention was improper.

NRC 1146 (1983), for the proposition that the Commission held that intervenors were entitled to a prior adjudicatory hearing on whether to lift the suspension on and extend the low-power operating license because the hearing record had been reopened by the Appeal Board relating to serious and substantive safety concerns with respect to design quality assurance which would be the subject of adjudicatory hearings before the Appeal Board. The facts in the Diablo Canyon case are clearly distinguishable from those in the instant case. Here the Appeal Board has held only that the two remanded contentions should not have been rejected at the threshold, and both it and the Commission have directed this Board to determine whether or not it is appropriate to renew at this time our authorization of low power.

B. NECNP's Motion for Leave to File a Reply

NECNP advances several arguments in support of its motion for leave to reply to the Applicants' and the Staff's briefs filed respectively on January 4 and January 12, 1988. First, NECNP urges that these briefs and supporting affidavits improperly address the merits of the two remanded issues and that it should be given an opportunity to respond to the alleged merits or lack of merit. Motion at 1-2. However, as discussed in Part A, *supra*, we have ruled that those portions of the briefs and affidavits addressing the merits were in error, and we have ignored those portions. We did, however, consider those portions of the Applicants' and Staff's briefs and affidavits that properly discussed and showed that the safety concerns alleged in the two remanded contentions would not adversely impact upon the public health and safety if Seabrook, Unit 1, were to be operated only up to 5% of rated power.

Second, NECNP argues that it would be improper to authorize low-power operations via summary disposition procedures upon the merits of the two remanded contentions without giving it an opportunity to reply.¹¹ Section 2.751 summary disposition procedures upon the merits of the remanded contentions were not invoked by the Commission or by the Board with respect to low-power operations. No one, for example, could have misunderstood our Order of December 2, 1987 (unpublished), wherein we stated that

¹¹ In passing, we note that at pages 3, 5, and 9 of its motion, NECNP cites the inopposite case of *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-565, 10 NRC 521 (1979). Therein, the Appeal Board held that the Licensing Board must allow intervenors during the course of the special prehearing conference to present arguments supporting the admissibility of their proposed contentions, and that the ultimate merits are not to be debated at that stage of the proceeding. Here, the two remanded contentions had been admitted as issues in controversy as of October 16, 1987, and the ultimate merits thereof are not now being considered. At page 9 of its motion, NECNP relies upon the similarly inopposite case of *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-81-48, 14 NRC 71 (1981).

As soon as possible, after reviewing the briefs filed in compliance with our Order of November 27, 1987, and making the determination as to whether or not it is appropriate for us to reauthorize low-power operations prior to the completion of the remand proceeding, we will confer with the Applicants, NECNP and the Staff to find out whether motions for summary disposition will be filed or whether a hearing should be scheduled.

Finally, as an experienced litigator in NRC proceedings, NECNP was well aware of the provisions of 10 C.F.R. § 50.57(c) and had the opportunity to show that the two remanded contentions were relevant to the activity to be authorized — i.e., low-power operations up to 5% of rated power. It failed to do so. It cannot be heard to excuse its failure by arguing that it had no meaningful opportunity to refute Applicants' and Staff's allegations that the two remanded contentions do not raise a safety issue during low-power operations because it would not have been in a position to do so until the completion of the discovery period. For example, with respect to Contention IV, it argues that it "is now conducting inquiries, through written interrogatories, into several reported instances of actual equipment breakage in critical safety systems, such as the Primary Component Coolant System, to determine the extent that these incidents are attributable to *corrosion* caused by the accumulation of bacterial debris and sedimentation" (emphasis added). From the date Contention IV was submitted as a proposed contention until the present time, it was solely addressed to and was recognized only to be addressed to the *blockage of coolant flow by accumulation* of aquatic organisms and other foreign matter in the cooling systems.¹² It is well settled that a party is bound by the literal terms of its own contention. *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-852, 24 NRC 532, 545 (1986). Without leave having been sought from the Board and granted, it is impermissible for an intervenor to attempt to amend his contentions or to advance new bases for them which could have been submitted earlier. *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-565, 10 NRC 521, 523 n.11 (1979). Again, for example, with respect to Contention I.V, NECNP argues that, in light of the fact that the Applicants' and the Staff's briefs argue principally that Seabrook's program for in-service inspection of steam tubing is not a safety issue because the particular circumstances causing the tube ruptures at the Ginna and North Anna plants would not occur at Seabrook, it has filed interrogatories to find out whether specific requirements for steam generator tube problems present similar and/or additional problems in the future. This argument is also to no avail because, as discussed in Part A, *supra*, we have ruled that those portions of the Applicants' and the Staff's briefs and affidavits addressing the merits of this contention were in error, and we proceeded to ignore them.

¹² See LBP-82-76, 16 NRC 1029, 1075 (1982); ALAB-875, 26 NRC at 261-63, 275.

Order

1. NECNP's Motion for Leave to File a Reply Brief (filed on January 14, 1988) is denied.

2. Pursuant to the directions of the Commission set forth in CLI-87-13, 26 NRC 400 (1987), we renew our authorization to operate Seabrook, Unit 1, up to 5% of rated power insofar as the two contentions remanded in ALAB-875 are concerned. We renew our authorization because the two remanded contentions are 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. However, we cannot give effect to our renewed authorization in light of ALAB-883, 27 NRC 43 (1988) and the Appeal Board's Memorandum of February 10, 1988 (unpublished), and thus we do not authorize the Director of NRR, upon 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 17th day of February 1988.

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
(Emergency Planning)

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

March 4, 1988

The Appeal Board denies the intervening governments' motion for interlocutory review (i.e., directed certification) of the Licensing Board's decision permitting applicant to pursue its request to operate the Shoreham nuclear power facility at a 25 percent power level.

RULES OF PRACTICE: INTERLOCUTORY APPEALS

The Commission's Rules of Practice prohibit "interlocutory appeals." 10 C.F.R. § 2.730(f). The proper vehicle for seeking interlocutory review of a licensing board decision is a motion or petition for "directed certification" pursuant to 10 C.F.R. §§ 2.718(i), 2.785(b)(1).

RULES OF PRACTICE: INTERLOCUTORY REVIEW (DIRECTED CERTIFICATION)

The Appeal Board grants requests for interlocutory review infrequently, and then only upon a showing that the challenged ruling either threatens to cause immediate and irreparable harm, or "'affects the basic structure of the proceeding in a pervasive or unusual manner.'" *Houston Lighting & Power Co.* (South Texas Project, Units 1 and 2), ALAB-637, 13 NRC 367, 370 (1981) (citing *Public Service Electric and Gas Co.* (Salem Station, Unit 1), ALAB-588, 11 NRC 533, 536 (1980)).

REGULATIONS: EXEMPTIONS

Under 10 C.F.R. § 50.12(a), the Commission may grant exemptions from regulations in 10 C.F.R. Part 50 upon a showing of at least one of six identified "special circumstances." The exemptions should also be "[a]uthorized by law, [should] not present an undue risk to the public health and safety, and [should be] consistent with the common defense and security."

RULES OF PRACTICE: WAIVER OF RULES OR REGULATIONS

10 C.F.R. § 2.758(b) provides a mechanism for a party to an adjudication to petition the Commission for the waiver of any specified Commission rule or regulation. It requires a showing that "special circumstances . . . are such that application of the rule or regulation . . . would not serve the purpose for which the rule or regulation was adopted."

RULES OF PRACTICE: INTERLOCUTORY REVIEW (DIRECTED CERTIFICATION)

The mere expansion of issues rarely, if ever, affects the basic structure of a proceeding in a pervasive or unusual way so as to warrant appeal board interlocutory review. *See, e.g.,* ALAB-861, 25 NRC 129, 135 (1987); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-706, 16 NRC 1754, 1757 (1982); *Pennsylvania Power & Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-641, 13 NRC 550, 552 (1981).

RULES OF PRACTICE: INTERLOCUTORY REVIEW (DIRECTED CERTIFICATION)

A board's use of parallel hearings to consider additional issues does not provide a basis for a grant of directed certification. *Public Service Co. of New Hampshire* (Scabrook Station, Units 1 and 2), ALAB-858, 25 NRC 17, 21 (1987).

RULES OF PRACTICE: INTERLOCUTORY REVIEW (DIRECTED CERTIFICATION)

A licensing board order that neither decides the merits of an issue nor denies the parties' right to be heard thereon does not have a pervasive or unusual effect on a proceeding so as to warrant interlocutory review. *South Texas*, 13 NRC at 372.

RULES OF PRACTICE: INTERLOCUTORY REVIEW (DIRECTED CERTIFICATION)

Unique or even erroneous licensing board interpretations and applications of Commission regulations generally cannot be said to "alter[] the very shape of the ongoing adjudication" so fundamentally as to require appeal board intercession before judgment on the merits. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-675, 15 NRC 1105, 1113 (1982). *See also id.*, ALAB-706, 16 NRC at 1756-58.

RULES OF PRACTICE: INTERLOCUTORY REVIEW (DIRECTED CERTIFICATION)

Only where a board's interpretation of a regulation is "of patent, immediate, and large significance to the administration of not merely that specific proceeding but, as well, the numerous other operating license proceedings then under way or at the threshold of commencement" has an appeal board conducted interlocutory review. *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-741, 18 NRC 371, 376-77 (1983). *See Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 464-65 (1982), *rev'd in part on other grounds*, CLI-83-19, 17 NRC 1041 (1983). *See also Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), ALAB-817, 22 NRC 470, 474-75 (1985).

APPEARANCES

E. Thomas Boyle, Hauppauge, New York, and Herbert H. Brown, Lawrence Coe Lanpher, and Karla J. Letsche, Washington, D.C., for intervenor Suffolk County; Fabian G. Palomino and Richard J. Zahnleuter, Albany, New York, for intervenor State of New York; and Stephen B. Latham, Riverhead, New York, for intervenor Town of Southampton.

Donald P. Irwin, Lee B. Zeugin, and David S. Harlow, Richmond, Virginia, for applicant Long Island Lighting Company.

Edwin J. Reis for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

Intervenors Suffolk County, the State of New York, and the Town of Southampton (hereinafter, "the Governments") jointly move for leave to file an interlocutory appeal¹ from the Licensing Board's January 7, 1988, memorandum and order in the "OL-6" phase of this operating license proceeding. See LBP-88-1, 27 NRC 7. In that decision, the Board gave permission to applicant Long Island Lighting Company (LILCO) to pursue its request to operate the Shoreham nuclear power facility at a 25 percent power level under NRC regulations codified at 10 C.F.R. §§ 50.57(c) and 50.47(c)(1). The Governments claim that the Board's order not only is erroneous, but also so fundamentally affects the structure of this proceeding that interlocutory review is necessary. LILCO and the NRC staff oppose the motion. As explained below, the Governments' arguments are not persuasive, and we therefore deny their motion.

A. Construction at Shoreham is complete, but numerous contested issues concerning offsite emergency planning for the facility remain unresolved. Despite these outstanding issues, Shoreham holds a low-power license pursuant to 10 C.F.R. § 50.47(d), authorizing operation up to five percent of rated power. In April 1987, LILCO asked the Commission to increase its authorized power level to 25 percent. The Commission denied the motion but permitted LILCO to "re-file its request under [10 C.F.R.] § 50.57(c) with the Licensing Board when and if it believes that some useful purpose would be served thereby." CLI-87-4, 25

¹ The Commission's Rules of Practice prohibit "interlocutory appeals." 10 C.F.R. § 2.730(f). As the Governments should be aware by now (see, e.g., ALAB-780, 20 NRC 378 (1984)), the proper vehicle for seeking interlocutory review of a licensing board decision is a motion or petition for "directed certification" pursuant to 10 C.F.R. §§ 2.718(i), 2.785(b)(1). Notwithstanding the incorrect characterization of their motion, however, the Governments address the proper legal criteria for a petition for directed certification. See *infra* pp. 261-62.

NRC 882, 883 (1987). LILCO refiled its request last July, and the Licensing Board subsequently called for fuller briefing by all the parties of the various issues raised by that motion. *See* Memorandum of October 6, 1987 (unpublished).

After consideration of the numerous pleadings before it (including the Governments' opposition), the Licensing Board decided that LILCO's motion was properly filed under 10 C.F.R. § 50.57(c). LBP-88-1, 27 NRC at 12, 16. That regulation permits applicants to move for an operating license authorizing low-power testing (one percent of full power) and "further operations short of full power operation," while the hearing on full-power licensing is still pending. Section 50.57(c) also gives other parties with contentions "relevant to the activity to be authorized" the right to be heard, and directs the Board to make certain findings required by section 50.57(a) — e.g., reasonable assurance that the activities authorized can be conducted in compliance with the agency's regulations and without endangering the public health and safety — prior to ruling on the motion.

The Licensing Board further agreed with LILCO that another regulation, 10 C.F.R. § 50.47(c)(1), embodies the appropriate standard against which LILCO's 25 percent power request should be measured. LBP-88-1, 27 NRC at 12, 15, 16. That provision states that, when an applicant fails to meet the NRC's emergency planning standards set out in 10 C.F.R. § 50.47(b), it

will have an opportunity to demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question, that adequate interim compensating actions have been or will be taken promptly, or that there are other compelling reasons to permit plant operation.

10 C.F.R. § 50.47(c)(1) (1987).² In so ruling, the Licensing Board also concluded that "no exemption from the [emergency planning] regulations is needed as urged by the Governments." LBP-88-1, 27 NRC at 12. The Board thus determined that it would entertain LILCO's motion for operation at 25 percent power. It noted, however, the opposing parties' right to be heard and the difficult task that lies ahead for LILCO if it is to succeed ultimately with its motion. *Id.* at 12, 16. The Board also solicited the parties' further views on whether a separate licensing board, special master, alternate board member, or technical interrogator should be used for the consideration of LILCO's motion. *Id.* at 14-15, 16-17, 18.

B. As the Governments' motion acknowledges, we grant requests for interlocutory review infrequently, and then only upon a showing that the challenged ruling either threatens to cause immediate and irreparable harm, or "affects the basic structure of the proceeding in a pervasive or unusual manner." *Hous-*

²The Commission recently amended this section of the emergency planning regulations, but the particular language at issue here was not changed. *See* 52 Fed. Reg. 42,078, 42,085-86 (1987).

ton Lighting & Power Co. (South Texas Project, Units 1 and 2), ALAB-637, 13 NRC 367, 370 (1981) (citing *Public Service Electric and Gas Co.* (Salem Station, Unit 1), ALAB-588, 11 NRC 533, 536 (1980)). The Governments rely on the latter criterion and suggest essentially two reasons why the Licensing Board's order has a pervasive or unusual effect on the basic structure of this proceeding. First, in their view, because LILCO's 25 percent power request is effectively a challenge to the Commission's emergency planning regulations and the generic assumptions underlying them, the Board cannot entertain the motion in the absence of either an "exemption" request under 10 C.F.R. § 50.12(a) or a "waiver" request under 10 C.F.R. § 2.758(b).³ In other words, the Governments' complaint is that the Board does not intend to evaluate LILCO's motion in accordance with all the regulatory standards that the Governments believe pertain here. Second, the Governments contend that the Board's ruling dramatically changes the issues in this proceeding, by permitting LILCO to attack the underlying assumptions of the emergency planning regulations.⁴

As a separate argument, the Governments claim that we should intercede and review the Board's ruling now because it has important generic implications for many other cases. In this connection, they cite our decision in *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 464-65 (1982), *rev'd in part on other grounds*, CLI-83-19, 17 NRC 1041 (1983), where we reviewed a ruling referred to us by a licensing board that concerned an interpretation of the Commission's Rules of Practice.

As both LILCO and the staff contend, the Governments misunderstand and overstate the significance of the Licensing Board's order.⁵ The Licensing Board's order simply authorizes the filing of LILCO's motion to operate at 25 percent power — an action clearly permitted under 10 C.F.R. § 50.57(c). As such, it adds new issues to the proceeding, not unlike a board's admission of new contentions. We have long held, however, that the mere expansion of issues rarely, if ever, affects the basic structure of a proceeding in a pervasive or unusual way so as to warrant our interlocutory review. *See, e.g.*, ALAB-861, 25 NRC 129, 135 (1987); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power

³ Under 10 C.F.R. § 50.12(a), the Commission may grant exemptions from regulations in 10 C.F.R. Part 50 upon a showing of at least one of six identified "special circumstances." The exemptions should also be "[a]uthorized by law, [should] not present an undue risk to the public health and safety, and [should be] consistent with the common defense and security." 10 C.F.R. § 2.758(b) provides a mechanism for a party to an adjudication to petition the Commission for the waiver of any specified Commission rule or regulation. It requires a showing that "special circumstances . . . are such that application of the rule or regulation . . . would not serve the purpose for which the rule or regulation was adopted."

⁴ LILCO apparently hopes to prove that the risks from operation at 25 percent power are substantially less than at full-power operation, and that therefore any deficiencies in the emergency plan for Shoreham are not significant for operation at that reduced power level. *See* LBP-88-1, 27 NRC at 12.

⁵ Although it is certainly not evidence of record upon which we would or could rely, we note that even one of the counsel for Suffolk County has stated (if quoted accurately) that the Board's decision "'shouldn't have much significance read into it.'" *Inside N.R.C.*, January 18, 1988, at 12.

Plant, Units 1 and 2), ALAB-706, 16 NRC 1754, 1757 (1982); *Pennsylvania Power & Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-641, 13 NRC 550, 552 (1981). The Governments do not convincingly explain why the addition of the 25 percent power issues here is distinguishable from these past cases.⁶ We have also found that a board's use of parallel hearings to consider such additional issues does not provide a basis for a grant of directed certification (*see supra* note 1 & pp. 261-62). *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-858, 25 NRC 17, 21 (1987).

Further, the Board's order does not decide the merits of the motion, and it preserves the Governments' right to be heard thereon. *See South Texas*, 13 NRC at 372 (no pervasive or unusual effect on proceeding where board's specification of issues for hearing is not a final ruling and parties remain free to litigate their issues). To be sure, the Board did determine that 10 C.F.R. § 50.47(c)(1) provides the appropriate standard against which LILCO's motion will be measured — thus rejecting the Governments' argument that LILCO must seek an exemption under 10 C.F.R. § 50.12(a) as well. But again, as we have repeatedly stressed, unique or even erroneous licensing board interpretations and applications of Commission regulations generally cannot be said to "alter[] the very shape of the ongoing adjudication" so fundamentally as to require our intercession before judgment on the merits. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-675, 15 NRC 1105, 1113 (1982). *See also id.*, ALAB-706, 16 NRC at 1756-58.⁷ This is particularly true in this case, where the Licensing Board has expressed reservations about LILCO's ultimate chance of success on the merits of its 25 percent power motion. *See LBP-88-1*, 27 NRC at 12, 16.

Only where a board's interpretation of a regulation is "of patent, immediate, and large significance to the administration of not merely that specific proceeding

⁶The staff correctly points out that the Board's determination to entertain LILCO's 25 percent power motion does not end or affect those other parts of this proceeding concerned with whether LILCO's emergency plan conforms to the NRC's regulations for full-power operation. NRC Staff Response (February 8, 1988) at 7-8.

⁷We do not reach the merits of the Governments' objection to the Licensing Board's ruling. But the following excerpt from the Statement of Consideration for the Commission's 1985 amendment to 10 C.F.R. § 50.12(a) — not cited by the Licensing Board or any of the parties — casts considerable doubt on the Governments' position that LILCO must seek an exemption under section 50.12(a) as well as satisfy the standards of section 50.47(c)(1):

On a related point, the relationship between the general exemption criteria in § 50.12(a) and other provisions in Part 50 that contain specific exemption criteria or alternative methods of compliance, the Commission would emphasize that § 50.12(a) is the exemption provision that applies *generally* to the provisions of 10 CFR Part 50. If another regulation in Part 50 provides for specific exemption relief, or for alternative methods of compliance, the criteria of the specific regulation are the appropriate considerations. If the exemption criteria in the specific regulation are met, the rule has been complied with, and no exemption under § 50.12(a) is necessary. It is only in those cases where the specific exemption or alternative compliance criteria cannot be satisfied, that the application of the general criteria in § 50.12(a) will be appropriate. If the specific exemption criteria, or the alternative methods of compliance, can be satisfied, there is no need to also satisfy the criteria of § 50.12(a).

50 Fed. Reg. 50,764, 50,775 (1985) (emphasis in original).

but, as well, the numerous other operating license proceedings then under way or at the threshold of commencement" have we conducted interlocutory review. *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-741, 18 NRC 371, 376-77 (1983). See *Catawba*, 16 NRC at 464-65. See also *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), ALAB-817, 22 NRC 470, 474-75 (1985). The Governments, however, totally fail to support their claim that the Licensing Board's ruling at issue here has "significant generic implications" for "many other cases." Governments' Motion (January 21, 1988) at 11.⁸

The Governments have therefore failed to show that the Licensing Board's ruling in LBP-88-1, 27 NRC 7, authorizing the filing of LILCO's motion for 25 percent power operation, has a pervasive or unusual effect on this adjudication, so as to warrant interlocutory review. Accordingly, the Governments' Motion for Leave to File Interlocutory Appeal is *denied*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

⁸ Indeed, we are aware of only one other proceeding (*Seabrook*) where the relationship of sections 50.57(c), 50.47(c)(1), and 50.12(a) could arise. But even there, applicants do not yet have a low-power (five percent) license; thus, any request for a higher power level is purely a matter of speculation at this point. (The only other pending operating license proceeding involves the Comanche Peak facility, but emergency planning is not a contested issue there.)

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
50-444-OL
(Offsite Emergency Planning)

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, *et al.*
(Seabrook Station, Units 1
and 2)

March 18, 1988

The Appeal Board denies a joint request by the Town of Amesbury, the Town of Hampton, the Seacoast Anti-Pollution League, and the New England Coalition on Nuclear Pollution for interlocutory review of a Licensing Board scheduling order.

RULES OF PRACTICE: DIRECTED CERTIFICATION

It is well-established that the Appeal Board will exercise its discretionary authority pursuant to 10 C.F.R. § 2.718(i) to direct certification of an interlocutory order of a licensing board "only where the ruling below either (1) threaten[s] the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, [can]not be alleviated by a later appeal or (2) affect[s] the basic structure of the proceeding in a pervasive or unusual manner." *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977).

RULES OF PRACTICE: DIRECTED CERTIFICATION

Where a licensing board scheduling order is involved, agency case law makes clear that, under either standard for interlocutory review, a showing that the schedule deprives a party of its right to procedural due process is required. *See* ALAB-864, 25 NRC 417, 420-21 (1987).

APPEARANCES

Matthew T. Brock, Portsmouth, New Hampshire, for the intervenors, Town of Amesbury, Massachusetts; Town of Hampton, New Hampshire; Seacoast Anti-Pollution League; and New England Coalition on Nuclear Pollution.

Frank W. Ostrander, Boston, Massachusetts, for the intervenor, James M. Shannon, Attorney General of Massachusetts.

Thomas G. Dignan, Jr., **George H. Lewald**, and **Kathryn A. Selleck**, Boston, Massachusetts, for the applicants, Public Service Company of New Hampshire, *et al.*

Sherwin E. Turk for the Nuclear Regulatory Commission staff.

MEMORANDUM

On February 25, 1988, the Town of Amesbury, the Town of Hampton, the Seacoast Anti-Pollution League and the New England Coalition on Nuclear Pollution (hereinafter "intervenors") jointly filed a motion for directed certification of a February 17, 1988 scheduling order of the Licensing Board.¹ The Board's order established a schedule designed to bring to a conclusion the litigation of the offsite emergency planning issues in this operating license proceeding.² To borrow its language, the issues before that Board are proceeding on three separate "tracks": the first, or "Main Track," consists of all issues involving the New Hampshire Radiological Emergency Response Plan (NHRERP), except sheltering; the second, or "Sheltering Track," includes the sheltering issues

¹ Because of the time constraints facing the intervenors under the Licensing Board's scheduling order, we directed that all responses to the intervenors' motion be filed expeditiously and, on March 9, we issued an order denying the motion for directed certification. This memorandum sets forth our reasons for denying the motion.

² At present, the proceeding is divided between two Licensing Boards. The other Board is presiding over onsite emergency planning and safety issues.

involving the NHRERP; and, the third, or "SPMC Track," embraces the issues arising from the applicants' Seabrook Plan for the Massachusetts communities.

In an earlier order issued on February 3, the Licensing Board had fixed a number of filing dates and proposed others for all three tracks. Then, in its February 17 order, the Board changed certain of the dates it had previously set and proposed. For the Main Track, the Board advanced the date established for the applicants' proposed findings of fact from March 9 to March 2 and, in the SPMC Track, it advanced the previously proposed filing date for the intervenors' contentions from May 6 to April 1. It is this latter change that is the focus of the intervenors' motion. The Board also delayed both the proposed hearing starting date for the Sheltering Track from April 18 to May 2 and the previously set date for filing testimony from March 28 to April 18.

A. The intervenors seek interlocutory review of the Licensing Board's scheduling order, claiming that the Board's three-track schedule, combined with the intervenors' Seabrook-related responsibilities before other boards and in other forums, is so compressed that, absent relief, they will be denied their due process right to a fundamentally fair hearing secured by 10 C.F.R. § 2.718 and the Constitution. They argue that the offsite Board's advancement from May 6 to April 1 for the filing of their contentions on the Massachusetts portion of the Seabrook Plan is the straw that broke the camel's back, with the consequence that they are being deprived of the opportunity to raise significant issues in the SPMC Track of the proceeding. The Attorney General of Massachusetts supports the intervenors' motion, pointing out that even though he has far more resources available for the proceeding than the intervenors, the Board's schedule is such that his office "has been hard pressed to meet its obligations."³

In particular, the intervenors argue that even though they were served with a version of the plan for the Massachusetts communities on September 22, 1987, they were engaged in thirty-four days of hearings on the New Hampshire portion of the plan, scattered throughout the period beginning October 5, 1987, and concluding February 10, 1988. And, since the end of the hearings, the intervenors claim they have been preparing proposed findings of fact and conclusions of law on those issues that, under the Board's schedule for the Main Track, are due April 6. Additionally, as the Attorney General points out, the Commission did not determine that the applicants' plan for the Massachusetts communities was a bona fide one until November 25, 1987, so any earlier review would have been senseless. According to the intervenors, the applicants also withheld from the Massachusetts portion of the plan information on the identities of those providing emergency services and they only received this material on February 24, 1988, following the Licensing Board's entry of an interim protective order on February

³ Response of Commonwealth of Massachusetts in Support of Joint Intervenor Appeal by Motion for Directed Certification (March 8, 1988) at 2.

17. In this regard, the intervenors argue that the Licensing Board's filing deadline for contentions does not give them sufficient time to investigate and to survey a reasonable sample of the hundreds of alleged service providers in order to ensure that they can file contentions with adequate bases and specificity. Further, they assert that since the entry of the scheduling order the applicants, on February 18, 22 and 23, have served "three substantial modifications or additions to the SPMC, totalling hundreds of pages of plans and materials" that they have not even had an opportunity to assess.⁴

In addition to the issues being litigated before the offsite Board, the intervenors note that they have other Seabrook-related demands on their time and resources that the Board seemingly ignored in setting the schedule for offsite issues. These other obligations, when combined with the Board's three-track schedule for offsite issues, are so burdensome that they effectively preclude the intervenors from developing and filing by April 1 many important contentions on the Massachusetts portion of the plan. First, the intervenors assert that, at our invitation, they had to supplement their petition to waive the Commission's financial qualification rule, which supplement was filed February 23. They also have been preparing briefs for submission to the United States Court of Appeals for the First Circuit in the challenge to the Commission's amendment of 10 C.F.R. § 50.47(c)(1) that provides new criteria for evaluating utility-prepared emergency plans in situations where state and local governments decline to participate in emergency planning. Similarly, they have prepared comments on the Federal Emergency Management Agency's guidance criteria for implementing the Commission's amendment of section 50.47(c)(1). Finally, they assert that intervenor New England Coalition on Nuclear Pollution is occupied litigating other issues before the onsite Seabrook Board and that the other intervenors have an opportunity to participate before that Board on the reopened issue of the applicants' amended notification plan.

The applicants and the NRC staff oppose the intervenors' directed certification motion, arguing that the intervenors have made no showing that the Licensing Board's scheduling order deprives them of due process and hence the standard for interlocutory review has not been met. In short, they claim that the intervenors overstate and misstate their litigation burdens before the offsite Board and, in the words of the applicants, "[i]f they squander their time, the fault lies not in the Board's order, but in the Intervenors' election of tactics."⁵

Specifically, the applicants and the staff assert that the principal part of the Massachusetts portion of the plan has been available since September 1987 so the intervenors have had many months to draft contentions. Next, they note that the hearings on the New Hampshire portion of the Seabrook Emergency Plan

⁴ Joint Intervenor Appeal by Motion for Directed Certification (February 25, 1988) at 9.

⁵ Applicants' Response to Joint Intervenor Appeal by Motion for Directed Certification (March 3, 1988) at 9.

were held on an intermittent basis from October 1987 to February 1988 and that the intervenors utilized a "lead intervenor" approach on the issues, so that the hearings did not require each intervenor's undivided attention throughout that period. The applicants and the staff also claim that in late December 1987 the applicants offered the intervenors, subject to a protective order, the information the applicants originally deleted from the Massachusetts portion of the plan concerning service providers. The intervenors, however, refused to sign the protective order, so they should not now be heard to complain about needing more time to file contentions.

B. It is well established that we will exercise our discretionary authority pursuant to 10 C.F.R. § 2.718(i) to direct certification of an interlocutory order of a licensing board "only where the ruling below either (1) threaten[s] the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, [can]not be alleviated by a later appeal or (2) affect[s] the basic structure of the proceeding in a pervasive or unusual manner."⁶ Where, as here, a scheduling order is involved, our cases make clear that, under either of these alternative standards, a showing that the schedule deprives a party of its right to procedural due process is required.⁷ Further, as we recently noted in directing certification and reversing a scheduling order in this same proceeding, "fundamental fairness is at the root of procedural due process" and, although "[t]here is . . . no litmus paper test for determining whether, in a particular case, the fundamental fairness standard is satisfied[,] . . . that assessment must be made on the basis of the totality of relevant circumstances disclosed by the record."⁸

Unlike the situation presented in ALAB-864 where the Licensing Board, without explanation, established a schedule that provided the intervenors only eleven days to conduct discovery on twenty-one contentions and only ten days to prepare prefiled testimony, the Board's scheduling order here, although once again without explanation, is not so draconian as to raise an issue of constitutional dimensions. In their motion papers, the intervenors acknowledge that before the Licensing Board they acceded to the schedule set forth in the Board's February 3 order. But the only change from that original schedule that moved up any of the intervenors' filing deadlines was the advancement of the intervenors' filing date for contentions. Thus, having made that concession, the intervenors' argument before us is necessarily limited to one that the April

⁶ *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977) (footnotes omitted). *Accord Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Units 1 and 2), ALAB-870, 26 NRC 71, 73 (1987); ALAB-864, 25 NRC 417, 420 (1987); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-861, 25 NRC 129, 134 (1987).

⁷ See ALAB-864, 25 NRC at 420-21; ALAB-858, 25 NRC 17, 21 (1987); *Houston Lighting & Power Co.* (South Texas Project, Units 1 and 2), ALAB-637, 13 NRC 367, 370-71 (1981).

⁸ ALAB-864, 25 NRC at 421 (footnotes omitted).

1 deadline for contentions on the Massachusetts portion of the plan is so short, when considered with their other litigation obligations, that they will be deprived of the opportunity to raise important issues about the plan. Our review of the relevant circumstances, however, does not support the intervenors' claim. Accordingly, the intervenors have not shown that the Licensing Board's scheduling order meets the standard for interlocutory review.

The intervenors' joint motion paints with a very broad brush in depicting their litigation burdens but they have failed to present us with any quantitative figures of the actual resources available to each intervenor, as well as estimates of the actual and proposed use of such resources, in meeting their respective Seabrook obligations. Indeed, in enumerating these obligations, the intervenors' motion does not even tell us whether the various filings are joint filings like this motion or separate filings by each intervenor. Absent at least some indication of the number of attorneys, paralegals and technical experts each intervenor is using and how their time is allocated to meet their respective obligations, it is difficult to conclude that the intervenors are overburdened by a schedule that on its face is not patently unreasonable.

For example, the intervenors concede that the majority of the Massachusetts portion of the Seabrook Plan has been available since last September 22. Even if we disregard this date and start the clock with the Commission's determination on November 25, 1987 that the plan was a bona fide one,⁹ the intervenors still have had almost three months prior to the Board's scheduling order to study and evaluate the plan. Although the hearing on the New Hampshire portion of the plan also was spread over much of this same period (from October 5 to February 10), the hearing consumed only 34 out of a total of 129 days with only 6 days of hearings in all of January and February. Further, each intervenor's participation in the hearing was not so all-consuming that the intervenors now reasonably can claim they had no time during this period to devote to other tasks, such as evaluating the Massachusetts portion of the plan or preparing proposed findings of fact on individual issues in the hearing as the testimony on those issues was completed. Moreover, the Licensing Board's scheduling order gives the intervenors a period of over six additional weeks (until April 1) to prepare contentions for the SPMC Track and eight weeks (until April 6) from the date of the close of the hearing to file proposed factual findings on the New Hampshire portion of the Seabrook Plan. This latter period for filing proposed factual findings is significantly longer than the usual, and presumptively reasonable, period of forty days prescribed for such findings in the Commission's Rules of Practice.¹⁰ In these circumstances, we cannot find that the Licensing Board's April 1 filing deadline for contentions on the Massachusetts portion of the

⁹ See CLI-87-13, 26 NRC 400 (1987).

¹⁰ See 10 C.F.R. § 2.754.

Seabrook Plan is unreasonable. Obviously, therefore, the schedule is not so harsh as to deprive the intervenors of their right to a fair hearing.

The intervenors also argue that two additional circumstances make the Board's schedule so burdensome that they cannot meet the April 1 deadline for filing contentions. They assert that on February 18, 22 and 23 the applicants issued substantial modifications to the Massachusetts portion of the plan. Besides the fact that under the current schedule the intervenors still will have over five weeks to analyze the amendments before contentions are due, we cannot ordinarily base a decision on whether to grant directed certification of a scheduling order upon subsequent events that were not before the Board when it established the challenged schedule. Rather, an appropriate request for relief must be presented in the first instance to the Licensing Board. In any event, we note that even though the applicants' recently filed amendments are voluminous due to the nature of the amendment process, many of the changes appear to be relatively minor and nonsubstantive.

Finally, the intervenors argue that they did not receive from the applicants the portions of the plan containing service-provider information until February 24 after they signed the Licensing Board's interim protective order. According to the intervenors, the April 1 deadline for contentions simply does not give them sufficient time to investigate and to survey a reasonable portion of the applicants' hundreds of service providers in order to ensure their contentions are adequately framed. Once again, we cannot base our decision on the appropriateness of granting directed certification of the Board's scheduling order on events occurring after that order.¹¹ Because the number of service providers utilized by the applicants and the magnitude of the intervenors' investigative task regarding those providers were not directly before the Licensing Board when it established the contention deadline, an appropriate request for relief must be presented in the first instance to the Board.¹²

¹¹ We cannot accept the argument of the applicants and the staff that the intervenors have only themselves to blame for the delay in their receiving the service-provider information because the applicants offered the intervenors that material last December but the intervenors refused to sign the applicants' protective order. The record does not contain any correspondence among the parties setting forth the exact terms of that offer and the transcript of the argument on this point before the Licensing Board raises serious questions as to the substance of the applicants' offer. *See, e.g.*, Tr. 9726-27.

¹² We note that in the event the Licensing Board denies the intervenors relief, the Commission's Rules of Practice, 10 C.F.R. § 2.714, permit late-filed contentions. Therefore, assuming the intervenors act with all possible resources and with due diligence in carrying out their investigation, any contentions they are unable to file because of insufficient time to investigate might still be pursued by establishing, *inter alia*, good cause for not filing the contentions on time.

For the foregoing reasons, the intervenors' motion for directed certification is denied.

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
Dr. W. Reed Johnson
Howard A. Wilber

In the Matter of

Docket Nos. 50-456-OL
50-457-OL
(Safety Issues)

COMMONWEALTH EDISON
COMPANY

(Braidwood Nuclear Power Station,
Units 1 and 2)

March 25, 1988

The Appeal Board affirms a Licensing Board decision rejecting intervenors' claim that incidents of harassment and intimidation of QC inspectors during the construction of the Braidwood facility precluded the requisite reasonable assurance finding that the plant has been properly constructed and can be operated without endangering the public health and safety.

OPERATING LICENSE PROCEEDINGS: ISSUES FOR
CONSIDERATION

An operating license proceeding is not concerned with whether a sanction should be imposed against a utility because of asserted noncompliance with a Commission regulation; rather, it is concerned with whether the plant was properly constructed and can be operated without endangering the public health and safety.

OPERATING LICENSE PROCEEDINGS: *SUA SPONTE* ISSUES

As a general matter, in an operating license proceeding, the Licensing Board must confine itself to matters put into controversy by the parties. 10 C.F.R. 2.760a. While the Board has the power to raise *sua sponte* "a serious safety, environmental, or common defense and security matter" (*ibid.*), it may not exercise that power without the issuance of a separate order which makes the requisite findings and briefly states the Board's reasons for raising the new issue. *Texas Utilities Generating Co.* (Comanche Peak Steam Electric Station, Units 1 and 2), CLI-81-24, 14 NRC 614, 615 (1981).

APPEARANCES

Robert Guild, Chicago, Illinois (with whom Douglass W. Cassel, Jr., and Robert L. Jones, Jr., Chicago, Illinois, were on the brief) for the intervenors Bridget Little Rorem, *et al.*

Joseph Gallo, Washington, D.C., and Philip P. Steptoe, Chicago, Illinois (with whom Peter Thornton, Chicago, Illinois, was on the brief) for the applicant Commonwealth Edison Company.

Gregory Alan Berry for the Nuclear Regulatory Commission staff.

DECISION

Before us on the appeal of intervenors Bridget Little Rorem, *et al.*, is the concluding partial initial decision of the Licensing Board in this proceeding involving the application of the Commonwealth Edison Company (applicant) for an operating license for each of the two units at its Braidwood nuclear power facility in Illinois.¹ The decision addresses a contention put forth by those intervenors concerning alleged harassment and intimidation of quality control (QC) inspectors in the employ of an applicant contractor performing electrical work at the facility.²

As admitted by the Licensing Board, the intervenors' contention alleged:

¹ See LBP-87-14, 25 NRC 461 (1987). In an earlier partial initial decision, the Licensing Board resolved in the applicant's favor the emergency planning issues raised by the intervenors. See LBP-87-13, 25 NRC 449 (1987). On *sua sponte* review in the absence of an appeal, we affirmed that decision in ALAB-871, 26 NRC 78 (1987).

² Although the intervenors' original contention in the quality assurance area was considerably broader, it was reduced in scope by reason of a Commission order. See CLI-86-8, 23 NRC 241 (1986), and Licensing Board Memorandum and Order (May 2, 1986, unpublished).

Contrary to Criterion I . . . of 10 C.F.R. Part 50, Appendix B, and 10 C.F.R. Section 50.7, Commonwealth Edison Company and its electrical contractor, L.K. Comstock Engineering Company [Comstock] have failed to provide sufficient authority and organizational freedom and independence from cost and schedule as opposed to safety considerations to permit the effective identification of and correction of quality and safety significant deficiencies. Systematic and widespread harassment, intimidation, retaliation and other discrimination [have] been directed against Comstock QC inspectors and other employees who express safety and quality concerns by Comstock management. Such misconduct discourages the identification and correction of deficiencies in safety related components and systems at the Braidwood Station.³

After this preamble, the contention described what the intervenors characterized as instances of harassment and intimidation. According to the contention, more than twenty-five Comstock QC inspectors had complained to the NRC at various times since August 1984 about harassment carried out by certain Comstock quality assurance supervisory personnel. This harassment was said to include widespread pressure to approve deficient work, to sacrifice quality for production and cost considerations, and to violate knowingly established quality procedures. Any inspector expressing quality or safety concerns, the contention asserted, was subjected to threats of violence, verbal abuse, termination of employment, transfer to an undesirable job, or other adverse treatment. Further, the contention maintained that, despite the termination of the employment of a Comstock QC supervisor for his mistreatment of a QC inspector, the effects of his harassment remained and systematic harassment continued to occur.

During the course of almost 100 days of evidentiary hearings on the contention, the Licensing Board received the testimony of over sixty witnesses, including several of the Comstock QC management personnel and inspectors involved in the alleged harassment and intimidation. In addition, the applicant presented testimony on data from two reinspection programs as rebuttal to the intervenors' charge that the effectiveness of the QC inspections was impaired by actual or perceived harassment and intimidation. Unrelated to any claim embraced by their contention but as part of a general attack upon one of the Comstock QC managers, the intervenors were also allowed to introduce evidence concerning a method of inspection (referred to as the grid system) performed by Comstock prior to the period of the asserted harassment and intimidation.

Over a lengthy dissent, the majority of the Licensing Board found there to be reasonable assurance that the plant was properly constructed.⁴ At the outset,

³ LBP-87-14, 25 NRC at 464 (quoting intervenors' contention).

⁴ Although cast in such broad terms, that finding must be read much more narrowly. Obviously, given the limited scope of the matter being litigated, the most that the majority could appropriately find was that reasonable assurance existed that the Comstock electrical work had been properly performed. In the circumstances, it was for the NRC staff to resolve, outside of the adjudication, any outstanding questions regarding the quality of the remainder of the construction work. The staff (subject to possible Commission review) also had the responsibility of making the ultimate findings required by 10 C.F.R. 50.57(a) as a precondition to the actual issuance of the operating license
(Continued)

the majority determined that the structure of Comstock's quality assurance organization met the requirements of Criterion I of 10 C.F.R. Part 50, Appendix B, regarding the freedom of quality assurance personnel from cost and schedule considerations.⁵ It then discussed the most significant alleged instances of harassment and intimidation of QC inspectors.⁶ Although the Board majority considered some of the actions against the QC inspectors to have "crossed the line of acceptable behavior," it found no evidence that any of the demonstrated instances of harassment or production pressure was intended to have an effect on the quality of the inspections.⁷ Further, the Board majority considered credible the testimony of the QC inspectors that, despite the actual or perceived harassment, they had continued to perform their inspections properly.⁸

As part of its examination of the question whether the QC inspectors had succumbed to any harassment or schedule pressure, the Board majority reviewed the evidence relating to the applicant's two reinspection programs at the facility.⁹ Those programs consisted of a second inspection of a sample of completed work by qualified individuals who had not been involved in the initial inspection. Although the programs were not instituted for litigation purposes, the applicant presented an analysis of the data from the reinspections to demonstrate the consistent level of performance by the Comstock QC inspectors before, during, and after the period of alleged harassment. The Board majority agreed that the results did so demonstrate.¹⁰ It also observed that no significant construction shortcomings had been identified in the one reinspection program during the course of which the safety significance of found deficiencies was assessed.¹¹ Finally, the Board majority reviewed the adequacy of Comstock's grid system inspection method and found no cause for concern.¹²

Based on the testimony of the QC inspectors and the results of the reinspection programs, the Licensing Board majority concluded that, despite management harassment and schedule pressure, the QC inspectors had continued to perform their inspection duties in a professional manner.¹³ Consequently, to

that the Licensing Board had authorized. Among other things, the staff had to find that the facility had been constructed in conformity with all regulatory requirements and that reasonable assurance exists that its operation will not endanger the public health and safety.

⁵ See LBP-87-14, 25 NRC at 468-71.

⁶ *Id.* at 471-92.

⁷ *Id.* at 502.

⁸ *Id.* at 502-03. In this regard, the majority expressed its agreement with the belief of applicant consultant Robert V. Laney, that the QC inspectors would scrupulously protect their personal integrity. *Ibid.* See Laney, fol. Tr. 17,245, at 24-25.

⁹ See LBP-87-14, 25 NRC at 492-99.

¹⁰ *Id.* at 503.

¹¹ *Id.* at 499. The other reinspection program did not evaluate the safety significance of its results. See DeGeorge, fol. Tr. 16,740, at 14.

¹² See LBP-87-14, 25 NRC at 499-500.

¹³ *Id.* at 502.

repeat, the majority found the requisite reasonable assurance that the Braidwood facility has been properly constructed and can be operated without endangering the public health and safety.¹⁴ On the strength of that finding, the Board authorized the issuance of licenses to operate both units of the Braidwood Station, provided that conditions stated in its earlier emergency planning decision (*see supra* note 1) are fulfilled.¹⁵

The Licensing Board Chairman filed a minority opinion in which he disagreed with many of the subsidiary findings of the majority. Among other things, the Chairman concluded that the harassment and production pressure were intended to affect the quality of the QC effort.¹⁶ In this connection, differing with the view of his colleagues, the Chairman found that the employment termination of a high-level inspector had been prompted by the fact that he had raised quality concerns.¹⁷ In addition, the Chairman considered the applicant's reinspection programs to have been inadequate to support the efficacy of the quality assurance program or the soundness of the electrical system installation.¹⁸

Notwithstanding his belief that improper production pressure was present and that instances of harassment, intimidation and retaliation had occurred, the Board Chairman found that the QC inspectors had properly performed their inspections for the period in question and that there is reasonable assurance that the electrical system was properly installed by Comstock. Thus, contrary to the intervenors' claim, the Board Chairman concluded that the quality of the construction of the Braidwood facility was not adversely affected by harassment or intimidation of QC inspectors. Based on his concern regarding the efficacy of Comstock's by then abandoned grid system method of weld inspection, however, the Board Chairman could not find reasonable assurance of the safety of the facility.¹⁹

On their appeal, the intervenors maintain that (1) Criterion I of 10 C.F.R. Part 50, Appendix B, was not met because of harassment and intimidation of QC inspectors; (2) there is no evidence that the QC inspectors performed their tasks satisfactorily; (3) deficiencies in grid system weld inspections compel reversal of the decision; and (4) the Licensing Board improperly placed the burden of proof on the intervenors. The applicant and NRC staff oppose the appeal. For the reasons that follow, we affirm the Licensing Board's decision.

¹⁴ *Id.* at 503. As previously observed, *supra* note 4, that finding requires qualification.

¹⁵ *Id.* at 504.

¹⁶ *Id.* at 538.

¹⁷ *Ibid.*

¹⁸ *Id.* at 538, 555-59, 669.

¹⁹ *Id.* at 538, 668-69. In another break with the majority, the Board Chairman recommended the imposition of civil penalties against the applicant and Comstock for specific matters related to harassment and intimidation of QC personnel. *Id.* at 538.

I. CRITERION I OF 10 C.F.R. Part 50, APPENDIX B

Appendix B to 10 C.F.R. Part 50 sets forth the quality assurance criteria for the design, construction, and operation of structures, systems, and components that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public.²⁰ Criterion I provides in relevant part:

The persons and organizations performing quality assurance functions shall have sufficient authority and organizational freedom to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions. Such persons and organizations performing quality assurance functions shall report to a management level such that this required authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety considerations, are provided. . . . Irrespective of the organizational structure, the individual(s) assigned the responsibility for assuring effective execution of any portion of the quality assurance program at any location where activities subject to this appendix are being performed shall have direct access to such levels of management as may be necessary to perform this function.

As earlier noted, the Licensing Board rejected the intervenors' claim that these requirements were not met in the case of the QC inspection of Comstock work. Renewing that claim before us, the intervenors go on to maintain that, *a fortiori*, the facility should be denied an operating license.²¹

Utilities engaged in the construction of nuclear power facilities are, of course, expected to comply with all of the requirements imposed by Criterion I and the other portions of Appendix B. And, beyond doubt, the failure to observe those requirements — just as the violation of other Commission regulations — may subject the utility to enforcement action on the part of the NRC staff. But this is not an enforcement proceeding and the issue at hand is thus not whether a sanction should be imposed against the utility because of its asserted noncompliance with a Commission regulation. Rather, we are concerned in this licensing proceeding with whether the Licensing Board correctly authorized the issuance of operating licenses for the Braidwood facility and, more specifically, whether there is adequate record support for the Board's ultimate finding of reasonable assurance that the Comstock electrical work was properly performed. On that score, a failure to observe some Criterion I requirements may or may not call for the conclusion that the requisite assurance is lacking. That will depend upon such factors as the nature of the violation and what measures, if any, were taken to compensate for the perceived QC organizational deficiency.

²⁰ See 10 C.F.R. Part 50, Appendix B, Introduction.

²¹ See Opening Brief of Intervenor-Appellants Bridget Little Rorem, *et al.* (July 1, 1987) at 6-7; App. Tr. 6-11.

We need not, however, pursue that matter further. For we are in agreement with the Licensing Board that, contrary to the intervenors' insistence, Criterion I was not violated here.

The intervenors' Criterion I claim is essentially rooted in the undisputed fact that the applicant wished to eliminate the QC inspection backlog pertaining to the Comstock work. In this respect, the record discloses that a backlog of approximately 14,000 inspections existed in mid-1983.²² In November 1983, the NRC staff expressed concern regarding Comstock's ability to eliminate that backlog while carrying out its ongoing inspection responsibilities.²³ In a written response to that concern, the applicant indicated that Comstock's inspection force had been expanded.²⁴

In early 1984, the applicant selected Daniel Shamblin as its new Project Construction Superintendent at Braidwood.²⁵ Shamblin found the continuing inspection backlog unacceptable.²⁶ In recognition of that fact, Comstock QC Manager Irving DeWald prepared a plan for the elimination of the backlog.²⁷ After considering the plan, Shamblin announced that the elimination of the backlog must be the first priority of Comstock.²⁸ He also was prepared to suspend any further Comstock craft work if necessary to accomplish that objective.²⁹ In addition, Shamblin required Comstock management to report to him every Monday on the backlog elimination effort.³⁰

As part of that effort, Comstock established a daily inspection status report for use in determining the progress being made in reducing the backlog.³¹ In addition, DeWald met with the Comstock QC inspectors every Friday to discuss inspection activities.³² At these meetings, it was reported that DeWald frequently would exhort the inspectors to perform their tasks expeditiously.³³ Comstock also continued to hire additional QC inspectors.³⁴ As a result of the efforts of the applicant and Comstock, the inspection backlog was eliminated in September 1984.³⁵

We find nothing in these undisputed facts that might be taken as supporting the intervenors' belief that the QC inspectors lacked "sufficient independence"

²² See DeWald, fol. Tr. 1700, at 7.

²³ See Intervenor Exhibit 3 at 7-8, 27-29.

²⁴ See Intervenor Exhibit 7, Enclosure 2 at 3.

²⁵ See Shamblin, fol. Tr. 16,274, at 1.

²⁶ *Id.* at 8-10.

²⁷ See Intervenor Exhibit 12.

²⁸ See Intervenor Exhibit 8 at 1.

²⁹ See Shamblin, fol. Tr. 16,274, at 10-14.

³⁰ See Intervenor Exhibit 8 at 2.

³¹ See DeWald, fol. Tr. 1700, at 20-21; Seese, fol. Tr. 2330, at 7-9.

³² See Tr. 1786 (DeWald).

³³ See Tr. 4240-41 (Snyder); Tr. 5796-98 (Gorman); Tr. 7566-68 (Seeders).

³⁴ See DeWald, fol. Tr. 1700, at 7-10.

³⁵ See Shamblin, fol. Tr. 16,274, at 16-17.

within the meaning of Criterion I. The applicant's desire to reduce the inspection backlog was not only quite understandable but also might well have had, at least in part, safety underpinnings.³⁶ Moreover, the steps taken to achieve that end appear to us to have been perfectly reasonable. Of particular significance, the record is devoid of anything to suggest that the applicant's management (through Shamblin) was calling upon the inspectors either to conduct the inspections at a pace that would not enable a proper review of the items under scrutiny or to overlook discovered deficiencies. Among other things, there is no probative evidence that inspection quotas (let alone unreasonable ones) were imposed, or that any action was taken against a QC inspector because of the failure to complete a certain number of inspections in a given period.³⁷ Additionally, it is clear from the testimony of the inspectors that they were free to raise quality concerns and did so when appropriate.³⁸

In the circumstances, the intervenors' argument comes down to the proposition that Criterion I contains an absolute prohibition against any endeavor by the utility to obtain the more timely performance of inspection activities on its construction project. We reject such an expansive reading of the Criterion.³⁹ As we see it, so long as there is no indication that it encompassed an explicit or implicit direction to perform substandard inspections, there is nothing improper about an effort to shorten the gap between the completion of a segment of the construction work and the ascertainment of the quality of that segment.

II. HARASSMENT AND INTIMIDATION

We turn now to the question whether, notwithstanding the absence of a violation of Criterion I, the record supports the intervenors' claim that

³⁶ *Id.* at 8-9. *See also* Intervenor Exhibit 3 at 7-9. As construction work progresses, it may become more difficult to conduct certain types of QC inspections (e.g., of items that are no longer readily accessible to the inspector).

³⁷ *See, e.g.*, Tr. 4248-56 (Snyder); Tr. 4857-66, 4883-84 (Rolan); Tr. 4995-98, 5050-54 (Mustered); Tr. 5107-28, 5207-09, 5242-43 (Holley); Tr. 5782-83 (Gorman); Tr. 5918-23 (Peterson); Tr. 6857-73 (Bowman); Tr. 8655-57 (Hunter); Tr. 9238-41 (Martin); Tr. 9665-70 (Perryman); Tr. 9884-85 (Bossong). In support of their argument, the intervenors refer to a meeting between 24 Comstock QC inspectors and the NRC resident inspectors, where the QC inspectors are said to have agreed in response to a question that Comstock emphasized quantity over quality. *See* Tr. 17,534-35 (McGregor). But the testimony of the QC inspectors at trial indicated that, although stressing the importance of expedition, the Comstock management took no concrete action intended to exalt quantity over quality. *See, e.g.*, Tr. 4267-69, 4469, 4526-27 (Snyder); Tr. 4744-47, 4882-84 (Rolan); Tr. 5115, 5122-23 (Holley); Tr. 5924-29 (Peterson); Tr. 6857-58 (Bowman); Tr. 16,647-49 (Hii).

³⁸ *See, e.g.*, Tr. 4182, 4185-87 (Snyder); Tr. 6795-815 (Bowman); Tr. 9648-50, 9673-81, 9689 (Perryman). This is not to say that all supervisors of the QC inspectors were pleased by the independence shown by the inspectors. Nevertheless, the inspectors indicated that, while their management may have responded slowly in some instances, problems were resolved in due course. *See, e.g.*, Tr. 4193, 4520-27 (Snyder); Tr. 4837-42 (Rolan); Tr. 6818, 6956-57, 6968-69 (Bowman); Tr. 9677, 9751-52 (Perryman); Tr. 12,373-82 (Archambeault).

³⁹ Because the pertinent portion of Criterion I relates to the freedom of quality assurance personnel to raise quality concerns, we agree, however, that a violation of that criterion could occur regardless of the presence or absence of harassment or intimidation of those personnel.

intimidation and harassment of Comstock QC inspectors stood in the path of the result reached below. In addressing this question, we first summarize the testimony bearing upon the nature of the asserted intimidation and harassment and then consider the evidence directed to their effect upon the acceptability of the inspectors' performance.

A. Over a dozen Comstock QC inspectors were called to testify. These individuals were not of one mind with regard to what constituted harassment or intimidation in a construction site setting.⁴⁰ Not surprisingly, then, equally diverse opinions were expressed with regard to whether harassment or attempts at intimidation had taken place. Some of the inspectors believed that they had been harassed and/or subjected to intimidation by Comstock QC management at various times during the 1983-85 period.⁴¹ The cited examples included abusive language by supervisors and the refusal by Comstock management to allow an inspector to change his work shift.⁴² Other inspectors, however, disclaimed any belief that they had been significantly harassed.⁴³

But while there was disagreement among the inspectors concerning their subjection to harassing and intimidating conduct on the part of superiors, no significant divergence of opinion was present in the testimony about the effect of that conduct upon inspector performance. With a single limited exception, each inspector to whom the question was posed stated unequivocally that, notwithstanding any perception of harassment or intimidation directed against him or fellow workers, he had carried out his responsibilities in a professional manner.⁴⁴ These statements were supported by concrete illustrative examples. Inspector Richard Snyder testified that, over the vehement objection of a supervisor, he filed a report on the calibration of a welding machine.⁴⁵ Inspector John Seeders testified that he performed a record review in a careful manner despite his conviction that he was being pressed to complete the review quickly.⁴⁶ And inspector Robert Hunter stated that, when a supervisor came to

⁴⁰ See, e.g., Tr. 4975 (Mustered); Tr. 7051-53 (Wicks); Tr. 6788, 6819 (Bowman); Tr. 7435-36, 7875 (Seeders); Tr. 9422-25 (Martin); Tr. 12,482 (Archambeault).

⁴¹ See, e.g., Tr. 4196-98, 4224-28 (Snyder); Tr. 4660-65 (Rolan); Tr. 5098-99 (Holley); Tr. 5728, 5741-44, 5754-56 (Gorman); Tr. 7418, 7425, 7853-55 (Seeders); Tr. 8635-37, 8669-70 (Hunter); Tr. 9214-15, 9219-20, 9416, 9420-26 (Martin); Tr. 9948 (Bossong); Tr. 12,369-70 (Archambeault).

⁴² See, e.g., Tr. 4196-98 (Snyder); Tr. 12,369-70 (Archambeault). The most serious incidents of harassment and intimidation involved confrontations with Comstock QC Supervisor Richard Saklak. Because of one such confrontation, Saklak's employment was terminated by Comstock. See DeWald, fol. Tr. 1700, at 26-33.

⁴³ See, e.g., Tr. 4972-79 (Mustered); Tr. 6780-91, 6796-800, 6810-12, 6818-21, 6910-11 (Bowman); Tr. 7039-40, 7050-58 (Wicks). See also Tr. 6255 (Puckett).

⁴⁴ See, e.g., Tr. 4256 (Snyder); Tr. 4739, 4743-44, 4880-81 (Rolan); Tr. 4974, 4991-94 (Mustered); Tr. 5111-16, 5153-54 (Holley); Tr. 5916-18 (Peterson); Tr. 6911 (Bowman); Tr. 7052 (Wicks); Tr. 7756-57 (Seeders); Tr. 8668-71, 8702-03 (Hunter); Tr. 9544-51 (Martin); Tr. 12,491-92, 12,642-48 (Archambeault).

⁴⁵ See Tr. 4181-87, 4196-97 (Snyder).

⁴⁶ See Tr. 7423-30 (Seeders).

him and requested that an inspection report be closed out, before complying with the request he would ensure that this action was appropriate.⁴⁷

The exception to this line of testimony was the observation of inspector Terry Gorman that he might have unintentionally discharged his duties in a less careful manner because of strong pressure exerted on him to complete high priority assignments.⁴⁸ At the time in question, however, Gorman was not engaged in the field inspection of construction work but, instead, was assigned to the processing of documents in the document vault.⁴⁹ From all that appears in the record, the processing errors that were discovered by file clerks (and led to Gorman's concession of a possible adverse reaction to pressure) were of no safety significance.

B. The intervenors acknowledge the testimony of the inspectors on their job performance. At least by implication, they also concede the absence of any affirmative evidence to suggest that that testimony was false. Nonetheless, we are told that, because the testimony was self-serving, we should not merely discount it entirely but, as well, assume the converse: that the perceived harassment and attempted intimidation had a decided effect upon the quality of the inspection of completed construction work.⁵⁰

The intervenors do not explain why we should accept the portion of the testimony of the inspectors that assists their position while, at the same time, reject as being not worthy of belief the portion that cuts against their attack upon the result below. We need not, however, pursue that seeming inconsistency any further in this instance. That is because there is credible evidence of record that bears out the inspectors' insistence that they carried out their field inspections properly, despite the perceived harassment and attempted intimidation. That evidence consists of the results of two reinspection programs that, in combination, produced a second opinion by different inspectors regarding the construction work examined by the QC inspectors in question, both before and during the period that those inspectors allegedly were subjected to harassment and intimidating tactics.

1. The first of the two programs was the Construction Sample Reinspection (CSR), which addressed all construction work completed before June 30, 1984.⁵¹ Its objectives were to provide assurance that the plant construction met "applicable design requirements" and "to confirm that the overall quality pro-

⁴⁷ See Tr. 8873-77 (Hunter).

⁴⁸ See Tr. 5752-62 (Gorman).

⁴⁹ See Tr. 5746-47 (Gorman).

⁵⁰ In this connection, the intervenors maintain that the Licensing Board majority gave excessive weight to the testimony of applicant consultant Robert Laney that the QC inspectors would resist pressure to compromise their integrity. Although the majority did note its general agreement with this witness's views on the subject (see *supra* note 8), we do not read that agreement as crucial to the Board's ultimate conclusion on the matter.

⁵¹ See Kaushal, fol. Tr. 13,068, at 3.

gram was functioning as expected.”⁵² The CSR was made up of three elements.⁵³ The first was a random selection of the items to be reinspected from the total number of safety-related items available for reinspection, with the consequence that each item had an equal opportunity to be included in the sample.⁵⁴ According to the uncontroverted testimony of a statistician, the selected sample was large enough to support a conclusion with 95 percent confidence that, if no design-significant defects were found in the inspected items, 95 percent of the total population would be free of such defects.⁵⁵ The remaining two elements involved the non-random selection for reinspection of items that either were a part of essential plant systems or, for some other reason, were deemed to warrant special scrutiny.⁵⁶

The second reinspection program was conducted by Pittsburgh Testing Laboratory (PTL) with an objective of ascertaining how well the QC inspectors had performed their duties. This program was initiated during the early phases of construction in 1977 and continued through the construction period. The portion of the PTL data analyzed for this proceeding related to work that had been reinspected between July 1982 and June 1986.⁵⁷

For the purposes of this proceeding, the applicant assembled the data obtained from these two reinspection programs in such fashion as to enable a comparison of the relationship between the results of the inspections and reinspections for both (1) the inspections taking place before the period of asserted harassment and attempted intimidation; and (2) the inspections occurring during that period. Specifically, the objective was to ascertain whether there was significantly greater agreement between the inspectors and reinspectors regarding items accepted by the former *prior* to the commencement of the purported undue pressure. If so, there might be room for an inference that the inspectors had succumbed to such pressure. On the other hand, so the applicant’s reasoning continued, if there turned out to be no significant difference between the rates

⁵² *Id.* at 4-5.

⁵³ *Id.* at 11-16.

⁵⁴ *Id.* at 14.

⁵⁵ See Frankel, fol. Tr. 17,082, at 10. Discrepancies identified during the CSR program were evaluated for design significance by Sargent & Lundy, the architect-engineer for Braidwood. See Kaushal, fol. Tr. 13,068, at 25-26. None of the discrepancies was found to be design significant. See Thorsell, fol. Tr. 14,270, at 17; Kostal, fol. Tr. 14,270, at 21. We need add only that the record belies the Licensing Board Chairman’s endeavor to put the objectivity of Sargent & Lundy into question. See LBP-87-14, 25 NRC at 662-65. For example, to support his belief that Sargent & Lundy might have been concerned about being held accountable for any determined design-significant defects, the Licensing Board Chairman pointed to a cable that assertedly had been excessively bent as the result of a cable junction box that was too small. *Id.* at 663. But the evidence discloses that the box was of adequate size and the cable manufacturer had allowed use of the cable as installed in it notwithstanding the degree of bending. See Tr. 14,488-89, 14,590-91, 15,490 (Thorsell). The remaining claims by the Licensing Board Chairman regarding the objectivity of Sargent & Lundy in its analysis of identified discrepancies are equally without merit.

⁵⁶ See Kaushal, fol. Tr. 13,068, at 14-16.

⁵⁷ See Rebuttal Testimony of George F. Marcus (August 1986) at 7-12, admitted at Tr. 15,568.

of agreement throughout the entire period, the appropriate inference would be that there was no pressure-related change in the performance of the inspectors.⁵⁸

2. As is undisputed, the data support the thesis that the agreement rate between the inspections and reinspections did not vary to a material extent insofar as the inspections conducted before and after 1983 are concerned.⁵⁹ In common with the applicant and the Licensing Board majority, we conclude that probative weight can be attached to this fact.⁶⁰ In this connection, we have considered and rejected the intervenors' objections to any reliance being placed upon the reinspection data — objections based entirely upon the views expressed by the Licensing Board Chairman in his dissenting opinion.

To begin with, crucial significance does not attach to the fact that the CSR program covered only inspections conducted before June 30, 1984. In stressing that consideration,⁶¹ the Licensing Board Chairman overlooked the additional fact that the PTL reinspection program extended to inspections throughout the period of construction work. The data acquired from that program that were put into evidence below related to the initial inspections performed during the entire period of alleged harassment and attempted intimidation. In this connection, both programs reinspected work that had been initially inspected between July 1982 and June 1984. The data derived from those reinspections indicated that the two programs provided similar results vis-a-vis the agreement rate between the initial inspections and the reinspections.⁶² Thus, there is little reason why the PTL data should be deemed insufficient for the period not embraced by the CSR program.

The insistence of the Licensing Board Chairman that the PTL data should be discarded as not derived from a statistically random sample entirely ignores the testimony of applicant witnesses Martin R. Frankel and Louis O. DelGeorge.⁶³ Dr. Frankel, an acknowledged expert in the analysis of statistical data, indicated that, although the PTL sample was not statistically random, it nonetheless might suffice to support an inference that the initial inspectors had not succumbed to undue pressure.⁶⁴ This, he added, could be determined only by means of an engineering evaluation.⁶⁵ Mr. DelGeorge, an engineer and official of the appli-

⁵⁸ See DelGeorge, fol. Tr. 16,740, at 5-6, 9-13.

⁵⁹ *Id.* at 13. See also Frankel, fol. Tr. 17,082, at 20-27. No exact dates were established during the proceeding for the commencement and cessation of the alleged harassment and intimidation. See LBP-87-14, 25 NRC at 539-40. Nevertheless, it appears that the period generally ranged from mid-1983 to late 1985. In any event, collectively, the reinspection programs covered inspection work performed both before and during the alleged harassment and intimidation.

⁶⁰ See LBP-87-14, 25 NRC at 493-99, 503.

⁶¹ *Id.* at 654-55.

⁶² See DelGeorge, fol. Tr. 16,740, at 37-38; Tr. 16,801-02 (DelGeorge).

⁶³ See LBP-87-14, 25 NRC at 559, 665-66.

⁶⁴ See Frankel, fol. Tr. 17,082, at 25.

⁶⁵ See Tr. 17,147-48 (Frankel).

cant with broad experience in the execution of reinspection programs, provided just such an evaluation.⁶⁶ He concluded that, given its size and distribution over time, the PTL sample was sufficient despite not being statistically random.⁶⁷ Significantly, neither the Licensing Board Chairman nor the intervenors even refer to this conclusion or the analysis offered in support of it, let alone explain why we should decline to accept it.⁶⁸

No greater merit attaches to the Licensing Board Chairman's complaint, echoed by the intervenors, that the supplied reinspection data did not include the items that had been rejected by the initial inspectors.⁶⁹ As a practical matter, reinspections normally are not directed to the determination whether a particular item had been rejected by the initial inspector: for good reason, the focus of reinspections is on work that has been accepted (either initially or after correction of determined deficiencies). Moreover, to repeat, the issue here is whether there was a significant change in the quality of the initial inspectors' performance as the result of harassment and intimidation. As seen, the data from the reinspection programs countered the existence of any such change.

In sum, we have been provided with insufficient cause not to take the reinspection results as corroborating the testimony of the inspector witnesses that they had performed their field inspections without regard to any harassment or attempted intimidation. On this score, it is important to bear in mind that there was not one scintilla of evidence that tended to establish that harassment or attempted intimidation had influenced the field inspections.⁷⁰

III. GRID SYSTEM

Prior to November 1982 Comstock employed an inspection method known as the grid system. There was no claim below that harassment or intimidation endeavors influenced the results of inspections using that system. This being so, it is doubtful that those inspections were within the ambit of the single contention admitted for litigation. Despite his recognition of this consideration,⁷¹ as previously noted the Licensing Board Chairman relied exclusively upon his

⁶⁶ See DelGeorge, fol. Tr. 16,740, at 43-44.

⁶⁷ *Id.* at 45-47.

⁶⁸ The Licensing Board Chairman also criticized the PTL program based upon his refusal to accept the testimony of applicant witnesses that only a small percentage of welds had been reinspected through paint. See LBP-87-14, 25 NRC at 665-66. The intervenors do not press this point on appeal and we find nothing in the record to cast doubt upon the credibility of the witnesses.

⁶⁹ *Id.* at 557-59, 660-62.

⁷⁰ In the absence of such evidence, the intervenors' reliance upon *Union Electric Co.* (Callaway Plant, Unit 1), ALAB-740, 18 NRC 343 (1983) is entirely misplaced. Stated otherwise, the record at hand does not indicate, in the words of *Callaway*, "a breakdown in quality assurance procedures of sufficient dimensions to raise legitimate doubt as to the overall integrity of the facility and its safety-related structures and components." *Id.* at 346.

⁷¹ See LBP-87-14, 25 NRC at 553-54.

belief that the grid system was flawed to support his conclusion that there was not reasonable assurance that the facility was properly constructed.⁷² Because the intervenors endorse the attack upon the grid system, we are constrained to address the matter notwithstanding our conviction that it was beyond the scope of the proceeding.⁷³ We find the Licensing Board Chairman's criticism of the grid system insubstantial.

The grid system method called for the selection of a certain percentage of classes of items for inspection. In the case of welds and equipment, 100 percent were inspected. For all other classes, 35 percent received scrutiny (subject to an expansion of the sample if an unacceptable number of deficiencies were discovered in the items initially selected for inspection).⁷⁴

At the end of October 1982, the applicant decided that it was not satisfactory to inspect only some items. Accordingly, it directed Comstock to commence forthwith an inspection of all items, including those that had previously eluded inspection under the 35-percent standard.⁷⁵

One vestige of the grid system remained, however, for almost another year. In conducting the 100-percent inspection of the welds, some inspectors had followed the practice (permitted by Comstock) of documenting the inspection results in personal notebooks and then later transferring the information to official checklists.⁷⁶ In October 1983, at the applicant's insistence, the practice was discontinued.⁷⁷ Thereafter, the inspectors were required to use the checklists during the inspections.⁷⁸

Given that ultimately 100 percent of all items were inspected, it is not significant that only 35 percent of certain items were examined at the outset.⁷⁹ This leaves the Licensing Board Chairman's dissatisfaction with the pre-October 1983 practice of recording weld inspection results *ab initio* in personal notebooks. Although that practice may well have been undesirable, there is nothing

⁷² See *supra* p. 277.

⁷³ As a general matter, in an operating license proceeding, the Licensing Board must confine itself to "matters put into controversy by the parties." 10 C.F.R. 2.760a. While the Board has the power to raise *sua sponte* "a serious safety, environmental, or common defense and security matter" (*ibid.*), it may not exercise that power without the issuance of "a separate order which makes the requisite findings and briefly states the [board's] reasons for raising the [new] issue." *Texas Utilities Generating Co.* (Comanche Peak Steam Electric Station, Units 1 and 2), CLI-81-24, 14 NRC 614, 615 (1981). No such order surfaced with regard to the issue of the adequacy of grid system inspections.

⁷⁴ See LBP-87-14, 25 NRC at 499-500; DeWald, fol. Tr. 1700, at 7; Intervenor Exhibits 160 and 200.

⁷⁵ See LBP-87-14, 25 NRC at 564; DeWald, fol. Tr. 1700, at 7; Intervenor Exhibit 205, Attachment III. See also App. Tr. 55.

⁷⁶ See DeWald, fol. Tr. 1700, at 24.

⁷⁷ See Tr. 9570-78 (Martin).

⁷⁸ *Ibid.*

⁷⁹ Apparently relying on an erroneous proposed finding submitted by the staff, the entire Licensing Board incorrectly thought that just 35 percent of the welds were inspected. See LBP-87-14, 25 NRC at 499-500, 564. See also NRC Staff's Findings of Fact and Conclusions of Law on Rorem, *et al.* Contention 2C (February 13, 1987) at 7-8.

in the record to suggest that it resulted in the failure to document discerned weld deficiencies.⁸⁰ In this regard, it is noteworthy that the CSR program did not identify any design-significant weld defects, i.e., deficient welds that might raise safety concerns.⁸¹

For the foregoing reasons, the Licensing Board's concluding partial initial decision, LBP-87-14, 25 NRC 461, is *affirmed*.⁸²

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

⁸⁰ Under the grid system, upon finding a defective weld the QC inspector would bring it to the attention of the craft personnel with instructions to take necessary corrective action. As a general matter, the weld would not be incorporated into an official checklist until after the defect had been corrected and, thus, the weld could be listed as acceptable. Depending upon the amount of time required to correct the defect, several days (or perhaps a week or more) might elapse before a particular weld would turn up on a later checklist. *See* Tr. 8290-91, 8348-56 (Martin).

In light of the foregoing practice, acknowledged by the Licensing Board Chairman (*see* LBP-87-14, 25 NRC at 554, 650), it is scarcely surprising that the checklists make reference only to accepted welds. Nonetheless, the Chairman takes that fact to suggest that the inspections did not turn up all weld defects. Proceeding on the assumption that a proper inspection would have determined that roughly 30 percent of the welds were defective, he reasons that it would not have been possible to correct all of them before the preparation of the checklist showing that they were acceptable. *Id.* at 554-55, 651.

There are several flaws in this line of reasoning. For one thing, there is no record basis for the Licensing Board Chairman's assumption respecting the percentage of welds that should have been found defective on an initial inspection. Second, the record evidence refutes his tacit assumption that all welds initially found defective made their way into the same checklist as acceptable. *See* Tr. 8352-53 (Martin). Third, the evidence also contradicts the yet further tacit assumption that a large number of weld defects could not be corrected within the several day period elapsing between the inspections and the preparation of the checklists. *See* Tr. 8357-63 (Martin).

⁸¹ The intervenors assert that the CSR program did not measure the effectiveness of QC inspector performance under the grid system. This is true but irrelevant. For our purposes, it is enough that the absence of any detected design-significant weld defects meant that there is 95 percent confidence that 95 percent of the total weld population is free of such defects. *See supra* p. 283.

⁸² We have considered all of the intervenors' other claims on appeal and find them equally without merit. Among those claims is the insistence that the Licensing Board improperly allocated the burden of proof. It may well be that, once the intervenors had established that QC inspectors believed that they had been subjected to harassment and attempts at intimidation, the applicant had the burden of going forward on the safety significance of that belief. If so, the applicant sustained that burden through the vehicle of the inspectors' testimony and the evidence relating to the reinspection programs, which reflected that any harassment or attempted intimidation that might have occurred did not materially influence the outcome of field QC inspections. Although given ample opportunity to do so, the intervenors did not succeed in rebutting the applicant's showing. Thus, the applicant must be deemed to have also satisfied its ultimate burden of proof on the question whether the Comstock electrical work was properly performed.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

John H Frye, III, Chairman
Dr. Oscar H. Parls
Frederick J. Shon

In the Matter of

Docket No. 50-322-OL-5
(ASLBP No. 86-534-01-OL)
(EP Exercise)

LONG ISLAND LIGHTING
COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

March 9, 1988

Licensing Board concludes that it lacks authority to retain jurisdiction for purposes of determining whether a subsequent exercise demonstrates that certain fundamental flaws, which it found were revealed by the February 13, 1986 Exercise of the offsite emergency response plan for the Shoreham Station, have been corrected.

LICENSING BOARDS: DELEGATED AUTHORITY

Where the Commission delegated authority to the licensing board to conduct an expedited hearing and issue a decision on the question of whether fundamental flaws were demonstrated by the exercise of an emergency plan, but did not delegate authority to make a reasonable assurance finding, that board's jurisdiction ends on issuance of its initial decision. It may not retain jurisdiction to determine whether a subsequent exercise demonstrates that any such flaws have been corrected.

MEMORANDUM AND ORDER

(Concerning Retention of Jurisdiction)

In our Initial Decision,¹ we noted that Staff, in its proposed findings, had suggested that we should retain jurisdiction in this proceeding to determine whether, following another FEMA-graded exercise, LILCO had adequately corrected the flaws found in its emergency plan in the February 13, 1986 Exercise. Because Staff did not elaborate on this suggestion and no other party addressed it, we called for the views of all parties.²

Those views have now been received.³ Staff no longer suggests that we retain jurisdiction. After reconsideration, Staff points out that were we to retain jurisdiction, we would have to do so on the basis that certain issues pending before us were unresolved. Staff now takes the view that we have carried out the Commission's directive in CLI-86-11, 23 NRC 577, 579 (1986), "to consider evidence which intervenors might wish to offer to show that there is a fundamental flaw in the LILCO emergency plan," so that there are no such issues. Thus in Staff's view, our jurisdiction terminated on issuance of our Initial Decision, LBP-88-2, 27 NRC 85 (1988).⁴

LILCO believes that we should retain jurisdiction. In support of this view, LILCO points out that its motion upon which the Commission acted in deciding CLI-86-11 viewed the February 13 Exercise as the full-participation exercise that would support licensing of the Shoreham plant. Thus, in LILCO's view, we should retain jurisdiction to determine, following an exercise, whether the flaws that we found have been remedied so as to permit a reasonable assurance finding. In this regard, LILCO appears to view our mandate as similar to that of a board with jurisdiction over an operating license proceeding where such a course is clearly appropriate. See *Commonwealth Edison Co.* (Byron Nuclear Power Station, Units 1 and 2), ALAB-770, 19 NRC 1163, 1168-70 (1984); *Cincinnati Gas and Electric Co.* (William H. Zimmer Nuclear Power Station, Unit 1), LBP-82-48, 15 NRC 1549 (1982), *modified and aff'd*, ALAB-727, 17 NRC 760 (1983).

Intervenors appear to take the position that, while we probably lack the authority to retain jurisdiction, it might be a good idea for us to do so. Initially,

¹ LBP-88-2, 27 NRC 85 (1988).

² *Id.* at 214.

³ See LILCO's Views on Continuing Board Jurisdiction, dated February 17, 1988; NRC Staff Response to Board Request, dated February 19, 1988; and Intervenors' Views on Whether the Licensing Board Should Retain Jurisdiction, dated February 23, 1988.

⁴ Staff also points out that LBP-88-2 in effect reverses several of the OL-3 Board's findings on the adequacy of the LILCO plan. Thus, a practical problem would be presented by our retention of jurisdiction over the exercise results on the "fixes" to these inadequacies because the OL-3 Board continues to have jurisdiction over any necessary changes to the LILCO plan. In Staff's view, this adds confusion and complication to an already complex case.

they point out that our Partial Initial Decision⁵ holding that the February 13 Exercise was not a full-participation exercise, the flaws found in LBP-88-2, and the expiration of the 2-year period in which the February 13 Exercise might have been used to support licensing combine to make it unlikely that there could be any corrective measures with respect to the February 13 Exercise results over which we might preside. Intervenors believe that while this situation could be interpreted in such a way as to present issues raised by the February 13 Exercise, such an interpretation involves a strained reading of CLI-86-11. While noting that there is no guarantee that the members of this Board would be available to preside over the litigation of the results of a future exercise,⁶ Intervenors believe that the stronger argument for our retention of jurisdiction lies in considerations of "judicial" economy. They correctly point out that, having found flaws revealed by the February 13 Exercise, it makes sense for us to review the efforts to correct those flaws.

Licensing boards "are delegates of the Commission and, as such, . . . may exercise authority over only those matters that the Commission commits to them."⁷ We agree with Staff that, with the issuance of LBP-88-2, we have discharged the responsibilities delegated to us by the Commission. The Commission has not indicated that our authority extends beyond "expedit[ing] the hearing to the maximum extent consistent with fairness to the parties, and . . . issu[ing] [our] decision upon the completion of the proceeding";⁸ consequently we have no authority to review any corrective measures that might be taken.

We note that, in its delegation to us, the Commission has not included the authority to make a finding of reasonable assurance, but rather has limited us to considering evidence that fundamental flaws exist.⁹ We presume that this omission was intentional, and that the Commission intended to leave the authority to make such a finding exclusively with the board having jurisdiction over the operating license application in general. Had the Commission given us such authority, LILCO's position would be well taken.

Moreover, we also agree with Staff that for us to retain jurisdiction in this procedural situation would only add confusion and complication to an already excessively complex proceeding. Intervenors have alluded to the possibility that it may not be possible to further consider the February 13 Exercise as a basis for licensing. Whether it is possible or not, it may not be desirable. As things now stand, another exercise must be held. That being the case, it may be more expeditious to design that exercise as a full-participation exercise that

⁵ LBP-87-32, 26 NRC 479 (1987).

⁶ LILCO also noted this problem in its response.

⁷ *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790 (1985).

⁸ CLI-86-11, 23 NRC at 582.

⁹ *Id.* at 579.

will support licensing in and of itself. At a minimum, such a course would seem to provide the opportunity to cut off further litigation over the results of the February 13 Exercise except to the extent that the Commission may wish to review those results in order to provide guidance. In this situation, we believe the Commission may wish to provide direction. Our retention of jurisdiction to determine whether the fundamental flaws that we have found have been shown by a subsequent exercise to have been corrected only serves to further complicate this situation without providing any corresponding benefit. If, after reviewing this situation, the Commission wishes to delegate further authority to this Board it can, of course, do so.

In light of the foregoing, we have concluded that we lack the authority to retain jurisdiction to determine whether the fundamental flaws revealed by the February 13, 1986 Exercise have been corrected.

It is so ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Frederick J. Shon
ADMINISTRATIVE JUDGE

Oscar H. Paris
ADMINISTRATIVE JUDGE

John H Frye, III, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland
March 9, 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)

March 23, 1988

MEMORANDUM AND ORDER
(Protecting Information from Public Disclosure)

I. BACKGROUND

On September 18, 1987, Applicants filed in this proceeding their Seabrook Plan for Massachusetts Communities (SPMC). Asserting personal privacy considerations, Applicants deleted or "redacted" certain information concerning the identity of individuals and organizations needed to implement the plan.

In its memorandum and order lifting the stay of low-power operations, the Commission required that the Applicants must provide to the NRC Staff and to FEMA any of the redacted information that the Staff and FEMA deem necessary

for their review of the plan. The Commission directed further that, prior to low-power operation, Applicants must indicate their willingness to provide "the detailed information [deemed necessary by the Staff and FEMA] to the other parties to the proceeding, if necessary under appropriate protective orders from the Licensing Board." The Commission expected that the Licensing Board would fashion orders that would "allow full litigation of contested issues without unnecessarily violating personal privacy." CLI-87-13, 26 NRC 400, 405 (1987).

On December 30, 1987, Applicants provided to the Staff information requested by the Staff and requested that the information be withheld from public disclosure pursuant to 10 C.F.R. § 2.790 on the grounds that it contained commercial proprietary information. The Staff granted the request on February 5, 1988. During the evidentiary hearings the Massachusetts Attorney General (Mass AG) requested the information. The Applicants agreed to provide it, but only under a protective order withholding the information from the general public. The Attorney General objected to a protective order as a matter of policy. Tr. 8398-425, 8987-9004. The matter stood at an impasse until February 10, when the Massachusetts Attorney General, who is the lead intervenor on this issue, agreed to a temporary protective order until the matter could be resolved on the merits. Tr. 9724-29. On February 17 the Licensing Board issued a temporary protective order. Active parties have executed affidavits of nondisclosure where required and we understand that most of the information has been provided in accordance with the terms of the temporary protective order.

In the meantime, Rockingham County Newspapers requested the information under the Freedom of Information Act (FOIA) (5 U.S.C. § 552), which request was denied by the Staff on February 25 on the grounds that the information was proprietary, apparently under FOIA Exemption 4 as restated under Part 9 of the NRC regulations. 10 C.F.R. § 9.5(4).

The Massachusetts Attorney General filed his motion and memorandum opposing the entry of a permanent protective order on February 19, to which Applicants replied on February 25, with the Staff responding on March 3.

II. DISCUSSION

A. Introduction

The Massachusetts Attorney General opposes a continuation of the protective order on the general grounds that one is not needed, that the Massachusetts public has a right to know who will be the responders in an emergency, and that a protective order will foreclose a full litigation of the plan by current and potential intervenors.

In response, Applicants argue that an extended protective order is needed to protect the privacy of the suppliers of services and facilities in the plan

for Massachusetts communities, and that Applicants would be harmed in their commercial interests in the plan if the suppliers were publicly identified and subject to intimidation by persons not under the control of the Licensing Board.

For its part, the NRC Staff emphasizes the Applicants' commercial right to have the information withheld from public disclosure, and would have the Board recognize the privacy rights of the suppliers.

In our rulings below, we extend the protective order through discovery to the beginning of the hearing on the plan for the Massachusetts communities. We will then reassess the need for protection. We agree with the Applicants and Staff that there is a significant probability that the suppliers' rights to privacy might be invaded absent a protective order. The Applicants have made at least a threshold showing that they have a protectible commercial or proprietary interest in the withheld information. Their initial request to the Staff for confidential treatment should not be mooted by compulsory discovery in this proceeding. Our major focus, however, is on preserving the integrity of this proceeding. Unrestricted disclosure of the identity of the suppliers prior to the evidentiary hearing will have the dangerous probability of allowing potential witnesses to be intimidated. In fact, the very factual foundation of the litigation could be distorted if uncontrolled disclosure of the relevant information is authorized.

B. Authority to Issue Protective Order

The Commission itself recognized that a protective order might be required to avoid violating personal privacy. CLI-87-13, *supra*, 26 NRC at 405. The Commission's general discovery rule authorizes its presiding officers to make orders required to protect "a party or person from annoyance, embarrassment, oppression" 10 C.F.R. § 2.740(c). The exemptions to the FOIA have been incorporated into the NRC discovery rules. Thus trade secrets and commercial financial information may be withheld from disclosure after balancing the interest of the public in disclosure and the interests of the persons urging nondisclosure. 10 C.F.R. §§ 2.790(a)(4), 2.740(c).

Judicial officers have the inherent authority and responsibility to ensure a fair hearing to the parties before it. Toward this end the NRC rules and the Administrative Procedure Act empower presiding officers to regulate the course of those hearings. 5 U.S.C. § 556(c)(5); 10 C.F.R. § 2.718(e).

Further, the Commission's licensing boards must predicate their decisions upon a record supported by reliable, probative, and substantial evidence. 10 C.F.R. § 2.760(2)(c). *See also* 5 U.S.C. § 556(d). Our authority to regulate the course of the proceeding therefore necessarily authorizes us to protect the foundation of the evidentiary record from deliberate distortion through

annoyance, intimidation, or embarrassment of potential witnesses or persons involved in the subject matter of the proceeding, as we explain below.

No party seriously disputes our general authority to impose orders restricting the disclosure of information. The dispute centers on whether the Intervenor's litigative needs will be compromised, whether a protective order is needed in this case, and whether any such need outweighs the strong public interest in conducting the proceeding "as open as possible to full public scrutiny." *Kansas Gas and Electric Co.* (Wolf Creek Nuclear Generating Station, Unit 1), ALAB-327, 3 NRC 408, 417 (1976).

A corollary to our finding that the Board is authorized to restrict the public dissemination of the protected information, in face of the strong public policy favoring disclosure, is that the restriction should be no greater than needed to protect the interests entitled to protection. *Id.* at 418. *Seattle Times Co. v. Rhinehart*, 467 U.S. 20, 32; 81 L. Ed. 2d 17, 26 (1984), citing *Procurier v. Martinez*, 416 U.S. 396, 413; 40 L. Ed. 2d 224 (1974) and other cases. We have followed this principle in considering the need for and the terms for extending the protective order.

C. Need for Protective Order

As the Massachusetts Attorney General recognizes, "[t]his is to be sure an unusual situation." Memorandum at 5. The emergency planning aspects of the Seabrook application have captured the public's attention as much as any proceeding. Even the candidates for the office of President of the United States found it appropriate to address the issue during the recent campaign in New Hampshire. The Commission itself commented that the Seabrook plant is surrounded by an "emotionally charged atmosphere" — a fact to which the Board can attest from its own experiences during the hearings.

The Board has had an opportunity over many weeks to hear from and observe many who live near the Seabrook Station, including many who live in the Emergency Planning Zone. Most of those we have heard strongly oppose the licensing of Seabrook, yet are civil and decorous. The Seabrook opponents by and large are as dedicated to civil order and to a disciplined society as any people anywhere.

There is, however, a proportionally small but aggressive minority of Seabrook opponents, including some members of the Clamshell Alliance, who have demonstrated by civil disobedience their willingness to frustrate the licensing process by extra-legal means. They are not parties to the proceeding and are, therefore, beyond the control of the Licensing Board. If, as we fear, this group would seek to influence the licensing process by interfering with the agreements and expectations between Applicants and the suppliers in the plan

for Massachusetts, there is little the Board can do except to deny them the opportunity.

There is another aspect of the emergency planning phase of the proceeding that sets it off from other administrative proceedings. In this case the Board is required to make *predictive* findings, i.e., there is, or there is not, reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at Seabrook. 10 C.F.R. § 50.47. This fact gives rise to a rare opportunity to influence the outcome of the adjudication by changing the facts upon which the prediction must be made. Our concern therefore is that some undisciplined opponents to the Seabrook Station will improperly interfere with the arrangements between Applicants and the suppliers for the *purpose of influencing the hearing*. This finding is unprecedented, required by the novel circumstances of this proceeding. Our reasoning should be well understood.

Stated another way, if the arrangements between the Applicants and the suppliers were made solely for the purpose of providing emergency services and facilities in the Massachusetts communities, without regard to the licensing process, we would have no concern that the arrangements would be tampered with — nor any authority over the matter. It is only because the arrangements have a separate and special use in support of the license application that our cognizance over them and the need for protection arise.

The Intervenors argue the matter from a slightly different direction. They state that, if in fact the community influences suppliers to abrogate their arrangements with Applicants, that is simply a fact of life that must be accounted for when considering whether adequate protective measures can and will be taken. And, in any event, the argument goes, sooner or later the information must be produced. The Board, however, does not accept this concept of a self-fulfilling, circular chain of events. No one seriously suggests that a rational community would oppress the potential suppliers of emergency services solely because they would serve in an actual radiological emergency. The only reason for pressuring the potential suppliers would be to prevent their arrangements with the Applicants from being used in the licensing proceeding. If the Board can interrupt the cycle by an appropriate protective order, it is our responsibility to do so.

D. Personal Privacy Considerations

The Massachusetts Attorney General points to the decision in *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 400 (1979), for the proposition that privacy protection to be afforded the suppliers in this proceeding was not granted in the similar *Allens Creek* case. There, the National Lawyers Guild sought to protect the identity of its intervening members to spare them harassment because of their

asserted antinuclear views. The Appeal Board, drawing a distinction between the emotional climate surrounding the civil rights movement (where privacy needed protection) and the controversy attendant to issues of nuclear power, held that the identity of the Guild members had not been shown to require protection solely because of their views. *Id.* at 399, 400. The case before us is quite different. As noted above, the Board through its own observations has determined that there are those who might harass the suppliers if it would suit their purposes, and that they might perceive a rational incentive for such harassment.

As argued by the Mass AG, there may be some doubt whether the privacy rights to which the suppliers might be entitled have a foundation in the exemptions to the Freedom of Information Act. The respective provision of the NRC rules, § 2.790(a)(6), pertains to medical, personnel, and similar files relating to the individual personal life. But, as noted above, our discovery rules do not end with § 2.790. The general NRC discovery rule on protective orders, § 2.740(c), and Federal Rule of Civil Procedure 26(c), upon which the NRC rule was modeled, clearly permit protection from annoyance and oppression independently of FOIA exemptions.

The Attorney General asserts his right to communicate the protected information to the general public. Both the Attorney General and Applicants have directed the Board's attention to *Seattle Times Co.*, *supra*, which is, indeed, instructive on that point. There the Court upheld a Rule 26(c) privacy-type state protective order designed to prevent harassment of members of a controversial religious organization. The Court found that pretrial discovery limitations on the dissemination of such information does not offend the First Amendment. Thus the Attorney General, gathering the information about the suppliers solely through the discovery authority given for this proceeding, is reasonably restrained from disseminating that information. He would not have the information but for the needs of this litigation and he has no First Amendment rights to information gathered only through that means. *Id.* at 32.

It should be noted that the protective order does not restrain the dissemination of identical information obtained through independent means. *Id.* at 34.

The Board therefore concludes that the suppliers of services and facilities in the plan for Massachusetts communities have an independent right to have their arrangements with the Applicants held private. This right of privacy is a separate and adequate basis in itself to extend the protective order. We also hold that the Applicants have sufficient privacy with the suppliers to assert their privacy rights for them. As a practical matter the suppliers cannot raise privacy claims on their own. Only Applicants can do this effectively. *United States v. Lasco Industries*, 531 F. Supp. 256, 263 (N.D. Tex. 1981). (Employer may assert right of employee to privacy in medical records against federal subpoena.)

E. Applicants' Commercial Interests

It is obvious that the Applicants have a substantial commercial interest in the arrangements with the suppliers. Not only has money been expended in developing the arrangements, as the Staff points out, but the secondary damages attendant to any disruption of the arrangements through tortious interference would be very great in terms of delay, extra litigative costs, or perhaps the outright denial of a commercially valuable license to which Applicants might be entitled.

The Commission's rules authorize the nondisclosure of "[t]rade secrets and commercial or financial information obtained from a person and privileged or confidential." 10 C.F.R. § 2.790(a)(4). This protection, as we have noted, has its genesis in the Freedom of Information Act, Exemption 4. 5 U.S.C. § 552(b)(4). Traditionally the type of information protected by Exemption 4 has been confidential commercial or financial information the disclosure of which would "cause substantial harm to the competitive position of the person from whom the information was obtained." *National Parks and Conservation Ass'n v. Morton*, 498 F.2d 765, 769-70 (D.C. Cir. 1974) ("*National Parks I*"). Although the Applicants do not allege a specific competitive injury from the disclosure of the identity of the suppliers, and there is no *direct* competitive significance to the information, any serious economic damage would weaken a utility's competitive position *vis-a-vis* other fuels. Furthermore, the economic trend is for increased competition among central-station electricity generators. The Board believes that Applicants have a real competitive interest in the commercial information. In addition, as the NRC Staff argues, substantial economic harm to the information's owner may be protected under Exemption 4 even where no competitive position is at risk. Staff Response at 7, *citing generally*, 9 to 5 *Organization for Women Office Workers v. Board of Governors of the Federal Reserve System*, 721 F.2d 1 (1st Cir. 1983). Finally, Exemption 4 is not by its terms limited to considerations of competitive harm.

F. Intervenor's Due Process Rights

The Attorney General argues that he will be denied a "full litigation" of the plan for Massachusetts communities under a protective order because he would be denied access to hundreds of third-party sources of information about the suppliers. Memorandum at 14-15. There is no need to dwell on this point. We are simply not moved by the argument and can find no need for any party to consult in the community at large in its discovery efforts.

The protective order is very narrow. It permits access to the information by the attorneys, secretaries, and investigators of the office of Attorney General. It is similarly flexible with respect to other intervenors. The Intervenor's are permitted

to conduct normal discovery-type interviews with the suppliers. In the case of business firms, they are permitted to contact the cognizant employees. If any intervenor, in a *particular situation* comes to a dead end because it may not contact, say, a former employee without violating the protective order, it can first seek an exception from the Applicants, then from the Licensing Board.

The Attorney General also makes a due-process argument on behalf of unnamed potential intervenors. This argument is even less convincing than the argument on the AG's own behalf, even assuming that he has standing to raise the matter. Potential intervenors have no discovery rights. Discovery is available only to parties to a proceeding. 10 C.F.R. § 2.740(a), (b). Memorandum at 12-13.

G. Other Withheld Information

Also redacted from the plan for the Massachusetts communities was a category of information in Appendix H, said to be the names and phone numbers of hundreds of members of the New Hampshire Yankee offsite response organization. The Staff did not request this information. Therefore the Applicants have not provided it to the Intervenor under the temporary protective order. The Attorney General demands the Appendix H information. He argues that the Commission, in CLI-87-13, intended for the Intervenor to have the entire plan for the Massachusetts communities. Applicants, looking at the plain language of CLI-87-13, note that under that order they need only indicate their willingness to give to the other parties the detailed information requested by the Staff and FEMA. *Id.*, 26 NRC at 405.

Neither the Applicants nor the Massachusetts Attorney General has interpreted the Commission's order correctly. The Attorney General has no basis for his opinion that the Commission intended that the entire plan be provided to the Intervenor. The language is clear enough on that point. *Id.*

On the other hand, Applicants misread CLI-87-13 as stating that they are obliged to provide the Intervenor with only the information requested by the Staff. That construction would imply that Intervenor's discovery rights are controlled by the requests of the Staff or perhaps FEMA.

The Commission was simply explaining to the Applicants that, at a minimum and without undue delay, the Intervenor should have whatever information the Staff and FEMA use to perform their evaluations. The Commission had no intention of restructuring the discovery rules in that respect. The standard for discovery remains as always: "parties may obtain discovery regarding any matter, not privileged, which is relevant to the subject matter involved in the proceeding" 10 C.F.R. § 2.740(b)(1). The information contained in Appendix H is relevant to the proceeding. The question to be decided is whether the information is privileged or should otherwise be protected in accordance with

general discovery principles. This matter was discussed during the telephone conference call of March 21. Tr. 9831-40. The foregoing interpretation of CLI-87-13 was explained to the parties. While counsel for Applicants points out that none of the Appendix H information would be discoverable until the contentions are filed, to move the matter along, Applicants are willing to produce the information forthwith under suitable protection. *E.g.*, Tr. 9838 (Dignan).

Accordingly, the Board directs that the Appendix H information be provided under the protective order extended today. However, we authorize the Applicants to redact home phone numbers because they are irrelevant to the issues, private, and would serve no discovery purpose. We also authorize the Applicants to redact the emergency phone numbers because there is no apparent discovery purpose for them and because the potential damage in the inadvertent release of the emergency numbers would outweigh any benefit from producing them.

II. ORDER

The protective order approved on February 17, 1987, is extended until the beginning of the evidentiary hearing on the Seabrook Plan for the Massachusetts Communities, or until further order of the Board. Prior to the beginning of the evidentiary hearing, Applicants may petition for further relief. Prefiled testimony containing protected information shall be withheld from public disclosure in accordance with the terms of the order. To the extent possible, protected information shall be separated from other portions of prefiled testimony.

THE ATOMIC SAFETY AND LICENSING BOARD

Gustave A Linenberger, Jr.
ADMINISTRATIVE JUDGE

Jerry Harbour
ADMINISTRATIVE JUDGE

Ivan W. Smith, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland
March 23, 1988

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

Docket No. 50-528

ARIZONA PUBLIC SERVICE
COMPANY, *et al.*
(Palo Verde Nuclear Generating
Station, Unit 1)

March 14, 1988

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by Myron L. Scott, on behalf of the Coalition for Responsible Energy Education, and Jack Kauffman, on behalf of the Valley of the Sun Gray Panthers (Petitioners), requesting that the Arizona Public Service Company, *et al.* (APS) be assessed a civil penalty of not less than \$100,000 for disabling an engineered safety system at the Palo Verde Nuclear Generating Station, Unit 1, on January 20, 1987.

TECHNICAL SPECIFICATION INTERPRETATION

Although a disabling incident was caused by Licensees inappropriately applying Technical Specification 3.0.3 for purposes of operational convenience, no enforcement action was warranted by the NRC based on the minimal safety significance of the incident and a lack of clear NRC guidance. The Licensees' future entry into Technical Specification 3.0.3, however, must be better controlled.

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

INTRODUCTION

By Petition dated April 27, 1987, Mr. Myron L. Scott, on behalf of the Coalition for Responsible Energy Education, and Mr. Jack Kauffman, on behalf of the Valley of the Sun Gray Panthers (Petitioners), filed a request pursuant to 10 C.F.R. § 2.206 addressed to the Director, Office of Inspection and Enforcement of the Nuclear Regulatory Commission (NRC). The Petitioners asked the NRC to provide relief by issuing an Order to Show Cause why a Notice of Violation (Severity Level III or higher) should not be issued and a civil penalty of not less than \$100,000 (\$50,000 escalated for the repetitive nature of the concerns) be assessed against the Arizona Public Service Co., *et al.* (Licensees) based on a January 20, 1987 event at the Palo Verde Nuclear Generating Station, Unit 1.

The Petition was subsequently referred to the Office of Nuclear Reactor Regulation for response. By letter dated June 22, 1987, the Director, Office of Nuclear Reactor Regulation, 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

This Petition concerns an event that occurred on January 20, 1987, at the Licensees' Palo Verde Nuclear Generating Station, Unit 1. During the event, a Control Room Shift Supervisor intentionally overrode an automatic trip function (which is to actuate on low steam-line pressure) of the main steam isolation system (MSIS). The MSIS is an engineered safety system.

The Petitioners allege that disabling of this engineered safety system was unauthorized, and that plant management's response to the event was representative of the failure of Palo Verde personnel and management to fully appreciate the significance of safety-related events and to adopt a thorough, diagnostic approach to such events to prevent their recurrence.¹ They also point to several past violations (included as Appendices 2 and 3 to the Petition) as additional examples of management's failure in these areas. According to the Petitioners, a high number of Licensee Event Report incidents at Palo Verde Units 1 and 2 and the fact that the Arizona Nuclear Power Project is still in the early years of

¹ The Petitioners base these allegations on a letter dated March 13, 1987, from the NRC to the Licensees (included as Appendix 1 to the Petition), which raised specific issues associated with the event and concerns with the Licensee management's response to the event.

attitude formation have increased the importance of instilling a thorough and diagnostic approach to event assessment and operator behavior through regulatory disciplinary action.

The January 20, 1987 disabling event was reported by the Licensees to the NRC in Licensee Event Report 87-007, dated February 18, 1987. As documented in that report, the reactor operating personnel did intentionally disable the Palo Verde Unit 1 MSIS automatic function when steam-line pressure was about 25 psia. At the time, the reactor was subcritical and was being cooled from Mode 4 to Mode 5 with the No. 2 steam generator because of a tube leak in the No. 1 steam generator.

The NRC Staff examined the circumstances surrounding the event, and reviewed the applicable plant procedures and regulatory requirements, to ascertain whether a violation of a regulatory requirement had occurred during the event. The results of the Staff's review, as reported in NRC Inspection Report No. 50-528/87-17,² can be summarized as follows:

- (1) The operating crew intentionally disabled the MSIS feature to keep the main steam isolation valves (MSIVs) open to minimize plant radiological contamination and to avoid potential MSIV damage. Before disabling the MSIS feature, the operating crew determined that this action was allowed by plant procedures and Technical Specifications, as discussed below.
- (2) The MSIS feature was disabled in accordance with plant Procedure 36MT-9SB03, "PPS Bistable Input Simulation." This procedure allows the crew to simulate inputs to the plant protection system (PPS) bistables. Paragraph 5.3 of the procedure requires the Shift Technical Advisor (STA) to verify that action taken under the procedure is allowed by the Technical Specifications.
- (3) The STA verified that the unit would be in compliance with the Limiting Condition for Operation (LCO) in Technical Specification 3.0.3. This LCO required the unit to be placed in a cold shutdown condition (Mode 5) from a hot shutdown condition (Mode 4) within 24 hours when a system-specific LCO and the LCO's associated action statement are not met. After the crew disabled the MSIS feature, they put the unit in a cold shutdown condition in approximately 1 hour and 18 minutes.
- (4) The implementation of Procedure 36MT-9SB03 was controlled in accordance with a plant work control procedure under Work Order 00203545.

² Inspection Report No. 50-528/87-17, July 24, 1987, ¶ 13.

On the basis of its review, the Staff concluded that the operating crew complied with the Licensees' procedures. However, the procedures were based on a misinterpretation of the NRC's intent concerning the use of Technical Specification 3.0.3. The misinterpretation of this particular Technical Specification may in part be the result of a lack of specific NRC guidance with respect to the use of Technical Specification 3.0.3 for the specific situation at Palo Verde. Therefore, we concluded that the Licensees' procedures inappropriately applied Technical Specification 3.0.3 for the purpose of operational convenience. Based on the minimal safety significance of this incident³ and the lack of clear NRC guidance, we conclude that enforcement action is unwarranted.

The Licensees' future entry into Technical Specification 3.0.3, however, must be better controlled. In order to have better control, the Licensees have improved their plant administrative procedures to utilize Technical Specification 3.0.3 appropriately.⁴

In addition, as part of a technical specifications improvement program for all licensees, the Staff has issued Generic Letter 87-09, dated June 4, 1987, which provides guidance on short-term improvements and includes clarifications in some areas. This Generic Letter specifically clarifies the intent of LCO 3.0.3 by stating that it is "not intended to be used as an operational convenience which permits (routine) voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable." Rather, as indicated by this generic letter, the intended purpose of LCO 3.0.3 is to provide time limits for an orderly shutdown when the individual Limiting Conditions for Operation and/or Action Statements in other specifications cannot be complied with. Now that this clarification has been issued, future similar occurrences may be subject to citation in accordance with the Commission's enforcement policy.

³The Staff evaluated the safety implications of the actions taken by the Licensees during this specific event. Based on that review, the Staff has concluded that the facility had not been placed in an unsafe condition during this event for the following reasons:

(1) The Technical Specifications (Table 2.2-1) allow the MSIS trip setpoint to be set 200 psi below the actual steam-line pressure whenever the plant is in Mode 3 or 4. Therefore, with an actual steam-line pressure of 25 psia, the trip setpoint could have been set at 0 psia, which would have effectively removed the trip function of the MSIS.

(2) At the time of the event, the reactor was shut down in Mode 4 with all control rods inserted and the reactor coolant system bled to cold shutdown conditions.

(3) The automatic MSIS feature on low steam-line pressure is provided primarily to terminate or mitigate a main steam-line break and the resulting cooldown of the primary system. At the time of the event, the No. 1 steam generator was already isolated and the No. 2 steam generator pressure was approximately 25 psia. Because the main steam-line design operating pressure is approximately 1000 psig, the probability of a steam-line break at 25 psia was extremely remote.

(4) With the reactor coolant system bled to a cold shutdown condition, the reactivity addition resulting from an uncontrolled cooldown could not have resulted in a return to criticality.

(5) Water injection capability was available to allow rapid recovery from any reactor coolant system contraction resulting from a cooldown.

⁴Inspection Report No. 50-528/87-10, May 21, 1987, at 15.

The Petitioners also expressed concern that Licensees' management has generally failed to appreciate safety-significant events, has not adopted a thorough, root-cause, diagnostic approach to plant events, and has allowed an excessive number of personnel errors to be committed at the facility. As examples of these concerns, the Petitioners have included as Appendices to their Petition three NRC letters concerning instances where management inadequacies may have existed. In response to these concerns, the Staff has reviewed the Licensees' cumulative activities and has found that the Licensees' overall management performance is acceptable. This finding is reflected in the NRC's most recent Systematic Assessment of Licensee Performance report on Palo Verde, dated January 15, 1987, which has found the Licensees' overall performance to be satisfactory. Also, as documented in other recent NRC reports on Palo Verde, the Staff has found that the Licensees are implementing a root-cause determination program and have recently made improvements in this program.⁵ The Staff will continue to closely review the Licensees' performance and will identify areas of the Licensees' performance where improvements may be warranted.

CONCLUSION

On the basis of the foregoing discussion, the information contained in the referenced documents, and in consultation with the Office of Enforcement, I have concluded that enforcement action is unwarranted.

Accordingly, the Petitioners' request for a civil penalty against the Licensees is denied. A copy of this Decision will be filed with the Secretary of the Commission for the Commission's review in accordance with 10 C.F.R. § 2.206(c) of the Commission's regulations.

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 14th day of March 1988.

⁵ Inspection Report No. 50-528/86-38, January 13, 1987, at 3; Inspection Report No. 50-528/86-37, January 26, 1987, ¶ 14; Inspection Report No. 50-528/87-19, June 12, 1987, at 2; and Inspection Report No. 50-528/87-17, July 24, 1987, ¶ 14.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

Docket No. 50-498

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

March 18, 1988

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by the Government Accountability Project (GAP) requesting a delay in the Commission's meeting to consider full-power licensing for South Texas Project (STP) Unit 1 because of alleged deficiencies in the NRC's review of allegations received through GAP. GAP requested that the Commission meeting be delayed until there had been a complete investigation of all allegations regarding STP and a report disposing of each allegation was released to the public.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

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

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

INTRODUCTION

On January 26, 1988, the Government Accountability Project (GAP) filed a petition (Petition) pursuant to 10 C.F.R. § 2.206 requesting a delay in the Commission's meeting to consider full-power licensing for South Texas Project (STP) Unit 1 because of alleged deficiencies in the NRC's review of allegations

received through GAP. GAP requested that the Commission meeting be delayed until there had been a complete investigation of all allegations regarding STP and a report disposing of each allegation was released to the public. The Petition was referred to the Staff on January 28, 1988. On February 12, 1988, GAP submitted a letter supplementing the initial petition and requesting an explanation as to the conduct of the review. This Decision provides a consolidated response to the above-mentioned submittals.

The deficiencies alleged by GAP in the Petition are related to the efforts of the NRC Safety Significance Assessment Team (SSAT) that was constituted in November 1987 to determine the licensing impact of all allegations that GAP made available to the NRC on the South Texas Project. In the January 26 submittal, GAP asserts the following as bases for its Petition:

- (1) The results of the NRC's limited investigation into allegations were predetermined in that the NRC had prepared a draft of the findings before the SSAT had returned from its site inspection.
- (2) One of the allegers was not permitted to show the NRC team any of his allegations relating to Unit 1.
- (3) The NRC review was subjected to overwhelming scheduling pressures, resulting in disposition of most of the allegations without interviewing the allegers and in a failure to thoroughly address the sixty selected allegations that were the focus of the team's review.
- (4) None of the allegations of wrongdoing have been investigated by the NRC.

In the February 12 submittal, GAP asserts the following additional deficiencies as bases for its Petition:

- (5) The SSAT did not investigate all the allegations, and therefore rendered false a statement by the NRC Chairman Lando Zech that 100% of allegations are investigated.
- (6) There was no basis for the NRC's assessment on January 12, 1988, that the allegations were not of immediate safety significance.
- (7) Houston Lighting and Power Company improperly interacted with the SSAT regarding the inspection.

In addition to the above, the Petition requests an explanation of whether NRC will conduct further investigation of the allegations.

Receipt of the GAP Petition was acknowledged on February 29, 1988. A notice that the Petition was under consideration was published in the *Federal Register* on March 8, 1988 (53 Fed. Reg. 7449).

In considering a request under 10 C.F.R. § 2.206 or, for that matter, any allegation of substandard workmanship or improper practices involving a nuclear power reactor, the NRC Staff is mindful of the Commission's overriding regulatory responsibilities to ensure adequate protection of the public health and safety in the use of radioactive material and the operation of nuclear power

facilities. See *Power Reactor Development Co. v. Int'l Union of Electrical, Radio, and Machine Workers*, 367 U.S. 396, 406 (1961). Consistent with these responsibilities, a reactor operating license will only be issued by the Commission if it can be found that there is reasonable assurance that power operation presents no undue risk to the health and safety of the public. See 10 C.F.R. § 50.57. When assessing the significance of allegations, the Staff makes an initial determination whether an allegation, if true, is relevant to safe operation of the facility. Allegations deemed not relevant to safe operation of the facility and allegations determined to be frivolous, or too vague or general in nature to provide sufficient information for the Staff to investigate, may not receive further consideration. Nevertheless, in this case, the SSAT, in fact, did review many allegations that would normally have been considered too vague or general, in order to confirm that the types of deficiencies alleged either did not exist or would not undermine safety.

The results of the SSAT's examination of the allegations received through GAP are contained in NUREG-1306, "NRC Safety Significance Assessment Team Report on Allegations Related to the South Texas Project, Units 1 and 2," March 1988. On the bases of this review, the results of previous inspections, and evaluations that have been documented previously in safety evaluation reports, the Staff has determined that the STP Unit 1 was built in conformance with applicable regulatory requirements and that the systems in the facility would, if called upon, perform their intended safety function. Thus, for the reasons in this Decision, we find no basis to support GAP's request and do not recommend a delay in the Commission's meeting to consider full-power licensing for STP Unit 1. Accordingly, the Petition is denied.

DISCUSSION

GAP informed the Staff in January 1987 that it had commenced an investigation into allegations concerning the safety of the STP. According to GAP, it had received safety allegations from approximately thirty-five current and former employees of the STP.

The Staff has attempted to work with GAP to obtain the substance of these allegations since January 1987. Correspondence ensued between the Staff and GAP, with repeated requests by NRC for the allegations-related information. Eventually the Staff issued a subpoena to GAP to produce those documents. In October 1987, the U.S. District Court denied enforcement of the subpoena and urged the parties to work toward getting the safety issues to the Staff. Subsequently, an agreement was reached between the Executive Director for Operations and GAP on the main elements of a process that would provide the NRC

Staff limited access to information that might be of relevance in the forthcoming licensing decisions regarding STP.

The SSAT was formed in November 1987. Each allegation was reviewed by the SSAT and a determination made as to whether further examination of the allegation was appropriate or necessary or whether no further action was required because of the duplication of allegation, lack of requisite specificity, or lack of safety significance. Those allegations that the SSAT determined to involve harassment/intimidation or wrongdoing were later referred to the NRC Office of Investigations (OI). After several weeks of preparatory efforts, including direct telephone contact with allegeders, a site inspection was conducted during the week of January 18, 1988. On the basis of the information from the inspection, the SSAT evaluated all allegations that appeared to be technically oriented and that were considered to have potential safety significance. A copy of the report documenting the results of the review, NUREG-1306, is enclosed herewith (not published). Since the SSAT's conclusions with respect to its review are fully explained in NUREG-1306, a detailed examination of each allegation is not warranted here. The following discussion summarizes some of the issues addressed in NUREG-1306 and provides a response to the matters raised in the Petition.

(1) Allegation That the Result Was Predetermined

The Petition asserts that the results of the NRC's allegedly "limited" investigation into allegations were predetermined, because the NRC inspection team or other NRC Staff had prepared a draft of the findings before the SSAT had returned from its site inspection.

As explained in NUREG-1306, the SSAT inspection efforts were fully consistent with the technical information provided by GAP and the allegeders. The only limitations on the review came from the lack of specificity from GAP regarding the allegations. The SSAT made strenuous efforts to overcome this difficulty by preparing for the onsite inspection (*see* Appendix B, NUREG-1306) in such a way that the allegations were viewed in a wide perspective. Each allegation was examined and analyzed for both the main concern and to ascertain any ancillary issues raised by the allegation, the potential root causes that might be involved, and wider implications if the allegations were substantiated. As a result, the onsite inspection effort was focused on physical inspection of components and specific areas of the plant, as well as related documentation.

By the end of the inspection, a large body of information had been accumulated; the review of the information was still incomplete. Under these circumstances, it was not possible to make findings in many areas before leaving the site. Therefore, no draft report could have been prepared at that time as alleged by GAP.

The SSAT did not see any alleged draft reports prepared by nonmembers. Although individual team members may have drafted handwritten contributions to actions of the report during the site inspection, typewritten material was not produced during the site inspection indicating results of the inspection. Such handwritten drafts can only be considered preliminary documents of individual participants and not necessarily reflective of the team's ultimate conclusions.

(2) Allegation Concerning Lack of Access to Unit 1

GAP asserts that one of the alleged was not permitted to show the NRC team any of his allegations relating to Unit 1.

The alleged referred to in this assertion was interviewed by members of the SSAT by telephone on January 16, 1988. The SSAT reviewed the information provided by the alleged in light of the allegations selected by the SSAT for onsite inspection and of allegations previously inspected at STP. On the basis of this review, the SSAT concluded that all but one of the alleged's concerns were bounded by other issues selected for inspection by the SSAT, or by previous reviews conducted on site of other allegations. The single exception was the alleged's concern relating to fasteners in electrical switchgear provided by Westinghouse. The alleged claimed that fasteners from sources other than Westinghouse were being used to fasten parts in Westinghouse switchgear. As a result of the onsite inspection, the SSAT found that non-Westinghouse fasteners had been used but that there was no safety basis or regulatory requirement to use Westinghouse fasteners, nor was a safety problem caused by use of non-Westinghouse fasteners.

A decision was made to allow the alleged access to Unit 2 instead of to Unit 1 because (1) the two units at STP are practically identical and any safety concerns raised regarding Unit 1 switchgear could be illustrated by reference to Unit 2 switchgear, and (2) for security reasons, public access to Unit 1 is more difficult to obtain than to Unit 2, at the current stage of construction. The alleged came to the STP site on January 18, 1988, and toured the Unit 2 13.8-kV switchgear in the company of two SSAT members (*see* Appendix C, NUREG-1306). No safety-related concerns were identified as a result of the tour with this alleged.

(3) Allegation That SSAT Review Is Incomplete Due to Scheduling Pressure

GAP alleges that the NRC review was subjected to overwhelming scheduling pressures, resulting in disposition of most of the allegations without interviewing the alleged and in a failure to thoroughly address the sixty selected allegations that were the focus of the team's review. GAP also alleges that the SSAT

did not investigate all the allegations and, therefore, rendered false a statement attributed to NRC Chairman Lando Zech that 100% of allegations relating to plant equipment are investigated.

The efforts of the SSAT to review all allegations for appropriate disposition are detailed at length in NUREG-1306. For approximately 2 months preceding the actual onsite inspection, the SSAT had access to the files that contained the concerns conveyed to GAP by the allegers.

The SSAT review of GAP's files identified approximately 700 allegations provided by approximately thirty-five individuals. Each allegation was reviewed and evaluated for appropriate disposition. The SSAT determined that 120 of the 700 allegations were repetitious, 240 were considered as either harassment/intimidation or as wrongdoing, and 140 more were not safety-related. The allegations of harassment/intimidation, wrongdoing, or those that were non-safety-related were found by the SSAT to have no licensing significance. Of the original 700 allegations, a total of 213 allegations remained as possible candidates for onsite inspection at STP. Examples of these allegations are: Pipe joints not properly installed; steam generator out of plumb; 20% of valves installed backwards; heating, ventilation, and air-conditioning (HVAC) duct-work and supports not installed per specifications; fasteners from questionable U.S. and foreign sources used in plant; Raychem cable splices do not meet safety standards; faulty weld rod used throughout the plant; coatings on orbital bridge flaking and chipping; crack in basemat of fuel-handling building; and as-built items do not agree with as-designed configurations.

The SSAT reviewed all 213 allegations in detail and subsequently placed allegations in categories on the basis of the discipline, equipment, and shared characteristics, (e.g., mechanical/valves/installation; electrical/splices/Raychem). From these categories of allegations, the SSAT identified for onsite inspection those allegations that were representative of the technical concerns conveyed by the allegers and enveloped the 213 allegations either specifically or on a generic basis. Ten such allegations were identified and designated as primary allegations. In addition, sixty-one secondary allegations were selected that conveyed concerns similar to those of the primary allegation.

At a very early date the SSAT found that the allegations were deficient in terms of specific details. On this basis, the SSAT developed a program for inspecting the allegations; that program 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 (described in NUREG-1306) 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.

The SSAT interviewed all the allegeders who were made available by GAP relative to the seventy-one allegations selected for onsite inspection by the SSAT. These interviews were conducted before and during the actual onsite inspection. With only a few exceptions, the allegeders did not provide specific details. The few details that were provided did not require the previously developed inspection plans to be changed. While on site, the SSAT made optimal use of available time. This was accomplished 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. After performing the onsite inspection, the SSAT spent significantly more time reviewing and evaluating inspection results and supporting data. The overall effort of the SSAT is estimated to have consumed 2910 person-hours. On this basis, I find that the totality of effort expended to review the allegations was sufficient to thoroughly address the concerns represented by the allegations. Moreover, the conduct of the SSAT review was fully consistent with the statement attributed to the NRC Chairman by the newspaper report included in the Petition in that each and every allegation was reviewed and evaluated, and appropriate disposition was made of each allegation.

In response to the question raised in the Petition regarding further reviews, there is no intention to conduct any further reviews on the allegations unless the results of the review of the wrongdoing allegations point to possible safety problems not previously made known to the NRC.

(4) Wrongdoing Allegations

GAP charges that none of the allegations of wrongdoing have been investigated by the NRC.

The SSAT was aware of the wrongdoing aspects associated with the allegations, and made a deliberate effort to separate the safety significance aspects out of them. The safety significance aspects have been included within the allegations assessed for licensing impact. OI encountered difficulty in its initial attempts to gain access to the allegeders' information in the possession of GAP. However, the wrongdoing aspects are currently being evaluated by OI. OI has requested that GAP make available for interview the individuals making allegations of wrongdoing regarding STP. GAP has indicated to OI that it is having difficulty in locating the allegeders involved in the allegations under review by OI. For this reason, OI has been unable to proceed with its investigations.

(5) Mr. Rehm's Statement Regarding Immediate Safety Significance

GAP alleges that there was no basis for NRC's assessment on January 12, 1988, that the allegations are not of immediate safety significance.

In his January 12, 1988 letter, Mr. T.A. Rehm stated to Ms. Garde that, based on the SSAT's initial review of GAP's files, "the data reviewed indicates that the allegations are general in nature and not of immediate safety significance." As indicated in § 2 of NUREG-1306, during November and December 1987, the SSAT had completed a review of all the information made available by GAP in its Washington, D.C. office. However, in the context of the continuing efforts of the SSAT, Mr. Rehm's statements were of a preliminary nature, awaiting completion of the SSAT's review. As shown in NUREG-1306, the completed review showed Mr. Rehm to be correct in his assessment.

(6) The SSAT Review Was Influenced by the Licensee

GAP also alleges that Houston Lighting and Power Company improperly interacted with the SSAT regarding the SSAT's review. GAP speculates that the Licensees limited the SSAT's investigation, and points to a memorandum issued by the Licensees at the conclusion of the site visit, stating that "no safety concerns requiring additional attention were noted by the inspectors" as evidence of improper influence by Licensees.

Section 2.206(a) of 10 C.F.R. requires petitioners to "set forth the facts that constitute the basis for the request." Absent such a showing, the Director need take no action on the Petition. See *Public Service Co. of New Hampshire* (Seabrook Station, Unit 2), CLI-84-6, 19 NRC 975, 979 (1984); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), DD-79-17, 10 NRC 613, 614-15 (1979); *Duke Power Co.* (Oconee Nuclear Station, Units 1, 2, and 3), DD-79-6, 9 NRC 661, 661-62 (1979); see also *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438, 443 (1980). In view of the lack of any specific information or facts to support GAP's speculations, I find that GAP has failed to present any substantive information calling into question the independent nature of the SSAT review. In the absence of an adequate factual basis, no action need be taken regarding GAP's allegation of influence by the Licensees.

CONCLUSION

On the basis of the review by the SSAT, the results of which are contained in NUREG-1306, and as described in this Decision, I find no basis to support GAP's request and do not recommend a delay in a Commission meeting

to consider full-power licensing of STP Unit 1. Accordingly, GAP's request is denied. A copy of this Decision will be filed with the Secretary for the Commission's review in accordance with 10 C.F.R. § 2.206(c).

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 18th day of March 1988.

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)

March 18, 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 take action concerning the Rancho Seco Nuclear Generating Station (Rancho Seco). Petitioner requested the NRC Staff to order the Rancho Seco Licensee to show cause why the NRC should not prevent the Licensee from restarting Rancho Seco, or, in the alternative, to order the Licensee to shut down the plant completely. Petitioner based these requests on an alleged official investigation of allegedly falsified cable tray data and on Rancho Seco's assertedly problem-laden history.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Where a petitioner requests the NRC to require complete or 100% inspection or sampling in order to satisfy petitioner's concerns, and where the NRC requires partial inspection or sampling to obtain data that give the NRC reasonable assurance that petitioner's concern raises no significant public health and safety issue, the NRC need not take any further action.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Where a petitioner raises a concern, the licensee takes action to address that concern, and the NRC Staff publishes its evaluation of the licensee's actions in a

public document and concludes that the licensee's actions resolve the petitioner's concern, so that the NRC has reasonable assurance that the licensee can operate the plant without undue risk to public health and safety, the NRC need not take any further action.

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

INTRODUCTION

On February 25, 1987, Ms. Barbara Moller submitted a Petition in accordance with 10 C.F.R. § 2.206. The Petition was referred to the Director, Office of Nuclear Reactor Regulation (NRR), for consideration.

The Petition asked the U.S. Nuclear Regulatory Commission (NRC) to order the Licensee of the Rancho Seco Nuclear Power Plant to show cause why the plant should not be prevented from restarting until a complete check of all cables was undertaken or, in the alternative, why the plant should not be completely shut down. Ms. Moller gave as the bases for the Petition (1) the "official investigation" concerning falsification of cable tray data and (2) the "problem-laden" history of the Rancho Seco facility. In the Petition, Ms. Moller asserted that three forged signatures had been found at each level in the quality control hierarchy on at least seven cable installation cards and that this indicated that proper cross-checking had not been done. Ms. Moller further asserted that in light of the falsification of cable data, sampling was not an effective method for checking cable work. Ms. Moller further asserted that 2000 cables had been added to the plant since 1974, and she expressed concern regarding information that had indicated to her that a sample of only 215 cables was going to be checked.

On April 1, 1987, the Commission's Office of Governmental and Public Affairs received a letter from U.S. Senator Alan Cranston requesting that the Commission Staff respond to the concerns raised in Ms. Moller's Petition. The Staff responded in a letter from Mr. Victor Stello, Jr., Executive Director for Operations, dated April 24, 1987. The letter stated that a response to Ms. Moller would be made following the completion of evaluations being performed by the Licensee and the Staff and that the NRC would not authorize restart of Rancho Seco until the cable-routing discrepancies were resolved.

On April 27, 1987, Dr. Thomas E. Murley, Director, NRC Office of Nuclear Reactor Regulation (NRR), acknowledged receipt of the Petition. He informed Ms. Moller that the Petition would be treated under 10 C.F.R. § 2.206 of the Commission's regulations and that appropriate action would be taken in

a reasonable time. Notice of receipt of the Petition was published in the *Federal Register* on May 6, 1987 (52 Fed. Reg. 16,967).

In a letter dated September 13, 1987, Dr. Murley advised Ms. Moller that the Licensee was currently working to resolve the cable problems and that the NRC Staff was monitoring this effort and would provide an independent assessment of the extent of the problems and the adequacy of proposed resolutions. He also reiterated the NRC Staff's position that Rancho Seco would not be permitted to restart until the safety concerns associated with the plant cables were resolved.

BACKGROUND

The Rancho Seco Nuclear Generating Station, operated by the Sacramento Municipal Utility District (SMUD, the Licensee), is a 916-MWe Babcock & Wilcox (B&W)-designed pressurized-water reactor located in Clay, California, about 25 miles southeast of Sacramento. The plant received an NRC operating license in 1974.

In the years 1983 through 1985, the Licensee undertook and completed a significant design/construction effort regarding electrical cable at Rancho Seco. These efforts involved rerouting of existing cable, and installation of new cable. This work was done in support of an expanded electrical distribution system, implementation of requirements imposed on licensees after the accident at Three Mile Island, implementation of modifications for fire protection (delineated in Appendix R to Part 50 of Title 10 of the *Code of Federal Regulations*), and efforts to environmentally qualify safety-related electrical equipment. In this period, approximately 7800 cables were either installed or rerouted, including 2034 that served safety-related equipment.

Concerns regarding cables began to surface in 1984 when it was alleged that records documenting electrical cable installation were not properly controlled, that some records were missing, and that data entered into the computerized cable raceway and tracking system (CRTS) might be inaccurate. Subsequent investigation by the Licensee and review by the NRC Staff have shown these allegations were true. The NRC Staff's evaluation is documented in NUREG-1286, Supplement 1.

Following the discovery and investigation of the cable-routing discrepancies, the Licensee developed a plan for cable inspection. In January 1987 the Licensee integrated this inspection activity and reviews of other cable-related problems into a single program under a single program manager.

The NRC Staff has monitored and evaluated the Licensee's program for identifying and correcting safety-related cable problems. This evaluation is documented in § 4.8 of the NRC Staff's "Safety Evaluation Report Related to the Restart of Rancho Seco Nuclear Generating Station, Unit 1 Following the Event

of December 26, 1985," and Supplement 1 to that report (NUREG-1286 and NUREG-1286, Supplement 1). The issues raised by Ms. Moller in her Petition were addressed by the Staff in §§ 4.8 and 2.3.2 of NUREG-1286 as discussed below.

DISCUSSION

A. Falsification of Cable Pull Cards

Investigations of cable discrepancies, including inspections, have been performed by the Licensee. The results showed that in two separate instances safety-related electrical cables had not been rerouted even though the cognizant field engineers and quality control inspectors had signed off on the cable installation records (cable pull cards) indicating the cables had been rerouted. Also, in both cases the signature of the cable installer was not on the pull card as it should have been, according to established plant procedures. In the first case, which involved fourteen cables serving equipment for remote plant shutdown, the cable installer's name was printed on the cards. In the second case, which involved the intermixing of eleven power and control cables with instrumentation cables in instrumentation cable trays, the field engineer's signature was in the signature block reserved for the signature of the cable installer. The safety implications of these cable discrepancies are discussed below.

To understand the safety implications associated with the cable discrepancies and to determine the appropriate corrective actions, it was necessary for the Licensee to understand the nature of the deficiencies in field engineering and quality control. The licensee has determined the nature and extent of the cable discrepancies with formal programs for investigation of identified cable discrepancies and inspection of installed cable. The NRC Staff has reviewed the Licensee's programs for investigation and inspection and found them acceptable.

The Fourteen Remote-Shutdown Cables

The first instance mentioned above involved fourteen remote-shutdown cables that were to have been rerouted to satisfy separation criteria for fire protection specified in 10 C.F.R. Part 50, Appendix R. In this instance, the field work necessary to reroute the cables was simply not done and the cables remained in an unacceptable configuration. The Licensee's investigation indicates that the work order (i.e., the cable pull cards) for rerouting the cables was never transmitted to the installer from the field engineer. Consequently, the cables were not pulled back and repulled into their new locations. A principal cause of this failure appears to be that instead of using the established procedure

for controlling cable pull cards, the field engineer and the Card Control Group (CCG) clerk were using an informal procedure developed by an engineering aide in the CCG. It also appears that when the card control discrepancy was detected, proper followup action was not taken. The NRC Office of Investigations is currently investigating whether or not wrongdoing was involved in this matter.

The failure of the quality control (QC) inspector to detect the work control error during his inspection is thought to be the result of the practice of some electrical QC inspectors to attempt to inspect cable routing after the work was completed. This practice is unacceptable because it usually allows inspection only in the vicinity of the cable terminations, and hence a failure to reroute a portion of the cables located away from the terminations would not be detected. As discussed in Appendix A of NRC Inspection Report 50-312/87-21, inspections of this type did not satisfy the existing procedural requirement to verify that the installed cable route was in agreement with the approved design drawings. In a letter from the NRC, dated July 30, 1987, the Licensee was notified that the improper QC practice was a Severity Level IV violation of 10 C.F.R. Part 50, Appendix B, Criterion X, which governs inspection of activities involving quality. The Licensee's corrective actions in response to this violation, are discussed later in this document.

The Eleven Intermixed Cables

The second instance involved eleven power and control cables that were to have been removed from some of their original trays and rerouted so that the trays could be redesignated and used to house new instrumentation cable. This work was to have been done as part of a major modification in 1983 that involved the relocation and installation of a large amount of cable over a relatively short time period. As in the first instance, the cable pull cards had been signed off, indicating the work necessary to complete the rerouting of the eleven cables was done; but the work had not been done. Thus, when the new instrumentation cables were pulled into the redesignated cable trays, intermixing of safety-related power/control and instrumentation cables occurred, which constituted a violation of design criteria.

The Licensee's investigation also identified procedural violations on the part of the field engineers and QC inspectors. The procedural violations included the signing of cable pull cards by the field engineer instead of by the craft foreman responsible for actually performing the work and the failure of QC inspectors to properly verify that the installed cable route was in accordance with specifications. As discussed above, the Licensee was cited with a Severity Level IV violation of 10 C.F.R. Part 50, Appendix B, Criterion X, for failing to conduct proper inspection of cable routing. The Licensee's corrective actions in response to this violation are discussed below.

Safety Implications and Corrective Actions

Following the completion of the investigation of the fourteen remote-shut-down cable discrepancies and the discovery of the eleven intermixed cables, it became apparent to both the Licensee and the NRC Staff that the faulty practices, procedures, and controls that had allowed cable-routing problems to occur and go undetected and could very well have affected other safety-related cables. In a July 2, 1987 letter from G.C. Andognini, SMUD, to Frank J. Miraglia, NRC, the Licensee committed to expanding the ongoing inspection of safety-related and safe shutdown cable to include all such cables in the population that had been rerouted since the beginning of commercial operation at the plant. The NRC Staff agreed that this expansion was necessary because multiple errors in rerouting had occurred and such errors could not be detected if route certifications were not properly performed by QC inspectors. Those inspections have since been completed and no other work control errors were identified. The results of the inspections are discussed below under § C.

In response to the cable installation deficiencies described above, the Licensee has developed new procedures and controls and has made improvements to existing ones. The changes have been based on the results and recommendations derived from the Licensee's investigations of cable discrepancies. The changes that specifically address control of cable work are as follows:

1. A new procedure has been developed that establishes instructions for the processing of cable installation cards. It details the interfaces between the CCG, CRTS Administrator, and Field Engineering. One important feature of the procedure is that it requires installation cards to be returned to the CRTS Coordinator after the work has been completed and held until the Engineering Change Notice is closed. The procedure currently exists as an attachment to the Nuclear Engineering Administrative Procedure (NEAP) 4127, Rev. 0, and is being formalized for use as the Card Control Electrical Engineering Instruction. Formal training on use of the procedure will be given to personnel who are either in the CCG or who handle cable installation cards in interfacing groups.
2. Existing cable installation procedures (MP/IS 307) have been revised so that cable route inspection is specified as a "hold point" in the procedure. QC inspectors are now required to witness cable pulls so that routing can be properly verified. Electrical QC inspectors have been trained regarding this procedural clarification. Use of this procedure will ensure that installed cable routes are properly verified.
3. Cable route revisions and repulls are to be specified on the cable drawings and forms input to the CRTS. Changes to these documents resulting from route revisions will be treated as Drawing Change Notices (DCN). New installation documents will not be generated for repulls. The intent of this change is to ensure that field instructions for implementing route revisions are clear.

In addition to the specified changes described above, the Licensee has made broad changes in the Rancho Seco quality assurance (QA) program. These

changes were presented to the NRC Staff in a meeting held September 23, 1987. The more significant changes include: reorganization of the QA department with the new Director of Nuclear Quality reporting directly to the Chief Executive Officer; increased staffing with people who have multidisciplinary backgrounds; organizational independence from production organization; and increases in the scope and frequency of audit activities.

The NRC Staff considers both the specific and broad changes in procedures and quality control to be acceptable. However, in the course of the normal inspection program the Staff will continue to closely monitor performance in quality activities to ensure that the changes are effective.

B. Inspection of Cable Routes

The Licensee's corrective action regarding inspection of cable routes has been (1) a complete (100%) inspection of all safety-related and safe shutdown cables that have involved route revisions between the start of commercial operation and the initiation of the inspection program on December 22, 1986 (475 cables), and (2) a random-sample inspection of cables installed between the start of commercial operation and the initiation of the inspection program that have never undergone route revisions (142 of 1559 cables). The 14,000 cables installed during the original construction of the plant, which have never involved route revisions, were excluded from the inspection program by the Licensee because

1. There has been no indication of any significant installation error or technical problem through startup or subsequent operation or surveillance testing.
2. The original architect engineer (Bechtel) had in place and used a rigorous quality control program for the design, installation, and inspection of the original cable population and followed a uniformly consistent set of rules and procedures.

The NRC technical staff has reviewed the Licensee's documentation for the procedures and controls for cable design and installation in place during original construction. The Staff's review is documented in § 4.8.2.2 of Supplement 1 to NUREG-1286. On the basis of this review, the Staff has concluded that (1) the Bechtel quality control program and Bechtel's circuit and raceway scheduling program were sufficient to adequately control the original design and installation of the original cable population, and (2) reinspection of this cable population is not necessary.

The Licensee completed the inspections on December 9, 1987. The results were documented in the Wire and Cable Program report transmitted to the NRC by letter dated January 22, 1988. The NRC Staff's review of the report is documented in § 4.8 of Supplement 1 to NUREG-1286. According to the report, the Licensee found no significant routing errors in the sample inspection

of the newly installed cables that had never been rerouted. A total of nineteen significant cable discrepancies were identified in the 100% inspection of rerouted cables, excluding the original seven cable discrepancies that had prompted the inspection program. All twenty-six identified cable-routing discrepancies have been corrected in the plant by properly rerouting the cables.

C. Sampling

In the Staff's view, the objective of a sample inspection of construction work is to determine with reasonable assurance that the number and significance of deficiencies in construction and quality assurance have not degraded safety margins to an unacceptable level. In the case of misrouted electrical cables at Rancho Seco, the following criteria were used:

1. There is 95% assurance that at least 95% of the cables are correctly routed (95/95).
2. The defects have no significant potential for a loss of redundancy as a result of a single failure during a design-basis accident.

An NRC Staff statistician has reviewed the sample sizes included in the revised sampling plan submitted with the Licensee's letter of July 2, 1987, and has concluded in §4.8 of NUREG-1286 that when sampling has been done according to the Licensee's plan, the 95/95 acceptance criterion stated above has been met. Sample inspections were completed according to the Licensee's plan on December 9, 1987. Based on the results of these inspections, the NRC Staff has concluded in §4.8 of Supplement 1 to NUREG-1286 that the 95/95 acceptance criterion stated above has been met.

On the basis of the knowledge of the causes of the routing defects identified at Rancho Seco, the types of defects identified and the results of inspections, which ensure that the 95/95 acceptance criterion has been met, the Staff has concluded that (1) the likelihood of installed safety-related and safe shutdown cables being in a configuration that violates physical separation criteria is acceptable low; and (2) the potential for a redundant safety system failure as a result of a possible major cable defect (violation of physical separation criteria) also is acceptable low.

D. "Problem-Laden History" of the Facility

Following issuance of the NRC Staff's Incident Investigation Team's (ITT) report on the December 26, 1985 overcooling event at Rancho Seco, it became apparent to both the Staff and the Licensee that the design and programmatic deficiencies identified during the Staff's investigation were symptomatic of more

serious problems than those associated with the overcooling event and would require a corrective action program that embodied more than the narrow focus of the overcooling event. Accordingly, in the spring of 1986, the Licensee embarked on a comprehensive Plant Performance and Management Improvement Program (PP&MIP) that responded to a broader range of issues.

The program was designed by the Licensee to comprehensively identify all known problems that had occurred, or that could be anticipated to occur in the future, based on experience at similar facilities. Problems were identified from several sources: a precursor review of historical documents and recommendations; interviews with a cross-section of the plant staff (180 interviews); a deterministic failure analysis for the effect of loss of electrical power, instrument air, and control power on plant operations; incorporation of relevant B&W Owners Group Safety and Performance Improvement Program (SPIP) recommendations; NUREG-1195, the Incident Investigation Team (ITT) report of the December 26th event; and other miscellaneous information. The resolution of each problem was prioritized by the Licensee as a restart, near-term, or long-term item.

The problems identified were organized by type or system, reviewed by two Licensee boards to eliminate redundancy, and assigned priorities for implementation. At the same time, the recommendations were combined with the functional and test requirements of each plant system to produce a reference document for each system.

The NRC Staff has reviewed the PP&MIP as part of the Rancho Seco restart safety evaluation and found it to be acceptable. The Staff's evaluation of the program is documented in § 2.3.2 of the NRC Staff's "Safety Evaluation Report Related to the Restart of Rancho Seco Nuclear Generating Station, Unit 1 Following the Event of December 26, 1985," and Supplement 1 to that report (NUREG-1286 and NUREG-1286, Supplement 1).

E. Design Control Deficiencies

The Petitioner also referenced "significant design control deficiencies" in safety-related pipe supplies. Problems that reflect deficiencies in design control were identified by the NRC Staff during its Augmented System Review and Test Program (ASRTP) inspection conducted at Rancho Seco in early 1987. These problems are discussed in Inspection Report 50-312/86-41 and summarized in § 3.7.2.2 of NUREG-1286.

To address deficiencies in design control, the Licensee has developed and implemented its Engineering Action Plan (EAP). The purposes of this plan are to improve the quality of work involving design reviews and design changes and to document, in detail, the design bases for key safety systems. The NRC Staff evaluated the plan and implementation of the plan during a followup ASRTP

inspection conducted between September 28 and October 9, 1987. As discussed in its inspection report (50-312/87-29), the Staff has concluded that, overall, the quality of design work at Rancho Seco has improved and that remaining weak spots would be corrected when new supervisors and engineering personnel were fully trained in the various aspects of the EAP.

CONCLUSION

The Petitioner seeks the institution of a show-cause proceeding pursuant to 10 C.F.R. § 2.202 to modify or revoke the operating license for the Rancho Seco facility. The institution of proceedings pursuant to § 2.202 is appropriate only where substantial health and safety issues have been raised. *See Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 175 (1975), and *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). This is the standard that I have applied to the concerns raised by the 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. Accordingly, the Petitioner's request for action pursuant to § 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 its review.

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 18th day of March 1988.

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)

March 22, 1988

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by the Honorable Tom Bradley, Mayor of Los Angeles, which requested the Nuclear Regulatory Commission to shut down the Rancho Seco Nuclear Generating Station (Rancho Seco) permanently. The Petitioner asserted that Rancho Seco should be shut down permanently because of (1) its asserted similarity to the Three Mile Island Unit 2 reactor; (2) its alleged 100 unplanned outages; (3) its alleged poor management, inadequate training, and sloppy maintenance; and (4) the overcooling event that Rancho Seco experienced in December 1985.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Where the NRC Staff has published public documents that contain safety evaluations of the concerns that a petitioner raises as the basis for a request, and where those public documents state that those concerns do not constitute substantial public health and safety issues, the NRC need not act on petitioner's request.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Where the NRC Staff has conducted a safety evaluation of a petitioner's particular concerns involving a particular plant, has concluded that those con-

cerns fail to provide a basis for any significant public health and safety issue, has concluded that there is reasonable assurance that the licensee can operate the plant without undue risk to the public health and safety, and has published the evaluation and conclusions in a public document, the NRC need not act on petitioner's request.

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

INTRODUCTION

On August 26, 1986, the Honorable Tom Bradley, Mayor of Los Angeles, submitted a Petition requesting that the Nuclear Regulatory Commission (NRC or Commission) conduct public hearings and permanently close the Rancho Seco Nuclear Generating Station (Rancho Seco). In a letter dated September 26, 1986, the NRC Director of Inspection and Enforcement, James M. Taylor, responded to Mayor Bradley and informed him that his Petition would be treated under 10 C.F.R. § 2.206 of the Commission's regulations. By letter dated December 15, 1986, Mr. Taylor provided additional information to Mayor Bradley on the status of his Petition. Mr. Taylor also stated that a full response to the Petition would be made after the NRC Staff completed its evaluation of corrective actions taken by the plant's operator, the Sacramento Municipal Utility District (SMUD), to improve the performance of Rancho Seco. Mr. Taylor's letter further advised that the NRC evaluation of the corrective actions would be completed before the Commission made any decision on restart.

Mayor Bradley's request for a hearing and subsequent permanent closure of the Rancho Seco Nuclear Generating Station is based on allegations that: (1) Rancho Seco is a twin of the Three Mile Island reactor; (2) the plant has had a troubled operating record; (3) the plant has suffered nearly 100 unplanned outages including the worst overcooling incident in industry history in 1978 and two severe overcooling incidents in 1985; and (4) the plant is plagued by poor management, inadequate training, and sloppy maintenance.

In accordance with the following discussion, I find that the permanent shutdown of Rancho Seco is not justified. I have decided, therefore, to deny your request. I do note, however, that the NRC has not permitted SMUD to operate Rancho Seco for more than 2 years following an overcooling transient that occurred in December 1985. During that time, a comprehensive evaluation to identify deficiencies at Rancho Seco was completed and a corrective action plan to correct the identified deficiencies was initiated. These actions resulted in significant improvements in plant management, maintenance, training, and in the overall mechanical condition of Rancho Seco.

BACKGROUND

On December 26, 1985, Rancho Seco experienced a loss of dc power within the integrated control system (ICS) while the plant was operating at 76% power. Following the loss of ICS dc power, the reactor tripped on high reactor coolant system (RCS) pressure. The reactor trip was followed by an overcooling transient that actuated safety features and resulted in excessive RCS cooldown. The overcooling transient continued until ICS dc power was restored 26 minutes later. With restoration of ICS dc power, the excessive RCS cooldown was stopped and the plant was stabilized.

The effects of the December 1985 transient were not, in themselves, significant in terms of decreasing the capacity of the plant to operate safely. However, the transient was the last in a series of undesirable events that raised the NRC's level of concern over the ability of SMUD to operate a nuclear power plant safely. The difficulties experienced by the Rancho Seco operators in recovering from the transient focused attention on the poor material condition of the plant and SMUD's failures to initiate plant improvements that had previously been required by the NRC.

In compliance with a Confirmatory Action Letter issued by the NRC Region V Administrator, the Rancho Seco Nuclear Generating Station has remained shut down since December 26, 1985. Because of the concerns that the December 1985 events raised, the Confirmatory Action Letter confirmed that, before returning Rancho Seco to power operations, SMUD would (1) provide a root-cause evaluation of the reactor trip and overcooling event and (2) justify Rancho Seco's readiness to resume power operations. SMUD has been responding to the Confirmatory Action Letter in stages, with step-by-step review and comment by the NRC Staff.

An Incident Investigation Team (IIT) was dispatched to the site to investigate the December 1985 transient and related issues. The NRC Staff has completed its investigation of the December 26, 1985 reactor trip and overcooling event and has published the results in NUREG-1195. This publication includes a description of the event and its significance, and discusses the precursors that led to the reactor trip and overcooling. The NRC Staff evaluation of the ongoing restart effort has been published in NUREG-1286 and Supplement 1 to NUREG-1286 (Supp. 1). NUREG-1286 and Supplement 1 comprehensively evaluate SMUD actions to improve overall performance at Rancho Seco and to correct the deficiencies identified in NUREG-1195.

In response to the IIT Report, SMUD developed the "Action Plan for Performance Improvement," which addressed the problems identified in the IIT Report and outlined a broad spectrum of issues to be addressed to improve the overall operational performance at Rancho Seco. The NRC Staff rejected the initial version of the SMUD Action Plan because it failed to address all

the problems that needed attention. Additionally, the NRC Staff independently initiated a review of the Rancho Seco performance history to identify areas of marginal performance. This effort included a review of weaknesses identified during a series of post-shutdown inspections and evaluations. The Staff indicated it would not accept the SMUD Action Plan until all problem areas identified by the Staff were included in the performance improvement program.

Failure to make progress on these issues led to essentially a 100% turnover of plant management and a complete management reorganization at Rancho Seco. As part of the Action Plan, the new SMUD management eventually compiled a comprehensive list of the problems which included Staff-identified deficiencies.

The SMUD Action Plan also included diagnostic programs to evaluate all areas of plant operations that are essential to successful overall plant performance. The Action Plan required SMUD to incorporate any additional problems identified by diagnostic programs into the list of previously identified deficiencies. The NRC Staff reviewed the completeness of the cumulative problem list. A corrective action program was established by SMUD to resolve all problems included on the cumulative problem list.

SMUD is now resolving the identified problems. The status of SMUD's corrective action program, a description of the problems, and a description of the problem identification process are included in the NRC Staff restart evaluation, NUREG-1286 and Supplement 1. The Commission will address the restart of Rancho Seco following the completion of (1) the SMUD performance improvement program and (2) the NRC Staff evaluation of the readiness of Rancho Seco to operate.

DISCUSSION

The specific issues enumerated in Mayor Bradley's petition regarding plant design, alleged troubled operating record, unplanned outages, overcoolings, and alleged inadequate management, training, and maintenance are thoroughly addressed by NUREG-1286. Resolution of these issues in a manner satisfactory to the NRC Staff was necessary before the Staff would make a positive restart recommendation to the Commission. Completion of the proposed corrective actions in plant hardware, Technical Specifications, procedures, management, and organization will result in significant performance improvement at Rancho Seco, which should preclude the types of concerns referenced by the Petition, including unplanned outages, overcooling, poor management, inadequate training, sloppy maintenance, operating mistakes, equipment failures, and procedural and inspection violations. The NRC Staff evaluation of the effectiveness of these improvements which supports restart is documented in NUREG-1286.

Design Similarity to the TMI Reactor

The Petition expressed concern that the Rancho Seco reactor is a twin of the Three Mile Island (TMI) reactor.

Even though the 1979 TMI accident was the most serious in the U.S. commercial nuclear power program, the plant's protective features successfully isolated the effects of the accident from the environment, and offsite radiological consequences were minimal (NUREG-0558, "Population Dose and Health Impact of the Accident at the Three Mile Island Nuclear Station"). Nonetheless, as a result of the accident a major safety reassessment of the commercial power program in the United States was initiated (e.g., NUREG-0578, "TMI-2 Lessons Learned Task Force: Status Report and Short-Term Recommendations"; NUREG-0737, "Clarification of TMI Action Plan Requirements"). This reassessment led to a wide range of required modifications throughout the nuclear industry, targeted at reducing the likelihood of a TMI-type accident (NUREG-0737, *supra*). The modifications included features that would improve the performance of the plant as well as the ability of the plant staff, the local community, and the nation to respond to nuclear accidents (*id.*). The "lessons learned" from the TMI accident were incorporated into the nation's nuclear power program and into Rancho Seco as appropriate. Thus, the TMI accident served as a stimulus to enhance the safety of existing nuclear power stations.

The specific plant hardware improvements that were developed following the review of the accident-related events at TMI were most applicable to reactors built by the Babcock & Wilcox Company (B&W), the manufacturers of the TMI reactor. As implied in the Petition, the Rancho Seco reactor was manufactured by B&W and benefitted substantially from the TMI accident experience. Rancho Seco also benefitted from the operating experiences of other B&W reactors. Following an incident that involved the loss of auxiliary feedwater at a B&W plant (Davis-Besse) on June 9, 1985, and the overcooling incident at Rancho Seco on December 26, 1985, the NRC requested that the B&W Owners Group reevaluate the design of the B&W reactor systems to look for inherent weaknesses that could make the reactors more susceptible to transients and accidents. The Owners Group evaluations are documented in a report entitled "Safety and Performance Improvement Program" (BAW-1919). The NRC Staff assessment of this program is available as a Safety Evaluation Report, NUREG-1231. As explained in NUREG-1231, the Owners Group did not identify any major design flaws; however, it made more than 200 recommendations for improving operations at B&W plants, and recommendations applicable to Rancho Seco have been incorporated by SMUD. The NRC Staff evaluation of BAW-1919, moreover, found no safety concerns that would preclude continued safe commercial operation of these facilities.

There are a total of eight B&W power reactors licensed to operate in the United States. Except for Rancho Seco, all the licensed B&W reactors, including TMI Unit 1, are operating. The operating records of these reactors are not significantly different from those of other types of reactors in the United States. As concluded in NUREG-1231, the B&W-designed reactors can operate without undue risk to the public health and safety. Accordingly, Rancho Seco's design similarity to TMI-2 provides no basis to close Rancho Seco permanently.

Management

The Petition describes the Rancho Seco operating history as "troubled" and characterized by a series of unplanned outages and reactor overcoolings. These occurrences have been evaluated by both SMUD and the NRC Staff. The root causes of the problems invariably include management and the onsite plant staff.

A key issue in the Rancho Seco performance improvement program has been management competence. Since December 1985, the senior plant management has undergone a 100% turnover, and more than twenty new managers have joined the SMUD staff. SMUD conducted a nationwide search for managers and was able to recruit experienced nuclear plant managers to direct future operations. The NRC Staff reviewed the resumes of these new managers and interviewed them. On this basis, and subsequent observations of plant recovery operations, the NRC Staff concluded (NUREG-1286, § 3.8) that the Rancho Seco management team appears well-qualified to prepare the plant to resume commercial operation, train the operating staff, and successfully operate the Rancho Seco Nuclear Power Station.

Maintenance and Training

The Petition included concerns related to inadequate training and sloppy maintenance. The management changes instituted at Rancho Seco included changes in management of the maintenance and training departments.

In both these areas, the new Rancho Seco managers have initiated programs to correct identified deficiencies. The NRC Staff considers improvements in these areas vital to successful plant operations and, as a result, has very closely evaluated the effectiveness of these improvement programs. The Staff's conclusions are based on detailed program reviews conducted on site (NUREG-1286, and Supp. 1, § 3.4.1). In the case of training, the Staff evaluation included observation of operators' performance at the B&W simulator in Lynchburg, Virginia (NUREG-1286, § 3.4.1.2). The Staff will continue close monitoring of these programs following plant restart. On the basis of its evaluation (NUREG-1286, §§ 3.3 and 3.4), the Staff has concluded that Rancho Seco has developed

effective maintenance and training programs that should be capable of supporting successful plant operations.

Equipment Reliability

In addition to management issues, the performance improvement program comprehensively addresses plant hardware problems. Known equipment deficiencies were integrated into the performance improvement program as items to be resolved before restart. SMUD added new systems to the plant to optimize future operations and improve the plant response to abnormal conditions. One of the new systems, the emergency feedwater instrumentation and control system, is a major hardware addition that provides redundant, safety-grade control of auxiliary feedwater (NUREG-1286, § 3.1.3). Had this system been in place on December 26, 1985, it probably would have prevented the overcooling transient from exceeding the Technical Specification limit of 100°F in 1 hour (NUREG-1195, § 7.2.3). SMUD has also established a preventive maintenance program to provide assurance that equipment will remain in good operating order (NUREG-1286, § 3.3.1.5).

A comprehensive equipment testing program is a major part of the performance improvement plan (NUREG-1286, § 3.7). SMUD is testing individual components, systems, and integrated systems to ensure that original plant equipment and the newly installed systems operate as designed. The system test program extends through the projected plant restart. SMUD has proposed that following restart (criticality), it would continue testing systems under hot, low-power conditions during a 6-month power ascension program (Supp. 1, § 3.4.1.7). The extended power ascension program will give the utility the opportunity to thoroughly evaluate operators during various startup conditions and will give the NRC Staff an additional opportunity to monitor system performance and SMUD operating competence. This program should decrease the likelihood of future operational mistakes and unplanned outages.

Overcooling Events and Unplanned Shutdowns

The Performance Improvement Program was designed to decrease the likelihood of overcooling events and to decrease the frequency of unplanned shutdowns. Specifically, SMUD: (1) installed a safety-grade emergency feedwater initiation and control system (Supp. 1, § 3.1.3); (2) added diesel generators to the onsite emergency grid (NUREG-1286, § 4.7); (3) refurbished the ICS/NNI (NUREG-1286, § 3.1); and (4) refurbished plant valves (NUREG-1286, § 3.3.2). These improvements in Rancho Seco's hardware systems should improve the plant's operating reliability and thereby decrease the number of

unplanned shutdowns. Furthermore, improved operator training, maintenance procedures, and plant management, as described above, should reduce the number of human errors that cause unplanned shutdowns. In short, significant improvements have taken place at Rancho Seco since the 1985 shutdown. The improvements should preclude the type of problems referenced in the petition.

CONCLUSION

The Petition requested the NRC to hold public hearings and shut down Rancho Seco permanently. 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), and *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). This is the standard that I have applied to the concerns raised by the 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 which warrant the initiation of a proceeding to consider the permanent shutdown of Rancho Seco. Accordingly, the Petitioner's request for action pursuant to § 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 its review.

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 22d day of March 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. LRP

INQUIRY INTO THREE MILE
ISLAND UNIT 2 LEAK RATE
DATA FALSIFICATION

April 28, 1988

After review of the Presiding Board's Recommended Decision and Staff's recommendations, the Commission decides to lift a condition imposed in the TMI-1 Restart proceeding as it applies to all those except the preaccident TMI-2 Supervisor of Operations. The restart condition had precluded preaccident TMI-2 individuals possibly involved in Unit 2 leak rate data falsifications from employment in certain positions at TMI-1 without specific Commission approval.

In a hearing instituted to develop the facts and to determine individual involvement in the falsifications, the Presiding Board found that virtually all Operations Department personnel worked under an erroneous interpretation of the leak rate technical specifications and that most of the personnel had some degree of culpability regarding leak rate surveillance testing irregularities or falsification. Furthermore, the Board found that the TMI-2 Supervisor of Operations bore greater responsibility for what went wrong with leak rate surveillance tests at Unit 2 than any other single individual.

The Commission finds that given the time that has passed and the fact that the leak rate surveillance testing irregularities directly flowed from management shortcoming in training and procedures, the restriction should not be continued, except as to the TMI-2 Supervisor of Operations, who is prohibited from

employment at TMI-1 in a responsible management or operational position without specific NRC approval.

MEMORANDUM AND ORDER

In an order issued in the Three Mile Island Nuclear Station, Unit 1 (TMI-1) restart proceeding, the Commission stated that it would institute a separate proceeding to consider what action should be taken concerning individuals possibly involved in falsification of reactor coolant system leak rates at Unit 2, and imposed the following condition on the Licensee:

- (1) No pre-accident TMI-2 operator, shift supervisor, shift foreman, or any other individual both in the operating crew and on shift for training as a licensed operator at TMI-2 prior to the accident shall be employed at TMI-1 in a responsible management or operational position, without specific Commission approval.

"Operational position" as used here includes any position involving actual operation of the plant, the direction or supervision of operators, or independent oversight of operations.

This condition shall also apply to the pre-accident Vice President, Generation, TMI-2 Station Manager, TMI-2 Supervisor of Technical Support (from January 1977 to November 1978), TMI-2 Superintendent of Technical Support (from December 1978 to the accident), and TMI-2 Supervisor of Operations. This condition shall not apply to Michael Ross, and Brian Mehler may continue in his present position consistent with this condition.

Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit 1), CLI-85-2, 21 NRC 282, 341-42 (1985).

The Commission stated that the purpose of the separate hearing was to develop the facts surrounding the leak rate data falsification in sufficient detail to determine whether any individual participated in, or knew of, or condoned, or by dereliction or culpable neglect allowed the leak rate falsifications at TMI-2. 21 NRC at 305. The Order and Notice of Hearing initiating that separate proceeding specified that the hearing was to be conducted in a legislative format designed solely to gather information, specified the procedures to govern the hearing, and identified the steps to be taken after the Presiding Board issued a recommended decision setting forth the facts, in order for the Commission to determine what action, if any, should be taken. CLI-85-18, 22 NRC 877 (1985).

After a hearing, totaling 33 hearing days and over 5000 transcript pages, the Presiding Board issued its Recommended Decision on May 21, 1987 (LBP-87-15, 25 NRC 671). It addressed each of the specific issues that the Commission, in CLI-85-18, had directed the Board to consider. In sum, the Board found, first, that virtually all Operations Department personnel worked

under an erroneous interpretation of the leak rate technical specifications. When this improper interpretation was discovered by an NRC Inspector in October 1978, the Licensee took inadequate corrective actions to instruct personnel on proper leak rate surveillance testing practices. Second, the Board found that there was a nearly unanimous lack of confidence in the computer-calculated test results, yet the tests were routinely submitted by Control Room Operators (CROs) and approved by Shift Foremen exhibiting "remarkably unprofessional" conduct. While operators felt a general sense of pressure to keep the plant on line, they did not feel that adverse actions would be taken against them if they failed to obtain "good" test results. Third, the Board found that 50% or more of the tests were discarded, with the knowledge of the CROs, Shift Foremen, Shift Supervisors, Supervisor of Operations, and Superintendent of Technical Support.¹ In addition, the Board found that many operators manipulated tests or falsified test results, that Shift Supervisors who did not personally participate in the tests were guilty of "culpable neglect" in failing to ensure that the performance of leak rate surveillance tests followed applicable technical specifications and administrative procedures, and that the Supervisor of Operations for Unit 2, James R. Floyd, knew about the difficulties the operators were having with the leak rate surveillance tests and was also guilty of culpable neglect. Finally, the Board found that three other members of TMI-2 management were also guilty of culpable neglect.²

After the issuance of that Recommended Decision, the NRC Staff, as instructed by the Commission in CLI-85-19, forwarded to the Commission its recommendations as to what action, if any, should be taken, including "whether the Commission should remove the condition imposed in the TMI-1 restart proceeding barring certain individuals from certain positions at TMI-1." 22 NRC at 883. In sum, the NRC Staff recommended that no further enforcement action be taken against the facility Licensee or the thirty-five individuals formerly at TMI-2 regarding leak rate surveillance testing irregularities at that facility. The Staff also recommended that the condition imposed in the TMI-1 restart proceeding should be lifted as to all individuals except the preaccident TMI-2 Supervisor of Operations, about whom current questions as to suitability for licensed activities remained, and those individuals employed in the TMI-2 Site Operations Department as of July 9, 1987, about whom allegations of sleeping while on duty at TMI-2 had recently been raised.

The Commission has reviewed the Presiding Board's Recommended Decision and the record before the Board. Based on that review, we conclude that the Presiding Board's findings are supported by the record. We have also considered

¹ There were two Superintendents of Technical Support from January 1977 until the accident at TMI-2. This statement refers to the Superintendent of Technical Support from January 1977 until December 1978.

² The Superintendent of Unit 2 and both Superintendents of Technical Support referred to in note 1, *supra*.

the Staff's recommendations and have determined, for the following reasons, that the TMI-1 restart condition should be rescinded to remove the condition for individuals other than the preaccident TMI-2 Supervisor of Operations.

The Board findings indicate that virtually all Operations Department personnel worked under an erroneous interpretation of the leak rate technical specification and most of the personnel had some degree of culpability regarding leak rate surveillance testing irregularities or falsification. The performance of ten preaccident individuals employed as licensed operators in 1985, as documented in the April 1, 1986 Staff report to the Commission, appears to demonstrate that they now can be relied upon to conform with procedural and regulatory requirements. The current performance of the remaining twenty-five individuals, twenty-four of whom were not licensed at the time of the joint OI/NRR investigation, has not been evaluated in the same detail, or in some cases, at all.³ However, there are other considerations that justify lifting the TMI-1 restart condition at this time on all individuals except the preaccident TMI-2 Supervisor of Operations.

The importance of the leak rate surveillance testing issue has certainly been driven home for those involved at TMI. Improvements since the TMI-2 accident in the measurement procedures, techniques, calculational methods, and a clear understanding of the technical specification requirements establish a significantly improved basis for correctly performing this routine task. GPU Nuclear has made significant and substantial changes in management and operating practices since the accident at TMI-2 which are reflected in high SALP evaluations. Additionally, all individuals to be used in a licensed operator position would be subject to the normal licensing process required by the NRC regulations.

Apart from the record of this proceeding, the Staff proposes to continue the restriction on employment for individuals who were a part of the TMI-2 Operations Department on July 9, 1987, on the basis of more recent allegations of sleeping on duty at TMI-2. The Commission believes that a decision whether to lift the TMI-1 restart condition should be made without regard to the ongoing investigation of new allegations unrelated to leak rate testing. To continue the license restriction for matters that did not form its basis works an unfairness against these individuals, particularly since the Staff has ample enforcement authority to obtain additional information or to protect the public health and safety if the evidence warrants such action. *See, e.g.,* 10 C.F.R. §§ 2.202 and 50.54(f).

³ Thirty-five individuals are subject to the TMI-1 restart condition No. 1 which bars them from certain positions at TMI-1. The Board essentially exonerated nine of the thirty-five individuals, including three individuals who were subjects of the joint OI/NRR investigation. Of the remaining twenty-six, the Staff conducted interviews with the supervisors of those individuals who are currently employed by licensees in licensed activities (GPU Nuclear and one by Southern California Edison Co.) No Staff evaluation has been made of the current performance of the remaining individuals.

As for Mr. Floyd, the Presiding Board concluded that he bore greater responsibility for what went wrong with leak rate surveillance tests at TMI-2 than any other single individual. Furthermore, the Board found that Mr. Floyd was not fully forthcoming and candid before the Board and noted many conflicts between Mr. Floyd's testimony and the evidence in the record. Moreover, Mr. Floyd has been convicted in the U.S. District Court for the Middle District of Pennsylvania for making material false statements. As noted in the Staff's recommendations, all of this reasonably calls into question Mr. Floyd's present suitability for duty in connection with NRC-licensed activities. Thus, in the case of Mr. Floyd, the Commission does not find sufficient reason to remove the TMI-1 restart condition. Mr. Floyd does not currently hold a position at a licensed facility. We need not reach today the question of whether Mr. Floyd should be prohibited from a management or "operational position" at any other licensed facility.

Given the time that has passed and the fact that the leak rate surveillance testing irregularities directly flowed from management shortcomings in training and procedures, there is no clear reason to continue the restriction in restart condition No. 1 for all individuals except for the preaccident TMI-2 Supervisor of Operations, James R. Floyd. Accordingly, the Commission has decided to lift the TMI-1 restart condition as it applies to all those except James R. Floyd, and to revise TMI-1 restart condition No. 1 in CLI-85-2, 21 NRC at 341-42, to read:

The preaccident TMI-2 Supervisor of Operations, James R. Floyd, shall not be employed at TMI-1 in a responsible management or operational position without specific NRC approval. "Operational Position" as used here includes any position involving actual operation of the plant, the direction or supervision of operations, or independent oversight of operations.

IT IS SO ORDERED.

For the Commission⁴

SAMUEL J. CHILK
Secretary of the Commission

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

⁴ Commissioner Carr was not present for the affirmation of this Order. If he had been present he would have approved it.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

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)

April 25, 1988

The Appeal Board reverses a Licensing Board partial initial decision, LBP-87-10, 25 NRC 177 (1987), to the extent that it found the environmental qualification of a coaxial cable used for data transmission in the Seabrook facility's computer system had been established. That issue is remanded to the Licensing Board for further evidentiary exploration and decision.

OPERATING LICENSES: APPLICATION FOR LICENSE (FSAR)

A Final Safety Analysis Report (FSAR), which is prepared by or on behalf of the applicant(s) for an operating license, must be submitted to the Commission as part of the license application. *See* 10 C.F.R. 50.34(b). It does not, however, automatically become part of the record of any adjudicatory proceeding on that application.

APPEARANCES

Dean R. Tousley, 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.

MEMORANDUM AND ORDER

For a third time, we are confronted with a challenge to the Licensing Board's treatment of the issue of the environmental qualification of the RG58 coaxial cable used for data transmission in the Seabrook nuclear power facility's computer system. For a third time, we conclude that that treatment did not appropriately dispose of the matter. For a third time, therefore, we are constrained to return the issue to the Licensing Board for further consideration.

A.1. We first summarize the tortuous evolution of the RG58 cable issue in this proceeding. The issue had its genesis in Contention I.B.2 of the intervenor New England Coalition on Nuclear Pollution (Coalition), which asserted that the applicants had not satisfied General Design Criterion (GDC) 4 in Appendix A to 10 C.F.R. Part 50. GDC 4 requires that

[s]tructures, systems, and components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents.

As litigated, the contention focused upon the capability of electrical equipment subject to GDC 4, including RG58 coaxial cable, to continue to perform its intended function for such period after an accident as might be necessary — i.e., whether the equipment is “environmentally qualified.”

The Commission's regulations identify several permissible methods for demonstrating that an electrical component is environmentally qualified.¹ In the case of RG58 coaxial cable supplied by International Telephone and Telegraph Corporation (ITT), the applicants chose the method of “[t]esting a similar item of equipment with a supporting analysis to show that the equipment to be qualified is acceptable.”² Specifically, the applicants relied upon the results of

¹ See 10 C.F.R. 50.49(f).

² 10 C.F.R. 50.49(f)(2).

tests performed on ITT RG59 coaxial cable to demonstrate the environmental qualification of the RG58 cable. Those tests, described in a particular equipment qualification file (EQF) prepared for the applicants, included measurement of both (1) the insulation resistance of a cable specimen during its exposure to an adverse environment (insulation resistance test); and (2) the leakage current during the application of a high alternating current voltage to the cable following its exposure to an adverse environment (high-potential test).³

On March 25, 1987, the Licensing Board issued a partial initial decision in which it authorized the issuance of a license for low-power operation (up to five percent of rated power) for Unit 1 of the Seabrook facility subject to certain conditions.⁴ In that decision, the Board found, *inter alia*, that the justification for environmental qualification of the RG58 cable by comparison with the tested RG59 cable was adequately documented in the applicants' EQF.⁵ The only specific evidentiary basis provided by the Board for its finding that the RG58 and RG59 cables possessed the requisite similarity, however, was a letter contained in that EQF from the cable vendor to Seabrook's architect-engineer and constructor.⁶

On its appeal from the Licensing Board's March 25 decision, the Coalition challenged the Board's determination that there had been an adequate demonstration of the environmental qualification of RG58 cable. In an October 1 decision, we agreed with the Coalition that the letter referenced by the Licensing Board was insufficient to establish the environmental qualification of the RG58 cable.⁷ In that letter, the cable vendor stated simply that the RG58 and RG59 cables have "similar construction details" and that it was "confident" that the RG58 cable "would have been approved" had it been tested.⁸ On the face of it, this terse statement appeared difficult to square with the fact that the RG59 cable insulation is 50 percent thicker than the RG58 cable insulation.⁹ That consideration led us to return the matter to the Licensing Board with instructions to point to additional support in the existing record for its finding that the RG58 cable is environmentally qualified or, failing that, to take further evidence on the issue.¹⁰

³ See Coalition's Exhibit 4, Electrical Equipment Qualification File No. 113-19-01, Reference 2, Qualification Tests of Electrical Cables in a Simulated Steam-Line-Break and Loss-of-Coolant-Accident Environment: 100-Day Duration RG-11/u and RG-59/u Coaxial Cables.

⁴ See LBP-87-10, 25 NRC 177.

⁵ *Id.* at 211.

⁶ *Id.* at 210. See Coalition's Exhibit 4, Reference 4, Letter from Joel T. Sibley, ITT, to George Morris, United Engineers & Constructors (February 11, 1983).

⁷ See ALAB-875, 26 NRC 251, 269-71 (1987).

⁸ Coalition's Exhibit 4, Reference 4.

⁹ *Id.*, Reference 1, United Engineers & Constructors Specification for Specialty Cable, Specification No. 9763-006-113-19, Appendix A at A1-A2.

¹⁰ ALAB-875, 26 NRC at 271.

On October 16, the Licensing Board issued a memorandum in which it advised us that, in its judgment, there was no need to supplement the record.¹¹ This was so, we were told, because the EQF demonstrated that the dimensional differences between the RG58 and RG59 cables are of such little importance that the test results for the RG59 cable could serve to qualify the untested RG58 cable. For that conclusion, the Board relied on two separate pieces of information that had not previously been discussed by it. The first disclosure was to the effect that the specified operating requirement for the insulation resistance of the RG58 cable is lower than that for the RG59 cable.¹² The Board consequently believed that "the predicted performance of the smaller RG58 cable under conditions of environmental qualification testing would be proportional to the lower required operating resistance of its insulation."¹³ Second, the high-potential test of the RG59 cable (wherein the magnitude of the voltage applied to that cable was based on its insulation thickness) yielded satisfactory results.¹⁴ As the Board saw it, had the RG58 cable undergone a like test, similar results would have been obtained.¹⁵

In commenting on the Licensing Board's October 16 memorandum, the Coalition criticized the Board's theory regarding the proportionality of insulation resistance requirements and insulation thickness of RG58 and RG59 cable.¹⁶ In this connection, the Coalition pointed to other information in the EQF that cast substantial doubt upon the validity of the theory.¹⁷ Based on these and other concerns, the Coalition maintained that the issue of the environmental qualification of the RG58 cable required a further adjudicatory hearing.¹⁸

For their part, the applicants made an endeavor to support the Licensing Board's proportionality theory.¹⁹ Proceeding on an entirely new tack, however, they went on to assert that, even if that theory proved unavailing, the RG58 cable should be deemed environmentally qualified because it serves no function in the mitigation of the consequences of an accident.²⁰ Rather, according to the

¹¹ See Memorandum to the Appeal Board (October 16, 1987, unpublished) [hereinafter, Licensing Board October 16 Memorandum] at 4.

¹² See Coalition's Exhibit 4, Reference 1, section 2.6.1.2 at 5-6.

¹³ Licensing Board October 16 Memorandum at 3.

¹⁴ See Coalition's Exhibit 4, Reference 2 at 2, 13.

¹⁵ See Licensing Board October 16 Memorandum at 3-4.

¹⁶ See New England Coalition on Nuclear Pollution's Supplemental Memorandum Regarding Environmental Qualification of RG58 Coaxial Cable (November 4, 1987) at 3.

¹⁷ *Id.* at 3-4.

¹⁸ *Id.* at 7. The Coalition also put forth a new concern that the RG59 cable might not be environmentally qualified. *Id.* at 6. We denied, however, that intervenor's subsequent motion to reopen the record to admit a new contention challenging the environmental qualification of the RG59 cable. ALAB-886, 27 NRC 74 (1988).

¹⁹ See Applicants' Response Regarding Environmental Qualification of RG-58 Coaxial Cable (November 25, 1987) [hereinafter, Applicants' November 25 Response] at 4. Notwithstanding their attempt to defend the Licensing Board's theory, the applicants stated that operating insulation resistance values should not be considered as acceptance criteria for accident conditions. *Id.* at 9.

²⁰ *Id.* at 3.

applicants, such cable need withstand an adverse environment only to the extent necessary to ensure that that cable does not compromise the safety function of other components.²¹ Given this claimed fact — said to be established by the documentation in the EQF of a telephone conversation concerning color-coding of electrical cable used at Seabrook²² — the applicants insisted that acceptable performance of the RG58 cable should be measured by its ability to avoid a catastrophic failure during its exposure to an adverse environment.²³ As the applicants saw it, the results of the high-potential test performed on the RG59 cable, standing alone, demonstrated that the RG58 cable meets that standard.²⁴

Unlike the applicants, the staff expressed disagreement with the Licensing Board's proportionality theory.²⁵ Nonetheless, it concurred in the ultimate conclusion reached by the Board in the October 16 memorandum.²⁶ In this connection, the staff supplied us with a new affidavit of Harold Walker, who had served as a staff witness on the environmental qualification issue during the hearing that preceded the partial initial decision. In that affidavit, Mr. Walker adopted the applicants' thesis that the RG58 cable performs no accident mitigation function (and made a passing reference to the telephone conversation that the applicants offered in support of that thesis).²⁷

In responding to the submittals of the applicants and the staff, the Coalition asserted, *inter alia*, that (1) there is no explanation in the memorandum summarizing the telephone conversation respecting why certain color-coded cables do not serve an accident mitigation function; (2) the memorandum does not clearly establish that the cables addressed in the telephone conversation include the RG58 cable; and (3) equal uncertainty exists respecting why, if the RG58 cable does not perform a safety function, the EQF specifies operating insulation resistance requirements for it.²⁸

²¹ *Ibid.* As we interpret the applicants' argument, the data transmitted by the RG58 cable to the facility's computer system are not required during an accident. The RG58 cable must be environmentally qualified, however, to the extent necessary to ensure that the cable will not degrade so severely as to prevent (e.g., by causing a fire) other equipment from performing its safety function.

²² See Coalition's Exhibit 4, Reference 6, Record of Conversation from N.K. Woodward, Impell Corporation, to C.D. Greiman, United Engineers & Constructors, reproduced in the Appendix to this opinion. Mr. Woodward also served as a witness for the applicants in regard to environmental qualification of electrical equipment. See Tr. 344.

²³ See Applicants' November 25 Response at 3.

²⁴ *Id.* at 3-5.

²⁵ See NRC Staff Response to Memorandum of Licensing Board and New England Coalition on Nuclear Pollution Regarding Environmental Qualification of RG-58 Coaxial Cable (December 11, 1987) [hereinafter, Staff's December 11 Response] at 5.

²⁶ *Id.* at 5-6.

²⁷ *Id.* Affidavit of Harold Walker at 3, 6.

²⁸ See New England Coalition on Nuclear Pollution's Reply to Applicants' Response Regarding Environmental Qualification of RG-58 Coaxial Cable (December 10, 1987) at 2-3; NECNP Response to Staff Regarding Environmental Qualification of RG-58 Coaxial Cable (December 23, 1987) at 4-5.

On consideration of the divergent views of the parties, we concluded in ALAB-882 that another remand was in order.²⁹ For the reasons there set forth, we agreed with the Coalition and the staff that the Licensing Board's proportionality theory was flawed. We further directed that Board to examine in the first instance the dispute between the parties with regard to whether the evidence established that the RG58 cable performed no accident mitigation function, so that, standing alone, the RG59 cable high-potential test results would suffice. If the Board found the record at hand to demonstrate clearly that the applicants and the staff have correctly identified the role of the RG58 cable in an accident environment, it was to explicate the basis for the finding. Otherwise, there would be a need for additional evidence on the question whether the RG59 cable test results could serve as the foundation for the environmental qualification of the RG58 cable.³⁰

2. Apparently, the Licensing Board saw no need to obtain any further development of the views of the parties on the matter remanded to it. For, without providing an opportunity for such development (let alone soliciting additional submissions), the Board issued a memorandum on March 2 in response to the ALAB-882 remand. We are told that

there is adequate evidence in the record, as averred by the Applicants and NRC Staff, to show that full environmental qualification of cable RG-58 is not required, that the high-potential withstand test is all that is needed to demonstrate its environmental qualification, and that the successful environmental qualification of cable RG-59 can serve to qualify the untested RG-58 cable by comparison.³¹

In arriving at this determination, the Board accepted the telephone conversation, as memorialized in the EQF, as evidence that the RG58 cable has no accident mitigation function.³² It also alluded to the fact that the Walker affidavit had made (albeit without explanation) a like claim.³³

Unfortunately, however, the Licensing Board failed to illumine the foundation for its apparent rejection of several Coalition arguments that were previously presented to us and very well might have been explicitly renewed before the Board had supplemental submissions been allowed. Indeed, there is little, if any, mention in the Board's March 2 memorandum of the Coalition's insistence last December that (1) the foundation for the crucial representation in the telephone conversation (as memorialized in the EQF) remains unexplained; (2) it is not clear that the representation was intended to include RG58 cable within its ambit; and (3) the EQF likely would not have set forth operating requirements for RG58

²⁹ See 27 NRC 1 (1988).

³⁰ *Id.* at 4-5.

³¹ Memorandum to Appeal Board on Environmental Qualification of Coaxial Cable RG-58 (March 2, 1988, unpublished) [hereinafter, Licensing Board March 2 Memorandum] at 2-3 (emphasis in original).

³² *Id.* at 4-5, 8.

³³ *Id.* at 5.

cable insulation resistance had that cable been deemed to possess no accident mitigation function.³⁴

3. In a March 22 submittal invited by us,³⁵ the Coalition takes exception to the Licensing Board's determination in the March 2 issuance.³⁶ That intervenor renews its insistence that the memorandum documenting the telephone conversation concerning color-coding of electrical cables does not provide an adequate evidentiary basis for establishing the environmental qualification requirements for the RG58 cable. As before, the Coalition questions the source of the statement in the memorandum that certain color-coded electrical cable need only remain intact during and following an accident.³⁷ Further, as the memorandum does not specifically mention RG58 cable or its purchase order number, the Coalition remains unconvinced that the color-coding scheme applies to this cable.³⁸ Because of these and other concerns, the Coalition requests that we once again remand the matter to the Licensing Board — this time with instructions that the record be reopened to verify the environmental qualification of the RG58 cable.³⁹

In a filing with us last December, the staff seemingly had endorsed, at least implicitly, the use of the memorandum documenting the telephone conversation to demonstrate that the RG58 cable does not have an accident mitigation function, and, thus, need only remain intact in order to be considered environmentally qualified.⁴⁰ Now, however, we are told that the memorandum cannot serve that purpose.⁴¹ Nevertheless, the staff endeavors to support the Licensing Board's outcome by pointing to excerpts from the Seabrook Final Safety Analysis Report (FSAR).⁴² According to the staff, these excerpts adequately demonstrate (when taken in conjunction with certain disclosures in the EQF) that the RG58 cable has no accident mitigation function but, rather, need only remain intact in the event of an accident.⁴³ This being so, the staff maintains that the Licensing Board correctly accepted the applicants' thesis that the results of

³⁴ See *supra* p. 345.

³⁵ See March 3, 1988 order (unpublished).

³⁶ See New England Coalition on Nuclear Pollution's Supplemental Memorandum on Environmental Qualification of RG-58 Coaxial Cable [hereinafter, Coalition's March 22 Memorandum].

³⁷ *Id.* at 5.

³⁸ *Id.* at 6.

³⁹ *Id.* at 8.

⁴⁰ See Staff's December 11 Response, Affidavit of Harold Walker at 6.

⁴¹ See NRC Staff Response to NECNP Supplemental Memorandum on Environmental Qualification of RG-58 Coaxial Cable (April 8, 1988) [hereinafter, Staff's April 8 Response] at 2.

⁴² *Id.* at 3, Attachment 2. The FSAR, which is prepared by or on behalf of the applicant(s) for an operating license, must be submitted to the Commission as part of the license application. See 10 C.F.R. 50.34(b). It does not, however, automatically become part of the record of any adjudicatory proceeding on that application.

⁴³ See Staff's April 8 Response at 3-4.

the high-potential test of the RG59 cable suffice to establish the environmental qualification of the RG58 cable.⁴⁴

Upon receipt of the staff's filing, we informally inquired of its counsel respecting whether the relied-upon portions of the FSAR are to be found in the existing record. It turns out that, in significant measure, they are not.⁴⁵ The staff suggests that, in order to cure this deficiency, we reopen the record ourselves to receive the material in question and to provide "all parties the opportunity to object to the genuineness and the significance" of that material.⁴⁶

Unlike the staff, the applicants endorse both the Licensing Board's March 2 determination and the reasoning underlying it.⁴⁷ In particular, the applicants insist that the memorandum documenting the telephone conversation, in combination with other portions of the EQF, demonstrates that the RG58 cable does not perform an accident mitigation function and, therefore, can be environmentally qualified on the basis of the acceptable results of the high-potential test on the RG59 cable.⁴⁸ Further, the applicants point to the Walker affidavit previously submitted to us as providing additional support for that thesis.⁴⁹

B. As we have just seen, at every stage of the consideration of the RG58 cable issue, we have been either favored with a new theory or referred to new asserted evidence (or both) to justify the Licensing Board's conclusion in its partial initial decision that that cable has been shown to be environmentally qualified. In the first instance, the Licensing Board rested that conclusion on a letter written by the cable vendor that had found its way into the EQF. When we determined that that letter was insufficient to support the conclusion, the Board produced its proportionality theory. Although endorsing that theory, the applicants also came up with an entirely different theory of its own, based upon another document in the EQF (the memorandum of a telephone conversation). Now acknowledging that this document does not of itself allow the acceptance of the applicants' current proposition that the RG58 cable has no accident mitigation function and therefore can be deemed environmentally qualified on the strength of the RG59 cable high-potential test results, the staff tells us that there is yet another document — the Seabrook FSAR — that *does* provide an adequate foundation for the proposition. Regrettably, however, the staff has also been compelled to concede (following our inquiry) that the FSAR

⁴⁴ *Id.* at 4.

⁴⁵ See Letter from Edwin J. Reis to this Board (April 14, 1988).

⁴⁶ *Ibid.*

⁴⁷ See Applicants' Supplemental Response on Environmental Qualification of RG-58 Coaxial Cable (April 8, 1988).

⁴⁸ *Id.* at 6.

⁴⁹ *Id.* at 5-6. It is worthy of note, however, that the Licensing Board refused to consider one segment of the affidavit relied upon by the applicants — that concerned with failure modes of the cable — on the ground that there is no record evidence dealing with that subject. See Licensing Board March 2 Memorandum at 8 n.5.

provisions it deems of particular relevance are not currently included in the evidentiary record.

There is no good reason why the resolution of such a relatively simple and narrow issue should have taken such a winding path and consumed so much time of the parties and the two boards. Much of the difficulty in this regard might have been avoided had the applicants and the staff reviewed at the outset — and then brought to the fore at one time instead of piecemeal — all of the available materials of possible relevance to the issue at hand. And it might well have proven helpful had the Licensing Board sought the views of the parties before acting on the ALAB-882 remand.⁵⁰

Be that as it may, our task at this juncture is to determine whether the Licensing Board correctly concluded that the evidence now of record adequately establishes that “full environmental qualification of cable RG-58 is not required”; that the high-potential test is “all that is needed to demonstrate its environmental qualification”; and that the RG59 cable test results suffice for this purpose.⁵¹ In common with the Coalition and the staff, we answer that question in the negative. In addition, we agree with both of these parties that the resolution of this matter requires the receipt of additional evidence. We decline, however, the staff’s invitation to receive ourselves what the staff regards as sufficient evidence to support the claim that the RG59 cable test results carry the day.

1. The brief memorandum of the telephone conversation upon which the applicants and the Licensing Board rely is reproduced in full in the Appendix, *infra*. It reflects that there was a discussion between employees of the Impell Corporation (the company retained by the applicants to prepare the EQF at hand) and United Engineers & Constructors (the Seabrook architect-engineer and constructor)⁵² respecting the means for identification of cables required to perform “a safety function subsequent to accident events.” According to the memorandum, the Impell representative was informed that “the different cables” in a purchase order identified as “P.O. 113-18” and “other cable specifications” were color-coded for that identification purpose. Specifically, those cables having an accident mitigation function were provided an outer jacket of one of four solid colors. If not bearing such an outer jacket (and the EQF indicates that the jacket for the RG58 cable is multi-colored),⁵³ the cable need only remain intact under

⁵⁰ Insofar as the ALAB-875 remand is concerned, before advancing the entirely new proportionality theory the Licensing Board might have solicited the parties’ thinking on its merit. Had it done so, it would have encountered the belief of both the Coalition and the staff that the theory is flawed.

⁵¹ See *supra* p. 346.

⁵² The memorandum, written by the Impell employee, erroneously refers to the company as United Engineers & Contractors.

⁵³ See Coalition’s Exhibit 4, Reference 1, Appendix A at A1.

accident conditions (i.e., in the words of the memorandum, there must be no "shorting to ground").⁵⁴

There are several manifest difficulties with the applicants' reliance upon the memorandum. To begin with, it does not clearly appear that RG58 cable comes within its scope. That type of cable is not specifically mentioned in the memorandum. Further, the caption on the cover page of the EQF discloses that the RG58 cable was not obtained by purchase order 113-18, but rather by purchase order 113-19.⁵⁵ For these reasons, the applicants are constrained to ask us to assume that the reference in the memorandum to "other cable specifications" was intended to embrace RG58 cable. We find insufficient justification for drawing any such inference. In this regard, it is noteworthy that, notwithstanding the weight they now attach to it, the applicants have never sought to have the memorandum sponsored by one or the other of the participants in the telephone conversation — either of whom presumably could eliminate any room for doubt respecting the scope of the discussion of color-coding for identification purposes.

The lack of sponsorship of the memorandum takes on still greater significance when other portions of the existing record are examined. Among other things, it appears from the Harsh Environment Equipment List contained in the EQF that *all* cables covered by the EQF (and that includes the RG58 cable) are within Operability Code A and thus, according to the testimony of applicants' witness Joseph M. Salvo, serve a safety function.⁵⁶ To the same effect, the report of a pre-audit review of a number of equipment qualification files placed all of the cables in the EQF covering the RG58 cable in Operability Code A.⁵⁷ Yet, in the case of many other such files, the report put some of the equipment addressed in the file in category A and the balance of the equipment in lesser categories (i.e., B or C).⁵⁸

⁵⁴ As we understand the use of the phrase in the memorandum, a wire "shorts to ground" if there is a complete breakdown of its insulation resistance with the possible consequence that the current passing through it would impair the performance of components having an accident mitigation function.

⁵⁵ On this score, the record discloses that purchase order 113-18 involved cable supplied by a vendor other than ITT. See Salvo, *et al.*, fol. Tr. 357, at 7.

⁵⁶ Tr. 387-88.

⁵⁷ See Coalition's Exhibit 13, Notegram from M. Trojovský, EG&G Idaho, to H. Walker, NRC (February 21, 1986), forwarding Pre-Audit Review of the Seabrook Station Equipment Qualification Program at 16. The subsequently issued audit report similarly did not provide any indication of a classification less than Operability Code A for the RG58 cable. See Coalition's Exhibit 12, Letter from C.F. Obenchain, EG&G Idaho, to M. Carrington, NRC (March 31, 1986), forwarding Audit of the Environmental Qualification of Safety-Related Electrical Equipment for the Seabrook Station (March 1986) at 32, 53.

⁵⁸ See Coalition's Exhibit 13 at 8, 9, 11, 13-22, 24-31.

As previously noted, at an earlier stage the Coalition raised a question respecting why, if the RG58 cable does not perform a safety function, the EQF included operating insulation resistance requirements for it. See *supra* pp. 346-47. Although, as also noted (*supra* p. 345), that question was not addressed in the Licensing Board's March 2 memorandum, it has not been renewed in the Coalition's most recent filing with us. In the circumstances, it is not clear whether the Coalition intends to pursue the point.

2. The short of the matter thus is that the Licensing Board erred in relying upon the memorandum of the telephone conversation to establish the environmental qualification of the RG58 cable. As the Coalition correctly observes, before attaching any (let alone controlling) weight to that memorandum, the Board should have insisted that it be sponsored by a witness in a position both to attest that RG58 cable is within its scope and to explain the basis for the representation in the memorandum regarding the color-coding scheme.⁵⁹ Any such explanation would, of course, have had to come to grips with the possible inconsistency between that representation (assuming that it was intended to extend to RG58 cable) and the other record evidence to the effect that the RG58 cable is capable of performing a safety function.

In the circumstances, we are compelled once again to conclude that neither the Licensing Board nor any party has brought to light any evidence *of record* that might adequately support the Board's finding that the environmental qualification of the RG58 cable has been established. There being no conceivable good reason to allow either the Board or the parties yet another opportunity to comb the existing record in search of such evidence, the appropriate course is clear: that finding, as set forth in the March 25, 1987 partial initial decision and repeated in subsequent Board memoranda, must now be vacated and, to the extent dependent upon that finding, the decision reversed. Given this mandated disposition, we agree with the Coalition that the next step should be a further evidentiary exploration of the RG58 cable issue.⁶⁰

The staff's suggestion that we preside over that exploration is not without its attraction. As earlier noted, the litigation of this issue has already consumed too much time. And were we to take the additional evidence ourselves, the final curtain might be rung down at an earlier date.

Absent truly exceptional circumstances, however, we should not impinge upon the Licensing Board's role as the initial fact finder in NRC licensing proceedings. In this instance, and despite our desire to have the RG58 cable issue resolved without further *unnecessary* delay, we cannot say that such circumstances are present.⁶¹ Accordingly, we once again remand the matter to the Board below. In the interest of the prompt development of an adequate record on the issue, however, we provide some additional guidance to the Board.

⁵⁹ Cf. *Duke Power Co.* (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-669, 15 NRC 453, 477 (1982).

⁶⁰ See Coalition's March 22 Memorandum at 8.

⁶¹ The Licensing Board responsible for the resolution of the onsite emergency planning and safety issues still has other remanded issues before it. See ALAB-875, 26 NRC at 275 (steam generator tube integrity and cooling system debris); ALAB-883, 27 NRC 43 (1988) (public emergency notification in the Massachusetts portion of the Seabrook plume exposure pathway emergency planning zone). It does not now appear that the ALAB-883 remand will be soon completed.

In the present posture of the matter, two questions are crucial to the examination on the remand. 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?⁶² All new evidence on these questions — whether accompanying a motion for summary disposition or introduced at a hearing⁶³ — must be sponsored by a competent affiant or witness.⁶⁴

In addressing the first question, the parties undoubtedly will wish to take into account the revelation in the existing record that the RG58 cable has been placed in a classification reserved for components having a safety function.⁶⁵ This consideration may or may not cut against the insistence of the applicants and staff that, in its intended use in the facility's computer system, the cable lacks an accident mitigation function. The new evidence might show, for example, that its Operability Code A classification had other possible uses of the cable in mind. But if it involved an accident mitigation function, no such alternate use would be permissible on the strength of a finding (assuming one is made on the remand) that the cable is environmentally qualified when employed in the computer system solely because, in that capacity, it need only remain intact in the event of an accident. Stated otherwise, before a nuclear facility uses for a particular purpose a component subject to the environmental qualification requirements, it must be demonstrated that that component meets those requirements when so employed.

For the foregoing reasons, the March 25 partial initial decision, LBP-87-10, 25 NRC 177, is *reversed* to the extent that it found that the environmental qualification of the RG58 coaxial cable had been established. That issue is

⁶² We appreciate that ALAB-882 could be read to imply that this question required an affirmative answer. See *supra* p. 346. But the Coalition has now suggested (in its March 22 memorandum at 7) that shorting to ground might not be the only failure mode by which the RG58 cable could compromise the safety function of other components. If there is merit to that suggestion, the RG59 high-potential test results might well not demonstrate that the RG58 cable is environmentally qualified. Inasmuch as the applicants and staff are being provided with yet another opportunity to establish that the RG58 cable is environmentally qualified, fairness dictates that the Coalition be allowed to pursue the suggestion on the remand.

⁶³ Our reference to the possibility that a summary disposition motion might be filed should not be taken as implying any belief respecting whether such a motion would be warranted.

⁶⁴ Presumably, the new evidence will include the portions of the Seabrook FSAR to which the staff referred in its April 8 filing with us. See *supra* p. 347. See also *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-717, 17 NRC 346, 366-67 (1983), *aff'd*, *Carstens v. NRC*, 742 F.2d 1546 (D.C. Cir. 1984), *cert. denied*, 471 U.S. 1136 (1985). We intimate no opinion, of course, on whether those portions support the proposition for which they have been offered. In passing upon their significance, the Licensing Board should, *inter alia*, consider the nature and extent of the applicants' obligations in satisfying the environmental qualification provisions found in section 8.3.1.4 b.1(d) of the FSAR.

⁶⁵ See *supra* p. 350.

remanded to the Licensing Board for further proceedings consistent with this decision.⁶⁶

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

⁶⁶In the absence of any indication to the contrary, we have assumed in this decision that the applicants have no present interest in subjecting the RG58 cable itself to such tests as might establish directly its full or limited environmental qualification. Although, as we have seen (*supra* pp. 342-43), Commission regulations permit the continued reliance upon the RG59 cable test results for whatever conclusions those results might support, needless to say there is nothing in our decision that would preclude the applicants, if so inclined, from now changing directions and calling for the testing of the RG58 cable.

In our prior remand of the RG58 cable issue, we indicated that, if necessary, the Licensing Board is to decide whether low-power operation of the Seabrook facility must await the ultimate resolution of the issue. *See* ALAB-882, 27 NRC at 5 n.14. At the present time, such a determination is unnecessary. This is because, unless the Commission should otherwise direct, low-power operation is precluded in any event pending the resolution of the public emergency notification issue remanded in ALAB-883. *See* 27 NRC at 54. As earlier observed (*supra* note 61), it may be some time before that resolution is achieved.

APPENDIX

New England Coalition on Nuclear Pollution's Exhibit 4, Reference 6



Record of Conversation

File: 0570-032-1661

Copy: GRahner

ABIsawas

GMoore

DGhosh

RBergeron (PSNH)

WCloutier (YAEC)

☐ Telephone _____ ☐ Meeting _____ ☐ Other _____
To: C.D. Greiman From: N.K. Woodward *NKW*
Company: United Engineers & Contractors Phone No.: 215-422-3292 Date: 10/8/85
Subject: Seabrook EQ: P.O. 113-18

Summary of Conversation:

Chuck and I discussed how Impell can identify which of the different cables in P.O. 113-18 and the other cable specifications are connected to equipment which must perform a safety function subsequent to accident events.

The color coding of the outer jacket as defined in UE&C separation documents enables this determination. Specifically, outer jackets with the single solid color of red, white, blue, or yellow designates cables for which performance requirements such as I.R. and accuracy must be met during environmental qualification. Cable of other colors or color schemes must remain intact (e.g. no shorting to ground). However, all Class 1E cables as defined by the Specification must be environmentally qualified.

Chuck will forward a copy of the UE&C separation document which defines these color schemes so that it may be included in the EQFs.

NKW/jm

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

James P. Gleason, Chairman
Dr. Jerry R. Kline
Frederick J. Shon

In the Matter of

Docket No. 50-322-OL-3
(ASLBP No. 86-535-04-OLR)
(Emergency Planning)

LONG ISLAND LIGHTING
COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

April 8, 1988

In this Memorandum the Licensing Board provides its written opinion and amplification of previous orders denying Applicant's motions for summary disposition and providing guidance on NRC's new rule concerning a utility emergency response plan (10 C.F.R. § 50.47(c)(1)).

RULES OF PRACTICE: COMMISSION GUIDANCE

In new rule (10 C.F.R. § 50.47(c)(1)), the Commission not only incorporates doctrine that noncooperating governments will provide their best efforts in responding to a radiological emergency but amplified and clarified doctrine enumerated in a related decision (CLI-86-13, 24 NRC 22 (1986)).

RULES OF PRACTICE: COMMISSION GUIDANCE

The new rule reinforces judgment that licensing boards' responsibility is to ensure that utilities' emergency plan supported by a "best-efforts" response from state and local governments meets the test of adequacy under Commission Rules and Regulations.

RULES OF PRACTICE: REGULATORY ASSUMPTION

The new rule places a responsibility on state and local governments to produce, in good faith, some adequate and feasible response plan that will be relied on in the event of an emergency or it can be assumed that a utility's plan will be utilized by Intervenors.

EMERGENCY PLANS: INTERPRETATION

The absence of state and local governments' participation in emergency planning cannot be viewed as an absolute impediment to licensing a substantially completed nuclear plant as that would result in a *de jure* veto power in the hands of local officials over the operation of nuclear electric facilities.

RULES OF PRACTICE: UTILITY EMERGENCY PLANNING

The fundamental purpose of the new rule is to provide criteria for evaluating utility-prepared emergency plans in cases where, in fact, state and local governments do not participate in such planning.

RULES OF PRACTICE: INTERPRETATION

In light of the new rule's sole purpose, it is not credible that the Commission intended the phrase "it may be presumed . . . state and local officials will follow the utility plan" (10 C.F.R. § 50.47(c)(1)(iii)) that licensing boards could arbitrarily decide that such governments need not respond to any plan or at all.

RULES OF PRACTICE: INTERPRETATION

There is no conflict between Appendix E and the new rule since the new rule's provisions are interpreted as applying to both 10 C.F.R. § 50.47(a) and Part 50, Appendix E.

RULES OF PRACTICE: REGULATORY ASSUMPTION

Commission guidance makes clear that nonparticipating governments are not expected to specify in complex detail responsive measures that will be provided in an emergency. However, unless such a plan is produced and evaluated for adequacy, it will be assumed that the utility's plan will be utilized.

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))**

The Board herein furnishes its written opinion and amplifies its Confirmatory Memorandum and Order denying motions filed by the Applicant (LILCO) for summary disposition of Contentions 1, 2, 4, 5, 6, 7, 8, and 10. The Confirmatory Order was issued on February 29, 1988. Two LILCO summary disposition motions filed the same date, as those referred to here, December 18, 1987, have been considered in separate rulings.¹

The basis supporting the motions for summary disposition of the legal authority contentions is the best-efforts assumption embodied in the Commission's new rule, 10 C.F.R. § 50.47(c)(1). That regulation provides that where an applicant for a nuclear utility operating license initiates its own emergency plan as a result of nonparticipation by state and/or local governments, the NRC will make an evaluation of the plan's adequacy and "will recognize the reality, that in an actual emergency, state and local government officials will exercise their best efforts to protect the health and safety of the public." 10 C.F.R. § 50.47(c)(1)(iii).

I. HISTORY

The current motions were reviewed in the wake of a plethora of filings, arguments, and legal challenges concerning the Applicant's legal authority to exercise certain emergency activities. This was the third consideration of summary disposition of the contentions, the motions for which have been raised amidst related developments of a court decision, licensing board rulings and orders, an appeal board decision, a Commission remand, and regulatory changes. Since this Memorandum provides additional guidance to the parties on the Board's

¹ See Board Orders of March 3, 1988 (unpublished), on LILCO's Summary Disposition Motion of Contentions 1-10 with Respect to 10 C.F.R. § 50.47(c)(1)(i) and (ii), and March 11, 1988 (unpublished), on Summary Disposition Motion of Contentions 1, 2, and 9 — Immateriality.

interpretation of § 50.47(c)(1) and its applicability to the present proceeding, in addition to the rationale for our previously announced decisions on the summary disposition motions, we set forth, preliminarily, in an abbreviated account, the evolution of the legal authority and realism issues.²

Ten contentions were filed originally by Suffolk County (Intervenors) challenging the legal authority of LILCO to carry out certain emergency planning functions.³ In the first motion for summary judgment of these contentions (August 1985), LILCO argued their approval on grounds, *inter alia*, that in a real emergency, the State and County would respond (realism theory). In a declaratory action filed by the combined Intervenor Governments (New York State, Suffolk County, and Town of Southampton), the New York State Supreme Court of Suffolk County on February 20, 1985, ruled that LILCO did not possess legal authority to carry out its proposed emergency plan functions. In a Partial Initial Decision, LBP-85-12, 21 NRC 644 (1985), the Licensing Board rejected LILCO's realism argument on grounds, *inter alia*, that any governmental response would be uncooperative, uncoordinated, and *ad hoc*, the opposite of what is contemplated in an adequate emergency plan under the regulations. After an Appeal Board affirmance of the Licensing Board decision, the Commission reversed and remanded the "realism" issue. The Commission accepted LILCO's realism argument and indicated that flexibility was called for in considering a utility emergency plan and that since State and local governments would be obligated to assist in an emergency at the Shoreham facility, a "best-efforts" response by the Governments utilizing the LILCO plan could be assumed. The Commission stated, however, that it would not assume that such a "best-efforts" government response would be adequate. The Licensing Board was directed to reconsider the matter in light of the Commission decision, taking additional evidence where necessary to augment the existing evidentiary record. *See* CLI-86-13, 24 NRC 22 (1986).

The Licensing Board, in again rejecting new summary disposition motions on the legal authority issues, interpreted the Commission's ruling in CLI-86-13 as not making indisputable what the participation of the Governments would be and leaving open to question whether the Government response would meet regulatory requirements. LILCO's second summary disposition motion was denied on grounds of an alleged lack of familiarity by State and local government

² The term "legal authority" refers to LILCO's authority to implement certain elements of its plans, and the word "realism" to LILCO's defense that, in an emergency, state and local officials would respond.

³ Two of the ten contentions, one dealing with posting traffic signs (Contention 3), and the other with dispensing fuel (Contention 9) have been previously resolved. The remaining contentions cover the following areas: Contention 1, directing traffic; Contention 2, traffic control including blocking roadways; Contention 4, removing obstructions from public roadways; Contention 5, activating sirens and broadcasting EBS messages; Contention 6, recommendations and decisions on protective actions; Contention 7, recommendations and decisions on ingestion exposure pathway; Contention 8, recommendations and decisions on recovery and reentry; and Contention 10, access control of EPZ perimeter.

personnel with the emergency plan, a lack of legal authority in LILCO to carry out the contested emergency functions, and a void in the record of what the Governments' response would be in an emergency. The Board did find on the basis of uncontested allegations of fact that the Governments possessed the physical capability to respond, in the areas being contested, in the event of an emergency. See Board Memorandum and Order, September 17, 1987, LBP-87-26, 26 NRC 201, 225.

In denying a LILCO motion for reconsideration, the Licensing Board stated that (1) the Applicant was not able to rely at that time on the then-proposed rule (which later became § 50.47(c)(1)) stating that the proposed rule was different than the law of the case set down by the Commission in CLI-86-13; (2) the Licensing Board had not improperly applied *Cuomo v. LILCO* which held, *inter alia*, that the Government was prohibited from delegating its police power; and (3) the Governments' assertions in the evidentiary record that they would not implement LILCO's plan, would not respond in an emergency in concert with LILCO, and would not rely on its recommendations or authorize it to perform contested functions made it an open question of how the Governments would actually respond and whether that response would be adequate. The Board indicated that it was not ruling at that time on which party carried the burden of proof on the question of the adequacy of the Governments' response. Board Memorandum and Order, October 29, 1987 (LBP-87-29, 26 NRC 302).

On the same date (October 29, 1987), the Commission issued the new rule amending § 50.47(c)(1), which became effective December 3, 1987. The rule, intended to give effect to emergency planning provisions passed by Congress in 1980, provides a procedure for approving a utility-only emergency plan when state and/or local governments decline to participate in developing such a plan. The rule provides that where an applicant's noncompliance with regulatory standards is the result of nonparticipation by state and/or local governments and where the applicant has made a sustained, good-faith effort to achieve government participation, including furnishing of copies of the plan, and the applicant's plan is found to provide reasonable assurance that public health and safety are not endangered by the facility's operation, an operating license can be issued.

The Commission provided guidance in the new rule, that in an actual emergency, state and local officials would generally follow the utility plan. However, this presumption is rebuttable by, for example, a good-faith and timely proffer of an adequate and feasible state and/or local emergency plan that would in fact be relied on in an emergency.

In connection with the issuance of CLI-86-13 and the new rule, the Licensing Board requested responses from the parties on the issues to be decided under the Commission's remand and the effect of the rule on that proceeding. See unpublished Board Memoranda and Orders to the Parties on October 8, Novem-

ber 9, and December 23, 1987. In the interim, LILCO filed yet another round of summary disposition motions on the remaining legal authority or realism contentions. The Board has communicated, through a telephone conference on February 25, 1988, our decision denying LILCO's motions, and the foundation for this action is submitted below. We address herein our review of the various procedural responses requested from the parties⁴ and our interpretation of the new rule for purposes of amplifying previous guidance to the parties on the remaining realism contentions.

II. GUIDANCE AND INTERPRETATION OF NEW RULE

In a Memorandum issued on October 8, 1987, the Licensing Board requested, as indicated above, the parties' specification of the issues and questions to be addressed under the Commission "realism" remand of CLI-86-13. The parties also addressed, pursuant to a Board Order of November 9, 1987, the effects of the new rule on the Commission's remand. The parties also filed responses to a Board request of December 23, which sought their interpretation of the word "may" in the phrase "may be presumed" as used in 10 C.F.R. § 50.47(c)(1)(iii) as well as the rule's applicability to Appendix E of 10 C.F.R. Part 50.

Section 50.47(c)(1) reads as follows:

(c)(1) Failure to meet the applicable standards set forth in paragraph (b) of this section may result in the Commission declining to issue an operating license; however, the applicant will have an opportunity to demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question, that adequate interim compensating actions have been or will be taken promptly, or that there are other compelling reasons to permit plant operation. Where an applicant for an operating license asserts that its inability to demonstrate compliance with the requirements of paragraph (b) of this section results wholly or substantially from the decision of state and/or local governments not to participate further in emergency planning, an operating license may be issued if the applicant demonstrates to the Commission's satisfaction that:

(i) the applicant's ability to comply with the requirements of paragraph (b) is wholly or substantially the result of the non-participation of state and/or local governments.

(ii) The applicant has made a sustained, good faith effort to secure and retain the participation of the pertinent state and/or local governmental authorities, including the furnishing of copies of its emergency plan.

(iii) The applicant's emergency plan provides reasonable assurance that public health and safety is not endangered by operation of the facility concerned. To make that finding, the applicant must demonstrate that, as outlined below, adequate protective measures can and will be taken in the event of an emergency. A utility plan will be evaluated against the

⁴References are to responses received from parties on October 30, 1987, concerning views on Commission CLI-86-13 Remand (Responses), to supplemental briefs received on November 17, 1987, on the new rule (Supplemental Briefs), to replies on other parties' filings on November 27 and 30 (Replies) and to Briefs of January 15, 1988, concerning interpretation of the word "may" and applicability of Appendix E to the new rule (Briefs).

same planning standards applicable to a state or local plan, as listed in paragraph (b) of this section, with due allowance made both for (1) those elements for which state and/or local non-participation makes compliance infeasible and (2) the utility's measures designed to compensate for any deficiencies resulting from state and/or local non-participation. In making its determination on the adequacy of a utility plan, the NRC will recognize the reality that in an actual emergency, state and local government officials will exercise their best efforts to protect the health and safety of the public.

The NRC will determine the adequacy of that expected response, in combination with the utility's compensating measures, on a case-by-case basis, subject to the following guidance. In addressing the circumstance where applicant's inability to comply with the requirements of paragraph (b) is wholly or substantially the result of non-participation of state and/or local governments, it may be presumed that in the event of an actual radiological emergency state and local officials would generally follow the utility plan. However, this 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.

In an effort to synthesize the varying positions as expressed in the filings on the new rule's impact, we set forth below the salient issues in the briefing papers, the respective views of the parties, and the Board's additional guidance for consideration in the forthcoming hearing on the remaining issues.

What Effect Does the New Rule Have on the Remand of the Legal Authority or Realism Issues of the Remaining Contentions?

The Applicant believes that the new rule essentially resolves the issue since the presumption of the rule that Intervenor would follow the LILCO emergency plan disposes, in its opinion, the legal authority related-issues. LILCO Supplemental Brief at 1. Accordingly, the previous flaws found by the Board (LBP-87-26, *supra*) concerning a lack of legal authority and nongovernmental participation have been overcome. Government participation is ensured by the rule's assumption that such officials will exercise their best efforts to protect the public in an emergency; the presumption is that they will follow LILCO's plan, and State and County governments can also authorize LERO personnel to perform specific acts to protect the public, if it becomes necessary to do so.

According to Intervenor, the new rule essentially has no impact on the issues involved in existing contentions, and the general scope of CLI-86-13 remains as previously identified by the Licensing Board in its September 17, 1987 Order. Governments' Brief at 5. The Commission has made clear in its discussion of the new rule that licensing boards will judge, on a case-by-case basis, what form the best efforts of state and local governments would take, and the Board in this case has already decided — in light of the Governments' denials — that it could not adopt the presumption that the LILCO plan would be followed. *Id.* at 7-8.

The Staff contends that the new rule and further interpretations of CLI-86-13 remove any doubt that the remand is to focus on the best-efforts government implementation of the LILCO plan and not on an open-ended inquiry into what the Governments intend to do in an actual emergency. Staff Brief at 4-5. The Commission intends the presumption to be mandatory, that in the absence of a good-faith and timely submission of another adequate plan by the Governments, the LILCO plan will be followed. Staff Reply at 11 n.6.

Did the Commission Intend the Word “May” to Be Viewed as Mandatory or Permissive in the Phrase in the New Rule “It May Be Presumed That . . . in an . . . Emergency, State and Local Officials Would Generally Follow the Utility Plan”? And Was It Intended That the New Rule Override Any Conflicting Requirements in Appendix E Other Than the “Exercise” Requirement Specifically Provided for by the Rule?

a. The Applicant contends that, in both CLI-86-13 and the discussion of the new rule, the rationale of using a plan rather than responding *ad hoc* in an emergency is made clear by the Commission. LILCO Brief at 2-3. The Commission, in its final version of the rule, abandoned language that indicated no assumptions were to be made on what actions the Governments would take, such as following the utility’s plan. See SECY-87-257 at 21. Finally, the language used in the rule makes it evident that it refers to the alternate possibility for the presumption: that either LILCO’s plan will be followed or the plan will be rebutted by a different plan submitted by the Governments. LILCO Brief at 5-7.

The Applicant alleges additionally that compliance with the new rule is tantamount to compliance with Appendix E. A contrary assumption — that an Appendix E requirement could be a roadblock would undermine the regulatory structure created by the new rule. *Id.* at 8-10.

b. The Intervenor contend that the word “may” was intended to be used permissively by licensing boards since that is the plain meaning of the word. It must be recalled, in Intervenor’s view, that the Licensing Board in its September 17, 1987 Order has already ruled against such a presumption. Therefore, it must not be mandatory. By referring specifically to subpart (b) of 10 C.F.R. § 50.47 at four different places, and by specifically referring to a provision on exercises in Part 50, Appendix E, the Commission demonstrated an intention not to disturb compliance with the rest of Appendix E. The final version of the rule deleted a section included in the public comment version that specifically exempted noncompliance with Appendix E. Governments’ Brief at 2-6.

c. The Staff agrees that the word “may” is intended by the Commission to be viewed as a mandatory and not discretionary instruction. The rule in the Commission’s words, “amplifies and clarifies” its decision in CLI-86-13 where

the presumption of following the utility's plan was mandatory. It is also clear in the rule's Statement of Consideration that the Commission's sole purpose was to establish procedures for licensing in cases where state and/or local governments do not participate in emergency planning. "Guidance" to licensing boards in the rule's context is considered a binding procedural rule. Staff Brief at 4-7.

Appendix E requirements, according to the Staff, must be read in the light of the new rule. The provision in the rule for "due allowance" to be made both for those elements where compliance becomes infeasible due to governments' nonparticipation and for the utility's compensatory measures for any resulting deficiencies provides standards that clearly show the Commission's intent not to have conflicting requirements. *Id.* at 7-10.

To What Extent Can the Existing Record Be Relied Upon?

a. The Applicant alleges that the new rule, as applicable to the record in this case, necessitates the conclusion that LILCO's emergency plan satisfies NRC's regulatory requirements, and, as a consequence, no additional evidentiary hearings are necessary. LILCO Supplemental Brief at 1. It is contended that the Commission left it to the Board to supplement the record if necessary and since nearly all of the remaining issues are related to Intervenor's now untenable position that they would not follow the LILCO plan, the record requires no supplementation. *Id.* at 13-15. The generic questions in reality raised by the Licensing Board in its September 17, 1987 Order are either answered by the record or are not substantial issues. These include questions of who will be in charge in an emergency, whether State and County officials will be able to use LILCO's plan, whether it is illegal for the State or County to use LERO's resources, and whether the State and County will be able to make timely decisions. *Id.* at 15-19.

b. In the Intervenor's view, the record compiled to date was developed long before CLI-86-13 was published and the new rule was issued and also prior to the time LILCO produced its realism argument. Since all prior hearings have proceeded under the assumption that only LILCO would be implementing the utility plan (State and County officials were not to be involved to any significant degree), the existing record, almost 4 years old, is likely to be of little use. However, LILCO should be required to designate specifically any parts of the record on which it intends to rely. Governments' Response at 7-9; Governments' Reply at 66-67.

c. The Staff's outline of information still required in connection with the remaining contentions reflects that the record contains a number of material facts relevant to the remaining contentions, which require no further hearings. The existing record consists of the LILCO plan itself, prior findings by the Licensing Board, evidence in the hearing record, and facts deemed admitted as a result of

the Board's September 17, 1987 Order. Staff Response at 4-16; Staff Reply at 11.

Assuming the Record Requires Supplementation, Which Party Has the Burden of Proof and the Burden of Going Forward with the Evidence?

a. LILCO alleges that, although under NRC rules the ultimate burden of proof is on the applicant, the Intervenor here, even without the new rule, have the burden of going forward with the evidence. NRC case law (*Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-613, 12 NRC 317, 340 (1980)), demonstrates that intervenors have the responsibility of going forward with *prima facie* evidence to support their contentions. In this case, only the Intervenor possess information on what their response will be in an emergency, and also there is a presumption under the new rule that government officials will follow the utility plan and both State and County policy favors planning over *ad hoc* responses. LILCO Supplemental Brief at 4-6.

b. Intervenor allege that the subject matter of the CLI-86-13 remand is the affirmative defense of realism and the burden of proof and of going forward on an affirmative defense rests on the party asserting it. The new rule also emphasizes the applicant's responsibility to demonstrate the adequacy of its plan and compliance with the rule's provisions. Finally, the submission of sworn affidavits of the Governor of New York and the Suffolk County Executive is sufficient to satisfy any threshold burden of going forward on the nature of an assumed "best-efforts" response. Governments' Reply at 29-34.

c. The Staff claims that Applicant has established a *prima facie* case by submitting a utility plan that accommodates participation by the State and local governments. The evidentiary record cited as well as the material facts admitted demonstrate how a response will be conducted and also demonstrate the known capabilities of the Governments to engage in protective actions in an emergency. Accordingly, it is Intervenor's burden to rebut Applicant's *prima facie* case that there is reasonable assurance that LILCO's plan with a best-efforts government response can be implemented. That burden cannot be met by a claim that Intervenor will respond but will not follow LILCO's plan since such a claim is precluded under § 50.47(c)(1)(iii). Staff Reply at 11-13.

Given the Assumptions and Presumptions of the New Rule, What Are the Issues to Be Litigated, if Any?

a. The Applicant claims there are no litigable issues since the LILCO emergency plan is a complete plan that is prepared to respond to an emergency.

In addition, there are the expertise, manpower, and communication resources that New York State and Suffolk County can produce to respond to an emergency. The only deficiency in LILCO's plan is a lack of legal authority that can be supplied at will by State and County governments. The only possible issue is whether the addition of government resources will damage the response and increase the hazard to the public as compared to LILCO's plan alone. LILCO Supplemental Brief at 10-13.

b. The Intervenor's contend that issues raised by LILCO's affirmative defense (realism), the Commission remand of CLI-86-13, the Board's September 17 Order, and the Commission's new rule require new contentions to supplement the legal authority contentions. LILCO, it is alleged, also has to outline how it will comply with the standards of §§ (i) and (ii) of the new rule. In addition to addressing issues contained in CLI-86-13 and the Board's September 17 Order, Intervenor's submit a number of "principal issues" or questions related to best-efforts assumption that allegedly require hearing time. Governments' Reply at 48-66.

c. The Staff believes the hearing needs to focus on a narrow range of questions that relate to the Governments' implementation of the LILCO plan and the interface between LERO and responsible government officials. Staff Reply at 2. In addition to questions raised by the Board and the Commission in the remand, the Staff suggested several additional areas requiring exploration. These areas concern the adequacy of LILCO's plan's provisions for *ad hoc* best-efforts response by State and County officials to the end that employing the evidentiary presumption that the LILCO plan will be followed, a determination can be made that the best-efforts response would be adequate. *Id.* at 9-10.

In the Circumstances of the Shoreham Case, Does the Regulatory Presumption That the Intervenor's Will Follow the LILCO Plan Apply and Has Time Run Out for a Proffer of a Government Plan for Rebuttal Purposes?

The Applicant submits that Intervenor's have had ample opportunity in the past to indicate what their responses would be in an emergency and declined to do so (a fact noted by the Board in its September 17, 1987 Order) and accordingly, any proffer now would not meet timeliness or good-faith requirements of the new rule. LILCO Supplemental Brief at 13. Intervenor's assertions that they would not follow any emergency plan offered by LILCO are contrary to the "best-efforts" assumption and to the new regulation. LILCO Reply at 27. The Board's earlier reliance on Intervenor's statements that they would not follow LILCO's plan must, in light of the new rule, now be changed. LILCO Supplemental Brief at 4. The only issue remaining is whether New York State and Suffolk County, using their best efforts, would somehow detract from the safety provided by the

LILCO plan. But, in LILCO's view, this issue was for resolution by means of summary disposition and not by litigation. LILCO Answer at 20. The new rule makes clear that if the presumption of following the utility plan is to be rebutted it cannot be by arguments that the Governments' responses will be *ad hoc* but only by a timely, good-faith proffer of a better government plan. The proffer of a worse plan would not be good faith. *Id.* at 26. In fact, Intervenor has repeatedly argued in this case that an *ad hoc* response is inadequate. LILCO Supplemental Brief at 6.

The Intervenor initially contend that the Licensing Board's September 17, 1987 Order dictates that the new rule presumption of following the utility plan cannot be applied in the present proceeding. This finding was based on affidavits in the record from Governor Mario Cuomo and Suffolk County Executive LoGrande that the LILCO plan would not be used by the State or the County. This ruling was confirmed by the Board's October 29 Order wherein it stated that it remained an open question as to how the Governments would respond in an emergency. Governments' Reply at 14-15. The new rule did not vacate CLI-86-13 or provide any basis for invalidating decisions (like the September 17 Order) made pursuant to it and the evidentiary record. In fact, the Commission's discussion of the new rule makes clear that decisions under it must be based on the facts and evidentiary record in each particular case. And the Board's previous rules were in fact based on the record. Since neither Governor Cuomo nor any other State or County official has expressed an intent "to refuse to act to safeguard the health and safety of the public" in the event of an emergency at Shoreham, the Commission's direction to the Board to reject any such claim has no relevance in this case. Governments' Reply at 16-19. Any interpretation that the presumption in the new rule can only be rebutted by the one specific example mentioned — an adequate state and/or local plan — would essentially make the "rebuttal" presumption an "irrebuttable" one. *Id.* at 23. Also, the Governments could not be barred on timeliness grounds from attempting to rebut the presumption, if they chose to do so, since the rule only became effective on December 3, 1987, and a rebuttal cannot be rejected before it is even proffered. *Id.* at 23-24.

The Staff argues that Intervenor either must come forward with another plan that meets NRC planning standards, or it is to be presumed that they will generally follow the LILCO plan. They can no longer claim that they will respond but will not follow the LILCO plan since this conflicts with the new rule. Staff Reply at 13. The new rule and the Commission's Statement of Consideration in adopting it make clear that the utility plan is presumed to be followed unless it is shown by the Governments that the best efforts will be based on another acceptable plan that would in fact be implemented. Staff Supplemental Brief at 4.

Board Guidance

The Commission's decisions in CLI-83-13 (17 NRC 741 (1983)) and CLI-86-13, *supra*, collectively affirmed that a utility-sponsored emergency plan offered in cases of nonparticipation by state and/or local governments must be evaluated for adequacy and that a best-efforts governmental response, also requiring evaluation, would materialize in the event of a radiological accident. In our previous consideration of motions for summary judgment, we indicated, as we do here, that LILCO was not entitled to a decision on the merits of the "legal authority" contentions, since the adequacy of the Governments' response in fulfilling regulatory requirements had yet to be determined. We stated there that the Commission expected the Board to determine what the Intervenor's response would be and, since the Commission did not specify completely the scope of issues to be heard, we requested comments from the parties on what question were to be answered, the extent to which the existing record can be relied on, and where additional evidence needed to be taken. Board Memorandum and Order, October 8, 1987. It is evident from the summary of the party's submittals, *supra*, that LILCO and Intervenor are far apart on their respective views, the one concluding the new rule satisfies any gaps in the record, thereby justifying summary disposition of the remaining issues, and the other that the Governments' continued denials that they will follow LILCO's plan essentially leave the case where it was, with the new rule having little impact, if any.

In the new rule, the Commission not only incorporated the "best-efforts" or "realism" doctrine of CLI-86-13, but "amplified and clarified" the guidance provided in that decision. We are directed to not only not accept statements of noncooperation by governmental officials at face value, but in an evaluation of the adequacy of a utility's emergency plan, to take into account the probable response of state and local authorities. See Commission Discussion of Final Rule 52 Fed. Reg. 42,078. Except for that guidance and a rebuttable presumption, discussed below, that state and/or local governments will follow a utility's plan, the new rule basically confirms the remand directions of CLI-86-13 which were evaluated in the Licensing Board's September 17, 1987 Order.

We conclude, therefore, that the new rule reinforces our previously considered judgment that the Board's responsibility is to ensure that the LILCO plan supported by a best-efforts response meets the test of adequacy under the Commission's rules and regulations. In carrying out that responsibility, however, it would deprive any proceeding of a meaningful purpose if the rule was interpreted to permit any state or local government to successfully demonstrate a continuing nonparticipatory role. We are confident that the Commission did not intend to dictate to any state and/or local government what particular response it should devise to cover public emergency situations, but neither did it contemplate that no emergency response would materialize. 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 Intervenor here. In that event, the LILCO plan will be evaluated for adequacy alone.

The Commission has stated its conviction that state and local participation in emergency planning was not only desirable, but essential for maximum effectiveness. However, the absence of such participation cannot be viewed as an absolute impediment to licensing of substantially completed nuclear plants since that would result in a *de jure* veto power in the hands of state and local government officials over the operation of nuclear electric facilities. See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-83-22, 17 NRC 608, 624 (1983). Accord Commission's Discussion of Final Rule, 52 Fed. Reg. 42,080 (1987). The fundamental purpose of the new rule is to provide criteria for evaluating utility-prepared emergency plans in cases where, in fact, state and local governments do not participate in such planning. In providing specific guidance for evaluating the adequacy of the governments' response and the utility's compensatory emergency plan, the rule provides, through the use of the word "may," a presumption that the utility's plan will be followed, a presumption rebuttable, however, by other responses, as for example, producing an adequate and feasible government emergency plan that would be relied upon. It is hardly credible that the Commission intended — in light of the sole purpose of the rule itself — that licensing boards could decide arbitrarily that state and local governments need not respond to any emergency plan — or at all — during a radiological accident. Such an interpretation, as the Intervenor contend for here, would reduce any "best-efforts" response at best to some indeterminate *ad hoc* responses, which in a fast-moving radiological accident scenario could have a catastrophic effect on the public's health and safety. Assuming some detailed response will develop underlies the Commission's summary comments accompanying the publication of the new rule that the rulemaking record strongly supports the proposition that state and local governments believe a planned response preferable to an *ad hoc* one. 52 Fed. Reg. at 42,082. We are obligated therefore to view Intervenor's obligation, in the context of this proceeding, as looking to the utility's plan to rely on in an emergency, or following some other plan *that exists*. *Id.* (emphasis supplied). Further, we see no conflict between Appendix E and the new rule. It is an established method of statutory construction that provisions of complementary regulations should be read together where possible. And read in that vein here, it is clear that no conflict was intended by the Commission. The new rule provides that due allowance is required to be given where nonparticipation of state or local authorities makes compliance with § 50.47(b) infeasible, and, since Appendix E supplements those standards, due allowance for compensatory measures is

directed to be made for the requirements of Appendix E also. Beyond that, the Applicant alleges in its brief that the planning requirements of Appendix E will be or have been satisfied by its emergency plan and its Revision 9. LILCO Brief at 10.

A question can be raised on the Commission's intent in incorporating in the new rule a presumption that either the utility's emergency plan or, for example, some other adequate state or local response plan must be forthcoming to rebut its use. From the beginning of the concept of emergency planning surrounding nuclear plant facilities, state and local governments have been intricately involved in the Commission's deliberative processes. See NUREG-75/111. Prior to the adoption of § 50.47 in 1980, the Commission, consulting with and receiving advice from a number of state and local officials on emergency planning, evidenced not only a consciousness of nonfederal governmental responsibilities but considered those entities as valuable and necessary adjuncts in the agency's planning process. Thus, in the Statement of Consideration accompanying the emergency planning rule in 1980, the Commission noted its belief that state and local officials would endeavor to provide fully (through emergency planning) for the public's protection. See 40 Fed. Reg. 55,402 (1975). And it recognized in the new rule that for 200 years, in actual emergencies, state and local (and federal) officials had demonstrated their efforts in protecting the public. 52 Fed. Reg. at 42,082. Licensing boards were admonished accordingly not to accept any claim that state and county officials would refuse to act in a radiological emergency. The Commission has stated here again, as it did in CLI-86-13, that emergency planning rules are flexible and the ultimate test to be applied is to ensure that, whatever plan is used, adequate protective measures will be provided. It appears clear from the guidance set forth in the new rule, that the Commission had no intent to have specified in complex detail what responsive measures a nonparticipating government — state or local — will provide in an emergency. However, whatever measures are planned, the Commission's rules do require that that plan be produced and evaluated for adequacy. Otherwise, it is to be assumed that the utility's plan will be utilized as the only available coordinated plan in existence.

This is not to say that Applicant's position is valid that the Intervenor, who have failed to reveal the nature of their responses in the past, have lost their opportunity to do so now. The Intervenor are still entitled to challenge the adequacy of the LILCO emergency plan supplemented by a best-efforts response from the governments (State and/or local) in connection with the activities contemplated in the remaining contentions, and they can also produce a plan of their own which will also be evaluated for adequacy in meeting the NRC's standards. The timeliness and good-faith criteria in the new rule cannot, in our view, be applied *a priori* and in the absence of any proposed response. Intervenor, however, 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 Intervenor is 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. Lacking the presentation of a positive case for analysis and evaluation, a finding of default and an adverse ruling could result in connection with the contention to which such omissions applied.

It is apparent from the present LILCO motions for summary disposition that the Applicant believes that its plan is a complete plan and that with the best effort of State and County resources in terms of expertise, manpower, and communication capabilities combining to fill any gaps in legal authority, a *prima facie* case has been made that its plan is adequate to meet regulatory requirements. The Intervenor argues that the fact that State and local governments are prohibited from delegating legal authority to LILCO has been recognized in prior decisions by the Board and has not been changed by CLI-86-13 or the new rule. This was the principal finding of the *Cuomo v. LILCO* decision recognized by the Board in its September 17 and October 29 Orders. The New York State Court of Appeals reversed *Cuomo v. LILCO*, February 17, 1988, on grounds that an advisory opinion was not a proper exercise of the State's judicial function. We did not intend then, or now, however, to convey the belief that State and County officials could not, under emergency conditions, call upon private entities to assist in performing emergency functions on a temporary basis. And as a factual matter, it is our opinion that the New York laws provide for precisely that set of circumstances. See New York State Exec. Law, art. 2B, §§ 20.1(a)(e), 25.

Under the present status of this proceeding, with the injunctions of CLI-86-13 and the new rule in mind, we believe the proper method of procedure calls for a restatement of the contentions so as to facilitate a resolution of the issues before the Board. Accordingly, since legal authority is no longer the focus of our deliberations, each of the contentions will be reworded to frame the issue to be litigated as follows:

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 and 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, including 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 and 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, including deciding upon protective actions that 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.

We concur with the Staff's views that the forthcoming hearing needs to focus on the Intervenor Governments' implementation of the LILCO emergency plan and on the methods by which LERO and responsible government officials will coordinate responses. The Board raised a number of questions that had in its view no record foundation in its prior rejection of LILCO's summary disposition motions. Board Order of September 17, 1987. LBP-87-26, 26 NRC at 217-23. The Commission has also raised several questions requiring further exploration in its remand decision. See CLI-86-13, 24 NRC at 31. Those inquiries may have been answered by LILCO's revisions to its emergency plan, but they require evidentiary foundation in the forthcoming proceeding. We do not agree, however, that these matters require further amplification through a new contention process, an action argued for by the Intervenor. The current discovery process, which has been authorized on the restated contentions, offers ample opportunity for the parties to explore the additional positions of the litigants on these matters.

The parties disagree over the validity of the current record to support findings by the Board on the adequacy of LILCO's plan supplemented by a best-efforts response. We see no benefit to any prolonged discussion of this matter since the record, consisting of the LILCO plan, prior findings of the Licensing Board, and evidence in the hearing record will speak for itself at the proper time. We have directed the Applicant to submit, in an evidentiary format, those parts of

the existing record that allegedly support its claim for a favorable ruling on the issues from the Board. We intend to restrict our forthcoming hearing to take only "additional evidence where necessary" as directed by the Commission and will use the existing record to the maximum extent possible. *Id.* at 32.

The parties have provided us with their differing views on the burden of proof with regard to the forthcoming hearings of these issues, and we conclude that the burden of going forward in the proceedings will have shifted to the Intervenor after the Applicant submits its *prima facie* case — that LILCO's emergency plan supplemented by the best-efforts activities of State and local government officials will meet the required regulatory standards so that adequate protective measures with respect to the functions called for in the remaining contentions can and will be taken in the event of an emergency. It is assumed in this shifting of the burden of going forward that the presentation to be made by LILCO will have answered questions previously raised by the Board or Commission in its remand decision.

All matters not referred to herein that have been advanced by the parties in their briefs have been reviewed and are not considered essential to the Board's guidance on the forthcoming hearings.

III. BOARD OPINION ON SUMMARY DISPOSITION MOTIONS

LILCO's latest series of motions for summary disposition on the so-called "legal authority" issues included: LILCO's Motions for Summary Disposition of Contentions 5 and 6 (Making Decisions and Telling the Public) (Decisions Motion); Contentions 1 and 2 (Directing Traffic) (Traffic Motion); Contention 10 (Access Control at the EPZ Perimeter) (Access Control Motion); Contentions 4 and 9 (Tow Trucks and Fuel Trucks) (Trucks Motion); and Contentions 7 and 8 (Ingestion Pathway and Recovery and Reentry) (Ingestion/Reentry Motion). The filing also included an introductory document styled, "Introduction: Memorandum of Law on LILCO's Motion for Summary Disposition of Contentions 1-2 and 4-10" (Introduction).

Denial of LILCO's summary disposition motions on the Decisions Motion, the Traffic Motion, the Access Control Motion, the Trucks Motion (except for Contention 9, disposed of on immateriality grounds), and the Ingestion/Reentry Motion was announced in a telephone conference call on February 25, 1988, and confirmed in a Confirmatory Memorandum and Order issued February 29, 1988 (unpublished). In that Order we promised a clarifying written opinion.

All of the motions to be treated here are predicated upon the Applicant's interpretation of the "realism" principle, a principle introduced into this case by the Applicant. As indicated, *supra*, the Commission issued a revised version of § 50.47(c), incorporating and modifying the realism principle that in an

emergency, state and county governments would respond, and the rule is directed at clarifying the proper procedures and applicable requirements where, as here, the state and local governments in the regions around a nuclear power plant have declined to participate in emergency planning for that plant. The Applicant's new motions are predicated on its belief that the provisions of the Commission's new rule now make summary disposition available. Indeed, the "Admitted Facts" upon which these motions rely are, in the main, those of the March 1987 Motion. It is only the applicability of those facts that the Applicant sees as different now that the Commission's new rule is in place.

LILCO's Position

LILCO believes that all of the contentions under consideration are resolvable by applying the "best-efforts" principle enunciated by the Commission in its new rule. Introduction at 2. Although conceding that legal authority for the eight functions addressed by Contentions 1-2 and 4-10 resides with the State and County (*id.* at 3), LILCO believes that that fact means merely that the LILCO organization, LERO, would have to get permission from the local authorities to perform the required functions (*id.*).

LILCO further alleges that the new rule "creates a presumption that 'state and local officials would generally follow the utility plan,'" and that the "only appropriate way to rebut that presumption is the one expressly mentioned in the rule: 'a good faith and timely offer of an adequate and feasible state and/or local radiological emergency plan that would in fact be relied upon in a radiological emergency.'" *Id.* at 10. LILCO further cites the Statement of Considerations accompanying the new rule, in which the Commission said that the rulemaking record "strongly supports the proposition that a planned response is preferable to an ad hoc one." *Id.*, citing 52 Fed. Reg. at 42,082. This chain of citations leads LILCO to the conclusion that the "follow-the-utility plan" presumption simply cannot be rebutted by allegations that the authorities would respond *ad hoc* and ignore an approved plan. *Id.*

Thus LILCO alleges that "[a]bsent specifics, the Intervenor's claim that they 'would not use the LILCO plan' is meaningless. The plain truth is that the authorities would do either what the LILCO plan calls for or something better. If they would do what the plan calls for, then the response has already been litigated. If they would do something better, then *a fortiori* it would meet NRC standards." *Id.* at 12.

This logic ignores the fact that the plan has not already been litigated (both in this proceeding and in the exercise proceeding there are still bars to complete approval).

It is this syllogism: the LILCO plan is acceptable; the local authorities would use the LILCO plan or something better; *ergo*, the local authorities would

use something acceptable or better; which runs as a thread through the entire set of motions for summary disposition.

LILCO also characterizes the Governments' position as "based on the proposition that Intervenor will never 'implement' the LILCO Plan because they, not the NRC, have decided the plan is inadequate." *Id.* at 18. And LILCO cites various Board and Commission opinions to the effect that some parts of the plan have already been approved, thus presumably making the adequacy of the plan the law of the case. *Id.* at 16-18. Here we would agree only to the extent of confirming that, as LILCO repeatedly points out, it is for the NRC to decide whether the LILCO plan is adequate; it is not for the Governments to decide.

In the Decisions Motion, LILCO analyzes the manner in which, it believes, decisions would be made to sound the alarms and warn the public. LILCO avers that the "best-efforts" principle of the new rule compels the conclusions that: (1) the County would agree to sound the sirens LILCO has provided (Decisions Motion at 2, 12-13); the County Executive would allow the use of the LILCO EBS to broadcast either LILCO's messages or his own (*id.* at 16-17); either the State (*id.* at 6) or the County (*id.* at 19) would assume command and control (*see also* Introduction at 4); the actions of those in charge would be taken in coordination and communication with LILCO and LERO (Decisions Motion at 19-24).

LILCO appends to its Decisions Motion a "Statement of the Material Facts as to Which There Is No Genuine Issue to Be Heard on Contentions 5 and 6." The Statement comprises twenty-two separate assertions, some with subparts. Of these, Nos. 1, 2, 12, 13, 15, 16, 19, and 20 set forth details of LILCO's OPIPs or EPIPs that concern the manner in which LILCO employees are to communicate with the governments in an emergency. Those numbered 4, 6, 7, 8, and 21 describe features of the New York State Radiological Emergency Preparedness Plan or the New York Emergency Management Office. Numbers 9, 10, 11, and 22 describe details of the so-called "Vorhees" Plan developed for (but rejected by) the County. Numbers 5, 14, 17, and 18 concern the features of plans for other New York counties. And the statement numbered 3 quotes the FEMA Post-Exercise Assessment of the February 13, 1987 exercise as saying that LERO demonstrated an ability to coordinate with FEMA simulators of state and local officials. *Id.*, Attach. 1.

The Traffic Motion asserts that the "best-efforts" principle dictates that the Suffolk County police would implement traffic control in the field. Traffic Motion at 2. It further indicates that the police would have the resources and knowledge requisite for implementation of the plan (*id.* at 2-4), basing this allegation on the "Admitted Facts" submitted with LILCO's Second Renewed Motion (March 20, 1988) that there are a given number of officers available, that the police department operates 24 hours a day, and that it has a communications system. The motion purports to find support for the notion that the Suffolk

County Police Department will have sufficient resources to carry out the LILCO plan in a recently released guidance document, NUREG-0654, Supp. 1, which "includes the reasonable assumption that" state and local officials will have sufficient resources available to implement a utility plan where necessary. Traffic Motion at 3. Finally, the motion states that the "best-efforts" principle "forecloses the argument that the police would drastically deviate from the LILCO plan, or simply ignore the advice of trained traffic guides, in favor of some spur-of-the-moment, *ad hoc*, response of their own." *Id.* at 8. Attached to the motion is a list of eleven matters alleged to be . . . Material Facts as to Which There Is No Genuine Issue to Be Heard . . . *Id.*, Attach. 1. "Fact" No. 1 asserts that Suffolk County has the resources to direct traffic during an evacuation. Fact No. 2 says the Suffolk County Police Department has responded to calls from the Shoreham facility. *Id.*, citing the Crocker Affidavit. The others merely list and describe the OPIP sections that instruct LILCO personnel in procedures for coordinating with local authorities.

The Access Control Motion divides the notion of access control into two time frames: short-term control, or control during an evacuation; and long-term control, or control after the evacuation has been completed. Access Control Motion at 3, 4. LILCO argues that the short-term control proposed has already been approved, citing our Partial Initial Decision, LBP-85-12, 21 NRC at 804-05. Access Control Motion at 3. That decision did indeed approve the methodology of the control proposal (which was to be implemented by LERO Traffic Guides). Read in context, however, it did not approve, or even speak to, the question of whether the plan could indeed be implemented, assuming a best-efforts State and County response.

As to long-term control, LILCO invokes the "best-efforts" principle in conjunction with an assertion of adequate police resources in much the same fashion as it did in the Traffic Motion. *Id.* at 4-8. Finally, LILCO pleads that this portion of Contention 10 merely duplicates other contentions and refers us to its treatment of Contentions 7 and 8 in the Ingestion/Reentry Motion. *Id.* at 8. The Access Control Motion includes a "Statement of Material Facts as to Which There Is No Genuine Issue to Be Heard . . ." with three numbered statements.

The first of those statements says that the Suffolk County police would provide access control. It cites our Special Prehearing Conference Order (Ruling on Contentions and Establishing Schedule for Discovery, Motions, Briefs, Conference of Counsel, and Hearing) of August 19, 1983 (unpublished). LILCO misreads our order. In that order we refused to admit a contention that alleged the absence of letters of agreement with the police to ensure that the police would maintain security within evacuated areas. We relied on the assumption that police departments would perform their normal duties. Controlling access to the EPZ is not a day-to-day police function. Indeed, the EPZ perimeter is a

hypothetical boundary that is largely ignored in routine life. Whether the police could or would mobilize to control it in an emergency is scarcely a matter "as to which there is no genuine issue." "Fact" No. 2 says the police have adequate resources, a statement vigorously disputed by the County. "Fact" No. 3 says the police know which intersections would have to be controlled. *Id.*, citing County's Testimony, ff. Tr. 2260. That may well be. The police deny that they would or could control them.

That portion of the Trucks Motion which deals with Contention 9 has been mooted by our Order of March 11, which granted summary disposition of Contention 9 on grounds of immateriality. We still have before us the Trucks Motion to the extent it seeks disposition of Contention 4, dealing with tow trucks. The motion, in essence, simply asserts that, as with the other contentions dealt with here, the County (or if not the County, the State) would simply allow LERO to use its trucks to remove obstacles from the roads in a radiological emergency. Trucks Motion at 1, 5-6. That would, LILCO believes, constitute a "best-efforts" response by the Governments. *Id.* at 6. In that hypothesis, LILCO offers an argument not unlike that offered in the Decisions Motion. *Id.* at 5. Here, however, LILCO also offers the affidavits of Charles A. Daverio and Jay Richard Kessler to show that LILCO routinely cooperates with local authorities in matters requiring LILCO to remove road obstructions or reroute traffic around them. *Id.* at 2, 5; Accompanying Affidavits. LILCO also appends to this motion a "Statement of Material Facts as to Which There Is No Genuine Issue on Contentions 4 and 9." Two of these (Nos. 3 and 5) pertain to Contention 9, and hence are moot. One (No. 1) simply asserts that the LERO road crews have radios. The other two, however, assert that Suffolk County lawfully could, and would, direct or permit LILCO crews to remove obstacles from the roadways in an emergency under the conditions imposed by a "best-efforts" response. *Id.*, Attach. 1. That notion is clearly disputed by the Governments.

In the Ingestion/Recovery Motion, LILCO tells us that there is, in effect, a dichotomy of responsibilities at most power plants for the ingestion pathway, recovery, and reentry functions in an emergency. Ingestion/Recovery Motion at 1, 18, 20, 24. The State takes a major role described by a generic State plan, the counties take roles described by appendices that contain the plans developed by the counties themselves; the one for Suffolk County, of course, is lacking. *Id.* at 2. LILCO sets forth its hypotheses in considerable detail (*id.* at 3-26) describing how State and County would interact, always assuming that the County, at least, would be constrained by the "best-efforts" principle to follow the LILCO plan in the absence of a County plan. *Id. passim.* LILCO stresses that the State would have no difficulty in responding and coordinating with the County in matters regarding the ingestion pathway EPZ at least since the County is within the ingestion pathway EPZ for other reactors for which State plans exist. *Id.* at 19. Again, as with motions concerning the other contentions and in the Introduction,

LILCO repeatedly tells us that the force of the new rule compels us to assume that the local authorities, where they have no plan of their own, will use the LILCO plan.

LILCO also appends a "Statement of the Material Facts as to Which There Is No Genuine Issue to Be Heard on Contentions 7 and 8." These comprise fifty-five statements generally outlining features of the New York State Radiological Emergency Plan, plans for counties other than Suffolk, and LILCO plan features, all of which are alleged by LILCO to be descriptive of what the State would do in a "best-efforts" response to an emergency. Two statements (Nos. 54 and 55) note that FEMA tested the ingestion pathway response for the Ginna plant and provided New York's plan with favorable comments.

The Governments' Position

On February 10, 1988, the Governments submitted their replies to the motion. These included their Overview Memorandum in Support of Governments' Opposition to LILCO's Motions for Summary Disposition of Contentions 1-2 and 4-10 (Overview), and separate documents opposing LILCO's Summary Disposition motions on Contentions 5 and 6 (Decisions Answer); Contentions 1 and 2 (Traffic Response); Contention 10 (Access Control at the EPZ Perimeter) (Access Opposition); Contentions 4 and 9 (Trucks Response); and Contentions 7 and 8 (Ingestion Pathway and Recovery and Reentry) (Ingestion/Reentry Response). Attached to these documents were affidavits as follows: Affidavit of Mario M. Cuomo, Governor of the State of New York, February 8, 1988 ("Cuomo Affidavit"); Affidavit of Patrick G. Halpin, Suffolk County Executive, February 9, 1988 ("Halpin Affidavit"); Affidavit of Richard C. Roberts, Suffolk County Police Department, February 9, 1988 ("Roberts 1988 Affidavit"); Affidavit of Richard C. Roberts, Suffolk County Police Department, September 25, 1984 ("Roberts 1984 Affidavit"); Affidavit of James E. Papile, James C. Baranski, and Lawrence B. Czech, New York State Radiological Emergency Preparedness Group, February 10, 1988 ("REPG Affidavit"); Affidavit of James E. Papile, New York State Radiological Emergency Preparedness Group, May 11, 1987 ("Papile Affidavit"); Affidavit of Karla J. Letsche, Kirkpatrick & Lockhart, February 10, 1988 ("Letsche Affidavit"); and Affidavit of Richard J. Zahnleuter, State of New York, February 10, 1988 ("Zahnleuter Affidavit").

Governments' Overview first lists three statements that it deems "reasons" for denying LILCO's motion. First, the Governments allege that LILCO's interpretation of the new § 50.47(c)(1) is erroneous. They believe that LILCO interprets the new rule as eliminating any requirement for fact-finding on the nature of a "best-efforts" response. The Governments see LILCO's treatment of "best efforts" as simply a plea for us to accept LILCO's hypotheses concerning the Governments' response to a radiological emergency without further

inquiry. Overview at 5-6. They cite the rulemaking for the notion that the Commission did not intend that the nature of a "best-efforts" response would be accepted without examination. Indeed, the Commission said that the licensing of a plant would depend upon "the record developed in a specific adjudication" *Id.* at 6, *citing* 52 Fed. Reg. 42,081. We agree. But we caution again that the need to develop a record does not (and we amplify this below) mean that the Governments, by blocking the development of a record, can indefinitely postpone a decision. The Governments further point out that the uncontroverted sworn statements of their responsible officials indicate that they would not use the LILCO plan or cooperate with LILCO. We intend to find out what it is that they *would* do.

Second, the Governments argue that LILCO's "realism" and "best-efforts" concepts assume the Governments would "permit" or "authorize" LILCO to perform police power functions itself. This, they believe, is contrary to New York law and to the law of the case. They argue that in both our PID and our Order of September 17, 1987, we accepted the notion that *Cuomo v. LILCO* precluded such an assumption. Overview at 8-9, *citing* LBP-85-12, 21 NRC at 911; LBP-87-26, *supra*.

Third, the Governments see the recent Decision of the OL-5 Board (LBP-88-2, 27 NRC 85 (1988)) as "compel[ling] summary rejection of the LILCO Motions." In essence, the Governments' reasoning is that, since the cited decision found "fundamental flaws" in the implementation of the communication and training portions of the plan, the Board is precluded from finding that a response that relied upon the plan could ever be adequate. Overview at 9-10. We cannot accord this chain of logic much weight. While our colleagues did indeed find that fundamental flaws in the plan were revealed by the exercise, they did not suggest that those flaws were uncorrectable. Quite the opposite: they specifically rejected the notion (there put forward by LILCO) that a fundamental flaw would perforce require a substantial effort to correct. LBP-88-2, 27 NRC at 92. We reason, therefore, that, while the present plan may be flawed, such flaws would present no bar to its use if they were corrected.

The Governments correctly point out that the primary difference between the present motion and the motions previously denied seems to be LILCO's belief that the new rule, standing alone, entitles LILCO to a summary ruling without further inquiry. That idea is grounded upon LILCO's interpretation of the "best-efforts" provisions of the rule, and that interpretation in turn rests on LILCO's view of the presumption that "state and local officials would generally follow the utility plan," a presumption that LILCO views as mandatory and Governments view as optional. Overview at 10-13. The Governments argue that accepting such an assumption would require us to ignore the sworn statements of the Governor of New York and the Suffolk County Executive. The Governments

also disagree with LILCO's position that the only way to rebut the assumption mentioned in the new rule is to offer an adequate State and County plan.

The Governments then assert that LILCO's assumption that an *ad hoc* response would be "guided" or "defined" by the litigation of the Plan that has occurred in this proceeding is "a variation on the . . . LILCO argument that the Plan has been 'approved.'" *Id.* at 13-14.

The Governments also assert that the defense LILCO has raised against this series of contentions is an affirmative defense, and they cite extensive case law to support the notion that the burden of going forward rests with the proponent of an affirmative defense. *Id.* at 33-41. We have put the burden of presenting the assembled *prima facie* evidence upon LILCO.

And the Overview would have us consider the motions barred by the doctrine of *res judicata*. That attack upon LILCO's motions is founded on the earlier status of *Cuomo v. LILCO* and our previous rulings based upon it. Overview at 41-49. The fact that the New York Court of Appeals has vacated the *Cuomo* decisions considerably lessens the force of that argument. We believe the case has proceeded beyond these considerations, and we intend to pursue the case in its present posture against the background of the revised rule.

In a separate section of the Overview, the Governments expand upon their assertion that the February 1, 1988 Decision of the OL-5 Board requires rejection of the LILCO motions. *Id.* at 49-63. They point out that that Board found fundamental flaws in the LILCO plan, and they therefore argue that there exists no approved LILCO plan and there can be no finding of adequacy by assuming that the Governments would follow the LILCO plan. That is correct as far as it goes. But, as we have noted above, fundamental flaws are by no means uncorrectable flaws. And of course no finding of adequate protection of the public health and safety could be made until the flaws are corrected, regardless of whether it might be LILCO or the local governments who implemented the plan.

The Governments also address a handful of other LILCO arguments they see as erroneous. They are at considerable pains to assure us that their conviction that a 10-mile EPZ is insufficient and their differences with the Commission's result concerning the possibility of orderly evacuation are not challenges to the Commission's regulations. *Id.* at 63-66. Quite so. We will not allow them to be. It is our intent to hold a hearing that will satisfy what the Governments themselves term the new rule's "call for a case-by-case adjudication to find out precisely how the Governments would respond." *Id.* at 66.

The Governments offer the affidavits of Governor Cuomo and County Executive Halpin as evidence that they would not be compelled by Article 2B of New York State law to rely upon or work with LILCO. *Id.* at 66-67. We are, of course, no longer convinced of the accuracy of any party's interpretation of State law. As far as the current status of the case is concerned, we are directed

not to take seriously any government officials' statements that they would not take action during an emergency.

The Overview challenges LILCO's reliance on comparisons with the plans for other plants, especially in connection with the Ingestion/Reentry Motion and the Decisions Motion. *Id.* at 67-72. We deal with the Governments' answers to those motions below.

The Governments would also have us ignore the newly issued Draft NUREG-0654, Rev. 1, Supp. 1, a document upon which LILCO places considerable reliance. *Id.* at 72-73, *citing* LILCO Memorandum (Introduction) at 11; LILCO Motion (Access Control), Attach. 1, Fact 2. The Governments are particularly exercised by the assumptions of that document (set forth at page 2 thereof) to the effect that:

In an actual radiological emergency, State and local officials that have declined to participate in emergency planning will:

- a) exercise their best efforts to protect the health and safety of the public.
- b) cooperate with the utility and follow the utility offsite plan; and
- c) have the resources sufficient to implement those portions of the utility offsite plan where State and local response is necessary.

The Governments argue that the document is only a draft, that it is not to be applied until the process of public comment is completed, that the second and third assumptions have already been clearly rebutted by the Government officials' affidavits, and that FEMA itself has said it could not defend these assumptions. Overview at 72-76, *citing* the affidavits and a letter from FEMA official D. McLoughlin to S. Chilk (April 28, 1987) at 4.

Finally, the Overview characterizes the motions as "premature," noting that they are based upon LILCO's Revision 9 to the Emergency Plan. The Governments complain that they have not had the opportunity to review that revision. This argument, as we state below, is adequate, in and of itself, to support a denial of the motions for summary disposition.

In their Decisions Answer the Governments assert that LILCO's motions repeat arguments already rejected by this Board and the Commission by ignoring significant questions pointed out by both tribunals. Decisions Answer at 5-12, 18-22. It is evident, as we noted above, that LILCO believes that the presence of the new rule, particularly the new rule's language concerning the presumption about state and local participation, gave the LILCO arguments a validity they did not previously have. The Governments also take issue with LILCO's assumption that "permission" or "authorization" to perform the functions would be readily granted. *Id.* at 13-15. Here the Governments' reasoning is heavily dependent upon the earlier decision in *Cuomo v. LILCO*. The Governments also question

the notion that LILCO's plan has already been litigated and found adequate. Decisions Answer at 15-18.

The Decisions Answer also argues, not without some redundancy, that LILCO's hypotheses as to the behavior of New York State and Suffolk County are without basis. In particular the existence of a generic State plan for other facilities, and the existence of a previously drafted (but rejected) plan for Suffolk County, do not, in the Governments' view, constitute the existence of acceptable plans for those governmental entities. *Id.* at 22-34. We are, of course, ordering a hearing simply because we are uncertain what the Governments would do.

Nor do the Governments concede the existence of proper communication facilities between themselves and LILCO. *Id.* at 34-38. We agree that this is one of the matters that must be settled at a hearing.

In general, the Governments see no support for the hypotheses LILCO adduces concerning the manner in which the plan would be implemented. *Id.* at 38-50. And they attach a list of no fewer than forty-one "Material Facts as to Which There Exists a Genuine Issue to Be Heard"

In the Traffic Response, as in the Decisions Answer, the Governments argue that the OL-5 Board found flaws in LILCO's plan and training. Traffic Response at 3, 6, 22-27. They again disagree with LILCO's interpretation of the new rule (*id.* at 4-6, 15-19), and they assert that there is nothing in the record to support LILCO's position that the resources of New York State or Suffolk County are sufficient to accomplish traffic guidance (*id.* at 3-4). They again cite *Cuomo v. LILCO* and the Board and Commission decisions following from it. *Id.* at 9-11. They repeat their claim that the motion is premature since the Governments have not had the opportunity to study Revision 9 of the plan. *Id.* at 12-15. They reiterate that they have neither the authority nor the intent to follow LILCO's plan or to authorize LILCO to do so. *Id.* at 20-22, 27-28. And they deny any substantial familiarity with the plan. *Id.* at 35-37, *citing* their attached affidavits.

Finally, the Governments categorically deny each of LILCO's eleven allegedly undisputed "material facts," offering statements in their attached affidavits of Roberts (1988), Halpin and Cuomo. *Id.* at 39-46.

In their Access Opposition the Governments urge us to reject the "short-term/long-term" dichotomy of access control that LILCO presses upon us. Access Opposition at 7, 9, 13 n.7. They dispute LILCO's assertion that the short-term phase has already been decided in LILCO's favor, pointing out (as we ourselves pointed out above) that the focus of the present dispute is quite different from that dealt with in our PID, centering now on the interaction of State, County, and LILCO rather than on the proposed methods to be used by LILCO Traffic Guides. *Id.* at 9-11. They characterize access control as essential to compliance with the regulations (*id.* at 11-13, *citing* § 50.47(a)(1) and NUREG-0654 § II.J.10.j), and they assert that numerous issues of fact still exist, issues that are not resolved by the "best-efforts" principle and that include matters pointed out

by this Board in its September 17, 1987 Order. *Id.* at 5, 13-22. The Governments append a list of sixteen "Issues of Material Fact in Dispute," some of which (Nos. 6, 8, and 9) repeat questions raised by this Board in its September 17 Order, others of which relate directly to the strategies, training, resources, and familiarity that the Suffolk County Police Department could bring to bear on the access control problem, and the last three of which question the overall adequacy of a "best-efforts" response by the Governments. *Id.*, Attachment.

The Governments' Trucks Response challenges as "false and unsupported" the motion's assumption that LERO personnel would obtain permission from the Suffolk County authorities to remove road obstructions. Trucks Response at 1. The Governments further assert that they are prohibited by law from giving such permission, and that they would not do so (*id.* at 2, 6-10); and they state that "[t]he anecdotal information in LILCO's affidavits are [*sic*] irrelevant to the issue at hand" (*id.* at 10-12). They point out issues of fact previously found unresolved by this Board and allege that the new rule does not affect the status of those issues. *Id.* at 12-15, *citing* Overview, § III. They append a "Statement of Material Facts as to Which There Exists a Genuine Issue to Be Heard on Matters Raised by LILCO's Motion for Summary Disposition of Contentions 4 and 9." *Id.*, Attachment. These sixteen numbered items are, in fact, questions that the Governments view as being still in dispute. Some of them repeat this Board's own questions, propounded when we denied summary disposition in our September 17, 1987 Order. Others simply raise issues concerning the nature and effectiveness of a "best-efforts" response.

The Governments' Ingestion/Reentry Response urges us to deny the Ingestion/Reentry Motion for two primary reasons: First, the Governments allege that LILCO has not dealt with the issues we identified in our Memorandum and Order of September 17, 1987; second, they allege that LILCO grossly underestimates the complexity of the activities required on the part of the State and County in the event of a radiological emergency. Ingestion/Reentry Response at 1, 2. The Governments particularly stress the need for preplanning, training, drills, and exercises. *Id.* at 2, 9, 10, 12, 17, *citing* REPG Affidavit. They allege that the New York Plan cited by LILCO in its motion does not contain, as alleged, detailed procedures. *Id.* at 8, 12, 17, *citing* REPG Affidavit. And they see far larger requirements on the part of the County than LILCO sees. *Id.* at 8, 13, 19, *citing* REPG Affidavit. And they view the fact that Suffolk and Nassau counties are within the ingestion EPZ for other plants as irrelevant, since they consider ingestion EPZ planning to be plant-specific. *Id.* at 16.

The REPG Affidavit addresses each of LILCO's fifty-five "material facts" in turn. A dozen (Nos. 3, 13, 29, 31, 36, 37, 38, 42, 44, 45, 46, and 55) they label "Agreed." REPG Affidavit at 17-27. The bulk of these are simply quotes from the New York plan which the REPG witnesses accept as accurate. Interestingly,

the one agreed fact that does not fit that description is No. 55, which alleges that New York State did well in a FEMA-graded exercise at Ginna.

Another fifteen (Nos. 6, 7, 8, 9, 11, 12, 14, 24, 25, 28, 30, 40, 47, 48, and 51) the witnesses also agree are accurate quotes from the State plan or from LILCO's plan, but they disagree in some measure with the LILCO interpretation.

Twenty-two "facts" (Nos. 1, 2, 4, 5, 10, 15, 16, 19, 20, 21, 22, 23, 26, 27, 32, 33, 39, 41, 49, 52, 53, and 54) the witnesses label "Denied" or "Disagree." In the main, these denials are of the nature of disagreements with the LILCO interpretations of certain features of the New York State plan and the manner in which that plan interacts with the plans of individual counties. Generally speaking, the New York REPG witnesses see the parts taken by individual counties in recovery, reentry, and ingestion planning as much more complex than LILCO sees them. The witnesses also see such things as police actions in an emergency as quite different from day-to-day police actions. Hence they believe that proper response cannot be ensured without preplanning and drills.

A handful (Nos. 17, 18, 43, and 50) the witnesses label "irrelevant." Their relevance (or lack of it) seems to the Board to constitute a matter in dispute. As to the two final facts (Nos. 34 and 35), the REPG witnesses agree that they represent provisions of the LILCO plan, but they doubt LILCO's ability to carry them out.

NRC Staff Position

On February 10, 1988, the NRC Staff filed four responses to the LILCO motions: On Contentions 5 and 6 (Making Decisions and Telling the Public) (Staff Decisions Response); on Contention 10 (Access Control at the EPZ Perimeter) (Staff Access Control Response); on Contentions 4 and 9 (Tow Trucks and Fuel Trucks) (Staff Trucks Response); and on Contentions 7 and 8 (Ingestion Pathway and Recovery and Reentry) (Staff Recovery/Reentry Response). Staff filed no reply to LILCO's Traffic Motion.⁵

In essence, the Staff supports LILCO's motions. In the Staff Decisions Response, the Staff asserts that the "best-efforts" principle "essentially renders moot" LILCO's lack of legal authority to activate the prompt notification system and to make protective action recommendations to the public. Staff Decisions Response at 2. Further, the Staff sees in the present record answers to the questions posed by the Commission in CLI-86-13 and by the Board in its

⁵On February 23, 1988, the Governments filed Governments' Response to NRC Staff Support of LILCO's Legal Authority Summary Disposition Motions. That response recognizes (and dismisses in a footnote) questions raised by the Staff concerning rapidity of emergency response and certain details of the Staff Ingestion/Reentry Response. It then disclaims any intent on the part of the Governments to present further substantive pleading.

September 17, 1987 Memorandum and Order. *Id.* at 2-3. The Staff would have us grant summary disposition. *Id.* at 8.

The Staff's reasoning is that where means exist for alerting and notifying the public (and they do here), the "best-efforts" principle means that local authorities will use these means unless they have some other adequate and feasible system. *Id.* at 4-5. The Staff grants that there remains the question of delay that could be caused by lack of familiarity with the plan or a cumbersome decisionmaking process, but for that question the Staff indicates that its review of Revision 9 of the plan and the coordination procedures therein are still ongoing. If the Staff means that the Board should leave to its (and FEMA's) analysis questions such as delays that might occur (*id.* at 5), we are not inclined to follow that procedure.

The Staff notes that protective measures would be advised by the utility under any circumstances, and sees in that fact (and the "best-efforts" principle) assurance that "[t]his situation is no different from that which might happen were there to have been County participation in planning." *Id.* at 5-7.

The Staff's Access Control Response would have us grant LILCO's motion with respect to Contention 10. Staff Access Control Response at 2, 5. The Staff does not address LILCO's reasoning splitting the matter into "short-term" and "long-term" components, but its analysis parallels LILCO's. Our earlier PID is cited for the idea that LILCO's plan is adequate with respect to access control. *Id.* at 2-3, citing LBP-85-12, 21 NRC at 804-05. As we observed, *supra*, we do not believe that the PID, read in context, settles the matter. The Staff also says, with LILCO, that the Suffolk County Police Department has the resources and familiarity with the plan necessary to carry the plan out. *Id.* at 3-5. The SCPD's denial of both these points seems to us to be good reason to assume there is a material fact in dispute.

In the Staff Trucks Response the Staff gives LILCO qualified support. Recognizing that the OL-5 Board found a fundamental flaw related to communications and realizing that removal of road obstructions might well involve communications, the Staff urges only that we find "that all facts material to summary disposition . . . except those facts concerning the adequacy of internal LERO communications, should be deemed established." Staff Trucks Response at 9. We are told that the assumption that State and County authorities would generally follow the LILCO plan removes the defect of lack of legal authority (*id.* at 2); that the Board's questions as to how obstructions would be removed, who would remove them, and how their removal would be coordinated are all resolved by previous findings on the plan and by the "best-efforts" assumption. *Id.* at 3. These things are true, the Staff says, because under the presumption mandated by the new rule it is the LILCO plan that will be implemented. *Id.* at 5. Questions of timeliness in implementation are, the Staff believes, settled by the record, which establishes that some SCPD officers are familiar with the plan and that the plan

provides for coordination with the SCPD. *Id.*, citing Testimony of Roberts, *et al.*, fol. Tr. 2180; OPIP 3.6.3, Attach. 15.

The Staff Ingestion/Reentry Response supports summary disposition of both Contentions 7 and 8. Staff Ingestion/Reentry Response at 1, 9. With regard to the ingestion pathway contention, Contention 7, we are told that our ruling in our September 17, 1987 Memorandum and Order was simply wrong; that our concern as to whether the two entities, LILCO and the Governments, might work at cross-purposes was, even then, unfounded, since “[a]ny conflict between the State and LILCO response is prevented by the LILCO Plan itself.” *Id.* at 3-4, citing LBP-87-26, 26 NRC at 222; OPIP 3.6.6.

We are also told that the regulatory presumption of the new rule mandates that the Governments will either follow the LILCO plan or some other plan that is “adequate.” *Id.* at 5.

Contention 8, we are told, involves only questions that are already answered in the record. The plan provides that LILCO will defer to and support the State in connection with the ingestion pathway, and State authorities can be quickly familiarized with the specific needs of the Shoreham ingestion EPZ. *Id.* at 7-9. The last, of course, is a notion with which the State REPG authorities strongly disagree. *Vide supra.*

Board Analysis

We believe that the posture of this case is such that the actual “legal authority” point in these contentions is no longer at issue. In order to more closely conform the contentions themselves to the points in dispute, we directed in our Confirmatory Order of February 29, 1988, that the contentions were to be reformulated, and we set forth reformulated versions of each in this Memorandum.

After careful consideration of all the filings submitted in this matter, we declined to grant summary disposition on Contentions 1, 2, 4, 5, 6, 7, 8, and 10. We conclude there have been a number of material facts raised relating to genuine issues to be heard on the adequacy of LILCO’s emergency plan, assuming a best-efforts response from the State and the County; the state of knowledge concerning details of the plan; and questions related to the availability of State and County resources. Specifically, there are denials of LILCO’s ability to communicate with responsible State and County officials in an emergency, alleged failure in requirements for a site-specific Shoreham emergency plan, questions concerning past emergency response performances of LILCO personnel, and failures to designate responsible County officials to act in an emergency, issues connected with LILCO’s traffic control plan, the adequacy of police resources, and a lack of flexibility in response plans; the necessity of prior training and relevance of emergency plans in other areas

of other New York State nuclear facilities. Additionally, and not of minor significance to this decision, is Intervenor's affidavits from counsel representing Suffolk County and the State of New York concerning the lack of opportunity to review and analyze Revision 9 of the LILCO plan. There is no argument that the plan's revision was received by the parties on January 25, 1988, and that the revision plays a fundamental role in LILCO's emergency plan and the proposed best-efforts response by State and County governments. In light of Intervenor's response to a very substantial filing of LILCO's summary disposition motions being due and submitted on February 10, 1988, and, in view of other filing requirements concerning this and related proceedings, the Board is unable to conclude that the Governments' claim for lack of time to review and analyze the changes and revisions is unwarranted. Accordingly, the application of 10 C.F.R. § 2.349(c), to Applicant's motion for summary disposition forms a part of our denial here. We again point out to Intervenor the uselessness of their continued submission of presumed statements of material facts under the format of questions on their perception of unresolved issues. If it were not for the affidavits of Papile, Roberts, the REPG group, and counsel representing New York State and Suffolk County, the margin for denying the motions for summary disposition would have been more narrow.

THE ATOMIC SAFETY AND
LICENSING BOARD

James P. Gleason, Chairman
ADMINISTRATIVE JUDGE

Jerry R. Kline
ADMINISTRATIVE JUDGE

Frederick J. Shon
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 8th day of April 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Dr. Robert M. Lazo, Chairman
Dr. Richard F. Cole
Dr. Emmeth A. Luebke

In the Matter of

Docket Nos. 50-250-OLA-2
50-251-OLA-2
(ASLBP No. 84-504-07-LA)
(Spent Fuel Pool Expansion)

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

April 19, 1988

In this Initial Decision the Licensing Board resolves the two remaining contentions in Licensee's favor and orders that the license amendments issued by the Office of Nuclear Reactor Regulation on November 21, 1984, remain in full force and effect without modification. The Board finds that the Licensee's seismic analysis for the new Turkey Point spent fuel pool racks shows that the rack design satisfies the structural aspects of GDC 2, 4, 61, and 62, and thus there is reasonable assurance of safe storage of fuel in the event of an earthquake. The Board also finds that, contrary to Intervenor's assertion, the Licensee and Staff have adequately considered materials spent fuel pool integrity during the storage under the expanded capacity.

APPEARANCES

Joette Lorion, Miami, Florida, for the Intervenor Center for Nuclear Responsibility, Inc., and Joette Lorion.

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

Mitzi A. Young, Esq., and Janice E. Moore, Esq., for the Nuclear Regulatory Commission Staff.

INITIAL DECISION

I. INTRODUCTION AND BACKGROUND

Florida Power & Light Company (FPL or Licensee) is licensed to possess, use, and operate the Turkey Point Nuclear Generating Plant, Units 3 and 4, two pressurized water nuclear reactors located in Dade County, Florida.

On March 14, 1984, the Licensee applied for amendments to allow the expansion of the capacity of each unit's spent fuel pool from 621 fuel assemblies to approximately 1404 fuel assemblies.¹ This application was supported by a Safety Analysis Report which addressed various safety matters related to the expansion and concluded that the proposed modification of the Turkey Point spent fuel pools would continue to provide safe storage of spent fuel. On June 7, 1984, pursuant to 10 C.F.R. § 2.105(a)(4)(i), the Nuclear Regulatory Commission published in the *Federal Register* a notice of consideration of the issuance of amendments to the facility operating licenses and offered the opportunity for a hearing on these amendments. 49 Fed. Reg. 23,715 (1984). On July 9, 1984, the Center for Nuclear Responsibility, Inc. (Center), and Joette Lorion (collectively referred to herein as Intervenor) filed a timely request for a hearing and petition for leave to intervene in the license amendment proceeding.²

The NRC Staff applied the standards of 10 C.F.R. § 50.92 and made a final determination that the amendments involved no significant hazards consideration. 49 Fed. Reg. 46,832 (1984). Consequently, on November 21, 1984, the NRC issued the license amendments to allow the expansion of the capacity of the spent fuel pools notwithstanding the pendency of the Intervenor's petition

¹ Letter from Mr. J.W. Williams, Jr. (FPL), to Mr. D.G. Eisenhut (NRC) (March 14, 1984) (Turkey Point Units 3 and 4, Docket Nos. 50-250 and 50-251, Proposed Amendment to Spent Fuel Storage Facility Expansion).

² Request for Hearing and Petition for Leave to Intervene, July 9, 1984.

to intervene. In conjunction with the issuance of the amendments, the NRC Office of Nuclear Reactor Regulation issued a Safety Evaluation for the expansion which concluded that there is reasonable assurance that the health and safety of the public will not be endangered by the expansion.³

On March 7, 1985, Intervenor submitted an Amended Petition to Intervene which included ten proposed contentions. On March 27, 1985, the Licensing Board held a prehearing conference in order to consider Intervenor's petition to intervene. By Order of September 16, 1985, the Licensing Board admitted the Intervenor as parties and seven of their proffered contentions (Contentions 3, 4, 5, 6, 7, 8, and 10) as issues to be litigated in the proceeding. LBP-85-36, 22 NRC 590 (1985). Contention 1 was rejected because it sought to litigate an issue not cognizable by the Board, and Contentions 2 and 9 were rejected because Intervenor failed to specify an adequate basis for those contentions. In several cases, the Board noted that the admitted contentions were supported by only a "minimally sufficient basis." *Id.* at 596-99.

On October 28, 1985, the Licensee served interrogatories upon the Intervenor.⁴ The Intervenor filed a response to these interrogatories on November 27, 1985.⁵ The Intervenor did not conduct any discovery, and no other discovery was conducted in this proceeding.

On January 23, 1986, Licensee filed a motion for summary disposition of each contention raised by Intervenor.⁶ Licensee's motion was supported by the NRC Staff with respect to every contention except for part of Contention 4.⁷ Subsequently, the NRC Staff submitted its own motion for summary disposition of Contention 4.⁸

Intervenor did not file a response to the NRC Staff's motion for summary disposition. Intervenor's response to Licensee's motion for summary disposition was filed on March 19, 1986.⁹ This response was not supported by an affidavit from any expert or by any other evidence. The only affidavit provided in support of Intervenor's response was that of Joette Lorion, who is one of the Intervenor.¹⁰

After considering the motions for summary disposition, the Licensing Board determined that there were no genuine issues of material fact to be litigated with respect to Contentions 3, 4, 7, 8, and 10 (unpublished). *Florida Power and*

³ NRC Staff Exh. 1.

⁴ Licensee Interrogatories to Center for Nuclear Responsibility and Joette Lorion, October 28, 1985.

⁵ Intervenor's Response to Licensee's Interrogatories to Center for Nuclear Responsibility and Joette Lorion, November 27, 1985.

⁶ Licensee's Motion for Summary Disposition of Intervenor's Contentions, January 23, 1986.

⁷ NRC Staff Response to Licensee Motion for Summary Disposition of Contentions, February 18, 1986.

⁸ NRC Staff Motion for Summary Disposition of the Personnel Exposure Portion of Contention 4, July 14, 1986.

⁹ Intervenor's Response to Licensee's Motion for Summary Disposition of Intervenor's Contention 3, etc., March 19, 1986.

¹⁰ See Affidavit of Joette Lorion on Contentions 3, 4, 5, 6, 7, 8, and 10, March 19, 1986.

Light Co. (Turkey Point Nuclear Generating Plant, Units 3 and 4), slip. op. at 62 (Mar. 25, 1987). The Licensee's motion for summary disposition of Intervenor's Contentions 5 and 6 was denied.

Hearings were held before the Board on Contentions 5 and 6 in Miami, Florida, on September 15, 1987, and September 16, 1987. During the hearing, the Licensee and Staff presented testimony from a series of witness panels. As discussed below, these witnesses generally were in agreement with respect to resolution of Contentions 5 and 6. Intervenor did not sponsor any testimony and did not offer any exhibits or other evidence. Furthermore, with respect to Contention 5, Intervenor did not cross-examine the direct testimony of the Licensee's panel of witnesses. Consequently, the evidence submitted by Licensee and Staff regarding Contentions 5 and 6 is essentially undisputed.

This Initial Decision is based upon the record developed at the hearing. The decision incorporates the Findings of Fact that follow. Any proposed findings submitted by the parties that are not incorporated directly or inferentially in this decision are rejected as being unsupportable in law or in fact or as being unnecessary to the rendering of this Decision.

II. FINDINGS OF FACT

A. Contention 5

1. Intervenor's Contention 5 states:

That the main safety function of the spent fuel pool, which is to maintain the spent fuel assemblies in a safe configuration through all environmental and abnormal loadings, may not be met as a result of a recently brought to light unreviewed safety question involved in the current rerack design that allows racks whose outer rows overhang the support pads in the spent fuel pool. Thus, the amendments should be revoked.

Intervenor gave the following bases for the contention:

In a February 1, 1985 letter from Williams, FPL, to Varga, NRC which describes the potential for rack lift off under seismic event conditions [sic]. This is clearly an unreviewed safety question that demands a safety analysis of all seismic and hurricane conditions and their potential impact on the racks in question before the license amendments are issued, because of the potential to increase the possibility of an accident previously evaluate [sic], or to create the possibility of a new or different kind of accident caused by loss of structural integrity. If integrity is lost, the damaged fuel rods could cause a criticality accident.

The Board admitted this contention by Memorandum and Order dated March 25, 1987 (unpublished) (hereafter "SD Order"). The contention questions whether there is a deficiency in the Turkey Point rack design and a necessity for a restriction on loading to prevent potential liftoff during seismic events. SD

Order at 18. This concern is based on a Licensee letter that indicated that the structural design of the rack, whose outer rows overhang the support pad, could cause the racks to lift off (or more likely tip off) from the pool floor during seismic events. See Letter from J.W. Williams, Jr., Licensee, to Steven A. Varga, NRC, dated February 1, 1985. In our March 25, 1987 Order denying summary disposition, we found that there is no question that properly executed administrative controls would prevent rack liftoff during a seismic event but observed that "there are sufficient doubts as to the basis for issuance of the amendments, particularly the structural analysis involving the safe shutdown earthquake and various loading conditions other than fully loaded and involving the overhanging rows, conditions which the Staff apparently has not evaluated." SD Order at 21, 24.

2. To determine whether administrative controls on loading should be imposed by means of either a license condition or a technical specification requirement for Turkey Point, the Board has applied the guidance of the Appeal Board in *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263 (1979). There the Appeal Board stated:

[T]here is neither a statutory nor regulatory requirement that every operational detail set forth in an applicant's safety analysis report (or the 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 when and until changed with specific Commission approval. Rather, . . . the contemplation of both the Act and the regulations is that technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety.

9 NRC at 273 (footnote omitted).¹¹ Consequently, we will determine whether the administrative controls are necessary to prevent an abnormal situation or event that poses an immediate threat to the public health and safety.

3. The Licensee's direct case consisted of the testimony of a panel of three witnesses: Edmund E. DeMario, an advisory engineer in the Commercial Nuclear Fuel Division of Westinghouse Electric Corporation (Westinghouse); Harry E. Flanders, Jr., a Principal Engineer for the Advanced Engineering Analysis Section of Westinghouse's Nuclear Components Division; and Russell Gouldy, a Senior Engineer in Licensee's Nuclear Licensing Department (ff. Tr. 103).

¹¹ See 10 C.F.R. § 50.36; *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), ALAB-746, 18 NRC 749, 754 n.4 (1983); *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 422 (1980); *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-578, 11 NRC 189, 217 (1980).

Description of the Spent Fuel Pool

4. The Turkey Point spent fuel pools have two storage regions, Region 1 and Region 2. The Region 1 storage racks consist of three major sections, which are the leveling pad assembly, the upper and lower grid assemblies, and individual storage cells made of stainless steel. The cells within a rack are interconnected by grid assemblies to form an integral structure. Each rack is provided with leveling pads connected to the lower grid assembly which contact the floor of the spent fuel pool and are remotely adjustable from above to level the racks during installation. The racks are freestanding and are not anchored to the floor or braced to the pool walls. Support pads for the new racks sit on the existing floor embedment plates which are located at various places along the bottom of the pool liner. Due to the location of the floor embedment plates, some of the support pads for some of the new racks in Region 1 cannot be situated at the corners of the racks. Therefore, some of the outer storage locations on these racks overhang (extend beyond) the support pad. Flanders, ff. Tr. 103, at 3-4; Kim, ff. Tr. 129, at 3-4.

5. The Region 2 storage racks consist of two major sections, which are the leveling pad base assembly and stainless steel cells. The cells are assembled in a checkerboard pattern, producing a honeycomb type of structure. The cells are welded to a base support assembly and to one another to form an integral structure, without the use of grids of the type used for the Region 1 racks. The Region 2 storage racks, like the Region 1 racks, are provided with leveling pads connected to the base support assembly, which contact the pool floor/embedment plates, and which are remotely adjustable from above to level the rack during installation. The racks are freestanding and are not anchored to the floor or braced to the pool walls. Some of the storage locations in some of the Region 2 racks also overhang their support pads. *Id.* at 4.

Analyses

6. In support of its amendment application, the Licensee provided the NRC with the results of an analysis that showed that liftoff or tilt of the storage racks would not occur during a seismic event. This analysis assumed that the Licensee would establish administrative controls to prohibit the loading of overhanging rows of a rack while the remaining rows of the rack were empty. The NRC issued the Turkey Point spent fuel pool expansion amendments in November 1984 on the basis that, with these administrative controls in place, rack liftoff would not occur. This procedure is currently in use at Turkey Point. It requires the preparation and use of a fuel-handling data sheet which designates a specific location within a spent fuel rack for each spent fuel assembly identified by number. The fuel-handling data sheets are prepared with the aid of fuel status

boards which contain diagrams of the reactor and the spent fuel pool that show the locations of currently stored fuel assemblies and the locations where fuel assemblies may be placed. By assigning a specific location for each assembly, the fuel-handling data sheet controls the loading of the racks and prevents the loading of assemblies into overhanging locations until after fuel assemblies are placed into the other storage locations. Prior to their use, the fuel-handling data sheets are subject to review and approval by the Plant Nuclear Safety Committee. These types of administrative controls are common in the nuclear industry and have been used successfully for loading assemblies in spent fuel racks as well as loading fuel assemblies into the reactor. Gouldy, ff. Tr. 103, at 4-6.

7. The Licensee's fuel rack seismic analysis was performed for two cases. Case 1 assumed that administrative controls are in place to prevent loading of fuel assemblies into the overhanging locations until after assemblies are loaded into the other storage locations. Case 2 is an analysis performed by Westinghouse at the request of Licensee, after NRC approval of the license amendments, to determine the potential effect of loading fuel assemblies into overhanging locations while the remainder of the fuel rack is empty. Flanders, ff. Tr. 103, at 14.

8. Standard Review Plan (SRP) § 9.1.2 states that the storage racks should be designed to Seismic Category I requirements (i.e., able to withstand the effects of a Safe Shutdown Earthquake (SSE) and remain functional). Section III of the "OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications" (NRC Position Paper) identifies criteria for performing criticality analyses for spent fuel pools under accident conditions, and it states that the presence of soluble boron in the pool water may be taken into account when analyzing the effects of earthquakes. Section IV of the NRC Position Paper identifies criteria for performing evaluations of the mechanical and structural integrity of spent fuel racks. These criteria state that compliance with the American Society of Mechanical Engineers (ASME) Code provides an acceptable basis for deriving allowable stresses in spent fuel racks. The design of the storage racks is considered to be acceptable if the amplitudes of sliding motion are minimal, if impact between storage racks and the pool walls is prevented, and if the factors of safety against tilting of the racks are within specified values. These criteria are widely used in the nuclear industry for performing seismic analyses of spent fuel racks, and they are recognized as being conservative. Flanders, ff. Tr. 103, at 4-7.

The racks were designed in accordance with Seismic Category I requirements. The structural analysis of the storage racks was based upon the allowable stresses of the ASME Code, and the remainder of the mechanical and structural analysis of the racks was performed in accordance with § IV of the NRC Position Paper. *Id.* at 7-8.

The Licensee's seismic analysis of the spent fuel storage racks used the following conservative assumptions:

- a. The maximum seismic acceleration used in the analyses was the design-basis Safe Shutdown Earthquake (SSE) acceleration for the Turkey Point Plant specified in the Updated Final Safety Analysis Report (FSAR) for Turkey Point.
- b. The structural damping of the seismic acceleration provided by the storage racks was consistent with the value provided in the updated FSAR for welded steel frame structures, and damping provided by the spent fuel pool water was conservatively neglected.
- c. A range of coefficients of friction between the racks and the pool floor embedments were used that bounded the maximum possible rack horizontal displacement (sliding) and the maximum rack horizontal overturning force (tilting).
- d. The storage racks were assumed to be hydrodynamically coupled, thereby producing maximum deflections, loads, and stresses for sliding or tilting.
- e. No loads on the racks were assumed as a result of sloshing of the pool water during a seismic event, because such sloshing would occur in the upper elevations of the pool above the top of the racks.

Id. at 8-11.

9. The Licensee's seismic analysis was performed in two phases. The first phase used a two-dimensional nonlinear model of an individual rack cell. The results of the first phase provided input to the second phase of the analysis, which used a three-dimensional linear model for the purpose of calculating loads and stresses in the storage racks. Use of these two models enabled the Licensee to account for both the nonlinear and three-dimensional responses of the storage racks. In particular, the model used in the first phase directly accounted for nonlinearities and provided input for correcting the loads calculated by the linear model used in the second phase. Similarly, the model used in the second phase provided three-dimensional response data for loads and stresses. Use of a two-dimensional model in phase one to calculate displacements was appropriate because each fuel assembly and storage cell is structurally symmetric about either the *x* or *y* horizontal axis. *Id.* at 11-12.

10. This methodology was applied for both Case 1 and Case 2. The results of the analysis for Case 1, which considered full fuel loading (i.e., fuel assemblies in all storage locations) and various partial loading conditions were as follows:

- a. The fuel rack support points did not lift off or lose contact with the floor of the spent fuel pool when subjected to the specific seismic ground accelerations. The factor of safety against overturning

was much greater than the 1.5 value specified by § 3.8.5.II.5 of the Standard Review Plan.

- b. The maximum relative displacement of a fuel rack was calculated to be 0.256 inch. The relative displacement accounts for sliding, structural, and thermal movement of two adjacent racks toward each other. The gap between adjacent fuel racks is 1.11 inches, and the gap between a fuel rack and the spent fuel pool walls is even larger. Thus, impact between adjacent rack modules or between a rack module and the pool wall is prevented, and the leveling screws will not slide off the embedment plates.
- c. The fuel rack stresses are within ASME Code-allowable limits, i.e., the minimum ratio of allowable stress divided by applied stress is greater than one. The minimum ratios of allowable stress divided by applied stress for the leveling pads, grid assemblies, and cell assemblies, are 1.27, 1.15, and 1.11, respectively. It should be noted that allowable stresses do not represent the point of material failure, but are values that include conservatism inherent in the ASME Code.

The results of the Case 1 analysis conform with the acceptance criteria in the NRC Position Paper and demonstrate that the spent fuel storage racks will be maintained in a safe configuration during postulated seismic events. *Id.* at 15-16.

11. In Case 2, the Licensee analyzed the potential effects of loading fuel assemblies into overhanging locations. The models were adjusted to account for the mass of the fuel in the overhanging rows, and the analysis was conducted for various partial fuel loading conditions with the appropriate seismic ground acceleration inputs. The results of the Case 2 analysis were as follows:

- a. The rack module was predicted to rock and result in liftoff of one side of the rack from the support point. The maximum liftoff of 0.18 inch was produced by loading the three outboard rows on the side of the rack with the most overhanging storage locations. Liftoff of support points is not uncommon for freestanding racks under seismic conditions, and the structural members of the racks are designed to accommodate the stresses produced by liftoff. The liftoff distance was used in an overturn stability calculation, and it was shown that the rack is stable and will not overturn and that the minimum factor of safety against overturn is 8 (which is substantially greater than the 1.5 factor of safety against overturning recommended by § 3.8.5.II.5 of the SRP).
- b. The maximum relative displacement of a fuel rack is 0.709 inch. Relative displacement accounts for sliding, rocking, structural, and thermal movements of two adjacent racks toward each other. This is less than the gap between adjacent fuel racks and between the fuel racks and the spent fuel pool walls. Thus, impact between

adjacent rack modules or between a rack module and the pool wall is prevented, and the leveling screws will not slide off the embedment plates.

- c. Structural loads and stresses are enveloped by the condition of a fully loaded rack. Thus, the maximum stresses produced by the partially loaded racks in Case 2 are less than the maximum stresses calculated in Case 1. Therefore, the applied stresses in Case 2 are also within the ASME Code-allowable stresses.

Id. at 16-17.

12. The results of the Case 2 analysis conform with the acceptance criteria in the NRC Position Paper and demonstrate that the spent fuel storage racks will be maintained in a safe configuration during postulated seismic events. The Case 2 analysis demonstrates this to be true without administrative controls to ensure that spent fuel is not loaded into overhanging portions of the racks until other portions of the racks have been filled. *Id.* at 16-18.

13. The NRC Staff's direct case consisted of testimony by Sang Bo Kim, a structural engineer, and Daniel G. McDonald, Jr., the project manager for Turkey Point, ff. Tr. 129.

NRC Staff Review

14. The structural design of spent fuel pool racks as well as the spent fuel pool must satisfy General Design Criterion 2, "Design Bases for Protection Against Natural Phenomena." GDC 2 provides that fuel storage be designed to withstand the effects of earthquakes without loss of capability to perform its safety function. In addition, the spent fuel pool and pool storage racks must be designed to ensure adequate safety under normal and postulated accident conditions (GDC 61, "Fuel Storage and Handling and Radioactivity Control"). Geometrically safe configurations of the fuel storage system should be used in order to prevent fuel criticality (GDC 62, "Prevention of Criticality in Fuel Storage and Handling"). Kim, ff. Tr. 129, at 4.

15. The NRC review scope and acceptance criteria are described in the "OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications," dated April 14, 1978, and later amended on January 18, 1979 (Operating Technology Position or OT Position). The OT Position specifies acceptable load combinations of weight, temperature, and earthquake. Dead and live loads are considered for normal service conditions. Thermal and earthquake loads are added for accident conditions. Allowable stress levels increase with the severity of the service level. This is generally the industry practice. ASME Code § III. In addition, the OT Position specifies an allowable safety factor for overturning by referencing § 3.8.5.11.5 of the Standard Review Plan (SRP), NUREG-0800. A range of the safety factors between 1.1 to 1.5

are specified depending on load combinations. The OT Position also states that total displacement, including thermal expansion due to temperature as well as movement of the rack due to earthquake (sliding and tilting), should be considered using a detailed nonlinear dynamic analysis that demonstrates that displacement is minimal. Kim, ff. Tr. 129, at 5, 10-11; Flanders, ff. Tr. 103, at 4-6.

16. This Staff criteria allows liftoff or tilting of the racks provided that, as stated in the criteria, (a) the factors of safety against tilting (or overturning) are within the value permitted by § 3.8.4.11.5 of the SRP, and (b) it can be shown that any sliding and tilting motion will be contained within suitable geometric constraints such as thermal clearances and that any impact due to clearance is incorporated. Thermal clearances are calculations of the space between the racks after expansion of the racks due to the heat transferred from the spent fuel assemblies. Kim, ff. Tr. 129, at 11; Flanders, ff. Tr. 103, at 4-6.

17. The Staff's evaluation of Licensee's rack design was performed with the assistance of Franklin Research Center (FRC), the Staff's technical consultant, and published in a safety evaluation supporting the amendments. The NRC Staff performed a review of Licensee's Case 1 analysis. The review consisted of an evaluation of the Licensee's description of the structural configuration of the spent fuel racks as well as the spent fuel storage pool, load combinations, calculations including rack response to an earthquake, resultant stresses in the rack, and comparison of final stresses with allowable stress limits prescribed in the OT Position. The Staff concluded in § 2.3.6 of its Safety Evaluation that the design of the racks satisfied the structural aspects of the Appendix A requirements of 10 C.F.R. Part 50 (GDC 2, 4, 61, and 62) because: (a) the Licensee considered all the required loading conditions including earthquakes and accidents; (b) the analysis methods that calculate stresses and earthquake response were in accordance with industry practice and were acceptable as detailed in FRC's Technical Evaluation Report which is appended to the Staff's Safety Evaluation; and (c) the resultant stresses and overturning safety factors satisfied the allowable limits specified in the Staff OT Position. Kim, ff. Tr. 129, at 4-6; Staff Exh. 1, § 2.3.6.

18. Subsequent to the Staff's November 21, 1984 Safety Evaluation, Licensee, by letter dated February 1, 1985, presented an additional rack earthquake response analysis concerning the loading of the overhanging outer rows. This additional analysis was done as a result of being informed by Westinghouse Electric Corporation, the rack vendor, (a) that lifting of a rack could occur during a seismic event if the outer rows are fully loaded while the rest of the rack is empty and (b) that administrative controls on fuel loading would be needed for those spent fuel racks whose outer rows overhang the support pads. Licensee stated that the analysis results demonstrated that the design of racks with fuel overhang continued to satisfy the OT Position in that there are adequate safety

margins against overturning and stresses in the racks and pool. In addition, Licensee stated that it would provide administrative controls on fuel placement in order to preclude the possibility of rack liftoff. Kim, ff. Tr. 129, at 6.

19. By letter dated February 26, 1985 (McDonald, ff. Tr. 129, at Attachment 3), the Staff responded to Licensee's February 1, 1985 request for NRC review of an analysis that showed that the results of liftoff would be acceptable. Licensee's request for review of the analysis represented a change in the NRC basis for issuing the amendments that authorized the pool expansions. The Staff stated that Licensee could make changes without prior NRC approval provided it performed a review pursuant to 10 C.F.R. § 50.59, "Changes, Tests, and Experiments," and determined that neither a technical specification change nor an unreviewed safety question is involved. The Licensee withdrew its February 1, 1985 request in a letter dated November 13, 1985. Gouldy, ff. Tr. 103, at 4-5.

20. In addition to stating that Licensee could institute a change in the use of administrative controls pursuant to a § 50.59 analysis, the Staff stated that the conclusions in its Safety Evaluation and supporting Technical Evaluation Report (TER) remained valid because administrative controls were initiated prior to any fuel being loaded in the SFP racks with overhanging rows and thus precluded the possibility of any rack liftoff. McDonald, ff. Tr. 129, at 7-8 and Attach. 3.

21. Section 6, of the Turkey Point Technical Specifications, "Administrative Controls," generally require the use of procedures and administrative controls to ensure that all safety-related structures, systems, and components remain within their design basis and can perform their safety function. Section 6.8.1, "Procedures," requires that written procedures and administrative policies be established, implemented, and maintained that meet or exceed the guidance of the American National Standards Institute (ANSI) N18.7-1972 as endorsed by Regulatory Guide 1.33, "Quality/Assurance Program Requirements (Operation)." Under ANSI N18.7-1972, § 5.3.4.5, "Fuel Handling Procedures," fuel-handling operations, which would include the movement of fuel in or about the spent fuel pools, must be performed in accordance with written procedures. Furthermore, § 6.8.3 of the Technical Specifications governs the modification of procedures and permits changes if: (1) the intent of the procedure is not altered; (2) the change is approved by two members of the plant management staff, at least one of whom holds a senior operator's license; and (3) the change is documented, reviewed by the Plant Nuclear Safety Committee, and approved by the plant manager. *Id.* at 9-10.

22. The fuel movement procedure for Turkey Point has been revised to include a restriction that prevents loading of racks with overhanging rows while the remainder of a rack is empty. This procedure is currently being used at Turkey Point as described in ¶ 7.

23. Licensee's seismic analysis of the spent fuel storage rack was performed for two cases. See ¶¶ 7-12. Case 1, discussed earlier, is predicated on the use of administrative controls to prevent loading of overhanging rows while the remaining rows of the racks are empty. That analysis considered full fuel loading and various partial loading conditions. In Case 2, the fuel assemblies are loaded in the overhanging locations before the remaining locations are loaded. The results of Licensee's analysis of Case 2 are consistent with NRC Staff's OT Position. The methodology used to calculate overturning and stresses is the same as that reviewed by FRC and the Staff in connection with the issuance of the rerack amendments. The calculational methodology included a general-purpose computer code that performs rack response analysis for the duration of an earthquake. The results of the analysis of the loading of overhanging rows in the absence of administrative controls satisfy the OT Position. Licensee's calculations and tabulated results show that the total displacements can be easily accommodated by the gaps provided between the racks and between the rack and the pool wall. The results also show that the stresses in the rack and the pool are within the limits specified in the OT Position. Kim, ff. Tr. 129, at 11-12; Flanders, ff. Tr. 103, at 14-18.

24. Specifically, Licensee's calculated factor of safety of 8 against overturning is greater than the SRP minimum value of 1.1. Thus, the criteria are satisfied, and the results indicate that overturning of a rack is unlikely during an earthquake. Licensee calculates a 0.72-inch total combined displacement between racks, attributable to seismic motion and thermal growth. The space between the racks prior to insertion of spent fuel assembly and thermal expansion is designed to be not less than 1.10 inches. Kim, ff. Tr. 129, at 12-13; Flanders, ff. Tr. 103, at 16-18.

25. Consequently, the Staff concluded that administrative controls on fuel loading are no longer necessary for the Turkey Point spent fuel pools. Kim, ff. Tr. 129, at 13.

26. Intervenors did not put on a direct case or offer evidence at the hearing. Intervenors did not cross-examine the Licensee's panel of witnesses. Tr. 104. Referring to the bases for Contention 5, Intervenors point to a February 1, 1985 letter from Williams, Licensee, to Varga, NRC, which describes the potential for rack liftoff under seismic event conditions that raises an unreviewed safety question. Intervenors cite the NRC Staff conclusion in § 2.3.6 of the November 21, 1984 Safety Evaluation that the fuel storage racks satisfied the structural aspects of the Appendix A requirements of 10 C.F.R. Part 50 (GDC 2, 4, 61, and 62). Kim and McDonald at 5; Tr. 126. Intervenors summarize a series of correspondence between the Licensee and Staff regarding the analyses and reviews concerning the loading of the overhanging outer rows with fuel rods. This ends by citing the NRC Staff testimony that it had completed the

reviews, including the Case 2 analysis, and determined that administrative controls were no longer necessary. Kim, Tr. 144.

27. Based on the evidence presented, the Board concludes that Licensee's seismic analysis for the new Turkey Point spent fuel pool racks, and the results of those analyses, comply with applicable NRC criteria. The record shows that the Staff adequately reviewed Licensee's Case 2 analysis against the pertinent acceptance criteria and acted in accordance with the regulations by permitting Licensee to perform a § 50.59 analysis. There is no evidence or record that Licensee has abused this provision. Intervenors did not put on a direct case with evidence. The Licensee's liftoff analysis shows that the fuel rack stresses would be within ASME Code limits, the safety factors for overturning are sufficiently larger than the Staff acceptance criteria, and the total displacement due to seismic motion and thermal growth is less than the cold gap between the fuel racks. Thus, the rack design satisfies the structural aspects of GDC 2, 4, 61, and 62; and there is reasonable assurance of safe storage of the fuel in the event of an earthquake. We find that the sworn testimony regarding the Licensee's analysis and NRC Staff's review supports the conclusion that loading controls are no longer necessary.

B. Contention 6

28. Contention 6 states:

The Licensee and Staff have not adequately considered or analyzed materials deterioration or failure in materials integrity resulting from the increased generation and heat and radioactivity, as a result of increased capacity and long term storage, in the spent fuel pool.¹²

The bases for the contention are:

The spent fuel facility at Turkey Point 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.

¹² In admitting this contention, the phrase "long-term storage" was limited to the storage period authorized by the amendments. LBP-85-36, 22 NRC 590, 598 (1985).

29. In a March 25, 1987 Order, the Board denied summary disposition of Contention 6 and raised an issue as to "the modes and effectiveness of surveillance of materials and the monitoring of the fuel storage pool and contents to provide a measured basis for safety during the extended period of use." SD Order at 33. The question derived from Intervenor's arguments concerning publications by A.B. Johnson, entitled "Behavior of Spent Nuclear Fuel in Water Storage" (BNWL 2256, September 1977) and "Spent Fuel Storage Experience" (Nuclear Technology, Vol. 43, mid-April 1979). While Johnson stated that the technology for handling spent fuel has developed over 35 years and has largely been satisfactory, Johnson concluded that expected spent fuel storage of 20 to 100 years would be an incentive to determine whether any slow degradation mechanisms are operative. The Board also acknowledged the Intervenor's observation that spent fuel presently stored at Turkey Point did not exceed 39,000 MWd/MTU but that under the amendments the plant could operate until burnup of 55,000 MWd/MTU. SD Order at 32, 33.

30. A few months after the Board issued the summary disposition order, the Staff issued new information concerning Boraflex, a neutron absorber material used in the Turkey Point spent fuel pools. BN-87-11, "Board Notification regarding Anomalies in Boraflex Neutron Absorbing Material," dated July 15, 1987.¹³ Boraflex is a relatively new material and will be discussed separately after the other spent fuel pool materials.

31. The Licensee's direct case on Contention 6 consisted of two witness panels: (1) William C. Hopkins and Eugene W. Thomas from Bechtel Eastern Power Company (Bechtel), and (2) Russell Gouldy from Licensee and William A. Boyd and Dr. Gerald R. Kilp from Westinghouse. Mr. Hopkins addressed the impacts of radiation on the spent fuel pool liner and concrete structure. Mr. Thomas addressed the impacts of heat on the spent fuel pool liner and concrete structure. Mr. Boyd addressed the impacts on K-effective of postulated gaps in the Boraflex poison material in the spent fuel racks. Hopkins, Thomas, and Boyd, ff. Tr. 222, at 9-14. Mr. Gouldy addressed the potential for degradation of Boraflex and Licensee's surveillance program for Boraflex. Dr. Kilp addressed the integrity of the materials in the fuel assemblies and storage racks. Kilp and Gouldy, ff. Tr. 222, at 45-49.

32. The Staff's witness on the first portion of Contention 6, materials other than Boraflex, was Clifford David Sellers, a Senior Metallurgist at NRC. Sellers, ff. Tr. 188. The Staff panel on Boraflex consisted of Dr. James Wing, Conrad E. McCracken, and Dr. Laurence I. Kopp. Wing, McCracken, and Kopp, ff. Tr. 339, Professional Qualifications. Dr. Wing and Mr. McCracken testified

¹³ The Staff stated that it would evaluate whether its response favoring summary disposition of Contention 10 was affected by the new information. BN-87-11 at 2. Staff counsel stated that Staff's position on summary disposition of Contention 10 was not changed by the new information. Young, Tr. 276-77.

on materials integrity of Boraflex. Dr. Kopp testified on the criticality aspects of Boraflex.

33. Ms. Lorion, for Intervenors, presented no direct case or evidence.

Materials Other Than Boraflex

34. The new spent fuel storage racks are constructed of Type 304 stainless steel as the load-carrying structure and use sheets of Boraflex as a neutron-absorbing material held in place by a thin-walled stainless steel wrapper on the outer surface of the storage cells and between the cells. Type 304 stainless steel is used in the pool liner. The rack feet consist of 17-4 PH stainless steel. The pool structure is concrete composed of cement and aggregate with reinforcing bars of carbon steel. The fuel assemblies are constructed of Zircaloy fuel cladding, Inconel 718 springs, and stainless steel nozzles and bands. Sellers, ff. Tr. 188, at 3; Kilp and Gouldy, ff. Tr. 222, at 4.

35. Redesign of the spent fuel pool racks increases only the storage capacity of the pool and not the frequency or the amount of newly discharged fuel to be placed in the pool during each fuel reload cycle. The rerack design does not change the radioactivity of the newly discharged fuel placed in the storage pool. Sellers, ff. Tr. 188, at 3.

36. There will be a small increase in radiation exposure and radiation heating to spent fuel pool materials as a result of the expanded storage capacity. As the old fuel elements continue to age, they contribute less and less to the heat load of the pool. The maximum pool temperature after refueling is not expected to rise above 143°F and will decrease thereafter. This is within NRC guidelines for maximum exposure temperature to concrete. Sellers, ff. Tr. 188, at 10, 11; Kilp and Gouldy, ff. Tr. 222, at 4-5.

37. Licensee performed two sets of calculations to determine the cumulative gamma and neutron exposures of materials stored for over 40 years in the Turkey Point spent fuel pools. One set assumed each fuel assembly has an average burnup level of 36,000 MWd/MTU. The second set assumed a future average burnup of 55,000 MWd/MTU. The results for 36,000 and 55,000 MWd/MTU showed that pool materials would receive cumulative gamma radiation doses of 1.9×10^{10} rads and 2.9×10^{10} rads, respectively. The cumulative neutron radiation dose of the two burnup levels was 4.8×10^{13} neutrons/cm² and 1.7×10^{14} neutrons/cm², respectively. Kilp and Gouldy, ff. Tr. 222, at 5-10.

38. Licensee analyzed the effect of thermal stresses on the pool structure resulting from the temperature differential between the pool water and outside conditions. Pool water temperatures up to 212°F were considered. Licensee assumed ambient temperature as low as 30°F outside the pool. The analysis showed that the pool structure would maintain its integrity even under severe

thermal stress conditions of postulated boiling combined with the effects of the design-basis earthquake. Thomas, ff. Tr. 163, at 4-7.

39. The Staff and its consultant, Franklin Research Center (FRC), reviewed Licensee's analysis of temperature-induced stresses on the pool structure and liner and concluded that the stresses were acceptable. Staff Exh. 1 (Safety Evaluation at 10, 15; Technical Evaluation Report at 25-26).

40. The temperatures associated with radiation due to the increased fuel storage capacity will not result in significant deterioration of the concrete pool structures or steel liner. Temperatures below 300°F have little effect on the concrete and reinforcing steel. The pool liner plate made of Type 304 stainless steel, maintains its stability and integrity in temperatures in excess of 1000°F, which is far above pool temperatures. Sellers; ff. Tr. 188, at 10; Thomas, ff. Tr. 163, at 8-10.

41. Tests show that stress corrosion cracking of sensitized steels adjacent to welds in the fuel pool liner would be highly localized and would not lead to gross degradation of the liner. Chloride-caused stress corrosion cracking is prevented in the stainless steels at Turkey Point by the controls on chloride levels in the fuel pools. Sellers, ff. Tr. 188, at 6-7.

42. The expanded storage capacity will not result in deterioration of the spent fuel concrete structure and steel liner due to radiation. The radiation is attenuated by distance and the water. Such attenuated exposure would be well below the threshold for radiation damage to the carbon steel in the pool structure and the stainless steel, which is the order of 10^{17} to 10^{18} neutrons/cm². Concrete is used throughout a nuclear power plant for its structural support and radiation shielding characteristics. Gamma radiation has a negligible effect on the mechanical properties of concrete. A concrete structure can withstand neutron fluences up to 10^{21} neutrons/cm² without loss of material integrity. This is many orders of magnitude higher than the fluence expected in the Turkey Point spent fuel pool. Reports on the irradiation of concrete have not identified any defects in concrete that can be traced directly to radiation damage. Sellers, ff. Tr. 188, at 5, 10, 14-15; Hopkins, ff. Tr. 163, at 5-7.

43. There will be no loss of integrity of the pool liner due to gamma radiation. Tests have shown that stainless steel can withstand neutron radiation levels that are orders of magnitude higher than those predicted in the Turkey Point spent fuel pools without loss of integrity. The effect of nuclear heating on stainless steel is negligible at the levels of radiation in the spent fuel pool. Hopkins, ff. Tr. 163, at 3-5, 7; Sellers, ff. Tr. 188, at 5.

44. Zircaloy, Inconel, and stainless steel are used for fuel assemblies. These materials are essentially unaffected by the alpha, beta, and gamma radiation that comprise the major fraction of the radiation in the spent fuel pool. The primary effect of gamma radiation at the levels expected at Turkey Point on these

materials is heating and not structural damage. Kilp and Gouldy, ff. Tr. 222, at 5, 11-12.

45. The racks containing the first discharged fuel assemblies can be expected to receive the maximum radiation in the pool. The assemblies are exposed to approximately 10^{22} neutrons/cm² while in the reactor. This is approximately 8 orders of magnitude greater than the 1.7×10^{14} neutrons/cm² exposures during 40-year storage of fuel with burnup of 55,000 MWd/MTU. Stated another way, a 40-year storage dose is similar to 1 second in the operating reactor. Sellers, ff. Tr. 188, at 5; Kilp and Gouldy, ff. Tr. 222, at 10-12, 15-16; Sellers, Tr. 211-12.

46. Little or no microstructural change would occur in the spent fuel pool materials that is attributable to the extended storage. The NRC Staff does not anticipate a significant increase in the corrosion occurring in the pool because the rates of most corrosion reactions tend to decrease with time as protective oxide films form on the metals. Microstructural change can occur with Zircaloy-clad fuel when the hydrogen produced by the reaction between zirconium and water diffuses into metal, forming hydride particles or a hydride phase within the Zircaloy cladding. Microstructural changes from solid state diffusion processes do not occur below 500°F in stainless steels. Sellers, ff. Tr. 188, at 5-6; Kilp and Gouldy, ff. Tr. 222, at 12-14.

47. Stress corrosion cracking and intergranular corrosion can occur in the storage rack steels adjacent to welds but it would be highly localized and would not lead to gross degradation of the steel. Test reactors use Type 17-4 PH stainless steel in control rod drive mechanisms. Inservice surveillance has shown no degradation at all of this material after many years of service in water of similar quality to that in the Turkey Point pools, and a temperature of 145°F. In addition, chloride-caused stress corrosion cracking and intergranular stress corrosion are prevented in the stainless steel at Turkey Point by controls on chloride levels in the fuel pools. Sellers, ff. Tr. 188, at 6-7; Tr. 193-94; Kilp and Gouldy, ff. Tr. 222, at 12-14.

48. Radioactive crud enters the pool with the freshly discharged fuel. It is subsequently removed by the pool water purification system well before the next refueling. There is no evidence that such crud deposits influence the corrosion of stainless steel or degrade the fuel itself. Sellers, ff. Tr. 188, at 7-8.

49. Leakage and disintegration of spent fuel and its cladding while in pool storage are highly unlikely. In the Battelle Pacific Northwest Laboratories Report BNWL-2256, Dr. Johnson surveyed the information on behavior of spent fuel in pool storage and found no evidence of degradation of spent nuclear fuel during pool storage after times up to 18 years for Zircaloy-clad fuel and 12 years for stainless steel-clad fuel (as of 1977). The results of surveys for the Nuclear Regulatory Commission, performed by Dr. J.R. Weeks of Brookhaven National Labs, since issuance of Dr. Johnson's report show that stainless steel-clad fuel

has been continuously stored in spent fuel pools since the early 1970s with no evidence of any failures developing in fuel cladding. Sellers, ff. Tr. 188, at 8.

50. While leaking fuel has been stored in a number of fuel pools, uranium oxide fuel pellets have displayed excellent corrosion resistance. Should a defect develop in a fuel cladding in the reactor, the volatile and soluble fission products, normally the alkalis and the halogens, would be released to the reactor coolant and removed by the reactor coolant purification system. Some small amounts of these materials may enter the pool from fuel that developed defects in the reactor, during the first few months after the fuel enters the pool. These (except for the inert gases) would readily be removed by the spent fuel pool water purification system. Fuel elements are tested for their leaktightness before being placed in the pool so that the plant staff can determine which fuel elements to be placed in the pool have defects. Sellers, ff. Tr. 188, at 9.

51. The proposed long-term storage does not affect the probability that degradation of the fuel will occur in the pool or that significant amounts of fission products would be released to the pool. In the unlikely event that a defect should develop in the fuel cladding during the first few months of pool storage, gaseous and alkali radioactive fission products could be released to the pool and the pool environment. The spent fuel pool radioactivity monitors and the cleanup system monitors would detect such a release. Should a leak develop in a fuel cladding several months after it has been placed in the pool (an unlikely occurrence) and after most of the gaseous fission product activity has decayed, the consequences would be less and would differ little from those associated with stored fuel elements containing known defects. Sellers, ff. Tr. 188, at 9-10.

52. The 40 years of industry experience with wet fuel storage illustrates that it is a fully developed technology with no associated major technological problems. Fuel elements have been stored continuously for as many as 25 years without evidence that Zircaloy-clad fuel or stainless steel structural elements degrade significantly during wet storage. Sellers, ff. Tr. 188, at 4; Tr. 195; Kilp and Gouldy, ff. Tr. 222, at 14-17.

53. Stainless steel clad spent fuel has been stored in PWR spent fuel pools more than 18 years. The exposure in the reactor, which is much greater than radiation levels in the storage pools, represents the maximum radiation exposure any stainless steel can accumulate in a spent fuel pool since the steel is directly against the fuel as the cladding material. Destructive and visual examination of this material produced no evidence of significant degradation of the stainless steel. Relating these observations to the materials of construction for the storage racks demonstrates that they would also not be subject to any significant degradation over long-term use, far beyond the present storage time. Sellers, ff. Tr. 188, at 11; Kilp and Gouldy, ff. Tr. 222, at 14-17.

54. Zircaloy-clad rods were examined after nearly 21 years of water storage. A comparison of cladding properties with those measured 20 years earlier

on rods from the same fuel assembly showed that no detectable changes had occurred in corrosion film thickness, cladding mechanical properties and fission gas thickness, cladding mechanical properties and fission gas release. Zircaloy-clad fuel elements that were loaded into Canada's NPD reactor in 1962 are continuing to operate satisfactorily, with no apparent degradation, after 22 years of exposure to far greater radiation than any element in the Turkey Point spent fuel pools will receive from being in the pools. Sellers, ff. Tr. 188, at 11-12; Kilp and Gouldy, ff. Tr. 222, at 14-17.

55. Surveillance, as used in the context of materials engineering, means the installation of specifically prepared test specimens that are nondestructively removable for testing after exposure to an environment that may degrade certain material properties. As such, no surveillance of spent fuel pool materials is planned. However, in the broader sense, spent fuel pool materials are subject to surveillance. There is monitoring of radioactivity in the spent fuel pool building atmosphere and the spent fuel pool cleanup system which is capable of determining the condition of stored spent fuel. The Licensee also periodically performs routine visual observations inside the fuel storage building and subjects the fuel to inventory by underwater television. The condition of the liner is monitored by the installed leak chase system, and procedures exist that require a daily check of the system to determine whether leakage has occurred. In addition, the Licensee maintains spent fuel pool area monitors to continuously monitor the pool areas and the plant's vent monitoring system to monitor total plant airborne radioactivity released (noble gas, iodine, and particulates). Sellers, ff. Tr. 188, at 12-13; Kilp and Gouldy, ff. Tr. 222, at 17-19, 43; Gouldy, Tr. 301.

56. Intervenors argued at hearing and in their findings that Licensee and Staff witnesses base their conclusions regarding the ability of the pool materials to withstand radiation upon assumptions and engineering judgment rather than field experience. They further assert that because predictors regarding extended storage are based on limited operational experience, an extensive materials surveillance program is needed to adequately protect the public health and safety. Tr. 93; Intervenors' Proposed Findings 17-21. A similar argument was rejected by the Commission in the *Waste Confidence Rulemaking* proceeding. *Rulemaking on the Storage and Disposal of Nuclear Waste* (Waste Confidence Rulemaking), CLI-84-15, 20 NRC 288 (1984). The Commission agreed that the basis for confidence that spent fuel will maintain its integrity during extended storage was based on an extrapolation for storage 30 years beyond a facility's license from current experience. It found that "the extrapolation is made for conditions in which corrosion mechanisms are well understood" and "[the] extrapolation is reasonable and is consistent with standard engineering practice." 20 NRC at 357. The Commission has concluded that spent fuel can be safely stored in reactor spent fuel storage pool for at least 30 years beyond the expiration of a reactor's operating license. For example, the Commission

found that the cladding that encases spent fuel is highly resistant to fuel failure under pool storage conditions and that corrosion would have a negligible effect during several decades of extended storage. *Id.* at 353-57, 366.

57. The record in this proceeding shows that the mechanisms for spent fuel material degradation are sufficiently understood, and the small increases in spent fuel pool radiation exposures and radiation heating will not significantly affect the integrity of spent fuel pool materials.

58. The evidence shows that the materials in the spent fuel pools will not degrade significantly because of the increased pool storage capacity over any term of years foreseeable for storage at individual plants. Stainless steel racks can be used to the end of life of the plant and experiments have shown that stainless steel, as well as the Inconel and Zircaloy in the aged fuel assemblies, can be exposed to many orders of magnitude of radiation greater than can be reasonably expected in spent fuel pool racks without significant degradation. In addition, there is no evidence that degradation would occur due to the small increases in radiation or heat to storage pool liners or the concrete structure in spent fuel pools as a result of the increased storage. The Licensee and Staff have adequately considered and analyzed degradation in materials integrity as a result of the increased capacity, and the Board concludes that no additional monitoring or surveillance of materials is needed to provide reasonable assurance of safe storage during the extended storage authorized by the amendments.

59. The Board finds that the routine surveillance or monitoring currently performed by the Licensee is adequate to ensure safety of the fuel storage pool and its contents during the extended storage period authorized by the amendments.

60. Based upon the evidence presented by the Staff and Licensee, the Licensing Board finds that the heat-induced stresses in the Turkey Point spent fuel pool concrete structures and stainless steel liners are acceptable, and that the temperature and radiation levels in the spent fuel pool will not result in any loss of integrity or degradation of the pool concrete or liner.

Boraflex

61. Boraflex is a neutron-absorbing material or poison used in the spent fuel storage racks. It is made by uniformly dispersing fine particles of boron carbide in a homogenous, stable matrix of a methylated polysiloxane elastomer (a polymer). The boron dissolved in the spent fuel pool water and the use of Boraflex or other poison material in the racks are each redundant and independent methods of preventing spent fuel pools from becoming critical. Kilp and Gouldy, ff. Tr. 222, at 23; Boyd, Tr. 330-32.

62. There are two regions in the Turkey Point spent fuel pools. The Region I racks are designed to hold fuel assemblies with a maximum enrichment of

4.5%. The Region II racks are designed to hold fuel assemblies with a maximum reactivity equivalent to the reactivity of assemblies having an initial enrichment of 1.5%. The Region I spent fuel storage rack modules at Turkey Point are each composed of a number of cells with Boraflex panels which run along the length of each of the four sides of the cell. The Region II rack modules have a somewhat similar structure, but spacing between individual cells is smaller and the density of the Boraflex panels is lower than in the Region I racks. Boyd, ff. Tr. 222, at 4-5.

63. The regulatory requirements to prevent criticality are found in General Design Criterion (GDC) 62, "Prevention of Criticality in Fuel Storage and Handling." GDC 62 states that criticality in the fuel storage and handling system shall be prevented by physical systems or processes, preferably by use of geometrically safe configurations. The NRC's acceptance criterion for ensuring that GDC 62 is met is found in the Standard Review Plan (SRP) § 9.1.2, which requires maintaining a storage array neutron multiplication factor (k_{eff}) less than or equal to 0.95 in spent fuel pools during normal and accident conditions. Kopp, ff. Tr. 339, at 3.

64. The Boraflex captures neutrons that would have otherwise been available for fission and therefore provides the required subcriticality margin. The total subcriticality margin with the Boraflex panels and the technical specification concentration of 1950 ppm boron in the spent fuel pool water, is approximately 25% ($k_{\text{eff}} = 0.75$). Kopp, ff. Tr. 339, at 3-4.

65. Boraflex has undergone extensive testing to determine the effects of gamma irradiation in various environments and to verify its structural integrity and suitability as a neutron-absorbing material. The evaluation tests have shown that Boraflex was unaffected by the pool water environment and would not be degraded by corrosion. Tests were performed at the University of Michigan, exposing Boraflex up to 1.03×10^{11} rads of gamma radiation with substantial concurrent neutron flux in borated water. These tests showed that Boraflex maintained its neutron attenuation capabilities after being subjected to an environment of borated water and gamma irradiation. Irradiation caused some loss of flexibility, but did not lead to breakup of the Boraflex. Long-term borated water soak tests at high temperatures also showed that Boraflex withstands a borated water immersion at 240°F for 251 days without visible distortion or softening. The Boraflex showed no evidence of swelling or loss of ability to maintain a uniform distribution of boron carbide. Wing, ff. Tr. 339, at 4-5; Staff Exh. 1, § 2.2 at 7; Kilp and Gouldy, ff. Tr. 222, at 23-24.

66. At the Turkey Point Nuclear Generating Plant, the spent fuel pool water temperatures under normal operating conditions are not expected to exceed 143°F, which is well below the 240°F test temperature. In general, the rate of a chemical reaction that could cause material deterioration decreases exponentially with decreasing temperature. On the basis of these tests, the Staff did not

anticipate any significant deterioration of the Boraflex at the pool under normal operating conditions over the design life of the spent fuel racks. Wing, ff. Tr. 339, at 5.

67. Experience with Boraflex in spent fuel pools at some operating nuclear power plants has shown some materials deterioration or failure in integrity of Boraflex. The Staff issued Board Notification BN-87-11 subsequent to the Staff's review and acceptance of the Turkey Point spent fuel pool racks. It reported that some physical changes or gaps were identified in some spent fuel pools using Boraflex. The surveillance program for Boraflex used in the spent fuel pools at Point Beach Nuclear Plant, Units 1 and 2, showed that the 2-inch by 2-inch surveillance coupons, which had a maximum exposure of 1.6×10^{10} rads of gamma radiation, experienced some physical changes in color, size, hardness, and brittleness. A full-length Boraflex assembly, which had a maximum exposure of about 10^{10} rads of gamma radiation, showed far less physical changes than the surveillance coupons. Neither the coupons nor the full-length Boraflex assembly showed any unexpected change in neutron attenuation properties. Inspections at Quad Cities Station, Units 1 and 2, revealed numerous gaps in some Boraflex panels that had been exposed to an estimated radiation dose of 10^9 rads. The Boraflex assemblies showed anomalies in the neutron attenuation profiles. One of the Boraflex surveillance coupons (8-inch by 12-inch) at the Prairie Island Nuclear Generating Plant, Units 1 and 2, showed some slight physical changes or degradations similar to the full-length Boraflex panels at the Point Beach Nuclear Plant. Wing, ff. Tr. 339, at 5-6; Kilp and Gouldy, ff. Tr. 222, at 25-26.

68. The exact mechanisms that caused the observed physical degradations of Boraflex have not been confirmed. The Staff postulated that gamma radiation from the spent fuel initially induced crosslinking of the polymer in Boraflex and produced shrinkage of the Boraflex material. When crosslinking became saturated, scissioning (a process in which bonds between atoms are broken) of the polymer predominated as the accumulated radiation dose increased. Scissioning produced porosity which allowed the spent fuel pool water to permeate the Boraflex material. Scissioning and water permeation could embrittle the Boraflex material. Gamma radiation from spent fuel is considered to be the most probable cause of the physical degradations, such as changes in color, size, hardness, and brittleness, that were found in the Boraflex material at the Point Beach plant. While the Staff could not pinpoint the cause of the gap formation in some Boraflex panels at the Quad Cities Station, the Staff thought it conceivable that full-length Boraflex panels that are physically restrained could experience shrinkage caused by gamma radiation which could lead to gap formation. Wing, ff. Tr. 339, at 7.

69. Licensee attributed the gap formation in Quad Cities' Boraflex to a rack design and fabrication process that did not allow the Boraflex material to shrink without cracking. Licensee testified that the fabrication process, which

required the Boraflex material to be glued along the entire axial length and firmly clamped in place to the stainless steel fuel rack walls, did not allow for shrinkage of Boraflex, and therefore the gaps developed.

70. Commonwealth Edison Company (CECo) hypothesized that Boraflex shrinkage caused by irradiation resulted in sufficient tensile stress to lead to breakage when it was restrained as in the Quad Cities spent fuel rack. BN-87-11, enclosure letter dated May 5, 1987. Bisco Products, Inc., the manufacturer of Boraflex material, informed the Staff that the failure of the neutron absorber may be due to the material's properties or, in the case of the Quad Cities racks, some manufacturing deficiencies such as the tearing of the Boraflex panels during handling. Based on this information, the Staff inferred that gaps may have been formed at Quad Cities before the panels were exposed to any radiation. Wing, ff. Tr. 339, at 8-9. In the Turkey Point racks, Boraflex is held to the stainless steel wall by enclosing it in a wrapper. The wrapper is an enclosure that protects the Boraflex from the flow of water and maintains a clearance between the Boraflex and the rack cell wall, which is large enough to allow shrinkage but small enough to prevent dislocation of the panel should it become brittle or crack. Short lengths of adhesive were used to attach the panels to the wrapper for panels produced by an automated process to provide temporary support during the spot-welding process. None of the Region I racks, and only some of the Region II racks, were fabricated using adhesive to attach the Boraflex panel to the wrapper or storage cell. Kilp and Gouldy, ff. Tr. 222, at 39-40, as corrected; Gouldy, Tr. 242-44.

71. Gamma radiation-induced crosslinking and scissioning of the polymer in Boraflex can take place in the spent fuel pool racks of the Turkey Point plant in the presence of spent fuels. Because water can permeate into the Boraflex, especially at the edges of the panel, minor degradations, such as changes in color, size, hardness, and brittleness, can be expected. However, the Staff could not predict with certainty whether or not gap formation will occur. Testing at Point Beach and Turkey Point indicates there are no gaps at accumulated levels of irradiation higher than at Quad Cities, and there is information that suggests that the Quad Cities' gaps may be related to fabrication and design of the racks. Thus, it may be inferred that gap formation may result from a combination of shrinkage due to irradiation and to fabrication or rack design deficiencies. In addition, the Staff was not certain whether physical restraints exist in the Boraflex panels at Turkey Point that are sufficient to cause gap formation. Because the Boraflex panels at the Turkey Point plant were constructed from single sheets, the Staff testified that it did not expect that there were gaps in all the Boraflex panels prior to exposure to radiation from spent fuels, unless the panels were damaged by some means. Wing, ff. Tr. 339, at 10, 12.

72. Similarly, Licensee testified that since the design and fabrication process used for Turkey Point is more similar to that used for Point Beach (rather than Quad Cities) and those panels were not restrained from shrinking and did not

develop any gaps, it would not expect gaps of significant size or extent to develop at Turkey Point. Kilp and Gouldy, ff. Tr. 222, at 40.

73. The Staff is collecting operating experience about Boraflex from plants that use Boraflex, additional test data from the vendor, and fabrication information from spent fuel rack contractors. The Staff will evaluate the information to arrive at the cause(s) of the observed gap formation. McCracken, ff. Tr. 339, at 10.

74. The Licensee tested fifty-four Boraflex panels from storage cells in both Region I and Region II of the spent fuel pool. They were representative of those storage locations that have received an estimated radiation dose of 7.8×10^9 rads, the highest cumulated exposure to date. The testing had the capability to detect gaps of 1 to 1½ inches or greater. No indication of gaps, voids, or other spatial distribution anomalies was observed. The results of this testing also verify that no gaps existed in these fifty-four Boraflex panels prior to exposure to spent fuel. No physical restraints are expected to exist in these panels. Therefore, on the basis of these data and information, the Staff believes that gaps will not likely form in the Turkey Point Boraflex panels. Kilp and Gouldy, ff. Tr. 222, at 33, 39; Wing, ff. Tr. 339, at 11.

75. Substantial physical degradation can alter the neutron attenuation properties of Boraflex and decrease the margin of subcriticality of the fuel pool. Neutron attenuation of Boraflex is mainly due to boron mass number 10 that is present in the boron carbide powder in Boraflex. If the spatial distribution of boron-10 is not disturbed, the neutron attenuation properties of Boraflex should remain unchanged. Physical degradations, such as changes in color, size (shrinkage), hardness, and brittleness, that do not disturb the spatial distribution of boron-10, should not alter the neutron attenuation properties of Boraflex. Large gap formation in a Boraflex sheet could alter the neutron attenuation profile. Of the 203 Boraflex panels examined at Quad Cities, 31 gaps were found in 28 panels, and two three-to four-inch gaps were found among the 31 gaps. If the conditions which resulted in gap formation at Quad Cities are present at Turkey Point, the Staff concluded that Turkey Point will not likely have gaps greater than four inches in approximately one percent of its Boraflex panels. Wing, ff. Tr. 339, at 11-13.

76. At the Staff's request, Licensee performed a sensitivity study to determine the effect of possible gaps in the Boraflex at Turkey Point on the margin of subcriticality. Since Region I of the spent fuel pool contains the higher Boraflex loading as well as the smaller subcriticality margin, the sensitivity study conservatively used the Region I spent fuel rack configuration. As an additional conservatism, the calculations did not take credit for the boron in the pool water, i.e., the racks are assumed to be flooded with pure water. The results indicate that for fuel enriched to 4.5 weight percent (wt %) U-235, the acceptance criterion of k_{eff} less than or equal to 0.95 is met for the case of a 2-inch gap at the

same elevation in all of the Boraflex panels in the rack. The acceptance criterion is also met for the case of almost a 4-inch gap at the same elevation in one-half of the Boraflex panels (two of four panels in each storage cell in Region I) in the rack. Kopp, ff. Tr. 339, at 13-14; Boyd, ff. Tr. 222, at 6-9.

77. The maximum enrichment of the fuel currently used at Turkey Point is only 3.6 wt % U-235. Licensee estimates that in approximately 3 years, the maximum fuel enrichment at Turkey Point will be less than 4.1 wt % U-235. For fuel of 4.1 wt % enrichment, the 0.95 acceptance criterion would be met for a 3.5-inch gap in all the Boraflex panels and a 7-inch gap in one-half of the panels in the rack. Kopp, ff. Tr. 339, at 14; Boyd, ff. Tr. 222, at 6-9.

78. The Staff considers Licensee's assumptions regarding the distribution of gaps to be conservative since if gaps were to develop, they would probably not all occur at the same elevation or throughout the entire storage location within the racks. In Quad Cities, for example, the distribution of gap sizes ranged from 0 to about 4 inches, with the maximum size (between 3 to 4 inches) observed in only 1% of the Boraflex panels tested. Therefore, conservatively assuming that the maximum gap size of 4 inches observed at Quad Cities occurs in 50% of the panels at Turkey Point, k_{eff} for the storage rack would be 0.93 for 4.1 wt % enriched fuel at Turkey Point. The acceptance criterion of 0.95 would be met with as much as a 7-inch gap in 50% of the Boraflex panels for 4.1 wt % fuel. Kopp, ff. Tr. 339, at 14-15.

79. Licensee had originally planned to perform an initial surveillance of Boraflex specimens after about 5 years of exposure in the spent fuel pool environment, as described in § 4.8 of the Turkey Point Units 3 and 4 Spent Fuel Storage Facility Modification Safety Analysis Report, dated March 14, 1984. This program will be increased. Two types of examinations will be conducted on Boraflex to examine and evaluate its physical and nuclear characteristics. First, an in-service surveillance program will evaluate the Boraflex specimens in both Region I and Region II of the spent fuel pool for physical and nuclear characteristics, including the determination of uniformity of boron distribution and neutron attenuation measurements. Second, a surveillance program will detect any spatial distribution anomalies in the full-length Boraflex panels. Wing, ff. Tr. 339, at 15; Kilp and Gouldy, ff. Tr. 222, at 30-33.

80. The second surveillance program is referred to as "blackness testing." These tests are performed using a fast neutron source and thermal neutron detectors. Any gaps in the Boraflex will be detectable by an increase in the number of thermal neutrons reflected back to the detectors. This method has been used satisfactorily in other spent fuel pool facilities such as the Quad Cities Station Units 1 and 2 to detect spatial anomalies in Boraflex. By retesting at regular intervals, any changes in the neutron attenuation properties or in the spatial distribution of the boron-10 in Boraflex should be detected and corrective actions taken should it be determined that gaps large enough to violate the k_{eff}

acceptance criterion may occur. Kopp, ff. Tr. 339, at 16; Gouldy, ff. Tr. 222, at 31-32.

81. In early August 1987, Licensee performed baseline blackness testing on the Boraflex panels that have received the highest cumulated radiation exposure to date. Licensee expects to perform future surveillance testing of the Boraflex panels within approximately 3 years, or sooner if industry experience indicates a shorter period for surveillance is warranted. In addition, Licensee made a commitment not to store any fuel with an enrichment greater than 4.1 wt % U-235 prior to completion of the next surveillance. Kopp, ff. Tr. 339, at 16; McCracken, Tr. 375-76; Gouldy, ff. Tr. 222, at 30-33.

82. Initial surveillance testing was performed by Licensee during the first week of August 1987 in the Turkey Point Unit 3 spent fuel racks. Storage locations were chosen in which the Boraflex panels would have experienced the highest accumulated gamma doses to date and, therefore, the largest percentage of shrinkage. No indication of gaps or other spatial anomalies was observed. The maximum accumulated gamma dose during this testing was estimated by Westinghouse Electric Corporation, the fuel vendor, to be 7.8×10^9 rads. The next surveillance testing of the Boraflex panels at Turkey Point is scheduled in approximately 3 years (December 1989) when the maximum accumulated gamma dose is estimated by Westinghouse to be 1.2×10^{10} rads. The Staff believes that the next surveillance should include a representative sample of panels subjected to a range of radiation exposures to provide reasonable assurance that fuel with enrichment up to 4.5 wt % U-235 can be stored at Turkey Point and maintain the $0.95 k_{\text{eff}}$ acceptance criterion. McCracken, ff. Tr. 339, at 17. Wing, McCracken, and Kopp, ff. Tr. 339, at 17; Kilp and Gouldy, ff. Tr. 222, at 36; Gouldy, Tr. 310-12.

83. Bisco Products, Inc., submitted additional test data for Boraflex on June 25, 1987, and August 26, 1987. The data showed that shrinkage in the Boraflex samples at the dose levels of 5×10^9 and 10^{10} rads of gamma radiation was essentially the same, averaging about 2.1%. Irradiation at 2.5×10^{10} rads showed an average shrinkage of 2.4%. The data indicated that no appreciable change in shrinkage of Boraflex material occurred between 5×10^9 and 2.5×10^{10} rads. The fifty-four Boraflex panels tested at Turkey Point had an estimated radiation dose of 7.8×10^9 rads and an estimated maximum dose of 1.2×10^{10} rads in 3 years. These dose levels are within the range of 5×10^9 and 2.5×10^{10} rads where no appreciable change in shrinkage was found. The Staff believes that the proposed Turkey Point surveillance interval is adequate. However, the Staff will continually monitor industry experience with Boraflex to determine whether a shorter time interval is warranted. Wing, ff. Tr. 339, at 17-18.

84. Intervenors argue that because the blackness tests performed by Licensee do not establish that no gaps exist in the panels since the test could not detect gaps smaller than 1.5 inches (Turner, Tr. 254), the amendments should

be suspended until the absence of gaps is proven by an in-depth testing program. The record is clear that the K-effective limit for either 4.1 or 4.5 wt % fuel enrichment would not be exceeded even if gaps smaller than 1.5 inches exist in all the panels in the pool (Kopp, ff. Tr. 339, at 13-15; Boyd, ff. Tr. 222, at 6-9) and that the presence of dissolved boron in the pool water alone is enough to maintain the subcriticality margin. Kopp, ff. Tr. 339, at 18; Boyd, Tr. 267-69. The Board finds no safety reason for suspending the amendments.

85. Intervenors also recommend that the Board direct the Staff to determine if Boraflex is "an unproven material" for spent fuel pool usage and if the use of Boraflex in the expanded storage capacity amendment involves a significant hazard. Intervenors' Proposed Finding 31. The record shows that no safety-significant degradation of Boraflex is expected at Turkey Point and there is an adequate surveillance program to monitor its performance. The Staff's determination as to whether an amendment involves significant hazards pursuant to § 50.92 determines the timing of any potential hearing either before or after the action is taken. This hearing has established that the Boraflex panels do not pose a significant safety concern.

86. In addition to the Boraflex surveillance, Turkey Point Technical Specification 3.17 requires the minimum boron concentration in the pool water while fuel is stored in the spent fuel pool to be 1950 ppm, and Table 4.1-2 requires that the boron concentration be sampled monthly. NRC calculations have shown that under normal storage conditions at Turkey Point with the pool water borated to 1950 ppm of boron, all of the Boraflex panels could be removed and the 0.95 k_{eff} acceptance criterion would be met, even with 4.5 wt % enriched fuel. Therefore, the boron concentration and sampling requirements provide additional assurance of safe fuel storage between surveillances of the Boraflex. The borated water and the Boraflex panels are independent and redundant safety measures. Kopp, ff. Tr. 339, at 18; Boyd, Tr. 267-69, 271, 328-29.

87. The Board finds that, based on the evidence presented by the Licensee and Staff, no safety significant degradation in the Turkey Point Boraflex panels at Turkey Point is expected to occur. The Licensee's surveillance programs include blackness testing on Boraflex specimens and panels at specified schedules which are adequate to detect physical degradations, including gaps, and will provide reasonable assurance that gap formation will be detected in sufficient time to enable Licensee to take corrective actions such that the NRC acceptance criterion of k_{eff} less than or equal to 0.95 is met. Licensee and Staff have adequately analyzed the materials integrity of Boraflex, and the material continues to be acceptable for use in safe storage of the spent fuel at the Turkey Point Nuclear Generating Plant.

III. CONCLUSION

Based upon the entire evidentiary record in this proceeding, and upon the foregoing findings of fact, the Board concludes the following:

1. The Licensee's seismic analysis for the new Turkey Point spent fuel pool racks shows that the rack design satisfies the structural aspects of GDC 2, 4, 61, and 62 and thus there is reasonable assurance of safe storage of fuel in the event of an earthquake.

2. Contrary to Intervenors' assertion in Contention 6, the Licensee and Staff have adequately considered materials spent fuel pool integrity during the storage under the expanded capacity.

IV. ORDER

WHEREFORE, in accordance with the Atomic Energy Act of 1954, as amended, and the Rules of Practice of the Commission, and based on the foregoing findings of fact and conclusions of law, IT IS ORDERED THAT License Amendment Nos. 111 and 105 to License Nos. DPR-31 and DPR-41, respectively, issued by the Office of Nuclear Reactor Regulation on November 21, 1984, shall remain in full force and effect without modification.

IT IS FURTHER ORDERED, pursuant to 10 C.F.R. § 2.760, that this Initial Decision shall constitute the final decision of the Commission thirty (30) days from its date of issuance, unless an appeal is taken in accordance with 10 C.F.R. § 2.762 or the Commission directs otherwise. *See also* 10 C.F.R. §§ 2.785 and 2.786. Any party may take an appeal from this Decision by filing a Notice of Appeal within ten (10) days after service of this Decision. A brief in support of such appeal shall be filed within thirty (30) days after the filing of the Notice of Appeal (forty (40) days if the appellant is the Staff). Within thirty (30) days after the period has expired for the filing and service of the briefs of all appellants (forty (40) days in the case of the Staff), any party who is not an appellant may file a brief in support of, or in opposition to, any such appeal(s). A responding

party shall file a single responsive brief, regardless of the number of appellants' briefs filed.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

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

**Richard F. Cole
ADMINISTRATIVE JUDGE**

**Emmeth A. Luebke
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 19th day of April 1988.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judge:

Charles Bechhoefer

In the Matter of

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

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

April 20, 1988

In an informal proceeding involving an Applicant's appeal from the Staff's denial of a senior reactor operator license, the Presiding Officer holds that the Applicant passed both the written and simulator portions of his examination and, accordingly, is entitled to the license he has been seeking.

SENIOR REACTOR OPERATOR LICENSE: CRITERIA

In order to obtain a senior reactor operator license for a reactor, an applicant must, *inter alia*, pass both a written examination and an operating test which includes, where feasible, a simulated operating test.

RULES OF PRACTICE: OPERATOR LICENSE PROCEEDINGS

A senior reactor operator license proceeding is governed by the regulations and regulatory guidelines in effect on the date(s) the examination was administered.

SENIOR REACTOR OPERATOR LICENSE: SCOPE OF PROCEEDING

The scope and content of a simulator examination depend upon the type of license sought. For an "instant SRO" license (where the applicant is not already a licensed reactor operator), a candidate must demonstrate that he or she meets the requirements for both reactor operator and senior reactor operator positions.

SIMULATOR EXAMINATION: GRADING STANDARDS

The standards governing simulator examinations require that, for an examiner's comment leading to an unsatisfactory rating, the evaluation be supported by detailed notes explaining what action was unsatisfactory and why. A comment that fails to satisfy those standards is legally defective and must be deleted.

TECHNICAL ISSUE DISCUSSED

Senior reactor operator license examination.

APPEARANCES

Alfred J. Morabito, New Brighton, Pennsylvania, *pro se*, Applicant.

Colleen P. Woodhead, Esq., and Benjamin H. Vogler, Esq., Bethesda, Maryland, and Jay Gutierrez, Esq., King of Prussia, Pennsylvania, for the Nuclear Regulatory Commission Staff.

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APPENDIX A: List of Exhibits (not published)

APPENDIX B: Transcript Corrections (not published)

DECISION

This proceeding involves the appeal of Mr. Alfred J. Morabito (Applicant) from the denial by the NRC Staff (Staff) of his application for a senior reactor operator (SRO) license for the Beaver Valley Power Station, Unit 1. The Staff denied Mr. Morabito's requested license on the ground that he had failed to pass both the written and simulator examinations that had been administered to him. During the proceeding, following its reevaluation of certain answers, the Staff conceded that Mr. Morabito had obtained sufficient points to have passed the written examination. Following an oral presentation held on February 22, 1988, and taking into account all the evidence of record, I now conclude, for the reasons set forth below, that Mr. Morabito has also passed his simulator examination and, accordingly, should be issued a senior reactor operator license.

I. PROCEDURAL BACKGROUND

In order to obtain a senior reactor operator license for a reactor, an applicant must, *inter alia*, pass both a written examination and an operating test which includes, where feasible, a simulated operating test.¹ Mr. Morabito, the Manager of the Nuclear Training Department at the Beaver Valley facility and a candidate for an SRO license, took these examinations on July 22 and 23, 1986. By letter dated August 27, 1986, he was informed by Region I of the Nuclear Regulatory Commission that he had passed the operating test but had failed to pass both the written examination and the simulator test; and, accordingly, that his application for an SRO license was denied. He was also informed that he could request a hearing with respect to those responses to examination questions that he claims were graded incorrectly or too severely.²

On September 11, 1986, Mr. Morabito filed with Region I his request for a hearing, setting forth the questions that he claimed were graded incorrectly or too severely, together with the bases for his claims.³ By letter dated November 12, 1986, Region I informed Mr. Morabito that it had performed a complete independent regrade of the written examination, had reviewed the simulator claims, and had determined that there was no adequate basis for reversing its original determination. Region I further advised Mr. Morabito that he could continue to pursue his request for a hearing to the NRC Division of Human Factors Technology in Washington, D.C.⁴

By letter dated December 1, 1986, Mr. Morabito advised the Director, Division of Human Factors Technology, that he wished to continue to pursue a hearing on the license denial. He forwarded the details of his claims by letter dated December 16, 1986.⁵ The Division of Human Factors Technology, by letter dated February 2, 1987, rejected Mr. Morabito's appeal with respect to both the

¹ 10 C.F.R. §55.11(b) (1987). The regulations were revised effective May 26, 1987 (52 Fed. Reg. 9453 (Mar. 25, 1987)), and similar examination requirements appear in the new regulations at 10 C.F.R. §§55.43 and 55.45. This proceeding is governed by the regulations and regulatory guidelines in effect on the dates the examination was administered.

² Letter from Harry B. Kister, Chief, Projects Branch No. 1, Division of Reactor Projects, NRC, Region I, to Mr. Alfred J. Morabito, dated August 27, 1986.

³ Morabito Exh. 1, attached Exhibit S. A List of Exhibits is set forth in Appendix A (not published).

⁴ Morabito Exh. 1, attached Exhibit L. Under NRC guidelines, a candidate must pass each of several sections of the written examination with a grade of at least 70% and the examination as a whole with a grade of at least 80%. Mr. Morabito had originally passed all sections of the written examination except for §6, on which he had been graded 59.7%. He had been graded 82.2% on the exam as a whole. On regrade, Region I increased the grade on §6 to 67.6%, although in doing so it both added and subtracted points. On other sections, Mr. Morabito continued to pass each section, although in some cases with a lower score than earlier. His overall score declined to 80.6%, still sufficient for a passing grade. *Id.*, Attach. 1. On the simulator exam, Region I removed one adverse comment but continued to hold that Mr. Morabito had failed. *Id.*, Attach. 2.

⁵ Morabito Exh. 1, attached Exhibit P.

written and simulator examinations,⁶ and it forwarded the appeal to the Office of the General Counsel for continuation of the hearing process.⁷

After several telephone and written communications between Mr. Morabito and the Office of the General Counsel, the file of the proceeding was forwarded to the Commission which, by Order dated July 1, 1987 (unpublished), granted Mr. Morabito's request for a hearing. The Commission ruled that informal hearing procedures were to be used, that the hearing was to be conducted by a single Presiding Officer, and that the Presiding Officer might make use of proposed hearing procedures that NRC had published for comment approximately 1 month earlier.⁸ On July 2, 1987, the undersigned was designated as Presiding Officer.⁹

By Memorandum and Order dated July 15, 1987 (unpublished), I ruled that the proposed regulations cited by the Commission would be used for guidance in this proceeding and that, in accordance with the provisions of proposed 10 C.F.R. § 2.1231, certain specified documents would initially constitute the hearing file. I also invited Mr. Morabito to submit a Specification of Claims, to define the matters as to which he wished to challenge the Staff's conclusions, and provided for a Staff response. Further, I issued a Notice of Hearing for the proceeding.¹⁰ On July 31, 1987, Mr. Morabito submitted his Specification of Claims.¹¹ The Staff filed its response on October 9, 1987.¹²

Mr. Morabito requested, and was granted, an opportunity to respond to the Staff. He filed his response on November 7, 1987.¹³ The Staff also requested an opportunity to respond to Mr. Morabito's response or rebuttal, and by Memorandum and Order dated November 24, 1987, LBP-87-31, 26 NRC 436, I granted that request. I also posed numerous questions to both parties, set forth a schedule for answering those questions, and directed that an oral presentation

⁶ Letter from William T. Russell, Director, Division of Human Factors Technology, NRR, to Mr. Morabito. NRR increased Mr. Morabito's grade on § 6 of the written examination from 67.6% to 68.1%, still short of a passing grade.

⁷ Morabito Exh. 1, attached Exhibit Q.

⁸ Proposed 10 C.F.R. §§ 2.1201-2.1263, 52 Fed. Reg. 20,089 (May 29, 1987).

⁹ 52 Fed. Reg. 26,106 (July 10, 1987).

¹⁰ 52 Fed. Reg. 27,485 (July 21, 1987).

¹¹ Morabito Exh. 1, including attached Exhibits A-Z and AA-BB. On September 10, 1987, Mr. Morabito filed an addendum to attached Exhibit J. As a result of the technical complexity of certain of the issues raised by Mr. Morabito, on October 5, 1987, I appointed Administrative Judge David L. Hetrick, a member of the Atomic Safety and Licensing Board Panel, as a technical interrogator to assist me with respect to technical matters involving SRO license examinations.

¹² Staff Exh. 1, including the attached affidavit of Messrs. David M. Silk and Barry S. Norris. The Staff earlier had obtained an extension of time within which to file its response. Memorandum and Order dated August 19, 1987 (unpublished). In its response, the Staff indicated that one portion of one of Mr. Morabito's answers to a written question which had previously been graded as incorrect had in fact been determined by the Staff to be correct. The Staff increased Mr. Morabito's grade on § 6 of the written examination from 68.1% to 69.2%, still short of a passing grade of 70%. Staff Exh. 1 at 6; see notes 4 and 6, *supra*.

¹³ Morabito Exh. 2.

be scheduled. The Staff responded to Mr. Morabito's rebuttal on December 21, 1987,¹⁴ and both parties responded to my questions by January 31, 1988.¹⁵

On February 17, 1988, the Staff filed the affidavit of Mr. Theodore L. Szymanski, Regional Support and Oversight Section Chief in the Operator Licensing Branch, Division of Licensee Performance and Quality Evaluation, NRR, Headquarters office.¹⁶ That affidavit took the position that Mr. Morabito had been incorrectly graded on one question of the written examination and that he was entitled to an additional 0.5 points. Although not specifically stated in the affidavit, the additional points were sufficient to provide Mr. Morabito with a passing grade on the written examination.¹⁷

The oral presentation was held on February 22, 1988, in Pittsburgh, Pennsylvania (about 25 miles from the facility and from Mr. Morabito's residence). Most of the record was developed through the direct testimony (several of the prior filings of the parties) and through questions posed to the parties by myself or the designated technical interrogator, Dr. David Hetrick. I permitted each of the parties to ask a few questions (screened by me) to the other party. Witnesses presented by the parties to respond to questions were Mr. Morabito and Mr. Lawrence G. Schad (for Mr. Morabito) and Messrs. David M. Silk, Barry S. Norris, and Theodore L. Szymanski (for the Staff). Mr. Schad is the Simulator Coordinator at the Beaver Valley facility. He participated in Mr. Morabito's simulator examination by assuming the role of SRO while Mr. Morabito was being tested as a Reactor Operator; he also was present in the observation booth during the period when Mr. Morabito was acting as an SRO.¹⁸ Mr. Silk was the NRC examiner who prepared, administered, and graded the written examination and administered the simulator examination for Mr. Morabito. Mr. Norris was the certified NRC examiner who observed Mr. Silk's administration of the simulator examination as well as conducting certain reviews of the written examination.¹⁹ Mr. Szymanski, who is identified above, participated in the Headquarters review of Mr. Morabito's examination.²⁰ At the oral presentation, both parties waived the opportunity to file proposed findings of fact and conclusions of law.²¹

¹⁴ Staff Exh. 2, including affidavit of Messrs. Silk and Norris.

¹⁵ Morabito Exh. 3 (January 28, 1988); Staff Exh. 3 (January 29, 1988), including affidavit of Messrs. Silk and Norris.

¹⁶ Staff Exh. 4.

¹⁷ By my calculations, which were later confirmed by the Staff, Mr. Morabito would only be entitled to an additional 0.25 point, but that would be sufficient to give him a grade of 70.3% on § 6 of the written examination, a passing grade. See note 22, *infra*.

¹⁸ Tr. 17, 92 (Schad). All transcript references in this Decision refer to the transcript of the oral presentation held on February 22, 1988. A listing of transcript corrections is attached hereto as Appendix B (not published).

¹⁹ Staff Exh. 1, attached affidavit, ¶¶ 1, 2.

²⁰ Morabito Exh. 1, attached Exhibit Q.

²¹ Tr. 255-57.

II. OPINION

A. Written Examination

As set forth above, the Staff filed an affidavit that indicated that Mr. Morabito was entitled to extra points on the written examination. This determination, which responded to a position that Mr. Morabito had taken throughout his appeal, raised Mr. Morabito's grade on § 6 of the written examination to 70.3%.²² As a result, with the agreement of the NRC Staff, I ruled at the oral presentation that Mr. Morabito had passed the written examination.²³

B. Simulator Examination

The examination administered to Mr. Morabito was governed by the Operator Licensing Examiner Standards set forth in NUREG-1021, Rev. 2 (April 1986), which were in effect on the dates of Mr. Morabito's examination.²⁴ Under those standards, the simulator examination is a portion of the operating examination. Mr. Morabito passed all portions of the operating examination except for the simulator examination.

The scope and content of the simulator examination depends upon the type of license sought — for Mr. Morabito, an "instant SRO" license (i.e., a senior reactor operator license where the applicant is not already a licensed reactor operator). During a simulator examination, a candidate is tested by carrying out the functions of a particular position during several hypothesized events or scenarios. The scenarios are developed by the NRC Staff based on information from the licensee concerning the design of the plant and the capabilities of the simulator.²⁵ Instant SRO candidates such as Mr. Morabito must demonstrate that they meet the requirements for both reactor operator and senior reactor operator positions.²⁶ For that reason, during various scenarios of the simulator

²² The dispute between the parties concerned the method of grading of question 6.03b, which called for three answers. The entire question was worth 1.5 points. Mr. Morabito provided four answers. Initially, the Staff regarded only one of the answers as correct and gave Mr. Morabito credit for 0.5 points (one correct answer out of three). Later, when it determined that another answer was correct, the Staff shifted to a method of proportional grading and awarded Mr. Morabito 0.75 points (two out of four correct). In its February 17, 1988 affidavit, the Staff stated that, although the method of proportional grading was in general preferable for multiple-answer questions, it was not appropriate for the Staff to have used it in the circumstances of the particular examination under review. Although the Staff indicated that Mr. Morabito would be entitled to 0.5 additional points, a recalculation indicates that Mr. Morabito provided two correct answers out of the three required and should be awarded 1.0 points for the question (an additional 0.25 points). Using that figure, Mr. Morabito has received 15.9 points out of a possible 22.6 points on § 6, or 70.3%. The Staff agrees with this figure (Tr. 5-6).

²³ Tr. 6. In reaching this conclusion, I express no opinion on any of the substantive questions raised by Mr. Morabito with respect to the written examination. Given the concession made by the Staff in its affidavit (Staff Exh. 4), those other questions have become moot.

²⁴ Some of those standards have subsequently been modified. See NUREG-1021, Rev. 4 (May 1987).

²⁵ Staff Exh. 1, attached affidavit, ¶ 38.

²⁶ NUREG-1021 (Rev. 2), § ES-302, ¶¶ B, D.3.

examination, Mr. Morabito acted either as a reactor operator or as a senior operator. During these scenarios, positions other than that occupied by the candidate are carried out either by other candidates undergoing examination or by representatives drawn from the facility staff.²⁷

During the simulator examination, Mr. Morabito was tested on three scenarios: (1) a boron dilution accident followed sequentially by a vacuum breaker leak, pressurizer reference signal failure, erratic governor valve control, and station blackout; (2) the B spray valve fails closed and the T-ave (temperature average) input to steam dumps fails low followed sequentially by B loop FRV (feedwater regulating valve) bypass fails open, loop 3 Th (hot leg temperature) fails high, turbine generator valves fail closed, PORV block valve fails open for 455D due to a breaker problem and Pzr (pressurizer) PORV 455D fails open; and (3) PRNI (power range nuclear instrument) (44) fails high followed sequentially by S/G (steam generator) tube leak (developing into a rupture), pzr level fails high, FWP-1A trip from 75% power, and "A" HHSI (high head safety injection) pump fails to auto start on low pressure SI.²⁸ In the third scenario, Mr. Morabito functioned as a reactor operator; in the first two, he functioned as a senior operator.

In accordance with NUREG-1021 (Rev. 2), § ES-302, ¶¶ D.3 and D.8, the scenarios (collectively) are designed to test the candidate's proficiency in eight competencies, under conditions of normal evolutions, instrument failures, component failures, and major plant transients. In the case of an instant SRO examination such as was administered to Mr. Morabito, the eight competencies are (1) Understanding/Interpretation of Annunciator/Alarm Signals; (2) Diagnosis of Events/Conditions Based on Signals/Readings; (3) Understanding of Instrument/System Response; (4) Compliance/Use of Technical Specifications; (5) Compliance/Use of Procedures; (6) Control Board Operation; (7) Supervisory Ability; and (8) Communications/Crew Interaction.²⁹

With respect to each competency, a candidate may receive a grade of satisfactory (S), marginal (M), or unsatisfactory (U).³⁰ Justification (in writing) is required for each M or U rating. One or more written comments by the examiner may serve the purpose of such justification. A particular comment may in some circumstances be applicable to more than one competency. In the case of Mr. Morabito's examination, he was graded as satisfactory in the first four of the above competencies and unsatisfactory in the last four of the competencies. Under the guidelines, a grade of U in one competency *may*

²⁷ Mr. Schad was one such representative (*see* p. 422, *supra*).

²⁸ Staff Exh. 1, attached affidavit, ¶37; *see also* Morabito Exh. 1, attached Exhibit J, Attach. 3 (Simulator Scenario Forms).

²⁹ *See also* Staff Exh. 1, attached affidavit, ¶38.

³⁰ NUREG-1021 (Rev. 2), § ES-302, ¶F.2, and § ES-303, ¶B. The current version of NUREG-1021 no longer includes the Marginal grade category. *See* NUREG-1021 (Rev. 4), § ES-302, ¶C.

(but need not) be considered an adequate basis for failure of the examination. There must also be an assignment of an overall rating, "based on the specific circumstances of candidate's performance during the examination."³¹ At the time of Mr. Morabito's examination, this general rating was described by the Examiner Standards as "a professional, subjective judgment on whether a candidate should pass or fail this segment of the examination."³²

With these general principles in mind, I turn now to Mr. Morabito's claims concerning the simulator examination. I will treat each of the competencies in which the candidate was rated as unsatisfactory and, within those competencies, will discuss each of the statements supporting the unsatisfactory rating.

1. Compliance/Use of Procedures

Mr. Morabito's unsatisfactory rating in this competency was initially based on four comments. During the initial review by Region I, the third comment was deleted.³³ I shall review the first, second, and fourth comments *seriatim*.

a. Examiner's Comment 1

The first comment reads as follows:³⁴

During first scenario candidate did not consult any procedure when decreasing load to check power range indicator response for two power range indicators that were lower than the other two. AOP-10 calls for the plant to be in Mode 3 [hot shutdown] if two power range channels are malfunctioning.

Elsewhere on the examination, the examiner set forth essentially the same comment with respect to the activity in question, as follows:³⁵

Candidate did not consult any procedure when decreasing load to check Power Range indicator response for two PR indicators that were reading lower than the other two. If candidate considered two PR indicators inoperable then plant should be in Mode 3 with[in] 1 hour as per AOP-10.

In his appeal, Mr. Morabito took the position that he did not consider two power range (PR) instruments to be inoperable; he considered two instruments to be reading differently from the other two but did not know why. He directed a 10% power reduction to determine if all instruments responded to a power

³¹ NUREG-1021 (Rev. 2), § ES-302, ¶ F.3; Tr. 19-20 (Norris).

³² NUREG-1021 (Rev. 2), § ES-303, ¶ B.

³³ Morabito Exh. 1, attached Exhibit L, Attach. 2 at 1; *id.*, attached Exhibit J, § ES-202-11, Attach. 1/4, ¶ 3.

³⁴ Morabito Exh. 1, attached Exhibit J, § ES-202-11, Attach. 1/4, ¶ 1.

³⁵ Morabito Exh. 1, attached Exhibit J, § ES-305, at 6, ¶ 5.2.A ("Offnormal/Abnormal Procedures").

change and, in addition, to commence reducing power to achieve Mode 3 conditions if it turned out that the PR instruments were not responding to the power change. After a 5% decrease, he observed that all detector outputs were responding appropriately and he stopped the power decrease at that time.

He claims that no procedure is required for a power reduction of up to 10%. Indeed, he claims that, prior to invoking procedure AOP-10, he would have to inform the crew that two PR channels were inoperable and also which instruments were defective. He explains that he ordered the small reactivity change in order to determine whether this was in fact the case. He draws a distinction between checking the "precision" of instruments (agreement with each other) and the calibration (accuracy of indication) of the instruments; he maintains that no procedure covers the first of these activities. He also claims that his action maintained temperature and power levels within specifications, and that eventually the reason for the PR instrument readings (an undetected boron dilution) would have been discovered. (Mr. Morabito learned of the undetected dilution only after a post-examination discussion with the examiners.)³⁶

At the oral presentation, Mr. Morabito introduced for the first time a new reason for his having reduced power in the reactor. He stated that "we were approaching the temperature limit . . . temperature was near its top limit, and some action had to be taken."³⁷

For its part, the Staff agrees that certain minor power reductions may be authorized without resort to a formal procedure. It also acknowledges that, in an emergency, the formal procedures would be supplanted by the emergency operating procedures (EOP) which must be memorized by operators and which do not require producing the formal procedure, as is otherwise required.³⁸ But it maintains that, in the circumstances, no power reduction was permissible without using a formal procedure. The Staff would not have insisted that procedure AOP-10 be utilized. If Mr. Morabito wished to investigate the accuracy of instruments, he could have resorted to a surveillance procedure, which is another formal procedure; he would not have been downgraded for using such a procedure. By reducing power gradually, however, without using a procedure, Mr. Morabito masked the indications of the dilution accident which was creating the unsafe reactivity condition.³⁹

In response to Mr. Morabito's new argument about approaching the temperature limits, the Staff asserts that the automatic operation of control rods should have been maintaining the temperature within its programmed band of

³⁶ Morabito Exh. 1 at 13-14, 17; *id.*, attached Exhibit S, Attach. B, at 4, 9; *see also id.*, attached Exhibit P, Attach. 3, at 1; Morabito Exh. 2 at 7-8.

³⁷ Tr. 58, 76-77, 78-79 (Morabito).

³⁸ Staff Exh. 3, ¶45; Tr. 83 (Norris).

³⁹ Staff Exh. 1, attached affidavit, ¶¶41-42; Tr. 82, 85-86 (Norris).

variation.⁴⁰ Mr. Morabito agrees with the Staff that the automatic control was functioning properly, but maintains that the temperature nevertheless was increasing.⁴¹

The Staff also advances a procedural objection to Mr. Morabito's introduction of oral testimony that had not previously been presented in written form. It asserts that it would be inappropriate to allow Mr. Morabito to offer additional reasons to justify his actions of a year and a half in the past, and that testimony should be restrained to that which had already been presented in writing.⁴²

Evaluation of this comment is a close question. Mr. Morabito took essentially conservative actions in responding to a situation that he did not fully understand. However, he clearly failed to utilize any procedures in formulating his response. The operability of certain instruments was in question — not their precision or accuracy, using Mr. Morabito's terminology. Given the operating rules of the Beaver Valley facility, it appears that, although some power reductions may be undertaken without a procedure, a reduction in a circumstance in which a procedure is called for would mandate that a procedure be followed. At the very least, a surveillance procedure would be used to test the operability of instruments.⁴³

Mr. Morabito's new argument that he reduced power partly because the plant was approaching temperature limits does not contribute to the resolution of this issue. It has the appearance of a belated rationalization; and, as the Staff notes, it was not advanced in any written documents prior to the oral presentation.

In any event, Mr. Morabito is being faulted not for reducing power but for doing so without following an appropriate procedure. The interaction of boron dilution, control rod motion, and intermittent rise and fall of temperature, as described by Mr. Morabito, is a slowly evolving process and not an emergency condition such as would justify immediate action.⁴⁴ Utilization of an appropriate procedure is required in such circumstances for a power reduction.

As the Staff points out, Mr. Morabito was being tested as much for his ability to follow required procedures as for his ability to maintain the plant in a safe condition.⁴⁵

This was an audit of his knowledge, and an audit of his ability to operate the plant in accordance with Duquesne Light procedures.

He is licensed to operate the plant in accordance with approved procedures. That is part of his license and part of his requirements.

⁴⁰Tr. 60-61, 79-81 (Norris).

⁴¹Tr. 86-87 (Morabito).

⁴²Tr. 72-73.

⁴³Staff Exh. 3, ¶ 47; *see also* Tr. 82, 85 (Norris).

⁴⁴Tr. 83 (Norris); *cf.* Tr. 62-65, 87 (Morabito).

⁴⁵Tr. 80 (Norris).

That being so, I agree with the Staff that Mr. Morabito should be downgraded for the activity recorded by the examiner's first comment. I note, however, that the Staff takes the position that this comment, by itself, would not justify a grade of unsatisfactory for the Compliance/Use of Procedures competency.⁴⁶

b. Examiner's Comment 2

The second comment under this competency reads as follows:⁴⁷

During second scenario while in ES-1.2 step 27 candidate asked "Are RCS hot leg temperatures greater than 395 F?" Candidate did not wait for an operator response and assumed the answer to the question was "yes" by answering "yes" aloud to himself. The operator then indicated the answer to the question was "No."

On his appeal, Mr. Morabito acknowledges the accuracy of the comment but challenges the implications that the Staff draws from it. He claims that thinking out loud by trainees is encouraged, even though the thinking may be incorrect. He acknowledges that he had expected a "yes" answer but stresses that he took no action prior to hearing the operator response, and then directed the correct action. He adds that he reacted with excellent supervisory control to direct a proper action, rather than the action he might have been expected to direct; and that the action he directed was the one required by the applicable procedure.⁴⁸

The Staff notes that Mr. Morabito has not refuted the comment. It asserts that the candidate's comments indicate an incorrect analysis of the transient in progress and an improper attempt to analyze an event instead of using the symptomatic approach provided by emergency procedures.⁴⁹ In response to my inquiry why this comment was relevant to the Compliance/Use of Procedures competency, the Staff asserts that all procedures are written with the premise that correct information will be used in the determination of actions; and that, if Mr. Morabito was not in a position to verify a parameter, then, rather than guess, he should have waited for and insisted upon a report from the reactor operator. The Staff adds that *if* Mr. Morabito had proceeded on the basis of incorrect information, he would not have been mitigating the accident in progress but rather worsening the condition.⁵⁰

⁴⁶ Staff Exh. 3, ¶ 51.

⁴⁷ Morabito Exh. 1, attached Exhibit J, § ES-202-11, Attach. 1/4, ¶ 2.

⁴⁸ Morabito Exh. 1 at 17-18; *id.*, attached Exhibit S, Attach. B, at 9; *see also id.*, attached Exhibit P, Attach. 3, at 1.

⁴⁹ Staff Exh. 1 at 13; *id.*, attached affidavit, ¶ 45.

⁵⁰ Staff Exh. 3, ¶ 53.

Insofar as this comment bears on Compliance/Use of Procedures, it appears to be remote at best and, more likely, inconsequential. Mr. Morabito took no action that was not consistent with applicable procedures. He indicated that he would never have taken any action without a response to the question he had posed.⁵¹ The Staff's assumption that Mr. Morabito might through incorrect analysis make the accident more severe is thus purely hypothetical and speculative. With respect to its applicability to the Compliance/Use of Procedures competency, this comment is insubstantial and should be deleted.

c. Examiner's Comment 4

The fourth comment⁵² under this competency reads as follows:⁵³

During the third scenario [during which Mr. Morabito was acting as a reactor operator], after the reactor tripped and SI activated, candidate did not check if LHSI pumps were running as required by immediate action step 11b of E-O. SRO had to remind candidate to check if LHSI pumps were running.

Mr. Morabito acknowledges that this comment is valid but questions the weight that should be given to it.⁵⁴ He views it as a minor event and also questions whether other candidates have been graded as harshly as he for the failure to adhere to one of the immediate action steps.⁵⁵

The Staff points out that Mr. Morabito's failure to perform an immediate action step of the emergency operating procedures is significant since the immediate action steps are required to be committed to memory and the third scenario provided the only evaluation of Mr. Morabito's ability to comply with these procedures.⁵⁶ More specifically:

This is one of the few tasks where we expect it to be performed almost flawlessly. This is the emergency procedure. This is a condition where the plant is not in a safe condition. To protect the safety of the public; to protect the core, itself, certain actions should take place. Those actions are automatic and they should be verified. He could not perform that.⁵⁷

In this instance, I accept the Staff's evaluation that this comment should remain a deficiency. Operators must be fluent with the emergency operating proce-

⁵¹ Tr. 99-100 (Morabito).

⁵² As noted earlier, at p. 425, *supra*, the third comment under this competency was deleted by Region I and is not now at issue.

⁵³ Morabito Exh. 1, attached Exhibit J, § ES-202-11, Attach. 1/4, ¶ 4.

⁵⁴ Morabito Exh. 1 at 18.

⁵⁵ Morabito Exh. 3 at 11; *see also* Morabito Exh. 2 at 8-9.

⁵⁶ Staff Exh. 1 at 13-14; *id.*, attached affidavit, ¶ 50; Staff Exh. 2, attached affidavit, ¶ 32.

⁵⁷ Tr. 125 (Norris).

dures, irrespective of the significance of any particular procedure. Mr. Morabito failed to adhere precisely to the mandate of one such procedure. But I also note that the Staff does not believe this deficiency in itself is significant enough to warrant an unsatisfactory grade for the competency.⁵⁸

d. Conclusion as to Compliance/Use of Procedures Competency

The Staff initially based its rating of unsatisfactory for this competency on the four deficiencies set forth in the examiner's report.⁵⁹ After Region I had eliminated one of the four deficiencies, the Staff examiners still believed that the remaining three deficiencies warranted an unsatisfactory rating — the deleted comment constituting, in their opinion, the least significant of the four.⁶⁰

I have now deleted another of the comments. Nonetheless, I regard the ability to follow procedures correctly as significant enough to warrant a rating of unsatisfactory based on the two deficiencies that remain. The unsatisfactory rating in this instance, however, is not of the type that would justify a failing grade on the simulator examination as a whole. In particular, the two comments on which the rating is premised did not involve situations where the reactor was placed in any danger. Moreover, although Mr. Morabito exhibited less-than-ideal adherence to procedures in two instances, he followed procedures adequately in other situations and demonstrated considerable knowledge of and familiarity with procedures generally.⁶¹

2. Control Board Operations

Mr. Morabito was tested on this competency only in the third scenario, in which he was performing as a reactor operator. His unsatisfactory rating was based on four comments, none of which were deleted through Region I or Headquarters review. I will deal with them *seriatim*.

a. Examiner's Comment 1

The first of the examiner's comments under this competency reads as follows:⁶²

⁵⁸ Staff Exh. 3, ¶ 57; Tr. 125 (Norris).

⁵⁹ Staff Exh. 3, ¶ 64; Tr. 126-27 (Norris).

⁶⁰ Tr. 128-29 (Norris).

⁶¹ See, e.g., pp. 432, 433, and 443, *infra*.

⁶² Morabito Exh. 1, attached Exhibit J, § ES-302-11, Attach. 2/4, ¶ 1.

Following SI actuation as the RCS pressure was decreasing the candidate misread RCS wide range pressure indication. Candidate misread 1600 psig as 1040 psig and then checked with other operator to confirm RCP trip criteria.

Mr. Morabito concedes that "[t]his comment is accurate. It documents a significant error."⁶³ But he claims that it alone should not be sufficient to produce a failing grade. He explains that it is always desirable to avoid a loss of forced-flow cooling but that, when necessary, natural circulation is adequate; and that, in this instance, he established and maintained natural circulation. As the scenario progressed, he also discovered on his own that he had tripped the pumps prematurely and stated that he was about to announce that fact to the SRO when the scenario ended. He then informed the SRO that he had tripped the pumps prematurely. Mr. Morabito adds that all parameters were maintained safely within limits; that the induced transient was mild; that his actions in tripping the pumps were "within the bounds of the analyzed accident"; that no adverse effects on the health and safety of the public or station personnel occurred; and that there was no equipment damage. Finally, he asserts that he flawlessly performed the complex procedure for securing the reactor coolant pumps, providing evidence of his familiarity with the control board and of his dexterity in performing several simultaneous and dependent sequential actions.⁶⁴

The Staff takes the position that the fact that Mr. Morabito correctly performed an inappropriate action does not obviate the fact that during a test of his ability to read process instrumentation he demonstrated an inability to do so correctly. The Staff believes that maintaining plant safety limits in this instance does not excuse the admitted error.⁶⁵ It adds that Mr. Morabito's efforts (as part of his appeal) to deemphasize operational errors "demonstrates an unconservative approach to nuclear safety."⁶⁶

As both parties acknowledge, the deficiency noted here was significant. But the fact that a deficiency may be significant need not automatically produce a "U" grade for the competency. The context in which the deficiency occurred, the corrective action adopted by the candidate, and his recognition of the error on his own, without prompting, all are relevant to the candidate's knowledge and abilities with regard to control board operations. I find somewhat disingenuous the Staff's position that, in attempting to place his operational error into context as part of his appeal, Mr. Morabito demonstrated an "unconservative approach to nuclear safety." The Staff itself acknowledges that this deficiency by itself

⁶³ Morabito Exh. 1, attached Exhibit S, Attach. B, at 10.

⁶⁴ *Id.*; Morabito Exh. 1 at 18-19; Morabito Exh. 2 at 9-10. Mr. Morabito also claims that he did not misread the gauge at 1040 psig, as claimed by the examiner, but rather misread it at 1100 psig. The difference is insignificant. See Tr. 133-36 (Morabito, Norris).

⁶⁵ Staff Exh. 1 at 15, attached affidavit, ¶ 53.

⁶⁶ Staff Exh. 2, ¶ 35.

would not warrant a "U" grade for the competency.⁶⁷ Moreover, the Staff's approach does not measure Mr. Morabito's attitude or knowledge when he took his examination but, rather, appears to attempt to penalize Mr. Morabito for exercising his appeal rights.

Based on the entire record concerning this deficiency, it is clear that this deficiency must result in some downgrading of Mr. Morabito's score on "Control Board Operations" and that he is not entitled to an "S" rating on this competency. The crucial consideration that is relevant is Mr. Morabito's self-recognition of his error, together with his exercise of sufficient control to minimize any ill effects that might otherwise have attended the error. Under applicable guidelines, a candidate who initially provides a wrong answer and then later recognizes the mistake "with little prompting" and goes on to correct it is to be rated as marginal.⁶⁸ Mr. Morabito here recognized his mistake and was prepared to correct it. He could not carry out the correction because the scenario ended. Further, in reacting to his mistake, he exhibited familiarity with the control board and applicable procedures. Under these circumstances, this admittedly significant deficiency should result in downgrading to no worse than a marginal rating.

b. Examiner's Comment 2

The examiner's second comment under the "Control Board Operations" competency reads as follows:⁶⁹

In step 4c of E-3, the Residual Heat Release valve was to be checked to ensure it was closed. Candidate was looking at the demand indicator for the manual control of Residual Heat Release Valve and not at the indication lights for the valve. Candidate was hesitant to respond to the check verification and appeared confused until other operator came over and explained the controls and indications to the candidate.

Mr. Morabito claims that this comment is incorrect and should be withdrawn. First, he asserts that there are no position-indicating lights for the Residual Heat Release valve; thus, the statement that he should have been looking at those lights was (by definition) erroneous. Second, he claims that he was not confused but only hesitant to verify that the valve was closed based on observation of the demand signal alone. He states that he had been cautioned during training against relying on a demand signal alone to determine whether the RHR valve was closed. At the oral presentation, he described such cautions as "common

⁶⁷ Staff Exh. 3, ¶ 66.

⁶⁸ NUREG-1021 (Rev. 2), § ES-303, ¶ B, at 1 of 6.

⁶⁹ Morabito Exh. 1, attached Exhibit J, § ES-302-11, Attach. 2/4, ¶ 2.

in the industry.”⁷⁰ After consultation with the other operator to verify that the demand signal was the only way to verify the valve position from the control room, he responded appropriately to the SRO that the valve was closed. He cites his activities as a good example of crew interaction and teamwork.⁷¹

For its part, the Staff acknowledges that its examiner made a mistake as to the presence of indicator lights. Indeed, the Staff concedes that, contrary to a fair reading of its comment, Mr. Morabito was properly looking at the demand indicator.⁷² It divides the comment into two segments, however, and claims that the candidate was deficient in having to be instructed by another operator in control board operation and component verification.⁷³

It is clear that the first part of this comment, concerning indicator lights, which the Staff concedes is erroneous, must be deleted. Further, it is by no means certain that the Staff’s error would not infect the entire comment — i.e., the theory that if Mr. Morabito was looking in the wrong place, all of his subsequent actions must be tainted. However, treating the second part of the comment (concerning consultation with another operator) as divisible from the first, I do not perceive that second part as reflecting a lack of knowledge on the part of Mr. Morabito. Rather, it reflects an attempt by Mr. Morabito to assure that he was following the only procedure available to keep the reactor in a safe mode of operation, given the existing circumstances. This was not an emergency situation, where time for consultation would not be available.⁷⁴ Thus, the consultation for which Mr. Morabito is being criticized is an example of his utilizing teamwork to achieve the greatest possible degree of safety. For these reasons, I am deleting this comment.

c. *Examiner’s Comment 3*

The examiner’s third comment reads as follows:⁷⁵

In step 9a of E-3, the containment sump pumps were to be stopped. Candidate stopped one containment sump pump and the Incore Instrument sump pump. The other operator came over to show the candidate where other containment sump pump switch was located.

Mr. Morabito agrees that the actions occurred as stated in the comment, although he clarifies that he was not shutting down any pumps but, rather, putting the control switches in the “off” position rather than leaving them in

⁷⁰ Tr. 147 (Morabito).

⁷¹ Morabito Exh. 1 at 19; *id.*, attached Exhibit S, Appendix B, at 10.

⁷² Tr. 147, 151-52 (Norris).

⁷³ Staff Exh. 1 at 15-16; attached affidavit, ¶¶ 56-57; Tr. 147-49 (Norris).

⁷⁴ Tr. 149 (Morabito).

⁷⁵ Morabito Exh. 1, attached Exhibit J, § ES-302-11, Attach. 2/4, ¶ 3.

the automatic position.⁷⁶ Although acknowledging his mistake, Mr. Morabito claims that the step was precautionary in nature and was not a major oversight in the overall scheme of the accident. He notes that eight actions are required to complete the step and that, of the eight, he missed only one (reflecting his general familiarity with the control board). He attributes his mistake to his haste in completing the step and adds that this occurrence should not support a grade of "U" for Control Board Operations.⁷⁷

The Staff takes the position that the candidate operated the wrong switch and that his mistake was identified by another operator; and that even though the candidate's action did not degrade plant conditions, the fact that he incorrectly positioned the wrong switch without noting his mistake supports an unsatisfactory evaluation. The Staff adds that the missing of a single step of a procedure being conducted from memory is significant.⁷⁸

I agree with the Staff (and Mr. Morabito does not dispute) that the deficiency here is significant. I will treat it in that light. I note however, that the Staff does not consider this deficiency significant enough to lead, without more, to a grade of unsatisfactory on the competency as a whole.⁷⁹

d. Examiner's Comment 4

The fourth (and final) comment under the Control Board Operations competency reads as follows:⁸⁰

In step 11 of E-3, CIA was to be reset. Candidate depressed the CIA Train B button and the CIB Train A button. CIA did not reset. Candidate did not verify CIA was reset following his attempt to reset CIA.⁸¹

Mr. Morabito asserts that this comment should be reconsidered because it is not entirely correct; that there is no way to verify CIA reset from the control room other than attempting to cycle the CIA valves. He claims that, after the scenario had ended, the examiner asked him how to get RCS samples; and that, after some confusion regarding the thrust of the examiner's question, he explained that the CIA sample valves would have to be opened. Upon request by the examiner to open those valves, Mr. Morabito opened the train B valves and they came open. The train A valves did not open. Mr. Morabito then immediately realized that train A of CIA had not been reset and (without

⁷⁶ Morabito Exh. 1 at 20; Tr. 153-54 (Morabito). The Staff concurs with the clarification. Tr. 154 (Norris).

⁷⁷ Morabito Exh. 1 at 20; *id.*, attached Exhibit U.

⁷⁸ Staff Exh. 1 at 16; attached affidavit, ¶¶ 60-61.

⁷⁹ Staff Exh. 3, ¶ 74, Tr. 158 (Norris).

⁸⁰ Morabito Exh. 1, attached Exhibit J, § ES-302-11, Attach. 2/4, ¶ 4.

⁸¹ CIA and CIB refer to two steps in the isolation of the containment. Tr. 159-60 (Norris).

prodding) reached over in front of the examiner, pushed the train A reset button and opened the train A sample valves. He claims that this is "exactly how" a failure to reset CIA in the plant would be detected. He adds that failure to reset CIA properly has no safety significance to the public or the plant and that his actions following the scenario represented "deft operation of various controls." He concludes that his actions do not warrant a grade of unsatisfactory.⁸²

The Staff, although recognizing that plant conditions were not degraded, asserts that Mr. Morabito's argument does not refute the fact that he failed to reset the CIA properly, or provide any excuse for his "inability" to operate the control board adequately in this respect.⁸³ It makes no reference to Mr. Morabito's activities following the conclusion of the scenario or to whether those activities should have any impact on the grade awarded. The Staff concludes, however, that the deficiency by itself is not sufficient to justify a grade of unsatisfactory for the competency.⁸⁴

Based on further questioning by myself and Dr. Hetrick at the oral presentation, I conclude that one part of this comment is unfair to Mr. Morabito and the other part should lead to a grade no worse than marginal. The unfair portion concerns the verification of CIA reset. The record demonstrates that, as claimed by Mr. Morabito, there is no way to perform such verification from the control room other than by attempting to cycle the CIA valves. (The reset buttons for these valves are spring-return buttons which have no indication of status.⁸⁵) Further, the scenario was terminated prior to any opportunity for Mr. Morabito to perform such cycling.⁸⁶ Why was it terminated so soon? The Staff explained that it had observed enough information about the candidate in that phase of the examination:

You have to realize that we could take any one scenario and run it on for many hours to some point where we beat it to death⁸⁷

In this instance, permitting the scenario to continue would have been the only way to test Mr. Morabito's knowledge and ability concerning CIA reset. For these reasons, the last sentence of the comment is unfair to Mr. Morabito and must be deleted for that reason.

The first part of the comment reflects Mr. Morabito's pushing one button correctly and one incorrectly. The incorrect action represents a deficiency in Control Board Operations. After the conclusion of the scenario, however,

⁸² Morabito Exh. 1 at 20-21; *id.*, attached Exhibit S, Attach. B, at 11.

⁸³ Staff Exh. 1 at 17; attached affidavit, ¶ 64.

⁸⁴ Staff Exh. 3, ¶ 76.

⁸⁵ Tr. 165 (Morabito, Norris).

⁸⁶ Tr. 172 (Silk).

⁸⁷ Tr. 172 (Norris).

Mr. Morabito was questioned by Mr. Silk and asked how he would know whether the CIA had been reset. He responded (correctly) that the only way was by operating the valves.

Mr. Morabito was then asked to operate the valves. He operated one and found it had been reset. Then, without further prompting, he attempted to operate the second set of valves and discovered it would not operate, indicating it had not been reset. Mr. Morabito then reached over, hit the reset button, and then immediately opened the valves.⁸⁸ By carrying out the operation correctly, Mr. Morabito reflected knowledge of this aspect of control board operation. The Staff suggests that he did so only with prompting.⁸⁹ But the prompting was only with respect to performing the test, not with respect to *how* the test was to be performed.

Mr. Morabito's performance here reflects some aspects of a satisfactory performance and some of a marginal performance. He appears to be familiar with equipment and procedures — an attribute of satisfactory performance.⁹⁰ However, he made a mistake, which he corrected with little prompting — i.e., prompting only with respect to revisiting the test and not with how to perform the test — and thereby met the criteria for a marginal evaluation.⁹¹ He exhibited none of the attributes of an unsatisfactory evaluation, other than the initial mistake. He cannot be fairly attributed with a poor working knowledge and understanding of the system — “obvious unfamiliarity” — such as would properly attend an unsatisfactory rating.⁹² In these circumstances, the Staff's rating of Mr. Morabito's performance here was unduly harsh and not supported by the record. He is to be evaluated as no worse than marginal on his attempted reset of the CIA valves.

e. Conclusion as to Control Board Operations Competency

Of the four comments under this competency, I have found only one serious enough to be equated to a level of unsatisfactory. I have deleted one comment and found the others no worse than a level of marginal. The one unsatisfactory comment is not significant enough to warrant a rating of unsatisfactory for the entire competency. Mr. Morabito has clearly fallen short of a satisfactory level for this competency, for he has made several mistakes. But his understanding of the control board and its operation appears to be satisfactory. For these reasons,

⁸⁸ Tr. 171-72 (Morabito).

⁸⁹ Tr. 172 (Silk).

⁹⁰ NUREG-1021 (Rev. 2), § ES-303, ¶ B (S).

⁹¹ *Id.*, § ES-303, ¶ B (M).

⁹² *Id.*, § ES-303, ¶ B (U).

I am changing the Staff's grading of Mr. Morabito on this competency from unsatisfactory to marginal.

3. *Supervisory Ability*

Mr. Morabito's unsatisfactory rating in the Supervisory Ability competency was based on two comments. The second of the comments, however, incorporated a number of other comments by reference.

a. *Examiner's Comment 1*

The first of the examiner's comments under this competency reads as follows:⁹³

In the second scenario, the candidate did not notice that the feed reg bypass valve indicator was indicating that the valve was open during diagnosis of unusual feed reg valve movement.

Mr. Morabito claims that this comment is erroneous. He states that, as SRO, he was the first to notice the stuck-open valve and called it to the attention of the balance-of-plant (BOP) operator. The BOP operator then observed it and initiated corrective action to close it. Mr. Morabito adds that his account is verified by the fact that the reactor operator had no way of knowing that the valve was stuck open unless he had heard Mr. Morabito and the BOP operator discussing it; and that, when discussing it with his examiner, the reactor operator knew the valve was stuck open and acknowledged hearing Mr. Morabito's discussion of it.⁹⁴

Mr. Morabito also claims that the examiner's scenario called for a high-level alarm to be the initiating event for the bypass valve failure, and that the alarm did not occur. He explains that, with no alarm to call his attention to a potential problem, there was no reason for him to do more than acknowledge the BOP operator's report that B steam generator feed flow was spiking in a manner similar to what had occurred in the first scenario (where there had been a problem with the simulator itself). After calling maintenance to check the problem, and after verifying with the BOP operator that the feedwater flow increase was returning to normal and was under control, Mr. Morabito concurred with the BOP operator's request to take manual control of the B steam generator feed regulating valve and then turned his attention to other matters. Mr. Morabito adds

⁹³ Morabito Exh. 1, attached Exhibit J, § ES-302-11, Attach. 3/4, ¶ 1.

⁹⁴ Morabito Exh. 1, attached Exhibit S, Attach. B, at 11.

that these measures were “obviously effective” since he and the BOP operator never lost control of B steam generator level.⁹⁵

The Staff acknowledges that Mr. Morabito recognized a problem with the steam generator feed flow. It faults him for not aggressively pursuing the root cause of the problem and for not identifying the root cause for 20 minutes. It deems the lack of an alarm to be irrelevant, on the ground that many problems initiated at nuclear plants do not initiate an alarm but must be identified from abnormal parameter readings. The Staff also considers the malfunctioning of the simulator to be irrelevant, inasmuch as the candidate was instructed to respond to all indications as he would in the actual control room. The Staff concludes that Mr. Morabito has not shown that the examiner’s comment was not a valid assessment, although it concedes that the failure to ascertain the cause of the problem aggressively was the significant fact in its evaluation of the candidate.⁹⁶

In evaluating the validity of this comment, it is important first to look at the grading standards applicable to Mr. Morabito’s examination. For a comment leading to an unsatisfactory evaluation, such as this one, the standards require that the evaluation “be supported by detailed notes stating the particular action or response that resulted in the unsatisfactory evaluation.”⁹⁷ The justification for the unsatisfactory rating should be “explicit in *what* action was unsatisfactory and *why*.”⁹⁸ The examiner’s first comment under Supervisory Ability fails to satisfy these standards.

The examiner’s comment, as written, can only legitimately be understood as stating that Mr. Morabito did not notice that a valve indicator was reading in a certain way. However, it was not the responsibility of the SRO (in which capacity Mr. Morabito was acting at that time) to notice the open indication. That was the responsibility of the reactor operator.⁹⁹ Moreover, as the Staff does not dispute, before the end of the scenario Mr. Morabito noticed that the valve was open.¹⁰⁰ When Mr. Morabito noticed the open valve, he took action to determine the reason.¹⁰¹ The Staff acknowledged that the action taken by Mr. Morabito in this respect was appropriate.¹⁰² The Staff’s only real comment was that Mr. Morabito took too long to react to the situation, that he did not pursue a remedy with enough aggressiveness.¹⁰³ Whether or not that comment would have been warranted as a deficiency, the comment as written does not

⁹⁵ Morabito Exh. 1 at 21; *see also id.* at 26.

⁹⁶ Staff Exh. 1 at 18; attached affidavit, ¶¶ 67, 68.

⁹⁷ NUREG-1021 (Rev. 2), § ES-303, ¶ B (M), at 2 of 6.

⁹⁸ *Id.*, ¶ B (U), at 2 of 6 (emphasis in original).

⁹⁹ Tr. 175, 176-77 (Norris); Tr. 186 (Morabito).

¹⁰⁰ Tr. 183-84 (Morabito).

¹⁰¹ Tr. 184, 192 (Morabito).

¹⁰² Tr. 193 (Norris).

¹⁰³ Tr. 196-97, 199 (Norris).

reflect what the Staff intended. All that it reflects is that Mr. Morabito failed to perform an action that he had no responsibility to perform. For that, he should not be faulted.

As for the Staff's argument that Mr. Morabito should not have assumed (as he admittedly did) that there was a simulator malfunction, the short answer is that all the actions taken by Mr. Morabito were based on there being a real problem; they were not influenced by his assumption. The assumption was based on a report to that effect from the reactor operator, but Mr. Morabito took appropriate steps to determine the cause of the valve problem. Mr. Morabito admits that he was tempted to "write . . . off" the problem as a simulator malfunction, based on an earlier malfunction.¹⁰⁴ He neither expressed that view during the examination nor took action in accordance with it. He should thus not be downgraded for this reason.¹⁰⁵

In conclusion, this comment is legally defective and, in addition, does not reflect an action for which Mr. Morabito should be downgraded. It must be deleted.

b. Examiner's Comment 2

The examiner's second comment under this competency reads as follows:¹⁰⁶

Unsatisfactory use of procedures and unsatisfactory crew interaction supports an unsatisfactory performance in supervisory ability.

With reference to this comment, Mr. Morabito seeks its deletion for the same reasons he opposed the various comments that are incorporated by reference. He also has submitted a number of documents that he claims attest to his supervisory leadership (in other positions), his judgment, his capabilities, and his ability to discharge supervisory responsibilities in field operations in a nuclear power plant environment. These documents stem from his previous employment at another reactor (Shippingport).¹⁰⁷

The Staff takes the position that Mr. Morabito's actions and communications observed during the examination displayed a callousness to procedures and less-than-precise communications. For the first time, the Staff provides examples of the incorporated actions that it deems to affect the candidate's supervisory

¹⁰⁴ Morabito Exh. 1 at 26; Tr. 199 (Morabito).

¹⁰⁵ Mr. Morabito's argument that the comment should be deleted because of a simulator malfunction (Morabito Exh. 1 at 21) relates to the failure of the alarm to sound. The simulator did not malfunction in this respect. This alleged malfunction is different from the one to which the Staff was referring and is not relevant to the validity of the examiner's comment.

¹⁰⁶ Morabito Exh. 1, attached Exhibit J, § ES-302-11, Attach. 3/4, ¶ 2.

¹⁰⁷ Morabito Exh. 1 at 21-22; *id.*, attached Exhibit S, Attach. B, at 11.

abilities. The Staff also asserts that Mr. Morabito's past accomplishments at another plant do not measure his performance on the date of the examination at the Beaver Valley plant.¹⁰⁸

I agree with the Staff that, in evaluating whether Mr. Morabito passed certain examination questions, I cannot rely on his past accomplishments at another plant. Beyond that, however, there are other compelling reasons why I cannot accept this comment. It suffers from the same legal deficiency as the first in this competency. It fails to apprise Mr. Morabito which of the comments in the incorporated competencies have an effect on Supervisory Ability and why each does so. I inquired which of the comments affected Supervisory Ability and was initially told that all of them did. Later, the Staff acknowledged that two of the initial comments (including one of those still remaining) under the Compliance/Use of Procedures Competency related to situations when Mr. Morabito was functioning as a reactor operator and not as an SRO, so that those comments would have no bearing on his supervisory ability.¹⁰⁹ In addition, neither this comment nor those incorporated by reference makes any attempt to spell out why each of the comments has a bearing on Supervisory Ability. I had to ask a number of questions to develop the record in this respect.¹¹⁰ Based on these considerations, the examiner's second comment under Supervisory Ability is impermissibly nonspecific and must be deleted for that reason.

I should add that, on the merits, none of the comments under Compliance/Use of Procedures or under Communications/Crew Interactions that still remain after my review would warrant an unsatisfactory rating in Supervisory Ability, either individually or collectively. The first comment under Compliance/Use of Procedures, which I have judged to be significant, relates to Supervisory Ability only marginally. The fourth comment under Compliance/Use of Procedures, which I have also judged to be significant, does not have any bearing on Supervisory Ability (since Mr. Morabito was acting as a reactor operator at that time). Although these two significant comments were sufficient to result in an unsatisfactory rating in Compliance/Use of Procedures, they are not significant enough to lead even to a marginal rating in Supervisory Ability.

Nor are the two remaining comments under Communications/Crew Interactions which I am rating marginal in that context (*see* pp. 443, 446, *infra*). In the first, I am downgrading Mr. Morabito for acting prematurely and giving what turned out to be an incorrect direction. There was nothing wrong with the manner in which he directed his subordinates, however, and I do not believe that Mr. Morabito should be penalized twice for this action. I am deleting the second comment as essentially inaccurate; it is likewise so for this competency. The

¹⁰⁸ Staff Exh. 1 at 18-19; attached affidavit, ¶ 71.

¹⁰⁹ Tr. 209-11 (Norris).

¹¹⁰ *See* Tr. 211 (Norris).

third comment (concerning "thinking out loud") is the same as the second comment under Compliance/Use of Procedures, which I deleted with respect to that competency. I rate the comment as marginal under Communications/Crew Interactions because of its potential for misleading others. Because no one was in fact misled, however, there seems to be no deficiency with regard to Supervisory Ability. Coupled with the procedural deficiencies of the incorporation by reference, this comment should continue to be deleted.

c. Conclusion as to Supervisory Ability Competency

Based on my deletion of both of the comments under this competency, Mr. Morabito must be judged as satisfactory in Supervisory Ability.

4. Communications/Crew Interactions

The fourth and final competency in which Mr. Morabito was rated as unsatisfactory is Communications/Crew Interactions. The rating was based on three comments.

a. Examiner's Comment 1

The examiner's first comment under this competency reads as follows:¹¹¹

During the first scenario, following the loss of offsite power, the candidate went to ECA-0.0 when he mistakenly observed that he had no emergency busses energized. Candidate should have relied upon verification of emergency busses from his operator who did properly verify that one emergency bus was energized and informed the candidate as such.

Mr. Morabito concedes that, during a discussion after the scenario, he informed the examiner that he must have mistakenly read the DF bus as deenergized and that he was astonished as to how he could have done that. Upon later consideration, however, he determined that he had not misread the DF bus voltmeter and that in fact it was deenergized when he looked at it. He claims that, several seconds later, after the only available diesel generator was up to speed, it closed on the bus and loaded. He further asserts that he then correctly directed the performance of ECA 0.0 (loss of all AC power) for the indications that he saw at the time. During performance of ECA 0.0, step 8, he asked the operator to verify that the emergency busses were deenergized, as required by that step. When the operator responded that the DF bus was energized, Mr. Morabito acknowledged that he was surprised but, without getting flustered,

¹¹¹ Morabito Exh. 1, attached Exhibit J, § ES-302-11, Attach. 4/4, ¶ 1.

properly directed transition to step 1 of E-O, as required by the procedure. He adds that at no time was the plant placed in a less safe position, and safe shutdown was achieved.¹¹²

The Staff asserts that, during a loss of offsite power where the diesel generator started and loaded as designed, Mr. Morabito did not recognize that the diesel generator does not load for approximately 10 seconds after loss of offsite power, so that his action was not based on a correct assessment of plant conditions. Further, Mr. Morabito failed to ask the operator about the AC buses and consequently failed to use available information before taking action. As a result, the candidate entered the emergency operating procedures incorrectly, in that he went to ECA 0.0 (loss of all AC power) instead of E-0 (reactor trip/safety injection). The Staff concludes that the failure to communicate with the operator prior to taking action on an incorrect understanding of plant conditions demonstrates deficiencies as a senior operator.¹¹³ The deficiencies, however, are not so significant that, standing alone, they would warrant an unsatisfactory rating in the competency.¹¹⁴

In response to my inquiry whether the candidate (who was here acting as a senior operator) would normally be expected to communicate with the operator before taking action in this situation,¹¹⁵ the two parties reach differing conclusions. The Staff acknowledges that for a short period of time the busses were not energized.¹¹⁶ It justifies its position that Mr. Morabito should have communicated with the operator with the general proposition that, although the SRO, as supervisor, should not be involved with control board operations, he must maintain the overall plant conditions in a safe manner.¹¹⁷

On the other hand, Mr. Morabito's negative answer is premised on his understanding that symptoms of loss of all AC power are "quite evident" and that neither operator objected to his direction to perform the immediate actions of ECA 0.0. He states that the BOP operator verified that one AC bus was energized when questioned by Mr. Morabito in accordance with step 8.a of ECA 0.0. When the BOP operator provided his response, Mr. Morabito personally verified the response and then directed the transition to E-0, step 1, in accordance with step 8.d of ECA 0.0. Thus, according to Mr. Morabito, the emergency procedure contemplated the situation presented by the examination, by containing an automatic provision for aborting the procedure once an operator realized that a bus was energized; and he properly followed the procedure.¹¹⁸

¹¹² Morabito Exh. 1 at 22-23; attached Exhibit S, Appendix B, at 12.

¹¹³ Staff Exh. 1 at 20; attached affidavit, ¶ 74.

¹¹⁴ Staff Exh. 3, ¶ 100.

¹¹⁵ LBP-87-31, *supra*, 26 NRC at 443, question 5.a(ii).

¹¹⁶ Tr. 221 (Norris).

¹¹⁷ Staff Exh. 3, ¶ 94.

¹¹⁸ Morabito Exh. 3 at 17-18; Tr. 217-18 (Morabito).

Procedure ECA 0.0 requires, as entry conditions, loss of offsite power and no emergency busses energized.¹¹⁹ Both parties agree that there was a loss of offsite power and a short period of time when the emergency busses were not energized. The real question here is whether Mr. Morabito acted prematurely in entering procedure ECA 0.0.

Mr. Morabito claims that he did not act prematurely; that the emergency procedures are symptom-based and "when you see the symptoms you implement" the procedures, without "wait[ing] a second or two [to] see if those symptoms are going to go away."¹²⁰ The Staff, however, maintains that one diesel generator had started prior to Mr. Morabito's entering the procedure; that this starting was reflected in lights on the control panel; and that, in any event, Mr. Morabito's training should have taught him that it would take up to 10 seconds for the diesel generator to get started and he should have waited those few seconds to determine if it would do so.¹²¹

This comment represents another very close question. I find that, as a result of the training he received, Mr. Morabito should have realized that it would take a few seconds for the diesel generator to start and, since the startup would negate one of the entry conditions to the procedure, should have waited briefly to ascertain whether the entry conditions were met. Mr. Morabito's action was therefore premature. However, the effect on reactor operation was trivial, particularly since the procedure included a mechanism for exiting once it was discovered that the bus became energized. Moreover, Mr. Morabito, during questioning by myself and Dr. Hetrick, seemed completely knowledgeable about how the procedure worked.

That being so, his action in neglecting to wait several seconds before entering the procedure may be equated as falling between a "slight or minor difficulty relating to system interactions" (one of the standards for a satisfactory rating) and a "difficulty . . . in relating the interactions of systems" (one of the standards for a marginal rating).¹²² His activities clearly do not reflect the "obvious unfamiliarity with subject and/or system" characteristic of an unsatisfactory rating.¹²³ In these circumstances, this comment will remain a deficiency but will be evaluated at a level no lower than marginal.

¹¹⁹ Tr. 221 (Norris).

¹²⁰ Tr. 215 (Morabito).

¹²¹ Tr. 222, 223-24 (Norris).

¹²² NUREG-1021 (Rev. 2), § ES-303, ¶ B (S, M), at 1 of 6.

¹²³ NUREG-1021, § ES-303, ¶ B (U), at 2 of 6.

b. *Examiner's Comment 2*

The examiner's second comment under the Communications/Crew Interactions competency reads as follows:¹²⁴

During the second scenario, step 6 of E-1 calls for checking secondary radiation levels. An operator checked the monitors and said "One indicator is about this much (holding fingers about 1/2 to 1 inch apart) higher than normal. Candidate proceeded in E-1. During followup questioning after the scenario, the candidate admitted *misunderstanding* the operator's report of secondary radiation levels and *assumed* there was no reason to go to E-3. [Emphasis in original.]

Mr. Morabito acknowledges that he relied on a hand signal from the reactor operator but claims that he asked followup questions to assist him in making certain that he understood the signals. He indicates that, in the circumstances, the hand signal was appropriate, inasmuch as a verbal description could have introduced other errors. He denies that he admitted to misunderstanding the operator's report, explaining that he misunderstood certain followup questions asked him by the examiner. He also asserts that, given the answers to questions he received from the operator, there would have been no reason to turn to procedure E-3 (setting forth a procedure to follow in the event of tube rupture). Mr. Morabito stresses that, on the basis of the operator's report (the hand signal) and his own followup questions, he made the correct decision.¹²⁵

The Staff claims that Mr. Morabito relied on hand signals from the operator and that hand signals are not a reliable means of communication in the control room. It explains the basis for its nonreliability view as "self-evident." The Staff adds that whether or not Mr. Morabito understood the particular signal is not relevant to the comment, inasmuch as it was inappropriate (*per se*) to rely on a hand signal. As for Mr. Morabito's alleged misunderstanding of the situation, the Staff merely states that it is "based on a verbal statement by the candidate."¹²⁶

I can agree with the Staff that the use of hand signals in the control room is not to be encouraged. As the Staff points out, the potential for erroneous interpretations is as great, if not greater, than the potential for verbal misunderstandings to which Mr. Morabito referred.¹²⁷ But, in response to my inquiry, both Mr. Morabito and the Staff indicated that they were not aware of any rule or standard that would preclude the use of such signals.¹²⁸ Nor was

¹²⁴ Morabito Exh. 1, attached Exhibit J, § ES-302-11, Attach. 4/4, ¶ 2.

¹²⁵ Morabito Exh. 1 at 23; *id.*, attached Exhibit S, Attach. B, at 12; Morabito Exh. 2 at 11-12; Tr. 232-34 (Morabito).

¹²⁶ Staff Exh. 1 at 21; attached affidavit, ¶ 77.

¹²⁷ Staff Exh. 2, ¶ 42.

¹²⁸ Responses to question B.5.b(i): Morabito Exh. 3 at 19; Staff Exh. 3, ¶ 102.

Mr. Morabito given instruction, either by NRC or Duquesne Light Company, concerning the use of hand signals. During his training, he was never told that it was inappropriate to use hand signals or to permit use of hand signals by persons serving under his direction.¹²⁹

The Staff would have preferred Mr. Morabito to have responded to the hand signal with a question such as "how much?", which would in effect have been a rejection of the hand signal.¹³⁰ The Staff did not recall any followup discussion between Mr. Morabito and the reactor operator.¹³¹ Given the consistency of Mr. Morabito's claim (starting from his first appeal) that he did ask certain questions of the operator, I find that he did indeed ask questions designed to ascertain whether there were any indications of a tube rupture (the situation that would have called for entering procedure E-3).¹³² As a result of his inquiries, he determined that a tube rupture had not occurred and reached the correct decision not to go into procedure E-3.

Furthermore, it seems apparent that Mr. Morabito did not admit to the examiner, following the scenario, that he had misunderstood the hand signal. What he admitted misunderstanding was the off-on status of the simulator, following the conclusion of the scenario. Knowing that fact was important for purposes of responding to the followup questions asked him by the examiner.¹³³

Based on the foregoing, I conclude that Mr. Morabito was knowledgeable of the events that were occurring and that he did not utilize the correct procedure fortuitously. He did not admit to any misunderstanding of the events that were occurring, only to followup questions asked him by the examiner. There was no regulatory bar to his reliance on hand signals, nor was he instructed as part of his training not to do so. For these reasons, this comment of the examiner must be deleted.

I stated earlier that I agreed with the Staff that use of hand signals in the control room may be inappropriate. If the Staff believes that use of hand signals is inappropriate to the extent necessary to lead to deficiency ratings on operator or SRO simulator examinations, it should either publish a standard or guideline setting forth that view or, alternatively, mandate that that viewpoint be included in operator training programs. Absent guidance of that type, a candidate cannot fairly be penalized for reliance on hand signals, particularly where (as here) no incorrect actions were taken as a result.

¹²⁹ Responses to question B.5.b(ii): Morabito Exh. 3 at 19; Staff Exh. 3, ¶ 104; Tr. 230 (Morabito).

¹³⁰ Tr. 236, 238-39 (Norris).

¹³¹ Tr. 237 (Norris).

¹³² Morabito Exh. 1, attached Exhibit S, Attach. B, at 12; Morabito Exh. 1 at 23; Morabito Exh. 3 at 19; Tr. 231 (Morabito).

¹³³ Tr. 233-35 (Morabito).

c. *Examiner's Comment 3*

The third (and final) comment under Communications/Crew Interactions reads as follows:¹³⁴

During second scenario, while in ES-1.2 step 27, the candidate asked, "Are RCS hot leg temperatures greater than 395 F?" Candidate did not wait for an operator response and assumed the answer to the question was "yes" and answered "yes" aloud to himself. The operator then indicated the answer to the question was "No".

This is the same comment as the examiner's second comment under the Compliance/Use of Procedures competency. I deleted the comment in that context as being insubstantial. *See* pp. 428-29, *supra*.

With respect to this competency, the arguments advanced by the parties on this comment are similar to those advanced under the other competency. Mr. Morabito stresses that "thinking out loud" should be encouraged and that the procedure was carried out correctly, on the basis of the operator's report. In terms of this competency (as well as that of Supervisory Ability, into which this comment is incorporated by reference), Mr. Morabito concludes that "[i]t takes a good supervisor, a good communicator, a good crew interactor to be able to generate enough information during an emergency to subsequently subjugate his own thoughts to the real facts and act accordingly and correctly."¹³⁵

The Staff adds only that Mr. Morabito not only failed to await the correct information but also incorrectly analyzed the effects of the transient in progress and improperly anticipated plant parameters. This comment is said to reflect Mr. Morabito's lack of care in communicating and interacting with other operators.¹³⁶

In terms of Communications/Crew Interactions, the significant implication of "thinking out loud" is whether others in the control room would be misled. Both parties agree that no one was misled by Mr. Morabito's incorrect statement.¹³⁷ Moreover, no incorrect action was taken, either by Mr. Morabito or by anyone else. The potential for misleading others, however, did exist. Although insubstantial in the circumstances, some downgrading for the incorrect initial statement is perhaps warranted, because of the potential for misleading others. Mr. Morabito argues that, at worst, his action should be evaluated (with respect to Communications/Crew Interactions) at a level no lower than "M".¹³⁸ I agree.

¹³⁴ Morabito Exh. 1, attached Exhibit J, § ES-303-11, Attach. 4/4, ¶ 3.

¹³⁵ Morabito Exh. 1 at 24; *id.*, attached Exhibit S, Attach. B, at 13.

¹³⁶ Staff Exh. 1 at 22; attached affidavit, ¶ 80.

¹³⁷ Responses to question B.5.c(iv): Morabito Exh. 3 at 20; Staff Exh. 3, ¶ 116.

¹³⁸ Morabito Exh. 3 at 20 (response to question B.5.c(v)).

d. Conclusion as to Communications/Crew Interactions Competency

Of the three comments under this competency, I have deleted one and rated the other two as no worse than a level of marginal. Mr. Morabito, on the basis of a lack of substantiality of the two comments, might possibly be awarded a satisfactory rating. In the interest of conservatism, however, I will evaluate Mr. Morabito as marginal in the Communications/Crew Interactions competency.

C. Conclusions

With respect to the simulator examination, the Staff rated Mr. Morabito as unsatisfactory in four competencies and, on that basis, gave him a failing grade on the examination. Upon a complete review of all the comments that were used in reaching the various unsatisfactory ratings, I have determined that Mr. Morabito should be rated as unsatisfactory in one competency, marginal in two others, and satisfactory in the fourth.

A candidate may, under NRC guidelines, be deemed to have failed an examination on the basis of a rating of unsatisfactory in only one competency.¹³⁹ But that result need not take place if a candidate's overall performance suggests that it is not warranted. That is the situation here. As I previously pointed out, the unsatisfactory rating in the Compliance/Use of Procedures competency is now based on two actions that are not serious enough to warrant a failing grade on the examination as a whole. The two marginal grades are also based on actions that are not very serious. Indeed, the Staff acknowledged that the potential consequences that may follow from particular actions of a candidate may be taken into account in determining a candidate's grade¹⁴⁰ and that none of Mr. Morabito's activities put the reactor in any danger.¹⁴¹

Taking into account all these factors, I find that the single unsatisfactory competency rating, together with marginal ratings in two other competencies, do not warrant a failing grade on the examination as a whole. I find that Mr. Morabito passed the simulator examination that was administered to him. Insofar as this record reflects, passage of the simulator examination was the only remaining bar to Mr. Morabito's obtaining the SRO license for which he is a candidate. Accordingly, he should be issued a senior reactor operator's license for the Beaver Valley Power Station, Unit 1.¹⁴²

¹³⁹NUREG-1021 (Rev. 2), § ES-302, ¶ F.3.

¹⁴⁰Tr. 159 (Norris).

¹⁴¹Tr. 253 (Norris).

¹⁴²The 2-year term of the SRO license (*see* 10 C.F.R. § 55.32 (1987)) is to run from the date of its issuance. I construe NUREG-1021 (Rev. 2), § ES-112, ¶¶ C.8, C.11, and D.4 (guidelines concerning effective date of a license) to be applicable only when a license denial is overturned through NRC Staff review. To make the term

(Continued)

III. ADDITIONAL OBSERVATIONS

On the basis of my review of the entire record in this proceeding, several additional points must be stressed. First, both parties are to be commended for the assistance they provided in developing the record of this proceeding to the degree necessary for me to provide an informed ruling on many technically complex issues. This proceeding utilized (at the suggestion of the Commission) the proposed procedures for informal proceedings. Although those procedures were not specifically designed for appeals in operator examination proceedings, they enabled the parties to present their positions effectively and provided the Presiding Officer with enough flexibility to fill in gaps in the record which might have compromised a full and fair determination of the merits of various substantive questions. Nonetheless, the procedures, although less complex than those for formal adjudications in 10 C.F.R. Part 2, Subpart G, do include certain complexities.

Mr. Morabito, a nonlawyer, succeeded in overcoming those complexities to the extent necessary to create a record significantly more complete than at the time he instituted his appeal. The Staff, for its part, carefully responded to the arguments propounded by Mr. Morabito and attempted to provide a complete background for the issues raised by Mr. Morabito. Both parties provided thoughtful responses to the questions that I raised. I especially commend the Staff for its willingness to modify its position (as in the written examination) when information was brought to its attention for the first time through this process of developing the record.

Second, notwithstanding my reversal of the Staff on the result reached in the simulator examination, I strongly emphasize that I do not subscribe in any way to Mr. Morabito's frequently expressed claim that the NRC Staff examiners were "incompetent." At issue were a number of complex and close questions which could reasonably be decided several ways. That I ruled in favor of Mr. Morabito and rejected the Staff position on many of these questions represents a difference of professional interpretation of events, not a judgment as to the competence of the individuals who originally rendered their decisions.

My only critique of the Staff examiners was their seeming tendency to accord undue weight to alleged deficiencies which, even if they were properly deemed to be deficiencies, were essentially trivial in nature. They tended to overlook the forest for the trees, to ignore the considerable knowledge and skills demonstrated by Mr. Morabito because of the few minor deficiencies that he exhibited. Perhaps this situation is attributable to a relatively junior examiner (2 years out of

of Mr. Morabito's license consistent with that of others who took the examination, as provided by the guidelines, would be unfair to Mr. Morabito, in view of the length of his appeal process and the several extensions of time granted to the NRC Staff.

engineering school at the time of the examination and certified as an examiner for power reactors less than 6 months prior to the examination) evaluating a candidate with more than 20 years' experience in the nuclear industry.¹⁴³ Or perhaps the situation is a necessary attribute of the examination process; but, if so, it may deprive the nuclear utilities of employing as operators or senior operators a number of competent and well-qualified individuals.

Finally, Mr. Morabito sought to use his appeal as an avenue for reforming the operator licensing process.¹⁴⁴ I early ruled that this matter was beyond my jurisdiction in this proceeding, although my findings and conclusions could perhaps serve as a vehicle for later changes in the process which he might seek to pursue through other channels.¹⁴⁵ Now, after having gone through this proceeding, I would recommend one modification to the process followed for Mr. Morabito's examination.

I noted earlier (at p. 425, *supra*) that the grading of the simulator examination was described by the NRC Examiner Standards in effect at that time as being a "subjective" judgment. In my opinion, it should be less so. Indeed, the current Examiner Standards have dropped the "subjective" characterization, referring to the pass-fail determination only as a "professional judgment."¹⁴⁶ More objective standards for the evaluation of a candidate's activities than were followed in Mr. Morabito's examination should be instituted, so that there is less potential for different grading of candidates for similar positions.

In a similar light, although affecting the written rather than the simulator examination, was the differing grading standards employed by the Staff for multiple-answer questions, such as question 6.03b. *See* note 22, *supra*. The grading method favored by the Staff Headquarters reviewers may well be preferable to that used by the examiner (which was eventually accepted by the Staff). If so, it should be prescribed for all examinations. Although I have no authority to put into effect any changes in practices that would lead to greater objectivity in grading, I can note that changes of this type appear to be under way. I also can express some hope that the Commission will continue to explore this matter and attempt to develop some more definitive guidance in this regard.

¹⁴³ Cf. Staff Exh. 1, professional qualifications of David M. Silk, with Morabito Exh. 1 at 2-3 and attached Exhibit B; and license application form, provided to Presiding Officer and parties by letter dated July 21, 1987 (entitled "Addition to Motion on Burden of Proof").

¹⁴⁴ Morabito Exh. 1 at 1-2, 31.

¹⁴⁵ LBP-87-23, 26 NRC 81, 84-85 (1987).

¹⁴⁶ NUREG-1021 (Rev. 4), § ES-302, ¶ C.

IV. CONCLUSIONS OF LAW

Based on the foregoing, and the entire record of this proceeding, I hereby conclude:

1. The Applicant (Mr. Morabito) has passed the prescribed written examination, operating test, and simulated operating test, as required by 10 C.F.R. § 55.11(b) (1987).
2. The Applicant has learned to operate and to direct the licensed activities of licensed operators in a competent and safe manner, within the meaning of § 55.11(b).
3. Having fulfilled the requirements of 10 C.F.R. § 55.11(a) and (c) prior to the institution of this proceeding, the Applicant has fulfilled all requirements for a senior reactor operator's license, as specified in 10 C.F.R. § 55.11 (1987).

V. ORDER

For the reasons stated, and based on the foregoing opinion, findings of fact, conclusions of law, and the entire record, it is, this 20th day of April 1988, ORDERED

1. The determinations by the NRC Staff that Mr. Alfred J. Morabito has not passed the written and simulator portions of the examination for a senior reactor operator license are hereby *reversed*.
2. The Director, Nuclear Reactor Regulation or, as appropriate, the Regional Administrator, Region I, is hereby *directed* to issue a senior reactor operator license for the Beaver Valley Power Station, Unit 1, to Mr. Alfred J. Morabito, subject to the standard terms and conditions that govern such licenses.
3. This license authorization is immediately effective. The term of the license shall run from the date of its issuance.
4. In accordance with the Commission's Order dated July 1, 1987 (unpublished), which instituted this proceeding, and as further provided by the Commission's Order dated October 2, 1987 (unpublished), this Decision will become final agency action thirty (30) days after the date of issuance unless

the Commission, on its own motion, undertakes a review of the Decision. No petition for review by a party will be entertained by the Commission.

PRESIDING OFFICER

**Charles Bechhoefer
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 20th day of April 1988.**

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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)

April 20, 1988

In this Memorandum and Order the Licensing Board admits seven contentions concerning safety in the high-density reracking of a spent fuel pool. Seven other contentions are denied admission to the proceeding.

**ADMISSIBILITY OF CONTENTIONS: SIGNIFICANT HAZARDS
CONSIDERATION**

Licensing boards are barred by Commission regulation from disturbing or overruling a Staff determination that the high-density reracking of a spent fuel pool does not involve any significant hazards. The Staff determination is subject only to discretionary review by the Commission itself.

ADMISSIBILITY OF CONTENTIONS: SIGNIFICANT HAZARDS CONSIDERATION

Even though licensing boards are barred from disturbing a Staff determination of no significant hazards and the issuance of a license amendment authorizing high-density reracking of a spent fuel pool, licensing boards may subsequently admit contentions for hearing which, if proven, would require changes to the license amendment issued.

ADMISSIBILITY OF CONTENTIONS: CASK-DROP ACCIDENTS

Cask-drop accidents, although of low probability, are, potentially, among the most serious accidents considered in the operation of spent fuel pools.

ADMISSIBILITY OF CONTENTIONS: SPENT FUEL POOL TEMPERATURE

Because bulk temperatures can differ significantly from temperatures at specific locations in a spent fuel pool, departure from nucleate boiling to film boiling is a matter of safety concern.

ADMISSIBILITY OF CONTENTIONS: NEW PROBLEMS IN ESTABLISHED TECHNOLOGY

Identification of new problems in an otherwise established technology such as the use of Boraflex in high-density storage racks can warrant the admission of a contention.

MEMORANDUM AND ORDER

Campbell Rich has petitioned to intervene in Florida Power and Light Company's application to expand the spent fuel pool at Unit 1 of its St. Lucie Plant. Mr. Rich has filed sixteen contentions that he seeks to have litigated. We find herein that Mr. Rich has standing to intervene and admit several of his contentions.

I. PROCEDURAL HISTORY

On August 31, 1987, the Nuclear Regulatory Commission published a notice of: (1) Consideration of Amendment to facility operating license for St. Lucie,

Unit 1; (2) a proposed finding of no significant hazards consideration; and (3) opportunity for hearing. 52 Fed. Reg. 32,852 (1987). The notice advised in pertinent part that

The amendment 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.

The St. Lucie plant is owned and operated by Florida Power and Light Company ("Licensee") on Hutchinson Island in St. Lucie County, 12 miles southeast of Fort Pierce, Florida.

Initially, and with the Board's approval, Licensee sought, without success, to resolve Mr. Rich's concerns by negotiation. Thereafter, pursuant to the Board's directions, Mr. Rich, by letter dated January 15, 1988, filed an amended petition to intervene setting forth sixteen contentions challenging whether the health and safety of the public would be adequately protected by the license amendment applied for. Both Licensee and the Nuclear Regulatory Commission Staff ("the Staff") filed responses to the petition, opposing it in whole or in part. A prehearing conference was held on March 29, 1988, on Hutchinson Island, Florida, to hear oral argument from the parties.

On March 17, 1988, Staff counsel informed the Board that the Staff had made a final "no significant hazards determination" pursuant to 10 C.F.R. 50.92(a)(4) [sic] (1987). The Staff had issued amendment number 91 to Facility Operating License No. DPR-67 on March 11, 1988, authorizing the requested spent fuel pool expansion at the St. Lucie, Unit 1 plant.

II. CRITERIA FOR ADMITTING CONTENTIONS

A. Standing

The requirements for intervention in Nuclear Regulatory (NRC) proceedings are set out in § 2.714 of Title 10 of the *Code of Federal Regulations*. A petitioner must have standing to participate, that is, it must demonstrate that its "interest may be affected" by the proceeding. 10 C.F.R. § 2.714(a)(1) (1987). That interest must be set forth "with particularity." 10 C.F.R. § 2.714(a)(2). In ruling on intervention petitions, licensing boards are required by subsection (d) of § 2.714 to consider

- (1) The nature of the petitioner's right under the Act to be made a party to the proceeding.
- (2) The nature and extent of the petitioner's property, financial, or other interest in the proceeding.
- (3) The possible effect of any order which may be entered in the proceeding on the petitioner's interest.

Mr. Rich resides in Stuart, Florida, approximately 10 miles from the St. Lucie plant. His standing to intervene in the proceeding was conceded by the parties at oral argument. Tr. 16; Staff Brief at 2-3; Licensee Brief at 5-6. We concur in the parties' view and find that Mr. Rich has standing to intervene in this proceeding within the meaning of 10 C.F.R. §§ 2.714(a) and (d) (1987).

B. Admissibility of Contentions

The criteria for admitting contentions to the proceeding are set out in § 2.714(b)(2) of Title 10 of the *Code of Federal Regulations* which provides in pertinent part that:

the petitioner . . . must include a list of the contentions . . . and the bases for each contention set forth with reasonable specificity.

The foregoing provision has been exhaustively interpreted in an extensive body of Commission case law holding, *inter alia*, that only those contentions which fall within the scope of issues set out in the *Federal Register* notice of opportunity for hearing may be admitted for litigation in Commission proceedings. See, e.g., *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 426 (1980). If a petitioner states the bases of the contention proffered with reasonable specificity, the § 2.714(b) requirement is met. Whether or not the contention is true is left to litigation of the issues admitted, and it is not the function of the Presiding Officer to reach the merits of the issue proposed in deciding whether the contention is admissible. *Mississippi Power and Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 426 (1973); *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 548 (1980).

Reasonable specificity means articulating the theory of the contention with sufficient clarity that the reasons for the petitioner's concern are apparent and the parties "will know at least generally what they will have to defend against or oppose." *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 20 (1974). Thus, for example, a proposed contention challenging solutions to identified problems in the license application must state why the solution is inadequate. *Commonwealth Edison Co.* (Dresden Nuclear Power Station, Unit 1), LBP-82-52, 16 NRC 183, 188 (1982). The contention must address concrete issues and may not consist of "vague generalized assertions, drawn without any particularized reference to the details of the challenged facility." *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 1 and 2), CLI-73-10, 6 AEC 173, 174 (1973).

At the same time, our case law allows some "leeway in judging the sufficiency of intervention petitions" from counsel new to the field and *pro se*

intervenors. *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), ALAB-279, 1 NRC 559, 576-77 (1975). The degree of specificity required to form the basis for a contention must be judged on a case-by-case basis. As Licensee and Staff correctly note, however, that does not mean that this Board has any obligation "to recast" a contention to make it acceptable. Licensee Brief at 8-9; *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-226, 8 AEC 381, 406 (1974).

III. RULINGS ON CONTENTIONS

Of the sixteen contentions submitted, two were withdrawn at oral argument. Tr. 68, 95-96. Accordingly, Contentions 7 and 12 are dismissed from the proceeding, and we do not address them herein. The remainder of the contentions are discussed below, *seriatim*.

A. Contention 1

The Contention avers

That the expansion of the spent fuel pool at St. Lucie, Unit No. 1 is a significant hazards consideration and requires that a public hearing be held before issuance of the license amendments.

Petitioner recites three bases for the contention, namely, that: (1) the spent fuel pool expansion increases the possibility of certain accidents, reduces the margin of safety, and creates the possibility of "a new and different type of accident . . . which would cause the pool to lose its structural integrity"; (2) Commission case law holds that expansion of a spent fuel pool involves significant hazards; and (3) Congress intended such expansions to be "a no significant hazards consideration." Request for Hearing and Petition for Leave to Intervene ("Amended Petition") at 1-2.

At the prehearing conference, Petitioner modified the contention to ask that the Board suspend the Staff's March 11, 1988 determination of no significant hazards on the ground, *inter alia*, that the Staff had not adequately considered the safety implications of the use of Boraflex. Petitioner argued that Boraflex should be viewed as an unproven technology based on Applicant's October 20, 1987 response to questions from the Staff Project Manager. Tr. 17-24.

Both Licensee and Staff renewed their written opposition to the modified contention at the prehearing conference. Both take the position that the Board lacks jurisdiction to reverse or otherwise act on the Staff's no significant hazards determination itself. Tr. 27-29. Licensee's Answer in Opposition to Amended

Petition to Intervene ("Licensee's Opposition") at 14-19; NRC Staff Response to Amended Petition to Intervene ("Staff Response") at 6-9.

The issue is governed by 10 C.F.R. § 50.58(b)(6) of Nuclear Regulatory Commission ("NRC") regulations which provides that

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.

In promulgating the rule, the Commission made it clear that the reference to "Commission" meant the Commissioners themselves and that this Board had no authority to act on the Staff's finding as such. That limitation on this Board's authority is distinguished from our authority, after a finding is made and the license issued, to consider and take corrective action on any threat to the public health or safety disclosed at any subsequent hearing. 51 Fed. Reg. 7745, 7759 (1986). Thus, this Board is barred as a matter of Commission regulation from acting on or granting the relief requested by Contention 1. Accordingly, Contention 1 is denied admission to this proceeding.

B. Contention 2

Contention 2 states that

Expansion of the spent fuel pool at the St. Lucie facility, Unit No. 1 constitutes a major Federal action and requires that the Commission prepare an environmental impact statement in accordance with the National Environmental Policy Act of 1969 (NEPA) and 10 CFR Part 51.

Petitioner alleges that the spent fuel pool expansion increases the probability of a radioactive release to the environment as a result of normal operation and a total or partial loss of coolant. Petitioner also alleges that Staff has not examined the effects of long-term or permanent storage of wastes in the pool or of alternatives to expanding the pool's storage capacity. Amended Petition at 3. At oral argument, Petitioner asserted that the consequences of a zirconium cladding fire are so severe as to warrant an environmental impact statement. Petitioner argued that the environmental assessment of the spent fuel pool expansion was inadequate because of: (1) the use of Boraflex; and (2) a severe accident such as a cask drop causing the structural failure of the pool as postulated in the Brookhaven National Laboratories Report titled "Severe Accidents in Spent Fuel Pools in Support of Generic Safety Issue 82" (NUREG/CR-4892, BNL-NUREG-52093) ("the BNL Report"). Tr. 29-37.

At the prehearing conference, Licensee and Staff reiterated their written opposition to the admission of Contention 2. They argue that an environmental assessment satisfies the requirements of the regulations and that the more extensive environmental impact statement is not required for low-probability accidents. Tr. 32-33. Licensee's Opposition at 20-23; Staff Response at 10-12.

Contention 2 asserts that § 102(2)(C) of the National Environmental Policy Act, 42 U.S.C. 4332(2)(C) ("NEPA"), requires that an Environmental Impact Statement (EIS) be prepared because the spent fuel pool expansion is a major federal action and thus, conversely, that the less rigorous environmental assessment prepared does not satisfy regulatory and statutory requirements. In support of the assertion, Petitioner cites essentially three bases: (1) a severe accident; (2) failure to analyze the effects of permanent waste storage at the site; and (3) failure to consider alternatives to onsite storage.

Licensee asserts that expansion of a spent fuel pool is not a major federal action within the meaning of NEPA, citing, *inter alia*, *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 264-68 (1979). Because of the state of the law concerning the requirement of a NEPA EIS in the instant case, we do not reach the issue.

The severe accident postulated is based on the BNL Report. The accident assumes a cask drop causing the structural failure of the pool, leading to loss of coolant, a fuel rod zircaloy cladding fire, and, ultimately, large radiation releases. The scenario describes an accident beyond the design basis of the plant and the spent fuel pool. However, the scenario does not identify any deficiencies in cask-handling procedures that would result in such a drop and offers nothing to connect the "generic" scenario in the BNL Report with the cask-handling procedures at the St. Lucie plant.

In the first instance, a contention must set forth its basis "with reasonable specificity." 10 C.F.R. § 2.714(b) (1987). Absent an explanation as to why or how the cask might drop in the first place *at the St. Lucie* spent fuel pool, we cannot just assume it will happen and then continue on to consider all the possible consequences. The possible accident postulated thus remains too speculative to satisfy the specificity requirement for admission to the proceeding. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-880, 26 NRC 449, 454-57 (1987).

Severe accidents are also known as "Class 9" accidents or "beyond-design-basis" accidents. Because such scenarios are highly speculative and of low probability, Commission policy and case law generally hold that they are not required to be considered in an EIS. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-87-12, 26 NRC 383, 393 n.17 (1987); *see generally*, "Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants," 50 Fed. Reg. 32,138 (1985). The courts have upheld that policy. *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d

1287, 1300-1301 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26, *cert. denied*, — U.S. —, 107 S. Ct. 330 (1986). An almost identical contention was considered in *Diablo Canyon*, *supra*. There the Appeal Board held that

There is nothing, therefore, to suggest that the loss of pool coolant and zircaloy cladding fire scenario . . . is anything but a remote and speculative, beyond design-basis accident. . . . NEPA does not require the consideration of such an event and an EIS need not be prepared.

26 NRC at 460. We find that conclusion controlling and so hold in this instance.

Finally, Petitioner asserts as a basis for requiring an EIS that Licensee failed to consider other possible alternatives to spent fuel pool expansion. Licensee points out that there is no obligation to seek possible alternatives, *citing Trojan*, *supra*, and noting that Petitioner has not alleged any basis for concluding that the alternatives suggested are environmentally superior to spent fuel pool expansion. We concur. Contention 2 will not be admitted to the proceeding.

C. Contention 3

Contention 3 states

That the calculation of radiological consequences resulting from a cask drop accident are not conservative, and the radiation releases in such an accident will no [sic] be ALARA, and will not meet with the 10 CFR Part 100 criteria.

As bases for this contention, Mr. Rich refers to the BNL Report, citing sections of that report that identify uncertainties in accident progression and radiological consequences. Mr. Rich argues that because of these uncertainties the accident consequences of a cask-drop accident in the expanded pool are not conservative and will not meet 10 C.F.R. Part 100 requirements. In Mr. Rich's view, the uncertainties preclude the possibility of a conservative estimate. Amended Petition at 4. At the prehearing conference, Mr. Rich agreed that his reference to ALARA was misplaced since it generally applies to routine operation, not accidents. Tr. 44.

Both Licensee and Staff oppose admission. Licensee argues that the sweeping and unsupported statement that a conservative estimate cannot be made is insufficient to establish basis for the contention. Licensee states that the leap from the existence of substantial uncertainty to the conclusion that such uncertainty cannot be provided for through the use of conservatism is wholly inconsistent with both engineering practice and practice authorized by the NRC. Tr. 43; Licensee's Opposition at 25. Mr. Rich responded that he is prepared to provide evidence related specifically to the inadequacy of the cask-drop accident calculations. Tr. 44-45.

The Board will afford Mr. Rich that opportunity. While Mr. Rich's written filing on this issue is not a model of specificity, it does raise an issue within the scope of the proceeding. The contention is accepted as modified by deletion of the reference to ALARA. Licensee's response to this contention should show that its analysis of a cask-drop accident bounds those uncertainties that are identified in the BNL Report and listed as the bases for this contention. Thus, by such conservatism and analysis, Licensee must demonstrate compliance with 10 C.F.R. Part 100 (1987).

D. Contention 4

Contention 4 states that

That the consequences of a cask drop accident or an accident similar in nature and effect are greatly increased due to the presence of a large crane to be built inside the spent fuel pool building in order to facilitate the reracking.

As bases for this contention, Mr. Rich relies heavily on the contents of the BNL Report. He asserts that: (1) the presence of the temporary construction crane in the spent fuel pool area is contrary to Licensee's FSAR; (2) structural failure of the fuel pool due to a heavy load drop is identified as a primary triggering event; (3) for heavy loads, human error probabilities, structural damage potentials, and recovery actions are the primary sources of uncertainties; and (4) the very presence of the crane inside the spent fuel pool building contributes to the potential for a heavy-load drop accident and may inhibit the ability of the existing crane to operate in a recovery action. Amended Petition at 4-5; Tr. 45-47.

Licensee opposes admission, stating that Mr. Rich uses a generalization from the BNL Report without even referring to the measures actually being taken to avoid such accidents. Licensee relies on portions of the SAR submitted with the amendment request and its responses to several NRC Staff amendment review questions related to the temporary crane and heavy load drops. Licensee's Opposition at 27-29; Tr. 49-50.

Staff states that construction accidents or safe handling of heavy loads are litigable issues within the scope of the proceeding, and since the temporary construction crane will be used to move racks within the spent fuel pool, they do not oppose admission. Staff further states that the contention may be erroneously premised on the fact that the temporary crane will be in the area during cask handling, but is otherwise adequately specific and supported by a minimally sufficient basis. Tr. 51; Staff Response at 15.

The Board finds that this contention meets the requirements of § 2.714. Cask-drop accidents, although of low probability, are, potentially, among the most serious accidents considered in the operation of spent fuel pools. Consideration of Licensee's actions, either taken or proposed, to avoid construction-crane-related accidents would require an inquiry into the merits of the issue.

Licensee's response to the contention should also address the potential for cask transfer of Unit 1 fuel to Unit 2 in addressing construction crane accidents. (See Staff Environmental Assessment Relating to the Transfer of Unit No. 1 Spent Fuel Between Units No. 1 and 2 of the St. Lucie Plant, dated February 22, 1988.) The contention is admitted.

E. Contention 5

Petitioner avers in Contention 5

That FP&L has not provided a site specific radiological analysis of a spent fuel boiling event that proves that off-site dose limits and personal exposure limits will not be exceeded in allowing the pool to boil with makeup water from only seismic Category 1 sources.

At the prehearing conference, Petitioner admitted that his original basis for this contention is probably inapplicable. Tr. 58. Mr. Rich modified the contention, in effect alleging that the site-specific radiological analysis of a fuel pool boiling event conducted by Licensee is inadequate and that the NRC Staff should conduct its own independent study and analysis. Tr. 59. Upon learning that the Staff had conducted a separate analysis, Petitioner withdrew the contention but later retracted the withdrawal pending his review of Staff's analysis. Tr. 63, 73.

Licensee objected to both the original and restated contentions, arguing that the contention is identical to a contention admitted in the Turkey Point proceeding but not supported by an adequate basis. The Turkey Point contention alleged that the radiological analysis of a spent fuel pool boiling event was an extrapolation of an analysis conducted at the Limerick reactor. Licensee's Opposition at 31. Licensee states that no such allegation is made in Petitioner's filing, and the use of the term "greater" in the "Bases for Contention" portion lacks comparative reference. *Id.*

The NRC Staff did not oppose the contention, interpreting it to address the lack of a site-specific radiological analysis of a spent fuel pool boiling event which demonstrates that 10 C.F.R. Parts 20 and 100 onsite and offsite dose limits will not be exceeded. Staff Response at 15. Apparently, the Staff interpreted the use of the term "greater" to apply to doses above the limits of NRC regulations.

The Board reserves judgment on this contention pending Petitioner's review of Staff's independent analysis. Mr. Rich is to advise the Board within 30 days of his receipt of the Staff analysis (and in any event, no later than May 19, 1988) whether he wishes to pursue the contention. If he does not wish to pursue it, it will be dismissed. If he does wish to pursue it, it will be ruled on at that time.

F. Contention 6

Petitioner asserts in Contention 6 that

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 and long-term storage in the spent fuel pool.

Petitioner argues that the pool was designed to store lesser quantities of spent fuel for a shorter period of time and that licensee has failed to adequately analyze problems that may result from exposure to the increased amount of decay heat and radiation emitted by the larger number of spent fuel assemblies stored. Petitioner specifies three problems: (1) deterioration of fuel cladding; (2) loss of integrity of materials making up the storage rack and the pool liner; and (3) deterioration of the concrete of which the pool is constructed. Amended Petition at 5-6. 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 calculations of these forces were "clearly inadequate." Tr. 65-66.

Licensee objects to the contention, first on the grounds that a similar contention was litigated in a proceeding involving the Turkey Point reactor. Licensee asserts that while intervenors there presented no testimony, nine witnesses testified that the contention there was without merit. Licensee also cites the documentation supporting the St. Lucie spent fuel pool amendment application for the proposition that the calculations of decay heat and radiation satisfy regulatory requirements. Licensee's Opposition at 35-36.

Staff does not object to admission of the contention if it is limited to the storage period authorized by the amendment. While Staff notes that the contention may be premature because raised before the Staff's evaluation is available, citing *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 468-69 (1982), it does not argue that the technical objection should bar admission of the contention. Staff Response at 16-17.

We agree with the Staff. The contention is adequately specific and clearly puts Licensee on notice of the issue to be addressed. Licensee's argument that the contention was copied from prior proceedings is not grounds for barring the

contention in this case. The St. Lucie spent fuel pool differs from the Turkey Point plant, and thus the Turkey Point decision on contentions cannot act as a bar to considering the issue here. See, e.g., *Commonwealth Edison Co.* (Byron Nuclear Power Station, Units 1 and 2), LBP-80-30, 12 NRC 683, 689 (1980).^{*} However, the scope of the contention is bounded by the scope of the notice of hearing and must be limited to the length of time authorized by the license amendment at issue. *Zion, supra*, 12 NRC at 426. The contention is admitted as modified.

G. Contention 8

Contention 8 states

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.

Petitioner alleges that increases in the heat load to the fuel storage pool using high-density storage racks could lead to excessively high temperatures in the pool and that a delay in makeup emergency water could cause a fuel rod cladding fire or explosion, thereby releasing radioactivity from the fuel and posing a threat to the public. Amended Petition at 6-7. Mr. Rich clarified his contention during the March 29, 1988 Prehearing Conference by stating that his basic concern was that the pool cooling system was inadequate under certain heat load conditions. He maintains that boiling in the fuel pool would result, with the probability that this could lead to a loss of cooling capability, and that he or his experts will provide substantial technical evidence that temperature guidelines will be exceeded. Tr. 68-70.

Licensee argues that their calculations show no departure from Standard Review Plan guidelines. Licensee objects to admitting the contention as it relates to boiling because it fails to point to any specific error in Licensee's analysis and calculations. Licensee also objects to the cladding fire portion of the contention because it fails to suggest how makeup water might be lost. Tr. 71-72; Licensee's Opposition at 37-38. Similarly, Staff would reject the contention inasmuch as Petitioner does not show that any of the safety guides would be exceeded. Staff Response at 18-19.

^{*}Licensee's argument is made in connection with many of Petitioner's contentions, and it is equally without merit in those instances. The argument will not be addressed further herein.

However, safety guides do not have the force and effect of law or NRC regulations. Moreover, bulk pool temperatures can differ significantly from temperatures at specific locations within the pool. Departure from nucleate boiling to film boiling is always a matter of safety concern. Accordingly, the Board finds Contention 8 admissible. The Board expects Petitioner and Licensee, as well as their experts, to present direct technical testimony for the record.

H. Contention 9

Contention 9 states

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.

This contention alleges that, if a pump or the power supply fails, the spent fuel pool cooling system will be unable to accommodate the increased heat load associated with the higher-density fuel storage and a full-core discharge. At oral argument, Petitioner emphasized the vulnerability of the electrical power supply to forces such as humidity, wear, and radiation. Tr. 80. Licensee opposes admission stating that it ignores a section of the Licensee's Safety Analysis Report (SAR) entitled "Decay Heat Calculations for the Spent Fuel Pool (Bulk)" which describes the cooling system design, a detailed decay heat analysis, and the sources and times of availability of makeup water in the event of loss of cooling capability. Licensee argues that the "mere assumption" of cooling system inadequacy is inadequate. The contention fails to question the Licensee's methodology or conclusions and should be rejected for lack of basis. Licensee's Opposition at 39-40. The Staff does not oppose admission. Tr. 81; Staff Response at 20.

The Board believes that this contention meets the minimal requirements of §2.714 in that it is sufficiently specific for litigation. While the basis for the contention is minimal, the changes in fuel density and amount provide the quantum of basis required. 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.

I. Contention 10

Contention 10 states

That in calculating time to boil after loss of cooling after completion of full core discharge with the presence of the proposed 1706 assemblies, FP&L utilized a different set of assumptions than in determining the original figures for time to boil as indicated in the Final Safety Analysis Report for the St. Lucie plant, Unit No. 1. (9.1-49, Table 9.1-3).

At oral argument, Petitioner asserted that the "time to boil calculations are not conservative." Tr. 82-85. It appears that Petitioner addresses the final assumptions used rather than the difference between assumptions used in the final Safety Analysis Report for the plant itself and those used for the final SAR for the spent fuel pool expansion. Tr. 84.

Both Licensee and Staff argue for the rejection of this contention. Staff maintains that there is not sufficient basis or specificity. Staff Opposition at 21; Tr. 88. Licensee points out, in part, that differing assumptions in the calculations do not form a basis for a contention. Licensee's Opposition at 41. At oral argument, Licensee emphasized that Petitioner fails to specify any flaw in the assumptions challenged. Tr. 87.

The Board agrees, and the contention is rejected for lack of basis and specificity. We note, however, that in Intervenor's clarification it appears that his real concern was that the calculations, particularly in the determination of "time to boil," were not conservative. Tr. 82-88. This is precisely the subject of Contention 8, *supra*, and thus will be addressed.

J. Contention 11

Petitioner asserts in Contention 11

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.

This contention asserts that the use of Boraflex neutron absorber plates as incorporated in the proposed high-density storage racks is an unproven, untested technology and is unsafe. Petitioner quotes a statement from NRC Information Notice 87-43, SSINS No. 6835 (dated September 8, 1987) that: "The concern is that separation of the neutron absorbing material used in high-density fuel storage might compromise safety." Amended Petition at 8; Tr. 88-95. Mr. Rich notes also that NRC has requested more information from Licensee in this regard, and presented extensive excerpts from a Board Notification concerning potential Boraflex problems. Tr. 90-104.

Licensee disagrees, stating that similar installations have been made at many reactor sites and any problems are not the consequences of "new technology" but rather a result of the discovery of "(r)ecent anomalies . . . due to Boraflex shrinkage caused by irradiation" in three plants. Licensee also asserts that it has answered the questions concerning potential Boraflex problems in its October 20 and December 23, 1987 responses to Staff inquiries. Tr. 104-05; Licensee's Opposition at 42-44. Staff does not oppose admission. Staff Response at 21-22; Tr. 106.

The Board finds this contention satisfies the requirements of basis and specificity. While the use of Boraflex may not be considered "new technology," the problems identified in the NRC Staff Board Notifications concerning the reports on the Quad Cities and Point Beach plants raise quite specific questions about the use of Boraflex in the Joseph Oats storage racks. Contention 11 is admitted.

K. Contention 13

Contention 13 states

That Licensee has not analyzed the effect that a hurricane or tornado could have on the spent fuel storage facility or its contents, and that the SER neglects certain accidents that could be caused by such natural disasters.

As bases for this contention, Petitioner cites failure to analyze damage from hurricane or wind-driven missiles, tidal waves, and prolonged washovers of the island caused by large storms. Amended Petition at 9.

Licensee argues that the contention should be rejected both because it is beyond the scope of the proceeding, citing *Florida Power and Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-85-36, 22 NRC 590, 598-99 (1985), and because the issue was decided at the operating license stage and no new information has been presented to challenge the validity of the health and safety finding made at that time. Licensee's Opposition at 48-49. Staff concurs. Staff Response at 23.

The effects of natural disasters (hurricane wind and flooding, tornado wind, and missiles) were evaluated at the operating license stage, and the plant design was found to be adequate to cope with any possible conditions. The contention provides no basis for reevaluating these effects as a result of the proposed amendment. The contention is therefore rejected.

In his "clarification" during the prehearing conference, the Petitioner proposed to amend the contention to include the possible effects of "a fully-fueled Grumman jet slamming into the spent fuel pool building" Tr. 106-09. Contention 13, on its face, is concerned with natural disasters. Neither the

Board nor the Petitioner (Tr. 107) considers the airplane scenario to be a natural disaster. We therefore do not allow the aircraft proposal to be an amendment to Contention 13. If it is to be considered at all, it should be submitted as a late-filed contention pursuant to 10 C.F.R. § 2.714(a)(1).

L. Contention 14

Contention 14 states

That FP&L has not properly considered or evaluated the radiological consequences to the environment and surrounding, human population of an accident in the spent fuel pool.

As bases for this contention, Mr. Rich asserts that the BNL Report identifies three factors not included in earlier risk assessments. Mr. Rich does not identify the three factors. He argues that the accident analysis should address the burning of the total number of assemblies authorized to be stored in the pool, an accident that is beyond the design basis for the spent fuel pool and one that would require a loss of cooling water in the pool. Petitioner further asserts that the radiological consequences are underestimated because the Licensee's population projection for the area is inadequate. Amended Petition at 9-11. At oral argument, Petitioner reiterated his general concerns about inadequate conservatisms and the possibility of a severe accident initiated by a fuel assembly or cask drop or loss of coolant mentioned in the BNL Report. Petitioner offered no further information on population changes. Tr. 109-11.

Both Licensee and Staff oppose the contention for lack of a scenario connecting the BNL Report to the specific procedure and arrangement of the St. Lucie spent fuel pool. Licensee's Opposition at 50-51. Staff Response at 24. Tr. 111-13. Mr. Rich does not allege noncompliance with a safety standard or provide a credible accident scenario. In order to accept this contention, a credible mechanism or scenario for a spent fuel pool accident such as loss of cooling water must be provided. Because this has not been done, the contention cannot be admitted.

M. Contention 15

Contention 15 states

That the increase of the spent fuel pool capacity, which includes fuel rods which have experienced fuel failure and 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.

Petitioner asserts that the increased number of fuel rods stored will increase the "chances that the fuel pool will go critical." Amended Petition at 11. At oral argument, Petitioner withdrew the phrase "which have experienced fuel failure" from the contention. Tr. 114.

Licensee argues that this contention is identical to one proposed in another proceeding. There the contention was admitted but later was summarily dismissed. Here, we look only for basis and specificity and would consider the merits only in a case of summary judgment or through the hearing process. Licensee argues further that Petitioner offers no basis for his bare allegation to question the analysis in the SAR and gives no notice of the issue to be addressed. Licensee's Opposition at 52-53. Staff, on the other hand, states its opinion that the contention raises an issue within the scope of the proceeding, is adequately specific, and is supported by at least a minimal basis. Staff finds the reference to criticality resulting from failed fuel lacks nexus, but does not oppose admission of the issue "whether added storage of fuel and more highly enriched fuel will cause a criticality accident." Staff Response at 25.

The Board agrees with the Staff. Criticality control is one of the basic concerns when fuel is being stored, and the methods used to achieve this control are of great importance. The contention is therefore admitted.

N. Contention 16

Contention 16 states

That FP&L has not responded to the concerns as presented by the NRC by outlining a loading schedule for the spent fuel pool detailing how the most recently discharged spent fuel will be isolated from other recently discharged fuel and/or a full core discharge in order to mitigate potential risks from fires in the spent fuel pools [sic] resulting in releases of radioactivity into the environment in excess of the 10 CFR 100 Criteria.

Petitioner's basis for this contention begins with the following quote from page 80 of the BNL Report:

For those plants which have a significant spent fuel pool risk, the one preventive measure which appears to have a substantial effect on risk (a risk reduction of 5 or more) is to maintain recently discharged fuel in low density storage racks that are isolated from the rest of the fuel racks by a foot or more of space.

Amended Petition at 11. The reduction of risk is pinned to the occurrence of an accident that causes a complete and rapid loss of water in the spent fuel pool. There is no assertion that St. Lucie is one of the plants with a significant spent fuel pool risk or that the Licensee's plan for reracking and storage is not in general accordance with the recommendations contained in the BNL Report. The

NRC Staff's Safety Evaluation Report describes Licensee's plans to have two discrete regions in the reracked fuel pool. Region I, a specially designed region with greater spacing and neutron absorber material between storage cells, is planned to accommodate new fuel cell assemblies or spent fuel assemblies that have not achieved a particular burnup level. Region 2 with closer spacing of spent fuel cells and a different neutron-absorbing-materials configuration is designed to store spent fuel with a particular minimum burnup level which is calculated for various initial enrichments. See Attachment to License Amendment No. 91 at 5-5, 5-6, and 5-6b, and attached Staff Safety Evaluation at 3.

Again, the acceptance of this contention requires consideration of an accident greater than the design-basis accident. Absent a credible mechanism or scenario for such an accident to occur, the contention cannot be accepted. The contention must be denied for lack of basis and specificity.

* * *

Because this Memorandum and Order grants a petition for leave to intervene, it is appealable by any party other than the Petitioner on the question of whether the petitions should have been wholly denied. 10 C.F.R. § 2.714a(c) (1986).

Order

For all the foregoing reasons and based upon consideration of the entire record in this matter, it is, this 20th day of April 1988, ORDERED

1. That Petitioner Campbell Rich is admitted as a party to this proceeding;
2. That Petitioner's Contentions 3, 4, 6, 8, 9, 11, 15 are admitted, as amended, the decision on Contention 5 is deferred, and all remaining contentions are denied;
3. That the contentions and their bases admitted in ¶ 2, above, are renumbered and restated, when appropriate, as set forth in Appendix A hereto which is incorporated herein by reference; and

4. That any party desiring to invoke the hybrid hearing procedures set forth in 10 C.F.R. § 2.1101 *et seq.* (1987) shall, on or before May 6, 1988, file with this Board a written request including a proposed procedural schedule.

THE ATOMIC SAFETY AND
LICENSING BOARD

B. Paul Cotter, Jr., Chairman
ADMINISTRATIVE JUDGE

Glenn O. Bright
ADMINISTRATIVE JUDGE

Dr. Richard F. Cole
ADMINISTRATIVE JUDGE

April 20, 1988
Bethesda, Maryland

APPENDIX A

Admitted Contentions

1. 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. (Originally Amended Petition Contention 3.)
2. That the consequences of a cask drop accident or an accident similar in nature and effect are greatly increased due to the presence of a large crane to be built inside the spent fuel pool building in order to facilitate the reracking. (Originally Amended Petition Contention 4.)
3. 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. (Originally Amended Petition Contention 6.)
4. 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. (Originally Amended Petition Contention 8).

5. 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. (Originally Amended Petition Contention 9.)
6. 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. (Originally Amended Petition Contention 11.)
7. 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. (Originally Amended Petition Contention 15.)

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulles, Chairman
James H. Carpenter
Gustave A. Linenberger, Jr.

In the Matter of

Docket No. 50-440-OLA
(ASLBP No. 88-562-02-LA)

CLEVELAND ELECTRIC
ILLUMINATING COMPANY, *et al.*
(Perry Nuclear Power Plant,
Unit 1)

April 26, 1988

ORDER DISMISSING PROCEEDING

On September 18, 1987, Licensees filed an application for amendment of the Facility Operating License for operation of the Perry Nuclear Power Plant, Unit 1, to (1) delete Technical Specifications relating to the Main Steam Isolation Valve Leakage Control System (MSIVLCS) and (2) revise the leakage criteria for primary-containment allowable leakage through the main steam lines.

On January 7, 1988, Ohio Citizens for Responsible Energy, pursuant to *Federal Register* notice, filed a petition to intervene and requested a formal adjudicatory hearing. Its interest only extended to the first of the amendments which would delete the Technical Specifications pertaining to the MSIVLCS. This Board was appointed on January 28, 1988, to preside in the matter.

By letter of March 11, 1988, for reasons specified, the Nuclear Regulatory Commission Staff notified Licensees that the proposed license amendment was

not acceptable to the Staff. On March 16, 1988, the Board inquired of the participants in the proceeding regarding their willingness to proceed in light of the Staff's position.

In a letter dated April 18, 1988, Licensees' counsel advised that Licensees had withdrawn that part of the application pertaining to the MSIVLCS Technical Specifications. Counsel further requested that as a consequence the Board should terminate the proceeding. He stated that the NRC Staff and Ohio Citizens for Responsible Energy agree to that course of action.

The issue before this Board in the proceeding was to consider the proposed amendment of the Technical Specifications pertaining to the MSIVLCS. With the withdrawal of the proposed amendment, without objection by the other participants, there is no longer a justiciable issue in the proceeding before the Board. Therefore, the Board orders that the proceeding be dismissed.

IT IS SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Morton B. Margulies, Chairman
ADMINISTRATIVE LAW JUDGE

James H. Carpenter
ADMINISTRATIVE JUDGE

Gustave A. Linenberger, Jr.
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 26th day of April 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Administrative Law Judge

Morton B. Margulles

In the Matter of

Docket No. 30-1391-SC
(ASLBP No. 88-565-01-SC)

EDWARD HINES, JR. MEDICAL
CENTER
(Veterans Administration)

April 29, 1988

MEMORANDUM AND ORDER
(Ruling on Motion for Temporary Stay of Proceeding)

On April 11, 1988, NRC Staff filed a "Motion for Temporary Stay of Proceeding," until May 25, 1988, pending completion of a Department of Justice criminal investigation. Dr. Maynard L. Freeman (Respondent) submitted on April 24, 1988, a "Memorandum in Opposition to the NRC Staff Motion for Temporary Stay of Proceeding." In this Memorandum and Order the motion for a temporary stay will be granted to May 25, 1988.

BACKGROUND

Edward Hines, Jr. Medical Center, of Hines, Illinois, is the holder of a specific byproduct material license, issued by the Nuclear Regulatory Commission, authorizing the use of radiopharmaceuticals for diagnostic and therapeutic

procedures. In August 1986 and subsequently, Dr. Maynard L. Freeman was its Assistant Chief of Nuclear Medical Science.

On August 24, 1987, an "Order to Show Cause Why License Should Not Be Modified, Effective Immediately" was issued. The Order set forth that the Commission conducted inspections and investigations in 1986 and 1987, which disclosed, *inter alia*, two misadministrations of radiopharmaceuticals at the Medical Center in August 1986. Further, the Order stated that evidence indicated Dr. Freeman was aware that diagnostic misadministrations had occurred but that he failed to ensure that the misadministrations were reported as required by the NRC, and that he made a false statement to a V.A. Investigatory Board and NRC investigators, destroyed evidence, improperly obtained additional evidence, and attempted to impede the NRC investigations by influencing the testimony of a witness, all in order to conceal that the misadministrations had occurred.

As part of the Order, the Medical Center's license was amended, effective immediately, with a requirement, among others, that Dr. Freeman be removed from all licensed activities and that he not serve in any position involving the performance or supervision of any licensed activities, including the supervision of any nuclear medicine technologists.

The Order provided that the licensee and any other person adversely affected may request a hearing within 30 days after the issuance of the Order. Dr. Freeman, through his attorney, on September 22, 1987, filed a request for a hearing. Concurrently, he requested that the NRC defer action on his request for a hearing pending a meeting with NRC personnel and consideration of his response to the Order. Nothing resulted from the meeting, and on January 25, 1988, counsel for Dr. Freeman requested that the hearing process go forward.

I was appointed to preside in this proceeding on February 18, 1988. Pre-hearing discovery got under way in March 1988 with Dr. Freeman's counsel serving requests for the production of documents on Staff on March 7, 1988, and making available to Staff on March 21, 1988 Notices of Deposition. No hearing date has been set. The parties had advised on March 2, 1988, that it was premature to set a hearing date.

Based on investigations conducted between December 16, 1986, and June 30, 1987, the NRC, on November 13, 1987, referred this matter to the Department of Justice (DOJ) for investigation. A criminal investigation was instituted by the DOJ on that date. Shortly after January 1, 1988, the U.S. Attorney's Office for the Northern District of Illinois commenced a federal grand jury investigation of this matter.

THE STAFF MOTION

At the request of the DOJ, Staff filed the subject motion for a temporary stay of the proceeding until May 25, 1988, pending completion of the DOJ criminal investigation.

Staff cites recent decisions of the NRC and the courts as authority for the principle that administrative proceedings may be suspended pending a criminal investigation. Among other cases, it cites *Finlay Testing Laboratories, Inc.*, Docket No. 30-13435 (Mar. 17, 1988); *Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), ALJ-87-4, 25 NRC 865 (1987); *Landis v. North American Co.*, 299 U.S. 248 (1936); and *United States v. Eight Thousand Eight Hundred and Fifty Dollars (\$8,850) in United States Currency*, 461 U.S. 555 (1983).

Landis is cited by Staff for the proposition that the party seeking the stay "must make out a clear case of hardship or inequity in being required to go forward, if there is even a fair possibility that the stay for which he prays will work damage to someone else." *Landis, supra*, at 254-55.

\$8,850 is relied upon as more recently employing the test established in *Barker v. Wingo*, 407 U.S. 514 (1972) that is to be used in determining whether a delay in civil proceedings, pending completion of a criminal investigation, violates the due process right to be heard within a meaningful time in cases involving deprivation of property rights. The test requires a weighing of four factors: (1) the length of the delay, (2) the reason for delay, (3) the defendant's assertion of his right to a prompt proceeding, and (4) the prejudice to the defendant of a delay in the civil proceeding. *\$8,850, supra*, at 565.

Staff argues that a balancing of the four factors indicates that a stay should be granted. It relies on a declaration by William P. Sellers, IV, a trial attorney in the DOJ's Criminal Division, who is assigned to the criminal investigation. The declaration was executed pursuant to 28 U.S.C. § 1746. Declarant recites that the DOJ has requested the NRC to seek a stay on the basis of a belief that should the stay not be granted it would irreparably harm the Department's criminal investigation.

The considerations that are the bases for the DOJ's conclusions are:

- (1) there is a substantial similarity, both legally and factually, between the subject matter of the NRC proceeding and the matters that are currently under criminal investigation;
- (2) the same witnesses, more than ten in number would be common to sustaining the Staff's Order in the administrative proceeding and to determine whether criminal activity has occurred; and
- (3) statements of the witnesses taken by the NRC would apparently be subject to broad discovery in the NRC proceeding and production of

such statements would reveal to possible targets, at this early stage of the criminal investigation, the scope of the government's evidence. Declarant expects that the investigation would be completed by May 25, 1988. Staff addresses the four-factor test in §8,850 as follows:

- (1) The length of the delay would be for a limited period until May 25, 1988, to complete the grand jury investigation.
- (2) The reason for the requested delay is meritorious. The Staff shares the DOJ judgment that if the administrative proceeding is permitted to go forward at this time it is very likely that the statements of the witnesses common to both proceedings would have to be produced. The Commission's Rules of Practice governing discovery, 10 C.F.R. §2.740(b)(1), permit access to "any matter not privileged which is relevant to the subject matter involved in the proceeding" In criminal cases, witnesses' statements are not made available to potential targets, or to anyone else when an investigation is in progress. The DOJ believes that identifying all of the potential witnesses and providing their statements would reveal to possible targets, at the early stage of the criminal investigation, the scope of the government's evidence. It would threaten to prematurely disclose substantial information relating to possible criminal misconduct by Hines Veterans Medical Center, its officers and employees, which would irreparably harm the criminal investigation.
- (3) Staff acknowledges that Dr. Freeman has asserted his right to a prompt hearing.
- (4) Staff views the prejudice to Dr. Freeman from a stay of the proceeding as slight. It states that Dr. Freeman is still employed by the Edward Hines, Jr. Medical Center, albeit in a restricted manner. Staff's position is that any prejudice to Dr. Freeman during this relatively brief period of time is outweighed by the irreparable harm to the criminal investigation that would result if the proceeding, particularly discovery, were permitted to go on at this time.

Staff noted that sensitive information had been developed during the course of the NRC investigation and was made available to the DOJ, but because of its sensitivity, the Department's declaration does not contain all of the details that might be used in support of the motion. It offered to make available to me, should I consider it necessary, an *in camera*, *ex parte* presentation of additional details of the information that has been developed.

RESPONDENT'S OPPOSITION TO THE MOTION

Respondent does not dispute that the cases cited by Staff provide the controlling standards for the matters at issue.

Respondent interprets *Landis, supra*, as placing on Staff the "burden to clearly establish that no harm will be incurred by Dr. Freeman if the stay is granted." He concludes that due process requires that the request for stay be denied relying on the fact that he has not had the opportunity to practice his chosen profession since August 24, 1987, based on allegations going back a year to occurrences in August 1988. Respondent views the requested stay as a means of prohibiting him from engaging in his chosen profession by effectively precluding him from challenging or contesting the validity of the Show-Cause Order in a meaningful hearing at a meaningful time.

Dr. Freeman concludes that the balancing of the four-factor test indicates that the stay should be denied.

Preliminarily, Respondent asserts that the unexplained and unsupported conclusion that there would exist substantial harm should the stay not be granted, as claimed in the Seller's Declaration, may not formulate a basis to obtain a stay. Rather, there must be a showing with specificity that a particular harm would exist. The proffer by Staff of an additional *in camera, ex parte* presentation is viewed as support for Respondent's contention that the Declaration lacks specificity.

Respondent answers the four-factor test in the following manner:

- (1) He claims the current motion seeks to effectively delay the proceeding indefinitely. Respondent states that granting the stay will delay by almost 45 days the discovery process, because a series of depositions had been planned, and this would further postpone the opportunity for hearing. Postulating that Dr. Freeman will be indicted by the Grand Jury, it is argued that he would then be required to weigh his constitutional protections in the criminal sense against his civil remedies in the administrative sense. As a result, the request of the Staff could leave Dr. Freeman in a position where he may never be able to contest the Show-Cause Order in any meaningful way.
- (2) Respondent considers Staff's reason for the stay to be meritless. He states that the government cannot seek to prevent disclosure of information, to be obtained by deposition, of information the government does not possess. It is further stated that there already is a plethora of statements in the public record in orders issued by the Commission. He asserts that Staff should not be heard to argue that the information will come to light for the first time by allowing the taking of depositions. Respondent also asserts that there is no information as to the specific information sought to be withheld.

- (3) As to the matter of the assertion of the right to a prompt hearing, Respondent points to Staff's acknowledgment that Dr. Freeman pursued his right to a prompt hearing.
- (4) Respondent states that the prejudice to him from a stay of the proceeding results in effectively eliminating any opportunity for him to contest the allegations in the Order to Show Cause. Again, postulating the indictment of Dr. Freeman, it was argued, as a result of the stay he would be forced to: undermine his Fifth Amendment privilege against self-incrimination; defend himself in simultaneous proceedings with distinctly different consequences; expose any defense he may have to a criminal indictment, or otherwise prejudice one position to protect another.

Respondent concludes that due process and the administrative procedure require that the request for stay be denied.

Should the stay be found to be inappropriate, Respondent, without elaboration, requests the convening of a summary procedure as set forth in the Commission's decision in *Finlay, supra*, and *Transco Security, Inc. of Ohio v. Freeman*, 639 F.2d 318 (6th Cir. 1981), *cert. denied*, 454 U.S. 820 (1981).

DISCUSSION

The matter at issue is whether Staff has made out a clear case of hardship or inequity should it be required to go forward with the Commission proceeding, as measured against the fair possibility that the stay will injure Dr. Freeman. The issue must be decided by weighing the harm that can result to the parties. Respondent's due process rights must be measured against the public interest in the criminal investigation.

The case law does not support Respondent's view that for Staff to prevail it must "clearly establish that no harm will be incurred by Dr. Freeman if the stay is granted." The factors to be considered and then balanced in deciding the issue are set forth in *\$8,850* and *Wingo*.

After fully considering Staff's Motion and Respondent's Opposition, I decide the four-factor test as follows:

1. Length of Delay

The delay Staff seeks is for a specific period, extending from the date it filed the motion on April 11, 1988, to May 25, 1988, a matter of 44 days or some 7 weeks. It is unlike the possible delays of 18 months considered in *\$8,850* and *Advanced Medical Systems, supra*. The request is not for a significant length of time, especially when considering that Dr. Freeman continues to be employed

at the Medical Center, albeit not with the same responsibilities he previously exercised.

Respondent's point, that as a practical matter, additional delay can result from the stay because of interrupting prior scheduling is accepted. However, this was not shown to involve other than a marginal amount of time.

There is no basis for accepting Respondent's argument that the requested stay to May 25, 1988, could effectively delay the proceeding indefinitely. Respondent factors into his argument his possible indictment and having to weigh his defense stratagems which could result in not fully contesting the Order to Show Cause. There is no causal connection between a 7-week stay and the scenario Respondent builds resulting in his not ever being able to meaningfully contest the Order to Show Cause. The argument that the stay could effectively delay the proceeding indefinitely is rejected.

2. Reason for Delay

The reason for the delay was properly established in the motion. It was provided in a Declaration made pursuant to 28 U.S.C. § 1746, by an attorney assigned to the criminal investigation. The unsworn declaration made under the penalty of perjury has the like force and effect of an affidavit.

The reason for the requested delay, the likelihood that statements of witnesses common to both proceedings would have to be produced, which would reveal to possible targets the scope of the government's evidence, thereby prematurely disclosing substantial information and doing irreparable harm to the criminal investigation, was the same given by the government in *Advanced Medical Systems*, 25 NRC at 870. In that proceeding, where an almost 5-month stay was granted, it was found to be a "traditional and appropriate reason for seeking a delay." There is no basis to find otherwise in this proceeding. Inherent in the Grand Jury process is nondisclosure of what goes before it to protect the process. Clear hardship would result if the Commission proceeding is not stayed.

The government might have provided additional facts in bolstering the reason given for the delay but the failure to do so did not make that provided legally insufficient.

Respondent's argument that the stay should not prevent disclosure of information, to be obtained by deposition, of information the government does not possess, was not completely formulated. No indication was given as to how this could be accomplished. It would require determining what information the government does possess. It does not appear this can readily be done where the very purpose of the government's motion is not to disclose what information it has. Absent a more definitive treatment of the issue raised, no relief can be granted.

The record does not show that the Staff or the DOJ were untimely in their actions.

3. *Respondent's Assertion of His Right to a Prompt Hearing*

Dr. Freeman timely asserted his right to a prompt hearing.

4. *The Prejudice to the Respondent from a Stay in the Commission Proceeding*

During the period of the stay, Dr. Freeman would continue to be kept from fully practicing his chosen profession. The record is silent as to the specifics of his present employment by the medical center. Considering the limited period of the stay and his continued employment, the requested stay would not result in significant injury to Dr. Freeman.

Respondent's claim that the prejudice to him from a stay of the proceeding results in effectively eliminating any opportunity for him to contest the allegations in the Order to Show Cause is rejected. Again, the argument postulates Dr. Freeman being indicted by a Grand Jury and having to weigh his defense stratagems which could result in not contesting the Order to Show Cause. I again find that there is no causal connection between a 7-week stay and Respondent's conclusion that it effectively eliminates any opportunity for him to contest the allegations in the Commission proceeding. Dr. Freeman may well be faced with having to make the same decisions as to defense stratagems, if a criminal indictment is brought, whether or not a stay is granted.

Staff has met the legal requirements for granting the stay it has requested. Dr. Freeman will not be significantly harmed by granting the stay. The harm to him is outweighed by the harm that will be done to the Grand Jury investigation and the DOJ should the stay not be granted.

As to Dr. Freeman's request for the convening of a summary procedure to contest the basis for the continued restricting of the employment of Dr. Freeman, better practice requires that this be the subject of an application separate from the response to the Staff's motion. It would provide an opportunity for Staff to respond to the request. The request may be filed at the completion of the stay, and Staff may file a response within 7 days of the receipt of the request.

ORDER

Staff's motion for a stay of the proceeding until May 25, 1988, is hereby granted.

Morton B. Margulies
ADMINISTRATIVE LAW JUDGE

Dated at Bethesda, Maryland,
this 29th day of April 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)

May 24, 1988

The Appeal Board affirms a Licensing Board memorandum and order, LBP-88-6, 27 NRC 245 (1988), that authorized the issuance of a low-power license for operation of the Seabrook facility at levels up to five percent of rated power notwithstanding the pendency of two safety issues remanded to it earlier by the Appeal Board.

APPEAL BOARDS: ADVISORY OPINIONS

Although an Appeal Board does not normally render advisory opinions, there is no legal bar to its doing so in appropriate circumstances. *See Tennessee Valley Authority* (Hartsville Nuclear Plants, Units 1A, 2A, 1B, and 2B), ALAB-467, 7 NRC 459, 463 (1978).

ADJUDICATORY BOARDS: AUTHORITY

In light of 10 C.F.R. 2.758(a), adjudicatory boards lack the power to entertain a claim that a Commission regulation should be disregarded as inconsistent with a statutory command. *See, e.g., Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 544 (1986); *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), ALAB-784, 20 NRC 845, 846 (1984); *Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 89 (1974).

ADJUDICATORY BOARDS: AUTHORITY

Any insistence that the Commission's regulations themselves violate the Atomic Energy Act must be raised with the Commission; the regulations are not subject to challenge before adjudicatory boards. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-865, 25 NRC 430, 439 (1987).

REGULATIONS: INTERPRETATION (10 C.F.R. 50.57)

Under 10 C.F.R. 50.57, it is not every contention that need be heard or decided prior to the authorization of a low-power license. Rather, the section requires a hearing only on those contentions relevant to the activity to be authorized. Further, the section mandates findings only on matters in controversy with respect to the contested activity sought to be authorized.

ADJUDICATORY BOARDS: AUTHORITY

Just as adjudicatory boards are not empowered to hold Commission regulations invalid, so too they must accept the interpretation and effect accorded to those regulations by the body that promulgated them.

APPEARANCES

Diane Curran and 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.*

Gregory Alan Berry for the Nuclear Regulatory Commission staff.

DECISION

We have before us the appeal of the intervenor New England Coalition on Nuclear Pollution (Coalition) from a February 17, 1988 memorandum and order issued by the Licensing Board in the onsite emergency planning and safety issues phase of this operating license proceeding.¹ In that memorandum and order, the Board concluded, contrary to the position of the Coalition, that the then pendency of two safety issues remanded by us in ALAB-875² did not stand in the way of the authorization of Seabrook operation at low power (i.e., at levels up to five percent of rated power).³ These issues had their genesis in contentions that had been submitted by the Coalition several years ago and, as we concluded in ALAB-875, were erroneously rejected by the Licensing Board at the threshold. One of the contentions concerned the adequacy of the applicants' proposal for the inservice inspection of the Seabrook facility's steam generator tubes. The other focused upon the accumulation of aquatic organisms and other foreign matter in the facility's cooling systems.

Underlying the conclusion reached in the February 17 memorandum and order was the Licensing Board's factual determination that neither the asserted inadequacy of the proposed steam generator tube inservice inspection procedure nor the possibility of the hypothesized blockage in cooling systems had a bearing upon safe facility operation at low power. In its appellate brief, the Coalition does not contest that determination.⁴ Rather, the appeal rests entirely upon a legal proposition. According to the Coalition, the issuance of a low-power license prior to the resolution of all contested issues pertaining to the safety of plant operation would deprive it of hearing rights guaranteed by section 189a. of the Atomic Energy Act of 1954, as amended.⁵ This is said to be so irrespective of whether the issues relate to low-power, or solely to full-power, operation.

¹ See LBP-88-6, 27 NRC 245.

² 26 NRC 251 (1987).

³ At present, low-power Seabrook operation is in all events precluded by reason of another discrete issue still before the Licensing Board. That issue involves the provision made for supplying notification of a radiological emergency at the Seabrook facility to members of the public located within the facility's plume exposure pathway emergency planning zone. See ALAB-883, 27 NRC 43 (1988), applicants' February 18, 1988 petition for Commission review pending. In nonetheless considering whether resolution of the steam generator tube integrity and cooling system issues were likewise a condition precedent to such operation, the Board followed the suggestion in our February 10, 1988 Memorandum (unpublished) at 7-8.

In addition, the Licensing Board has before it a remanded issue concerned with the environmental qualification of certain coaxial cable used for data transmission in the facility's computer system. See ALAB-891, 27 NRC 341 (1988). It may or may not prove necessary for the Board to determine whether the pendency of that issue stands in the way of low-power operation. See *id.* at 353 n.66.

⁴ See New England Coalition on Nuclear Pollution's Brief in Support of Appeal of Memorandum and Order Renewing Authorization to Operate at Low Power (April 7, 1988) [hereinafter, Coalition's Brief].

⁵ 42 U.S.C. 2239(a).

A. Before coming to grips with the merits of the appeal, we must consider the applicants' insistence, endorsed by the NRC staff, that the appeal has become moot by reason of developments occurring subsequent to the April 7 filing of the Coalition's brief.

On April 22, the Coalition advised the Licensing Board in writing that it had decided not to litigate further either the steam generator tube integrity contention or, to the extent that it related to the applicants' monitoring program for the detection of coolant flow blockage resulting from the buildup of macrobiological organisms, the cooling systems contention.⁶ As further explained in a subsequent filing with the Board below,⁷ the decision not to oppose any summary disposition motions on the latter contention stemmed from the Board's March 18, 1988 Memorandum and Order (unpublished). In that issuance, the Board adhered to an earlier ruling that the cooling systems contention could not be read as encompassing microbiologically-induced corrosion.⁸ The Coalition does not accept that ruling and intends to appeal it "at the appropriate time."⁹ Moreover, it continues to believe that the applicants' "program for detecting and controlling microbiologically induced corrosion is not adequate."¹⁰ For these reasons, it asked the Licensing Board to make clear in granting summary disposition to the applicants that that action was "limited to the issue of blockage of cooling systems by macro-organisms."¹¹

In a May 12 Memorandum and Order (unpublished), the Licensing Board took note of the Coalition's April 22 Letter and subsequent filing. It concluded that the letter constituted an abandonment of both contentions and that, therefore, there was no need to issue a decision on the applicants' pending motions for summary disposition of them. The contentions were dismissed and, on the ground that summary disposition had not been granted, the Coalition's request in its May 6 Response was denied as moot.

Given these developments, we called upon the Coalition to respond to the suggestion that the appeal at hand is moot. In its response, the Coalition points

⁶ See Letter from Andrea Ferster to the members of the Licensing Board (April 22, 1988) [hereinafter, Coalition's April 22 Letter]. Inasmuch as that letter had an obvious possible relevance to the proper disposition of a matter pending before us, the Coalition should have specifically directed our attention to its content. Merely including this Board on the service list was not enough. Manifestly, we cannot be expected to examine routinely the copies served upon us of the large number of documents that are filed with the licensing boards in the various proceedings pending before those boards. If such a document warrants our review in connection with an outstanding appellate matter, it should be supplied to us with an appropriate covering memorandum or letter.

⁷ See New England Coalition on Nuclear Pollution's Response to Applicants' Motion for Summary Disposition on NECNP Contention IV (May 6, 1988) [hereinafter, Coalition's May 6 Response].

⁸ We understand the phrase "microbiologically-induced corrosion" to have reference to corrosion in cooling systems brought about by the attack of extremely small marine organisms that pass through protective screens. In contrast to larger "macro-organisms," by reason of their size these organisms do not directly pose a blockage threat (although any corrosion they might induce could possibly ultimately have that effect).

⁹ Coalition's April 22 Letter at 2; Coalition's May 6 Response at 3-4.

¹⁰ Coalition's May 6 Response at 3. See also Coalition's April 22 Letter at 1-2.

¹¹ Coalition's May 6 Response at 4.

out anew that it intends to challenge the Licensing Board's determination that its cooling systems contention did not encompass the issue of microbiologically-induced corrosion. This being so, we are told, the contention remains unresolved and, accordingly, the question raised by the appeal has not become purely academic.¹²

For present purposes, we accept this analysis. In addition, it occurs to us that a decision on the merits of the appeal might also prove useful in connection with another issue pending below. As previously noted, we recently remanded to the Licensing Board the issue of the environmental qualification of certain coaxial cable, and the Board may find it necessary to decide whether that issue must be resolved in advance of low-power operation.¹³ Should that contingency arise, the Board undoubtedly would be advantaged by a definitive appellate ruling on the Coalition's claim that, irrespective of whether the cable fulfilled a safety function during low-power operation, such operation would be legally barred unless and until the cable was found to meet all applicable environmental qualification requirements.¹⁴

B.1. We now move forward to consider the merits of the Coalition's appeal. Of necessity, the Coalition maintains that there is no conflict between its interpretation of the scope of the hearing rights provided it in section 189a. of the Atomic Energy Act and the terms of 10 C.F.R. 50.57(c) — the principal (and the only one here relevant) provision in the Commission's regulations concerned with the authorization of low-power facility operation. For we have long recognized that, in light of 10 C.F.R. 2.758(a), we lack the power to entertain a claim that a Commission regulation should be disregarded as inconsistent with a statutory command.¹⁵ And, as the Coalition itself acknowledges, just a year ago in this proceeding we had occasion to reiterate, in the context of section 50.57(c), that an intervenor's insistence that "the Commission's regulations themselves violate the hearing requirements of the Atomic Energy Act" must be raised "with the Commission; the regulations are not subject to challenge before us."¹⁶

¹² The Coalition repeats the statement in its papers below that its appeal will be filed "at the appropriate time." New England Coalition on Nuclear Pollution's Response to the Suggestion of Mootness Contained in Applicants' Brief in Response to NECNP's Appeal of Renewal of Low Power Authorization (May 19, 1988) at 16. We have not been asked for guidance, and do not here provide it, with respect to whether an appeal must have been taken from the Board's March 18 Memorandum and Order, or must be taken from the May 12 Memorandum and Order, or can await subsequent events. On this score, the time for the filing of a notice of appeal from the May 12 order has not as yet expired (see 10 C.F.R. 2.762) and, thus, an appeal from that order is still possible as of this writing.

¹³ See *supra* note 3.

¹⁴ Although we do not normally render advisory opinions, there is no legal bar to our doing so in appropriate circumstances. See *Tennessee Valley Authority* (Hartsville Nuclear Plants, Units 1A, 2A, 1B, and 2B), ALAB-467, 7 NRC 459, 463 (1978).

¹⁵ See, e.g., *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 544 (1986); *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), ALAB-784, 20 NRC 845, 846 (1984); *Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 89 (1974).

¹⁶ ALAB-865, 25 NRC 430, 439 (1987).

Our initial task, then, is to address the Coalition's insistence that section 50.57(c) is not to be taken as affirmatively authorizing the issuance of a low-power license prior to the resolution of all contested issues relevant to full-power operation. If we conclude that the section does contain such an authorization, it will be for the Commission to pass judgment upon the Coalition's belief that the consequence is the denial of statutory hearing rights.

2. Subsection (a) of 10 C.F.R. 50.57 sets forth the findings that must be made as a precondition to the issuance of a full-power license.¹⁷ In subsection (c), the regulation focuses upon the requirements for "an operating license authorizing low-power testing (operation at not more than 1 percent of full power for the purpose of testing the facility), and further operations short of full power operation." Action by the Licensing Board on an applicant's motion seeking such a license

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 *his contentions are relevant to the activity to 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 supplied.]

As the emphasized portions of the section make clear, it is not every contention that need be heard or decided prior to the authorization of a low-power license. Rather, in so many words, the section requires a hearing only on those contentions "relevant to the activity to be authorized" — here, operation at levels up to five percent of rated power. With equal specificity, the section mandates findings only on matters in controversy "with respect to the contested activity sought to be authorized" — which, once again, in this instance is operation at levels not to exceed five percent of rated power.¹⁸

¹⁷ In the instance of a facility such as Seabrook, those findings include:

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

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

(3) There is reasonable assurance (i) that the activities authorized by the operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the regulations in this chapter; and

(4) The applicant is technically . . . qualified to engage in the activities authorized by the operating license in accordance with the regulations in this chapter. . . .

¹⁸ For its part, the Coalition seemingly attaches no particular significance to the phrases "relevant to the activity to be authorized" and "with respect to the contested activity sought to be authorized." Rather, it would have us take

(Continued)

In short, we find the terms of section 50.57(c) to provide adequate support by themselves for the Licensing Board's conclusion that the decisive question was whether the remanded contentions presented issues germane to low-power, as distinguished from full-power, operation.¹⁹ It need be added only that, although the Commission may not have been previously called upon to confront squarely the precise question that is raised by this appeal, a 1984 decision in the *Shoreham* proceeding makes plain its view that neither section 50.57(c) nor common sense mandates that the authorization of low-power operation be preceded by the resolution of safety issues having nothing whatever to do with such operation.²⁰

Before the Commission at the time was the request of the *Shoreham* applicant, pursuant to section 50.57(c), for a license authorizing it to engage in fuel loading and low-power testing. The request came to the Commission against the background of the grant by a licensing board of the applicant's motion for summary disposition on the safety issues related to so-called "Phases I and II" (which covered fuel loading and precriticality and cold critical testing).²¹ In connection with that grant, the Board noted that the facility lacked a fully qualified onsite source of emergency alternating current (AC) power, as required by General Design Criterion (GDC) 17 contained in Appendix A to 10 C.F.R. Part 50. Relying upon its interpretation of an earlier Commission order, however, the Board determined that, because neither onsite nor offsite AC power would be required for the protection of the public health and safety

the last two sentences in the portion of section 50.57(c) quoted in the text above as indicating that the purpose of the section "was simply to relieve the Licensing Board of the obligation to make positive findings on *uncontested* issues prior to low power operation, by delegating this function to the Director of Nuclear Reactor Regulation (NRR)." Coalition's Brief at 16 (emphasis in original).

There are at least two crucial flaws in that thesis. First, it does not explain what the Commission might have had in mind when it limited the required hearing and initial decision to the activity "to be authorized." Surely, that explicit limitation cannot be dismissed as mere window dressing and thereby ignored. Second, the Coalition overlooks the fact that there was no occasion in enacting section 50.57(c) for freeing licensing boards of the obligation to make findings on uncontested issues. For, at the same time section 50.57(c) assumed its present form in 1972 as part of a general restructuring of facility license application review and hearing processes, the Commission added section 2.760a. See 37 Fed. Reg. 15,127, 15,137, 15,142-43 (1972). As promulgated, section 2.760a generically *prohibited* licensing boards in operating license proceedings from making findings of fact and conclusions of law on any uncontested matter. (In 1979, that section was amended to allow (albeit not to require) the boards in certain specified circumstances to raise and decide *sua sponte* matters that had not been put in controversy by the parties. See 44 Fed. Reg. 67,088 (1979).) Given section 2.760a, section 50.57(c) must be taken as simply a reinforcement of the Director's obligation to pass upon all *uncontested* matters pertinent to the sought low-power authorization.

¹⁹ As just noted, section 50.57(c) assumed its present form in 1972 as part of a general restructuring of facility license application review and hearing processes. Although the accompanying statement of consideration has nothing illuminating to say about the section specifically, it does reflect that a major purpose underlying the entire restructuring effort was the expedition of the decisional process. See 37 Fed. Reg. 15,127. Certainly, the accomplishment of that objective is furthered, not retarded, if the section is read as authorizing low-power operation on the strength of a determination that the requisite assurance exists that such low-power operation will not endanger the public health and safety.

²⁰ *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-84-21, 20 NRC 1437.

²¹ See LBP-84-35A, 20 NRC 920 (1984).

during Phases I and II, a license authorizing those phases could issue in advance of compliance with GDC 17.²²

The Commission's role was to determine whether to allow the Licensing Board's order to become immediately effective, with the consequence that the NRC staff could issue a license for Phases I and II after resolving "any remaining *relevant* uncontested issues."²³ Carrying out that function, the Commission found one impediment to the order receiving such treatment. But that impediment was not the GDC 17 matter. Rather, the potential stumbling block to the inception of those phases of operation was one of our decisions — handed down subsequent to the entry of the Licensing Board order — that had remanded certain "minor" issues to the different Licensing Board that had responsibility for the basic operating license proceeding. As the Commission saw it, Phases I and II could not commence until that Board either resolved the remanded issues in favor of the applicant or determined them to be "*not material* to [those phases] of low-power operation."²⁴

Insofar as the GDC 17 matter was concerned, the Commission explicitly agreed with the analysis that led the Licensing Board to decide that Phases I and II of low-power operation could be authorized notwithstanding the continuing lack of compliance with that criterion.²⁵ It acknowledged that, in a prior order, it had held that section 50.57(c) should not be read to make the criterion inapplicable to low-power operation.²⁶ But the Commission went on to explain that

[b]y this we meant only that § 50.57(c) does not, by itself, carve out an exception from all health and safety regulations that would otherwise be applicable to a low-power license. We did not mean to say, however, that every health and safety regulation, regardless of its purpose or terms, must be deemed fully applicable to fuel loading and to every phase of low-power operation, or that the pressures, temperatures, and other stresses associated with full power must be postulated in evaluating applicability of, or compliance with, regulations for low power. Each regulation must be examined to determine its application and effect for fuel loading and for each phase of low-power operation. *Simple logic and common sense indicate that some regulations should, by their own terms, have no application to fuel loading or some phases of low-power operation.*²⁷

The Coalition makes no endeavor to distinguish the *Shoreham* result or the reasoning underlying it. Rather, we are told merely that the Commission indulged in a "novel" reading of section 50.57(c), totally devoid "of regulatory

²² *Id.* at 926.

²³ 20 NRC at 1438 (emphasis supplied).

²⁴ *Id.* at 1439 (emphasis supplied).

²⁵ *Ibid.*

²⁶ *Ibid.* (citing CLI-84-8, 19 NRC 1154, 1155 (1984)).

²⁷ *Id.* at 1439-40 (emphasis supplied).

or case authority.”²⁸ We leave it to the Commission to evaluate that criticism. Just as we are not empowered to hold Commission regulations invalid, so too we must accept the interpretation and effect accorded to those regulations by the body that promulgated them.²⁹

In sum, in terms and as interpreted by the Commission, 10 C.F.R. 50.57(c) allows the authorization of low-power operation so long as no safety issues pertaining to such operation remain unresolved. Given the unchallenged finding therein that neither of the issues here in question bears upon low-power operation, it necessarily follows that the Licensing Board’s February 17, 1988, memorandum and order, LBP-88-6, 27 NRC 245, must be *affirmed*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

²⁸ Coalition’s Brief at 21.

²⁹ It will thus be for the Commission to pass ultimate judgment upon the Coalition’s further claim that the *Shoreham* interpretation of section 50.57(c) cannot be squared with the promulgation two years earlier of 10 C.F.R. 50.47(d). We note in passing, however, our belief that the claim lacks merit.

Section 50.47(d) provides that a license authorizing operations up to five percent of rated power can issue in advance of the review by the NRC and the Federal Emergency Management Agency of offsite emergency preparedness planning. The Coalition reasons that, if section 50.57(c) had been intended to have the effect attributed to it by the Commission in *Shoreham*, section 50.47(d) would have been thought unnecessary. We disagree. Section 50.57(c) does not address the question of the extent to which offsite emergency preparedness is relevant to low-power operation and, thus, must be considered before such operation is commenced. That question is, instead, confronted and answered in section 50.47(d).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Sheldon J. Wolfe, Chairman
Dr. Richard F. Cole
Dr. George A. Ferguson

In the Matter of

Docket No. 50-352-OLA
(ASLBP No. 87-550-03-LA)
(TS Iodine)

PHILADELPHIA ELECTRIC
COMPANY

(Limerick Generating Station, Unit 1)

May 5, 1988

The Licensing Board grants the Licensee's motion for summary disposition of the sole contention that questioned whether the proposed amendment to the Licensee's Technical Specifications would downgrade reporting requirements for iodine spikes which would have an adverse effect on public health and safety.

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 unnecessarily devoted to 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). 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).

TECHNICAL ISSUE DISCUSSED

Iodine Spikes.

MEMORANDUM AND ORDER (Granting Licensee's Motion for Summary Disposition)

Memorandum

I. BACKGROUND

On September 27, 1985, the Nuclear Regulatory Commission ("Commission" or "NRC") Staff issued Generic Letter 85-19 regarding the requirements for reporting iodine spikes¹ during normal plant operation. That letter requested licensees to file a request for amendment to their operating licenses to incorporate the NRC model Technical Specifications relating to iodine spikes. On August 19, 1986, in response to that request, Licensee filed an application for an amendment with the NRC requesting changes to the Technical Specifications contained in Appendix A of Facility Operating License NPF-39 for Limerick

¹ An iodine spike is an increase and subsequent decrease in iodine dose equivalent in the primary reactor coolant following a change in reactor power or pressure. In the proposed amendment, Licensee defines iodine spike as an increase in iodine dose equivalent to a level greater than 0.2 microcurie per gram ($\mu\text{Ci/g}$). (Aff. of John S. Wiley submitted in response to Board Order of March 17, 1988, requesting clarifying information.)

The definition of iodine spiking as it appears in NRC's annual reports on nuclear fuel performance is as follows: Iodine spiking (i.e., a temporary increase in coolant iodine concentration) is frequently observed at reactors where leaking fuel rods are present. These temporary increases in iodine concentrations have been observed to occur following shutdowns, start-ups, rapid power changes, and coolant depressurizations. An iodine spike is characterized by a rapid increase in the iodine concentration in the coolant by as much as three orders of magnitude, followed by a return to prespike concentration. The latter characteristic distinguishes the spiking phenomenon from a step-wise permanent (i.e., until the failed fuel is removed from the core) increase in coolant activity level caused by the sudden failure of one or more fuel rods. (NUREG/CR-3602, §4.2.3 (1986).)

Generating Station, Unit 1. The NRC Staff published in the *Federal Register* a notice of the proposed issuance of the requested amendment and opportunity for a hearing and made a proposed determination that the requested amendment involved a no significant hazards consideration. 52 Fed. Reg. 7675 (Mar. 12, 1987).

Ultimately, after a special prehearing conference had been held on September 29, 1987, in a Memorandum and Order dated October 9, 1987 (unpublished), the Board admitted as parties Mr. Robert Anthony, pro se, and Air and Water Pollution Patrol (AWPP), represented by Mr. Frank Romano. The Board found that the submissions of and the oral presentations by Mr. Anthony and AWPP were unfocused. For that reason, among others, we concluded that, except for two somewhat similar contentions asserted by the intervening parties, none of the proposed contentions were admissible. These somewhat similar contentions were consolidated and, as reworded, the following contention was admitted as an issue in controversy:

Consolidated Contention. The proposed amendment to the Licensee's technical specifications would downgrade reporting requirements for iodine spikes which would have an adverse effect on public health and safety.

Bases. The change in the reporting requirements would eliminate or decrease Special Reports and Licensee Event Reports on iodine spiking, and thus would decrease the regulatory control exercised by the NRC, would permit a situation where Licensee could release radioactive iodine in excess of the one-time release limits, and, in not requiring the reporting of such releases, except on an annual basis, would endanger the health and safety of the uninformed public.

On November 23, 1987, the Licensee filed a motion for summary disposition. After extensions of time had been granted, on February 9, 1988, the two intervenors submitted responses opposing the motion for summary disposition. On February 18, 1988, the NRC Staff filed its response in support of the Licensee's motion for summary disposition. In an Order of March 17, 1988 (unpublished), the Licensee and/or the Staff were requested to respond in affidavit form to certain questions presented by the Board. On March 31 and April 4, the Licensee and the Staff, respectively, submitted responses. On April 25, Mr. Anthony submitted a response.

II. DISCUSSION

A. Regulations and Case Law

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) further provides in pertinent part 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) provides in pertinent part 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) provides in pertinent part 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 unnecessarily devoted to 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). 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. The Licensee's Motion for Summary Disposition and the Staff's Support Thereof

Licensee moves that the consolidated contention be dismissed and that, since only a single contention was admitted, the proceeding also be dismissed. In

support of its Motion for Summary Disposition, the Licensee appended the Joint affidavit of John Doering and John S. Wiley. Mr. Doering, an employee of Philadelphia Electric Company, is responsible for management and oversight of plant operations, engineering and chemistry support at the Limerick Generating Station. Dr. John S. Wiley, also an employee of Licensee, is Director of the Nuclear Plant Chemistry Section and is responsible for the technical direction of chemistry programs at Licensee's nuclear facilities. The Licensing Board is satisfied that Mr. Doering and Dr. Wiley are qualified to attest to the matters in their joint affidavit.

The following material facts as to which Licensee asserts there is no genuine issue to be heard are based on the Doering/Wiley affidavit (Licensee's Jt. Aff.), Licensee's Statement of Material Facts as to Which There Is No Genuine Issue to Be Heard (Statement), and the Wiley affidavit (Wiley Aff.) submitted on March 31, 1988, in response to the Board's March 17, 1988 Order requesting clarifying information.

1. The amendment proposes no modification to the Limerick Generating Station radioactive release limits. (Licensee's Jt. Aff., §§ 8, 11, and Attachs. 3, 4, and 5; Statement, ¶ 1.)
2. The amendment proposes no modification to the Station reporting requirements related to plant radioactive effluents. (Licensee's Jt. Aff., §§ 8, 10 and 11; Statement, ¶ 2.)
3. High levels of iodine in the reactor coolant encountered by reactors operating in the early 1970s resulted from moisture trapped inside the fuel rod, pellet-clad interactions, and crud-induced corrosion. (Licensee's Jt. Aff., ¶ 12; Statement, ¶ 3.)
4. Improvements in the design of the nuclear fuel, improved fuel management practices, and the replacement of the older fuel assemblies gradually eliminated the failed fuel and the resulting higher levels of iodine in operating reactors. (Licensee's Jt. Aff., ¶ 12; Statement, ¶ 4.)
5. Since startup, for the first operating cycle, Limerick has averaged only 8×10^{-5} $\mu\text{Ci/g}$ of iodine in the coolant. (Licensee's Jt. Aff., ¶ 13; Statement, ¶ 5.)
6. The average measured value of iodine in the coolant at Limerick is 0.04% of the threshold value of 0.2 $\mu\text{Ci/g}$ contained in the Technical Specifications. (Licensee's Jt. Aff., ¶ 13; Statement, ¶ 6.)
7. The peak value for iodine concentration in the primary reactor coolant for the first cycle of operation was 1.2×10^{-4} $\mu\text{Ci/g}$. As of March

- 29, 1988, the peak value for the second (present) fuel cycle is 2.2×10^{-4} $\mu\text{Ci/g}$, which occurred on March 25, 1988.² (Wiley Aff. at 4.)
8. The boiling water reactor 1986 median value for iodine coolant activity was 1.5×10^{-3} $\mu\text{Ci/g}$. (Licensee's Jt. Aff., ¶ 13; Statement, ¶ 8.)
 9. Sampling for iodine cooling activity is conducted at the Station in accordance with Technical Specification 4.4.5. (Licensee's Jt. Aff., ¶ 14; Statement, ¶ 9.)
 10. During operation at Limerick, the frequency of iodine sampling is daily. (Licensee's Jt. Aff., ¶ 14; Statement, ¶ 10.)
 11. The Station has established an administrative limit of 0.002 $\mu\text{Ci/g}$ which is 1% of the Technical Specification limit. (Licensee's Jt. Aff., ¶ 14; Statement, ¶ 11.)
 12. If the administrative limit for iodine levels in the reactor coolant were exceeded, this information would be discussed at the daily chemistry meeting held at the Station, management notified, and available courses of action considered. (Licensee's Jt. Aff., ¶ 14; Statement, ¶ 12.)
 13. The Director, Nuclear Plant Chemistry, reviews reactor coolant iodine monitoring data monthly for trends. (Licensee's Jt. Aff., ¶ 14; Statement, ¶ 13.)
 14. The NRC has assigned Resident Inspectors to monitor operation of Limerick Unit 1. (Licensee's Jt. Aff., ¶ 15; Statement, ¶ 14.)
 15. Periodic inspection reports by the Resident Inspectors and by Regional Specialists which include consideration of reactor chemistry are forwarded to Region I and headquarters and are made public. (Licensee's Jt. Aff., ¶ 15; Statement, ¶ 15.)
 16. Section 50.73(a)(2)(i) of 10 C.F.R. requires that a Licensee Event Report ("LER") be filed should the iodine coolant activity exceed 4 $\mu\text{Ci/g}$, or 0.2 $\mu\text{Ci/g}$ for 48 hours. (Licensee's Jt. Aff., ¶ 16; Statement, ¶ 16.)
 17. Section 50.73(b) of 10 C.F.R. requires that any LER submitted must include the details surrounding the event, its cause and corrective actions, and provide a reference to previous similar events. (Licensee's Jt. Aff., ¶ 16; Statement, ¶ 17.)

²In a letter of April 8, 1988, Licensee's counsel notified the Board and the parties that an iodine concentration value of 1.26×10^{-2} $\mu\text{Ci/g}$ occurred on April 1, 1988. He noted that this value was less by a factor of 16 than the 0.2- $\mu\text{Ci/g}$ value contained in Technical Specification 3/4.4.5 (a copy of which was attached to the Wiley affidavit) and that, as of April 8, the iodine concentration was 3.9×10^{-3} $\mu\text{Ci/g}$. As Licensee's counsel points out, the iodine concentrations measured on April 1 and April 8, 1988 were well below the triggering concentrations for plant shutdown. The Board notes that these two concentrations exceed the Limerick Station administrative limit of 2×10^{-3} $\mu\text{Ci/g}$, and thus required discussion at the daily chemistry meeting held at the Station, notification of management, and consideration of courses of action. (Licensee's Jt. Aff., ¶ 14; Statement, ¶ 12.)

18. LER's related to Limerick Generating Station are placed in the Public Document Room in Washington, D.C., and the Local Public Document Room in Pottstown, Pennsylvania. (Licensee's Jt. Aff., ¶ 16; Statement, ¶ 18.)
19. Section 50.72(b)(1)(i) of 10 C.F.R. requires a 1-hour notification of the NRC Operations Center via dedicated telephone should the iodine coolant activity exceed 4 $\mu\text{Ci/g}$ or 0.2 $\mu\text{Ci/g}$ for 48 hours. (Licensee's Jt. Aff., ¶ 17; Statement, ¶ 19.)
20. The Station Emergency Plan requires the declaration of an Unusual Event if the level of iodine in the reactor coolant exceeds 0.2 $\mu\text{Ci/g}$. (Licensee's Jt. Aff., ¶ 18; Statement, ¶ 20.)
21. The declaration of an Unusual Event would require state and local officials to be notified within 15 minutes and the NRC Operations Center to be notified immediately thereafter. (Licensee's Jt. Aff., ¶¶ 18, 22; Statement, ¶ 21.)
22. The amendment request does not seek to eliminate any Licensee Event Reports required by 10 C.F.R. § 50.73. (Licensee's Jt. Aff., ¶ 20; Statement, ¶ 22.)
23. The amendment does not seek any change to Technical Specification limits related to offsite release limits or the requirements for monitoring, sampling, or reporting of radioactive effluents. (Licensee's Jt. Aff., ¶ 21; Statement, ¶ 23.)
24. Any radiological release above regulatory or Technical Specification limits would require the implementation of the Station Emergency Plan. (Licensee's Jt. Aff., ¶ 18; Statement, ¶ 24.)
25. The dose calculations for the design-basis accident that is controlled by the iodine level in the coolant, the main-steamline-break accident, are unaffected by the proposed change to the Technical Specifications. (Licensee's Jt. Aff., ¶ 23; Statement, ¶ 25.)
26. As of March 29, 1988, there have not been any iodine spiking events at the Limerick Plant. (Wiley Aff. at 3.)

The NRC Staff's response supporting the Licensee's motion relies upon the affidavit of Richard J. Clark, an employee of the Office of Nuclear Reactor Regulation (NRR) of the Nuclear Regulatory Commission. Staff also responded to the Board Order of March 17 with an affidavit by Mr. Clark (Clark Supp.). Mr. Clark, a graduate engineer with postgraduate training in chemical and nuclear engineering has over 30 years' experience in the nuclear power field and currently serves as NRC Licensing Project Manager for the Limerick Generating Station. The Board finds Mr. Clark qualified to comment on the Licensee's motion and the consolidated contention in issue.

The NRC Staff maintains that the consolidated contention is factually incorrect, and consequently its allegations, bases, and conclusions are erroneous.

Therefore, it supports the Licensee's Motion for Summary Disposition as filed and, because the consolidated contention is the only admitted issue, supports dismissal of the proceeding as well. The following briefly summarizes the Staff's presentation of material facts as to which there is no genuine issue to be heard which augments the Licensee's motion for summary disposition:

1. The basis for model Technical Specifications in Generic Letter 85-19 was the significant improvement in the design of BWR fuel over the past decade that greatly reduced the potential for stress corrosion cracking of the fuel cladding and, thus, the release of iodine in the coolant. (Clark Aff., ¶ 6.)
2. Improved fuel management by Licensee, such as restrictions on power changes and preconditioning, has also significantly reduced the stresses that could cause a crack in the cladding with the resultant release of iodine into the coolant. (*Id.*)
3. Staff Generic Letter 85-19 stated that because the quality of nuclear fuel has greatly improved over the past decade, with the result that normal coolant iodine activity is well below the spiking limit, some of the current Technical Specifications on reporting requirements for iodine activity limits in the reactor coolant could be eliminated. (*Id.*, ¶¶ 6, 8; Attach. 3 to Licensee's Motion.)
4. The proposed amendment would not change the reporting requirements on iodine spiking in any manner that would reduce the timeliness of information available to the NRC and the public. (Clark Aff., ¶ 8.)
5. The only reporting requirements that would be changed by the proposed amendment are the requirement to submit special 30- and 90-day reports if the coolant iodine activity exceeds the Technical Specification limit of 0.2 $\mu\text{Ci/g}$ or if it exceeds the limit for 500 hours in any consecutive 6-month period. In Generic Letter 85-19, the NRC Staff recommended that these special reports on iodine activity be deleted from Technical Specifications since they serve no useful purpose and were duplicative of other reports — specifically, the reporting requirements of 10 C.F.R. §§ 50.72 and 50.73. With the current reporting requirements of §§ 50.72 and 50.73, the NRC determined that it would serve no useful purpose either to the Licensee or the NRC to also require a separate, special report. (*Id.*)
6. The proposed amendment would not change any offsite release limits or any reports related to offsite releases. Reports related to offsite releases and the release limits are governed by other Technical Specification requirements and NRC regulations which are totally unaffected by the requested changes. (*Id.*, ¶ 9.)

7. There have been no reportable incidents of iodine spiking in any BWR in 1986 or 1987, and there have been no reportable events at the Limerick plant. (Clark Supp. Aff. at 4, 5.)

The NRC Staff's filing in support of Licensee's motion concludes that the proposed amendment would not downgrade reporting requirements for iodine spikes, nor would it in any way affect the regulatory control exercised by NRC, and also concludes that the bases for the consolidated contention rest on erroneous assumptions that are fundamentally flawed and provide no support for the contention. (Clark Aff., ¶¶ 8, 9, 13.)

C. The Intervenor's Opposing Responses

1. AWPP

Contrary to the requirements of 10 C.F.R. § 2.749 for responses to motions for summary disposition, AWPP does not dispute or even address the specific material facts presented by Licensee. Instead, AWPP chose to discuss other matters such as discovery disputes, newspaper articles, boric acid corrosion (PWR related), other power plants, welding infractions, etc., all of which are not germane to the instant motion.³ AWPP would have been better served had it addressed the issue before it.

However, AWPP does allege that Generic Letter 85-19 lacked a statistically researched basis. According to the NRC Staff, its basis is contained in the annual reports designated as NUREG/CR-3950, which discuss all aspects of fuel performance including iodine spiking. Reports similar to these have been published since 1979. A review of all volumes of NUREG/CR-3950 (four volumes, one volume for each of the years 1983, 1984, 1985, and 1986,

³AWPP refers to certain Licensee Event Reports, NRC Information Notices, and Inspection Reports. The Board has reviewed these documents and finds that none contradict any of the information contained in the Licensee or NRC Staff affidavits supporting the motion for summary disposition. NRC Information Notice 86-108 (AWPP Opposing Response at 4) pertains to degradation of the reactor coolant system pressure boundary resulting from boric acid corrosion. This notice was addressed to pressurized water reactor licensees and simply does not apply to Limerick, a boiling water reactor station. Similarly, NRC Information Notice 88-02 (*id.*) pertained to fatigue cracks in steam generator tubes and was directed to Westinghouse PWR owners. Limerick has no steam generator tubes. NRC Inspection Report 50-352/86-02 (*id.* at 5) clearly states that no violations were identified. The minor and unexpected release of gaseous effluent was compared with the appropriate criteria and "[t]he technical specification limits for the release were not exceeded." NRC Inspection Report 50-352 (86-02 at 4). The release limits for gaseous effluents will be unaffected by the proposed amendment. (Licensee's Jt. Aff., ¶21.) In its response at page 5, AWPP refers to LER 87-017, stating that it indicates Licensee does not have monitors under control, thereby making iodine control more important. A reading of LER 87-017 indicates that the system operated in the prescribed manner upon receiving a momentary high-radiation signal. There were no adverse consequences as a result of the event. No radiation was released. While no definite cause of the spurious signal was identified, it was suspected that maintenance work on a nearby panel generated a momentary electrical signal spike which simulated a high-radiation signal to the nuclear steam supply shutoff system and resulted in the system isolation. (LER 87-017 at 2, 3.) In any event, Licensee reports of this type which describe the functions of safety systems are not and will not be affected by the Technical Specification changes proposed. (Licensee's Jt. Aff., ¶8; Clark Aff., ¶8.)

respectively) establishes that there has been only one incident of iodine spiking in a BWR in the 4-year period covered by NUREG/CR-3950. That incident occurred at Big Rock Point. (Clark Aff., ¶ 12.)

2. *Mr. Anthony*

In the "rebuttal" section of his two-page opposing response, Mr. Anthony has grouped into six categories the material facts in "Licensee's Statement of Material Facts as to Which There Is No Genuine Issue to Be Heard" and proceeded to write a one-sentence comment on each group. We discuss each group below:

Group 1. With respect to the Licensee's Statement of Material Facts 1 and 2, *supra*, Mr. Anthony asserts that "Limerick release limits do not protect the public properly because they are based on boundaries beyond the railroad, so limits and effluent reports are skewed." (See also ¶ 1 of his April 25 response.) Clearly, Mr. Anthony's assertion relates to releases of radioactive effluents from the Limerick Station which are not relevant to the subject matter of the consolidated contention — viz., whether the proposed amendment to the Technical Specifications would downgrade reporting requirements for iodine spikes which would have an adverse effect on public health and safety. Thus, Mr. Anthony has not set forth facts showing that there is a genuine issue of fact. Moreover, such an argument is precluded by the doctrine of *res judicata*. In ALAB-828, 23 NRC 13 (1986), the Appeal Board affirmed the Licensing Board's refusal to reopen the record to hear Mr. Anthony's complaint about the supposedly improper use of the plant site boundaries by PECO in determining the public's exposure to gaseous and liquid effluent releases during routine plant operation. Mr. Anthony contended then, as now, that the dosages should be calculated at the closest, publicly accessible approaches to the plant (a railroad right-of-way and the Schuylkill River), rather than at the more distant site boundaries. The Appeal Board found no basis for overturning the Licensing Board's conclusion that nothing in Mr. Anthony's presentation raised a genuinely significant safety issue.

Group 2. With respect to the Licensee's Statement of Material Facts 3 and 4, Mr. Anthony asserts that "[w]e have seen no evidence from NRC to back up these assertions." However, the Staff's Mr. Clark attested in ¶ 12 of his affidavit that the NRC publishes fuel performance annual reports (NUREG/CR-3950) containing the statistical basis of Generic Letter 85-19 which states, *inter alia*, that "the quality of nuclear fuel has been greatly improved over the past decade with the result that normal coolant iodine activity (i.e., in the absence of iodine spiking) is well below the [acceptable] limit." Since Mr. Clark attests that these reports are available for copying at the NRC public document room and are also available for sale from the NRC, Mr. Anthony's mere assertion that

he has not seen such evidence does not serve to show there is a genuine issue of material fact to be heard.

Group 3. With respect to the Licensee's Statement of Material Facts 5 through 8, Mr. Anthony asserts that "[w]e have seen no figures from PECO or NRC to support these figures, but in any event they do not respond to the issue, which is iodine spikes, not averages." Mr. Anthony's mere assertion in effect that he has not seen the documentation does not serve to show there is an outstanding, unresolved genuine issue of material fact since we are unaware that he made any effort to seek production of these operating license documents from the Licensee and/or the Staff and was informed by them that there was no such documentation. Further, while many of the values addressed in the Licensee's joint affidavit at ¶ 13 are averages, the Licensee's affiants assert that there was a maximum value of only 1.2×10^{-4} µCi/g during the first cycle of operation and a peak value for the second (present) fuel cycle of 2.2×10^{-4} µCi/g as of March 29, 1988. The Staff's affiant, Mr. Clark, at ¶ 12 of his affidavit avers that since 1982 there has been only one incident of iodine spiking in a BWR.

Group 4. With respect to the Licensee's Statement of Material Facts 10 through 15, Mr. Anthony asserts that "[w]e do not necessarily dispute these items but they are also not relevant to the hazards to the public from iodine spikes which might cause surges of releases of radioactivity to the public without staff action or immediate registration or alarm due to inadequate monitoring or limits based on erroneous site boundaries." Here the Intervenor first alleges that iodine spikes might be undetected due to inadequate monitoring, but this allegation is not relevant to the issue presented in the consolidated contention — viz., in short, whether the proposed amendment would downgrade reporting requirements.⁴ Second, he repeats the complaint advanced in Group 1, *supra*, about dosages being improperly determined at the site boundary, which cannot be heard because of *res judicata*.

Group 5. With respect to the Licensee's Statement of Material Facts 16 through 21, Mr. Anthony asserts that "[w]e do not question that the reporting procedures exist but they are based on criteria which do not provide an immediate response, presumably plant shutdown, to levels of radioactive iodine which could cause severe damage to children walking along the railroad right of way or workers there." Once again, as he attempted to do in Groups 1 and 4, *supra*, Mr. Anthony resurrects his allegation about dosages being improperly

⁴Mr. Anthony attached two documents to his response, stating that one "casts doubt on PECO's ability to properly measure or calculate radiation doses from Limerick routine releases of radioactive effluents," and that "the other document questions the ability of nuclear power plants, including Limerick, to monitor or react to radioactive releases either inside or outside the plant." Even assuming these documents reflect that which he alleges they reflect, these documents, like his allegations, are not relevant to the issue raised in the consolidated contention. (See also ¶¶ 3, 4, and 5 of his response of April 25, where, in questioning the Licensee's ability to operate the plant safely, Mr. Anthony raises an issue irrelevant to the issue in the consolidation contention.)

calculated at the site boundaries rather than at the railroad right-of-way. Such an allegation is barred by *res judicata*.

Group 6. With respect to the Licensee's Statement of Material Facts 22 through 25, Mr. Anthony asserts that "[i]t may be true that the design basis for iodine levels in the coolant would be effective in shutting the plant in case of a steam line break and implementation of the emergency plan, but we assert that monitoring of releases should be continuous and should not only be tied to stack release levels but should alarm the station staff via continuous monitor registration of on-site and off-site instruments which could alert the operators to dangerous levels of radioactivity from an accident like Chernobyl or TMI, or a nuclear bomb accident, to which Limerick could add a lethal leverage." Once again, as he attempted to do with respect to Group 4, Mr. Anthony resurrects the allegation that the monitoring of releases is inadequate or ineffective. The allegation is simply not relevant to the issue raised in the consolidated contention.

At page 3 of his affidavit (Wiley Aff.), Mr. Wiley deposed that, pursuant to the present Technical Specifications, which would not be changed by the proposed amendment, the plant would be required to shut down if the primary coolant iodine activity exceeds 4 $\mu\text{Ci/g}$ or if the iodine activity exceeds 0.2 $\mu\text{Ci/g}$ for 48 hours. At ¶ 6 of his April 25 response, Mr. Anthony is concerned that, while the Technical Specifications require a shutdown if the iodine activity exceeds 4 $\mu\text{Ci/g}$, they do not specify how soon thereafter a shutdown is mandated. However, his concern is misplaced because § 3.4.5 of both the current and proposed Limerick plant Technical Specifications require the plant to be in "at least hot shutdown with the main steam isolation valves closed within 12 hours." (See Clark Supp. Aff. at 3, 4, and Attach. B thereto.) Mr. Anthony's other comments in ¶ 6 of his response express his dissatisfaction with the continued operation of the plant for up to 48 hours prior to shutdown initiation when the iodine concentration in the coolant is in the range of 0.2 to 4 $\mu\text{Ci/g}$. However, the fact of the matter is that this requirement was in the original Technical Specifications, it was not contested in the consolidated contention, and remains unchanged in the proposed amendment.

III. CONCLUSION

We conclude that the Licensee, as supported by the Staff, has sustained its 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 that requires a hearing, and that the Licensee is entitled to a decision as a matter of law. The only reporting requirements eliminated by the proposed amendment are the requirements for 30-day and 90-day Special Reports which are already duplicative. No Licensee Event Reports are eliminated. The elimination of

the Special Reports would not decrease the regulatory control exercised by the NRC because whatever information that would be sent to NRC via the Special Reports would be contained in one or more other reports submitted to NRC, i.e., the iodine concentrations that would trigger the 30-day and 90-day Special Report requirement would also require plant shutdown and the preparation of a Licensee Event Report. The proposed amendment would not change any release limits or the reporting requirements for releases. The proposed amendment does not involve current limits for radioactive gaseous releases, and the allegation that the amendment would permit excessive one-time releases is without merit.

Order

1. The Licensee's motion for summary disposition, as supported by the Staff, is granted. Accordingly, the Joint Contention is dismissed, the Intervenor is dismissed as parties, and this proceeding is terminated.

2. The Director of the Office of Nuclear Reactor Regulation is authorized to issue the requested amendment.

3. Our action is final for appellate purposes. Accordingly, pursuant to 10 C.F.R. § 2.762, any party may take an appeal from this Memorandum and Order by filing a Notice of Appeal within ten (10) days after service of this Memorandum and Order. A brief in support of such appeal shall be filed within thirty (30) days after the filing of the Notice of Appeal (forty (40) days if the appellant is the Staff). Within thirty (30) days after the period has expired for the filing and service of the briefs of all appellants (forty (40) days in the case of the Staff), any party who is not an appellant may file a brief in support of,

or in opposition to, any such appeal(s). A responding party shall file a single responsive brief, regardless of the number of appellants' briefs filed.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Sheldon J. Wolfe, Chairman
ADMINISTRATIVE JUDGE**

**George A. Ferguson
ADMINISTRATIVE JUDGE**

**Richard F. Cole
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 5th day of May 1988.**

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)

May 9, 1988

In this Partial Initial Decision, the Board rules on the adequacy of Applicant's reception centers for public use in the event of a radiological emergency at Shoreham.

EMERGENCY PLANS: PLANNING BASIS

On the assumption that emergency broadcast communications to the public are not confusing or conflicting, a radiation monitoring capacity for 20% or more of the emergency planning zone (EPZ) populations within 12 hours will satisfy regulatory criteria of NUREG-0654.

EMERGENCY PLANS: MONITORING CAPACITY

The ultimate monitoring capacity depends on the rate at which reception centers can monitor evacuees and not the capacity of the road system to deliver evacuees to the centers.

EMERGENCY PLANS: TRAINING

Prior familiarization or training of police, though desirable, is not crucial to implementation of traffic control.

EMERGENCY PLANS: FUTURE TRAFFIC GROWTH

The guidance in NUREG-0654, calling for an annual review of emergency plans, is adequate to provide for future traffic growth in the absence of barriers that cannot be corrected prior to license issuance.

EMERGENCY PLANS: PUBLIC HEALTH AND SAFETY

Standards for public health protection do not require the submission of theoretically optimal plans or resolution of all predictive uncertainty about how future emergencies will unfold: Such standards can be met by a practical demonstration of existing capability if the underlying analysis is reasonable and does not depend on flawed or distorted data or assumptions.

PARTIAL INITIAL DECISION ON SUITABILITY OF RECEPTION CENTERS

INTRODUCTION

This is a Partial Initial Decision on offsite emergency planning issues pertaining to the application of the Long Island Lighting Company (LILCO) for an operating license at Unit 1 of the Shoreham Nuclear Power Station (Shoreham). The Decision addresses the adequacy of three reception centers proposed by LILCO for public use in the event of a radiological emergency at Shoreham. The adequacy of the centers is evaluated for compliance with NRC regulatory standards on emergency planning, codified in 10 C.F.R. § 50.47, Appendix E, and the criteria of NUREG-0654, FEMA-REP-1, Rev. 1. Also, the dictates of the Appeal Board in ALAB-832, 23 NRC 135 (1986), and ALAB-855, 24 NRC 792 (1986), are required to be considered. Proposed findings of fact and conclusions of law were submitted by LILCO, New York State, Suffolk County, and the Town of Southampton (Governments or Intervenors) and the Nuclear Regulatory Commission Staff (Staff). All of the proposed findings of fact and conclusions of law have been considered. Any such finding or conclusion not incorporated directly or inferentially in this Partial Initial

Decision is rejected as unsupported in fact or law or unnecessary to the rendering of this decision.

HISTORY

Reception center issues have plowed a lengthy and complicated furrow in this proceeding over the past 4 years. In its initial emergency scheme, LILCO designated five primary and backup facilities in Suffolk County as relocation centers. These were to serve as reception centers for registering, monitoring, and decontaminating evacuees and as temporary shelters for housing, feeding, and sanitary facility purposes.¹ Subsequently, and allegedly due to opposition to LILCO's emergency plan by the Governor of New York and Suffolk County officials, several relocation centers became unavailable.² LILCO thereupon revised its plan to provide for separate reception centers and temporary shelter facilities (congregate care centers) to accommodate evacuees. Hearings were held, but as LILCO declined to identify the reception centers until after it completed negotiations, a void in the record was noted by the Board on the matter.³ Subsequently, the record was reopened after the Veteran's Coliseum in Nassau County was identified by LILCO as its designated center. After a hearing and a Licensing Board decision approving the functional adequacy of the Coliseum, the Appeal Board remanded the issue with directions to broaden the scope to determine whether there were any factors, including location, that might make the Coliseum unsuitable to serve as a sole reception center for emergency planning zone (EPZ) evacuees.⁴ Prior to the remanded hearing, however, the Nassau County government adopted a resolution resulting in the Coliseum also becoming unavailable to LILCO. Applicant then moved again to reopen the record after substituting three LILCO operating facilities in place of the Coliseum. Granted by the Board, the motion was aimed at the presentation of evidence in support of these facilities, all in Nassau County, to be utilized as reception centers. Bellmore, Hicksville, and Roslyn in the Towns of Hempstead, Oyster Bay, and North Hempstead, respectively, are the designated facilities.

In convening a hearing on the new reception centers, the Licensing Board included for litigation those issues remanded by the Appeal Board in ALAB-832, issues raised by Intervenors that were considered relevant to the proceedings and an issue concerning the proper population planning basis for monitoring evacuees, which was affirmed by the Appeal Board in ALAB-855, *supra*, 24 NRC at 801. *Also see* Board Memorandum and Order (Rulings on LILCO

¹ LILCO Exh. EP-1 at 4.2-1, 4.2-3.

² Cordaro, *et al.*, ff. Tr. 14,707, at 13-14.

³ Tr. 15,713.

⁴ ALAB-832, *supra*, 23 NRC at 162.

Motion to Reopen Record and Remand of Coliseum Issue), December 11, 1986 (unpublished). Testimony was received on the following issues:

1. The adequacy of LILCO's planning basis — the number of people expected to seek monitoring at LILCO's new reception centers;
2. Whether transportation and traffic problems might develop as a result of the reception centers' locations and their distance from the EPZ;
3. Whether the reception centers' locations might create problems in regard to the evacuation shadow phenomenon;
4. Whether the distance of the reception centers from the plume EPZ would increase exposure to radiation, causing an additional problem;
5. Whether LILCO's proposed monitoring procedures were adequate;
6. The staffing requirements given the new scheme;
7. The adequacy of evacuation routes to the three LILCO reception centers including the effects of traffic congestion on the way to and in the vicinity of the facilities, and LILCO's Revision 8 proposal to employ traffic guides on Nassau County roadways;
8. LILCO's proposal to transport all evacuees traveling on buses to the parking lot next to the Hicksville facility, when that facility itself is also proposed by LILCO to be the local emergency response organization (LERO) relocation center;
9. Whether the proposal to send evacuees to LILCO parking lots could or would ever be implemented in a way to protect the public health and safety.

We combine, in our Decision below, the issues litigated in the following manner: planning basis issues (1); traffic-related issues (2 and 7); distance of reception centers from EPZ issues (3 and 4); monitoring-related issues (5, 6, 8, and 9); and a zoning issue referenced by Applicant and Intervenor in proposed findings.

1. Planning-Basis Issues

Introduction

At the outset, we agree with Staff and Governments that this issue, the number of evacuees for whom monitoring must be provided, is fundamental to the question of the suitability of the reception centers. Staff Proposed Findings at 6; Governments' Proposed Findings at 19. It is clear that many other matters — for example, staffing requirements, space requirements, and traffic flow — all hinge to a considerable extent upon the number of people and vehicles that can be expected to come to the reception centers.

A brief procedural history of the matter may be useful here. In our Concluding Partial Initial Decision on Emergency Planning (CPID), LBP-85-31, 22 NRC 410, 417 (1985), we stated:

We accept LILCO's planning basis for the number of evacuees who might seek shelter, be processed through the relocation center and, according to NUREG-0654 § II.J.12, must thus be monitored. [The estimate was 32,000 or 20% of the EPZ population.] The record is unclear as to how the Coliseum could accommodate the evacuees of the general population who will seek monitoring and processing, aside from those seeking shelter. We therefore find that LILCO's failure to plan for those of the general population who seek only monitoring and processing constitutes a defect in the Plan.

Before the Appeal Board, LILCO claimed that this matter had not been properly raised in the original contentions, and the Appeal Board remanded the issue for a determination by this Board as to whether the issue was "reasonably embraced within the concerns" that had been originally presented to us for litigation. 24 NRC at 421.

We then issued our Clarifying Decision on Remand (Monitoring of Evacuees), LBP-86-36, 24 NRC 561, 571 (1986), wherein we stated:

After analysis of the issue on remand, the Board adheres to its findings as stated in its concluding partial initial decision. We conclude that Contentions 24.O and 75 taken together properly raised the issue of population planning basis for evacuees arriving at a reception center, that LILCO had a fair opportunity to litigate the matter, and that when the smoke had cleared it had simply failed to carry its burden of proof on that point. In reaching this conclusion, the Board never found it possible to adopt any parties' views as to what the correct number should be in the planning basis for radiological monitoring. This remains true to this day; there is simply no basis to decide it in the record.

The Appeal Board then issued ALAB-855, affirming our position and saying:

Surely, the need of evacuees for monitoring and decontamination services does not hinge to any extent upon whether they have been able to make their own sheltering arrangements. This being so, it seems beyond serious dispute that monitoring and decontamination services must be regarded as within the "range of protective actions" that 10 C.F.R. 50.47(b)(10) *requires* be developed for *all* members of the public within the EPZ.

24 NRC at 800 (footnote omitted, emphasis in original).

The Appeal Board directed us to proceed to consider the motion to reopen the record for the purpose of considering the substitution of other facilities for the Nassau Coliseum. While the Appeal Board regarded the Applicant's estimate of the number of persons who will need monitoring and decontamination as well as shelter (20% of the total of 160,000 or 32,000) as being "of dubious validity," the Board noted that "LILCO may reassert the claim before the Licensing Board. Alternatively, it may proffer a new estimate." *Id.* at 801.

Accordingly, we accepted evidence on the number of evacuees that each of the parties believed LILCO must be prepared to accommodate.

Identification of Witnesses

LILCO presented the testimony of Douglas M. Crocker, Dale E. Donaldson, Diane P. Dreikorn, Edward B. Lieberman, Dr. Roger E. Linnemann, Dr. Michael K. Lindell, Dr. Dennis S. Milet, and Richard J. Watts (LILCO Exh. 1), and the rebuttal testimony of Dr. Michael K. Lindell (LILCO Exh. 50). Suffolk County presented the testimony of Dr. Stephen Cole, Dr. Susan C. Saegert, Dr. James H. Johnson, Jr., Dr. David Harris, Dr. Martin Mayer, Gregory C. Minor, and Steven C. Sholly (SC Exh. 13); rebuttal testimony of Gregory C. Minor and Steven C. Sholly (SC Exh. 14); testimony of Dr. James H. Johnson, Jr., and Dr. Susan C. Saegert (SC Exh. 15); and New York State presented the testimony of James D. Papile, James C. Baranski, and Lawrence B. Czech (NY Exh. 1). FEMA presented the testimony of Dr. Thomas E. Baldwin, Ihor W. Husar, and Joseph H. Keller (FEMA Exh. 2). The NRC Staff presented the testimony of Falk Kantor and Lewis G. Hulman (Staff Exh. 5).

LILCO's Position

LILCO relies upon a FEMA internal memorandum (the so-called "Krimm Memorandum," FEMA Exh. 1) for its position that Criterion J.12 of NUREG-0654 requires sufficient resources to monitor about 20% of the total population of the EPZ in 12 hours.⁵ The criterion itself actually says only:

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 of monitoring within about a 12-hour period all residents and transients in the plume exposure EPZ arriving at relocation centers.

NUREG-0654 at 65.

LILCO, the NRC Staff, and FEMA all believe that an appropriate planning basis for the purpose of determining the resources in people and instruments

⁵ That memorandum says:

The State and local radiological emergency preparedness plans should include provisions at relocation center(s) in the form of trained personnel and equipment to monitor a minimum of 20 percent of the estimated population to be evacuated.

For highly improbable radiological releases involving high levels of radiation encompassing a relatively large area, it may be necessary to monitor a greater number of evacuees beyond 20 percent of the population. In such a situation, State and local governments would be expected to develop and implement ad hoc response measures, supplemented, if needed, by Federal and private sector resources.

FEMA Exh. 1 at 2.

that should be committed to monitoring is that one should plan on monitoring 20% of the EPZ population in about 12 hours. LILCO Exh. 1 at 10 (Crocker, *et al.*); FEMA Exh. 2 at 7 (Baldwin, *et al.*); Tr. 19,221 (Kantor). One of LILCO's witnesses, Mr. Donaldson, a former NRC employee, had been a member of a team that developed a "precursor" document to NUREG-0654. He recalled that, although the group did not have a particular number in mind when that document was written, it was their belief that "only a small percentage" of the EPZ would require monitoring. LILCO Exh. 1 at 8.

The Applicant points out (LILCO Proposed Findings at 15-16) that the regulations do not require dedication of enough resources to handle *all possible* accidents, the emphasis being on prudent risk reduction measures. Citing *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-83-10, 17 NRC 528, 533 (1983). And LILCO also offers the limited size of the EPZ itself as compelling the notion that something less than a "worst case" is a suitable basis for compliance with the regulations (LILCO Proposed Findings at 15).

LILCO notes that the "Krimm Memorandum," introduced both by FEMA (as FEMA Exh. 1) and by LILCO (as Attach. L to LILCO Exh. 1), was prepared by FEMA's Policy Development Branch and is FEMA's national policy. Tr. 18,314 (Keller); Tr. 18,440 (Husar); Tr. 18,346, 18,465 (Keller). That memorandum was based upon FEMA's review of "[p]revious experience gathered on evacuating responses to a variety of natural and technological emergencies." LILCO Proposed Findings at 16, *citing* FEMA Exh. 1.

LILCO does not dispute that there may be circumstances under which more than 20% of the EPZ population may require monitoring, but characterizes such circumstances as highly improbable, again citing the Krimm Memorandum (LILCO Proposed Findings at 17). But LILCO believes that planning for monitoring 20% of the EPZ population, like planning for the evacuation of a 10-mile radius, is the resource commitment required by the regulations.

LILCO also points out the result of a calculation by the Staff's witness, Lewis G. Hulman (Staff Exh. 5). LILCO Proposed Findings at 17-18. Mr. Hulman attempted to calculate the fraction of the population that could be expected to be contaminated in a severe accident. That is, he tried to determine how many people would be likely to *need* monitoring, rather than how many would *seek* it. He performed what he termed a "footprint assessment," calculating the conditional probability of the number of people within the 10-mile EPZ who could be within the plume. Staff Exh. 5 at 1 (Hulman). He used three different scenarios, Cases 1, 2, and 3. *Id.* at 6 ff. The first case calculated the number of people covered by a plume of width twice the Gaussian diffusion parameter centered in each of sixteen 22.5-degree sectors, adding to that the population in the sector within 2 miles of the plant, and used meteorological data to compute a weighted fraction of the time that various numbers of people would be exposed.

Id. at 5-6. In Case 2 it was assumed the plume would expand without the restrictions of Case 1, and in Case 3 the exposed population included all the people from 2 to 10 miles in each sector plus all those within 2 miles to be considered at risk, and weighted the probabilities according to the time the wind blows in each direction. *Id.* at 7. His ultimate conclusion was that “[e]ven in the most conservative of the three cases, the planning basis of 20% would be a conservative estimate of the number of people who might be within the plume.” *Id.* at 9.

As we discuss *infra*, Suffolk County witnesses Gregory Minor and Steven Sholly criticized Mr. Hulman’s analysis on the ground that he had ignored the effects of shifting wind and precipitation. SC Exh. 14. LILCO would have us accept Mr. Hulman’s work as lending support to the 20% requirement nonetheless, since Mr. Hulman himself acknowledged these omissions and opined that his other conservatisms more than offset them. LILCO Proposed Findings at 18-19, *citing* Staff Exh. 5 at 8 and Tr. 19,211, 19,223, and 19,228.

LILCO would also have us discount the position of New York State (discussed in some detail below) to the effect that emergency plans should be able to accommodate 100% of the population of the EPZ. LILCO Proposed Findings at 23-24. LILCO points out that FEMA witnesses testified that other local plans in New York do not achieve that goal. *See* Tr. 18,381 (Keller, Husar); Tr. 18,371, 18,379, 18,472, 18,481-83 (Keller). And LILCO points out that at least one exchange in the transcript between one of the Licensing Board judges and a New York witness could be taken to mean that New York policy anticipates only that some sort of reserve monitoring capacity, not the capacity available early in an emergency, would permit 100% monitoring. LILCO Proposed Findings at 24, *citing* Tr. 18,238-39.

Finally, LILCO discounts the “monitoring shadow” theory of Suffolk County, a theory described in some detail below, saying that because the Board has already concluded that, in the case of the “evacuation shadow” the results of polls have “no literal predictive validity,” we must reach the same result here. LILCO Proposed Findings at 25-28, *citing* LBP-85-12, 21 NRC 644, 667, 655-71 (1985). LILCO believes that the present polling data, even supplemented by the “focus group” study discussed below, cannot be used to predict the behavior of large groups of people in an emergency. And LILCO suggests that the “monitoring shadow” and “evacuation shadow” phenomena, that were exhibited at TMI-2, point in very divergent directions since only a tiny fraction of those in the surrounding area availed themselves of monitoring, while those who evacuated constituted a substantial fraction. LILCO Proposed Findings at 28-29, *citing* LILCO Exh. 1 at 15; Tr. 17,499 (Mileti); Tr. 19,195 (Kantor).

Governments' Position

The Governments start by pointing out a phrase from a Commission decision, *San Onofre*, CLI-83-10, *supra*, 17 NRC at 536 n.12, wherein the Commission said that NUREG-0654 § II.J.12:

requires relocation centers capable of registering and monitoring all residents and transients in the plume exposure EPZ

While they admit that the statement "arguably constitutes dicta," the Governments urge us to give it weight in our decision (Governments' Proposed Findings at 27-28). That we decline to do.⁶ We do indeed regard the statement as *obiter dicta*. We believe that the Commission was merely restating in abridged form the guidance offered in the NUREG document and that the words of the document itself, "all residents and transients in the EPZ arriving at relocation centers," properly govern.

The Governments attack the applicability of the Krimm Memorandum on five rather overlapping grounds. First, they note that the memorandum derived its figure, 20%, from previous experience in which "from 3 to 20% of the evacuees arrived at relocation centers or shelters" (Governments' Proposed Findings at 28-29, *citing* FEMA Exh. 1 at 1). This, the Governments believe, forms little basis for the memorandum's conclusion that the upper limit of that range is an appropriate value for accommodating those who would seek monitoring. Indeed, the Governments say, the use of sheltering data to estimate the monitoring requirement is precisely the practice that this Board and the Appeal Board found unsatisfactory. Governments' Proposed Findings at 29-30. And they cite testimony that indicates that it is in fact upon the number of people who have sought shelter in emergencies that the Krimm figure is based. *Id.*, *citing* Tr. 18,321-23 (Keller); Tr. 18,356-61 (Husar).

Second, they assert that by relying on shelter-seeking data, the Krimm Memorandum neglects the fact that more than 20% of the EPZ population may be advised to seek monitoring by emergency broadcast system (EBS) messages. *Id.*, *citing* OPIP 3.6.1 at 2; NY Exh. 1 (Papile) at 8). The Governments point out that in the exercise of the LILCO Plan held on February 13, 1986, the scenario called for instructing approximately 60% of the summertime population to report

⁶ We decline, but not for the reason that LILCO offers us. LILCO cites ALAB-855, *supra*, 24 NRC at 799, where the Appeal Board, in dealing with the Commission's statement, find "no occasion to explore . . . the bounds of our obligation to give effect to a Commission pronouncement that, albeit clear-cut, might not have been essential to the decision where it is found." LILCO Proposed Findings at 9. We note that the Appeal Board's statement was, in context, made in the course of a finding *against* LILCO and was followed one page later (*id.* at 800) by the words cited in our introductory matter requiring that monitoring and decontamination be developed for all members of the public in the EPZ.

to a reception center for monitoring. Governments' Proposed Findings at 32, *citing* NY Exh. 1 at 9.

Third, the Governments note that the Krimm Memorandum does not address the "monitoring shadow" phenomenon, a concept the Governments and their witnesses believe very important. Governments' Proposed Findings at 32. They cite FEMA witness Keller at Tr. 18,324 for the notion that the memorandum does not in fact address this concept, but they omit the statement by Mr. Keller on the next page of the transcript (Tr. 18,325) where he states that the upper end of the experiential range was selected because "some people may go to the reception center to allay their fears," an idea that, in our view, is virtually indistinguishable from that of the monitoring shadow.

Fourth, they allege that the Krimm Memorandum fails to support a 20% planning basis because it ignores the fact that the reception centers will be performing a dual function, both sheltering and monitoring. They cite LILCO's own witnesses (LILCO Exh. 1, Attach. P, OPIP 4.2.3 at 3, 7; Tr. 17,438 (Crocker); LILCO Exh. 1 at 3) for the fact that the reception centers will serve both needs. FEMA's witness, Mr. Keller, agrees. Tr. 18,328-29. Thus the Governments would have us find that the total of people seeking both shelter and monitoring could be larger than the planning basis.

Finally, the Governments would question the origins of the Krimm Memorandum. The memorandum was written in response to an inquiry by one of FEMA's witnesses, Mr. Keller. FEMA Exh. 1, Keller Letter. Mr. Keller sought guidance since, *inter alia*, he expected the issue of the planning basis to surface in this hearing. He wrote to Mr. Stewart Glass, then Regional Counsel for FEMA Region II, and Mr. Krimm, Assistant Associate Director for Natural and Technological Hazards in the Office of State and Local Programs and Support, FEMA Headquarters, issued the memorandum addressed to Division Chiefs of the corresponding Divisions in the FEMA Regional Offices. FEMA Exh. 1; Tr. 18,313 (Husar). The Governments point out that FEMA Guidance Memorandum IT-1, which is official guidance, establishes a hierarchy for FEMA guidance documents and sets forth a procedure by which such documents are to be developed and promulgated. Governments' Proposed Findings at 34-35, *citing* Tr. 18,162 (Papile); Tr. 18,193-96 (Baranski); SC Exh. 18. Because a memorandum from an Assistant Associate Division Director does not fit into the official FEMA guidance schema and is not generated according to FEMA's official method for developing guidance, the Governments would not have us give the Krimm Memorandum substantial weight. Governments' Proposed Findings at 37.

The Governments see the testimony of Mr. Donaldson, author of a "precursor document" to NUREG-0654, as offering scant support for LILCO's view. They point out that Mr. Donaldson's draft did not include the language in §J.12 (LILCO Exh. 1 at 8 (Donaldson)), that he did not have a specific number of

people in mind when he wrote the draft (*id.*; Tr. 17,449), and that the Steering Committee that worked on the document after him used it in ways unknown to him and did not consult him on the number of people who might be expected to arrive at reception centers. *Id.* They would have us give the Donaldson testimony no weight. Governments' Proposed Findings at 40.

The Governments also discount Mr. Hulman's testimony. Their primary objection to it is that it speaks only of the number of people who might be contaminated, not to the number who might seek monitoring for reasons associated with their own fears or worries, "behavioral" reasons in the Governments' argot. *Id.* at 53, *citing* Tr. 19,198-99 (Hulman, Kantor).

Further, the Governments would fault Mr. Hulman's analysis because it does not account for either wind shifts or precipitation. Again, Mr. Hulman admits this (Staff Exh. 5 at 8 (Hulman); Tr. 19,200 (Hulman)), but believes he has "more than offset these limitations." Staff Exh. 5 at 8 (Hulman). The Governments' witnesses, however, regard the omissions as serious. SC Exh. 14 at 5 (Minor and Sholly). They point out the "substantial chance" (about 86%) that some wind shift will occur in a 6-hour period. Tr. 17,941 (Minor). And they criticize Mr. Hulman for having failed to use computer codes, despite their existence, that would account for wind shift (Governments' Proposed Findings at 54 n.36, *citing* Tr. 19,200, 19,226-27 (Hulman)).

The Governments would also have us believe that the failure of Mr. Hulman's analysis to allow for the fact that evacuation itself could increase the number of people exposed during a wind shift is a serious flaw and that Mr. Hulman admitted as much under cross-examination. Governments' Proposed Findings at 54-55, *citing* Tr. 19,228-29 (Hulman); SC Exh. 14 at 5-6 (Minor, Sholly). Actually, at the point cited in the transcript, Mr. Hulman spent most of his time protesting that an increase in exposure due to wind shift during an evacuation is very unlikely.

Finally, the Governments would have us reject Mr. Hulman's ultimate conclusion, based on his graphs, of persons exposed as a function of time fraction (conditional probability). He pointed out that his results support a conclusion that the 20% planning basis is conservative (overestimates the number contaminated) 90% of the time. The Governments would use these same curves to point out that if one wished to cover the situation 95-98% of the time, the number of people could more than double. Governments' Proposed Findings at 55, *citing* SC Exh. 14 at 6 (Minor and Sholly); Staff Exh. 5 (Hulman), Fig. 2.

While the State and County agree that the 20% planning figure is too small, they appear to differ on the question of what a proper figure would be. The State witnesses testified that a prudent plan would permit monitoring of at least 100%

of the population in the EPZ. NY Exh. 1 at 7-10.⁷ The County witnesses, on the other hand, espouse a complex theory, similar to the one we dealt with under the rubric "Shadow Phenomenon" in our PID. LBP-85-12, *supra*, 21 NRC at 655. There the matter involved the "evacuation shadow," a hypothesized large number of people who might evacuate from areas where no evacuation was ordered. Here the County witnesses hypothesize that a large number of people would appear and request monitoring, even though they came from areas where monitoring had not been advised. They call this the "monitoring shadow" and distinguish it from the evacuation shadow, although they assert that the two have similar roots. Governments' Proposed Findings at 56, *citing* SC Exh. 13 at 13-18, 27; Tr. 17,933 (Cole, Johnson, Saegert).

The Governments point out that witnesses for FEMA and the Staff agree that people might seek monitoring even though they did not come from an area where occupants had been advised to seek it. Tr. 19,198 (Kantor); 18,330-31 (Keller, Baldwin, Husar). While LILCO's witnesses took the position that such a monitoring shadow can be controlled by proper dissemination of good emergency information,⁸ the Governments believe that the only reliable way to estimate the extent of the monitoring shadow is by surveying the population in advance. Governments' Proposed Findings at 55-59, 67-69. To this end the County presented the results of a survey conducted by the County's witness Dr. Stephen Cole. SC Exh. 13 at 13-16 (Cole, *et al.*) and Exh. 8 thereto at 8. The survey asked 1500 respondents by telephone how they would respond to a series of the EBS messages that were actually used in the February 13, 1986 exercise of the plan.⁹ Dr. Cole's results indicated that 50% of "all Long Island households" would go to the specific center mentioned in the EBS messages. That would represent more than 1.3 million people. Governments' Proposed Findings at 59, *citing* SC Exh. 13 at 16-17 (Cole, *et al.*). While the Governments point out that they do not take the position that a full 1.3 million people would report for monitoring to the reception centers, they do believe that far more than the 20% of the EPZ population should be the planning basis. *Id.*

The Governments would thus have us find that Dr. Cole's survey has established that a large monitoring shadow would result from a radiological emergency. They would also have us delve into the reason for the "shadow."

⁷ As we noted above, LILCO would interpret certain of the New York witnesses' responses as evidence that the State really only expects a capability for expansion to 100% monitoring. Note, however, that the Governments, in their Proposed Findings, specifically attribute a 100% requirement to the State (Governments' Proposed Findings at 25), although State plans do not necessarily fulfill that requirement at other plants in the State. Tr. 18,381-82 (Keller, Husar); Tr. 18,238-39 (Papile).

⁸ This is a position not inconsistent with that adopted by this Board in reference to the "evacuation shadow," which all agree is an analogous phenomenon. *Cf.* LBP-85-12, *supra*, 21 NRC at 670.

⁹ There is some dispute between the County and LILCO as to how accurately the messages used in the survey represented those used in the exercise. LILCO Proposed Findings at 28, *citing* Tr. 17,819 (Cole); Cordaro, *et al.*, ff. Tr. 1470, at 27; Tr. 10,498 (Weismantle).

They note that it is well established in the record of this case that people fear radiation. Governments' Proposed Findings at 65, *citing* Tr. 17,983 (Kline); SC Exh. 13 at 26-27; LILCO Exh. 6 at 464; Tr. 17,849 (Saegert). And they see confirmation of their theories in other work by Dr. Cole. In addition to the survey, Dr. Cole conducted group interviews of the type known as "focus groups," wherein he examined "the monitoring shadow and the fear which drives it." Governments' Proposed Findings at 66, *citing* SC Exh. 13 at 31-33; Tr. 17,824-25 (Cole). During these group sessions, recordings of the EBS messages from the February 13, 1987 exercise were played to the group, and the group then discussed the individual participants' perceptions of and attitudes toward a Shoreham accident and how they would react. SC Exh. 13 at 32. Analysis of the transcripts of these group interviews by Suffolk County's witnesses, Drs. Cole, Saegert, and Johnson, led these witnesses to conclude that there is a deep-seated fear of radiation on Long Island, that some Long Islanders believe that if there is *any* accident at Shoreham they will be exposed to radiation, that the fear would not be based upon objective or quantitative notions of the amount of radiation involved (any amount is dangerous), and that in the event of an accident many people will believe that their lives are in grave danger. SC Exh. 13 at 33-35. Thus many will seek monitoring (*id.* at 36). In short, it is the Governments' position that the primary motivator in an emergency is preexisting fear.

As to the effect upon people's behavior of messages that may be broadcast at the time of the emergency, the Governments believe that will be minimal. They particularly discount the notion that members of the public not advised to seek monitoring will not do so. LILCO's messages, they believe, will not overcome the strong fear of radiation. The County's experts have examined the EBS messages in LILCO's Plan and the messages broadcast during the February 13 exercise, and those experts conclude that the messages do nothing to calm the fear or to explain why only some people might have become contaminated. Governments' Proposed Findings at 70, *citing* SC Exh. 13 at 42. The EBS messages tell those outside the 10-mile zone that they are safe, but because many members of the public are predisposed to believe differently, they are likely to seek monitoring at the reception centers. Tr. 17,972 (Johnson). The Governments find further support for their theory that predisposition dominates emergency information in an article from the magazine *Nuclear Safety*, written by LILCO's witness Dr. Lindell. There, Dr. Lindell opined that the evacuation overresponse at TMI resulted "as much from prior public perception of the risks of nuclear power" as from conflicting information, and he said that ensuring consistency of information solved "only part of the problem."¹⁰ Governments'

¹⁰ Dr. Lindell was permitted to present rebuttal testimony to answer the Governments' implication during the hearing that his presented testimony was inconsistent with his *Nuclear Safety* article. He explained that to the

(Continued)

Proposed Findings at 71, *citing* LILCO Exh. 6 at 466; *see also* Governments' Proposed Findings at 66 n.44.

NRC Staff's Position

The Staff's position (and apparently that of FEMA) is very close to that of LILCO. To begin with, the Staff would accept the Krimm Memorandum as reliable guidance. Staff Proposed Findings at 9-12. The Staff particularly regards the 20% figure as reasonable in view of the calculation by its witnesses of the number of people who could potentially be affected by a release. *Id.* at 12, *citing* Staff Exh. 5 at 1 (Hulman), and 7 (Kantor); Staff Proposed Findings at 18-19. The Staff even parses the Krimm Memorandum closely, noting that the memorandum speaks of "20 percent of the population to be evacuated," and observing that, since LILCO's plan calls for evacuating only part of the EPZ under some circumstances, providing for 20% of the total EPZ population could, in some cases, more than satisfy the requirement. Staff Proposed Findings at 11. We agree, but we cannot see why having too great a capability under some special circumstances could lead to any problem.

Like LILCO, the Staff would have us note the fundamental similarity of the "evacuation shadow" and the "monitoring shadow" phenomena. On the basis of that similarity, the Staff would have us hark back to the decision we previously rendered (LBP-85-12, *supra*, 21 NRC at 655-71), in which we discounted predictions of such a shadow by polling techniques similar to those of Dr. Cole in the present case. Staff Proposed Findings at 14-16. The Staff notes that, in ordering a hearing held on the present question, we had distinguished between the two phenomena in question, but, with the evidence now in place, the Staff would have us find that the predictive value of public opinion polls should be given little weight and the number of people to be provided for should be assumed to be "a function of" those advised to evacuate. *Id.* at 16. The Staff would have us find that 20% is a reasonable upper bound for that function. *Id.* at 16-17. The Staff cites its own witness, Mr. Kantor, for the notion that offsite response organizations need not be capable of monitoring 100% of the EPZ population. *Id.* at 17, *citing* Staff Exh. 5 at 4 (Kantor).

It is also the Staff's position that a 20% base, expandable for the worst possible accidents, is a capability consistent with the general thinking embodied in NUREG-0654, and that the 12-hour period for monitoring mentioned in § J.12 thereof is based not on radiological health and safety considerations but is intended "to provide a recommended objective for planning purposes." *Id.*

extent that his magazine article studied behavioral intentions and risk perceptions it did so to help planners to understand what types of cues or characteristics of the hazard would be most salient to local residents; it was not his intent to predict future behavior from such surveys. LILCO Exh. 50 at 2; Tr. 17,771-73 (Lindell).

Board Decision

We have given the positions of the parties and the portions of the record that support them careful consideration. After having duly accepted evidence on the matter of the monitoring shadow, we are convinced that the matter of that shadow's size is governed by factors not substantially different from those that govern the evacuation shadow. That is, the tendency of people to seek monitoring when not advised to be monitored is, for practical purposes, influenced by considerations very like those that influence a decision to evacuate when not so instructed. The chief among these factors are predisposition due to fear of the hazard involved, and the information supplied at the time of the incident. "Information" in this sense includes both the official offerings and the rumors currently flying. We see, at this juncture, no immediate way to predict the behavior, and we are still convinced, as we were in our earlier PID, that Dr. Cole's polling techniques tell only what the situation is now, not what it will be at some undetermined future date. See LBP-85-12, *supra*, 21 NRC at 667.

Faced with a situation where no firm predictions are possible, we choose to accept the opinions of those who deal professionally with the business of emergency planning. In particular, we give great weight to the policies of FEMA, and, for that reason, to the guidance expressed in the Krimm Memorandum. The fact that the result of that memorandum jibes with the result of the Staff's analysis of the population fraction at risk we regard as fortuitous, but it is comforting to know that the plan provides for monitoring a number of people near the maximum that could be expected in all but the most severe accidents if it complies with the FEMA guidance.

We recognize the fact that, as the Governments would have it, the Krimm Memorandum is based upon figures for those reporting to shelters, but we recognize also that those figures were adjusted upward in a manner consistent with the best judgment of an emergency planning professional. In short, we conclude 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.

We must again caution, as we did in our earlier PID, that confused or conflicting information (or instructions) could cause a monitoring shadow that would lead to the swamping of the monitoring capacity, and we note that the results of the exercise hearing (LBP-88-2, 27 NRC 85 (1988)) are not such as to give great confidence that communication to the public will be clear and concise. Nevertheless, if one assumes that proper communication is indeed possible and will be required before licensing, we believe that provision of

monitoring capacity for 20% or more of the EPZ population within 12 hours will satisfy the guidance expressed in NUREG-0654 § II.J.12.¹¹

2. *Traffic-Related Issues*

The traffic issues that arise in this case originate from the Appeal Board's remand on reception center issues wherein it found that evidence on traffic had been improperly excluded from our consideration of the functional adequacy of the Nassau Coliseum to serve as a reception center. In its remand order, the Appeal Board observed:

But, manifestly, a reception center that is beyond the reach of the persons it is set up to serve cannot fulfill its intended purpose, no matter how well the facility might be designed and equipped.

ALAB-832, *supra*, 23 NRC at 161-62 (1986).

The issues in the remand hearing that relate directly to traffic problems associated with reception centers are:

Whether transportation and traffic problems might develop as a result of the reception centers' locations and their distance from the plume EPZ.

The adequacy of evacuation routes to the three LILCO facilities proposed as reception centers, including the effects of traffic congestion on the way to and in the vicinity of the facilities, and LILCO's Revision 8 proposal to employ traffic guides on Nassau County roadways.

Memorandum and Order (Rulings on LILCO Motion to Reopen Record and Remand of Coliseum Issue), December 11, 1986, at 7, 18 (unpublished).

A number of other issues raised by the Appeal Board or the Intervenor potentially impacting the road capacity assessment — including shadow evacuation, LILCO's monitoring procedures, and its staffing requirements — are considered and resolved herein separately. This is necessary due to the inherent complexity of what became a multiparameter problem in litigation.

Although Intervenor expressed numerous detailed concerns about road capacity, it was apparent from the outset that a principal element of disagreement about traffic focused on the planning basis that defined the number of evacuees that would have to be accommodated at the reception centers rather than the intrinsic capacity of the highway system to carry traffic. *See* NY Exh. 5 at 39

¹¹ We note a divergence between the positions of the Staff and LILCO on the matter of the applicability of this ruling. The Staff would have us find that capacity for "up to 30% monitoring with ad hoc measures to expand" the capability is adequate for a finding limited specifically to Shoreham. Staff Proposed Findings at 20 n.8. LILCO would have us rule that 20% is adequate. LILCO's Reply to Staff Proposed Findings at 5. Since the testimony of the Staff and FEMA supports the 20% figure, we see no reason to limit our finding as the Staff requests.

(Hartgen and Millspaugh). Put in simplest terms, the streets and highways to be used to access the reception centers would accommodate the additional traffic if the traffic demand is not too great. If, on the other hand, the traffic demand for service is much higher than LILCO plans because background traffic will be higher than normal or shadow evacuation occurs, congestion in streets and highways might prevent access of some persons to the reception centers within the time prescribed in NUREG-0654 §J.12.

Intervenors presented their case on traffic in a manner that could not be rigorously compared with LILCO's assessment because their planning basis assumptions were entwined with their traffic analyses. None of the cases they presented in their prefiled testimony corresponded directly with the case LILCO presented and we are therefore precluded from making symmetrical comparisons of the respective positions. NY Exh. 5 (Hartgen, Millspaugh). Because LILCO carries the burden of proof in this proceeding, we first assess the validity of traffic analysis presented under its planning basis, taking into account any controverting evidence presented by Intervenors. We examine separately the validity of the planning bases of the parties to determine whether LILCO's planning requires modification. In this decision, we find that LILCO's planning basis is adequate. *See supra*. There is therefore no need to determine here whether the traffic consequences that result from Intervenors' traffic scenarios will make LILCO's facilities unsuitable as reception centers.

LILCO's Traffic Analysis

LILCO's analysis of traffic was presented by Mr. Edward Lieberman, Vice President of KLD Associates, a witness in these proceedings whom the Board found to be well qualified in the field of traffic engineering. LILCO Exh. 1, Attach. C (Crocker, *et al.*). The analyses of traffic expected to travel to one of LILCO's three reception centers after departing the western boundary of the EPZ was contained in three documents prepared by Mr. Lieberman. LILCO Exh. 1, Attachs. M, S, and T (Crocker, *et al.*). KLD TR-192 reported on assignment of evacuees to the road system from the EPZ to the reception centers and provided a preliminary road-capacity analysis. Subsequently, KLD submitted KLD TR-201 and, shortly thereafter, KLD TR-201A, which contained revisions including a ramp-capacity analysis not in KLD TR-201. Throughout the proceeding, LILCO relied primarily on its analysis in KLD TR-201A, and its findings therein were the principal subjects of dispute on traffic issues.

As noted, *supra*, LILCO relied on FEMA guidance contained in the "Krimm Memorandum" for its planning basis for the number of evacuees that would have to be monitored at the reception centers in an emergency. FEMA Exh. 1 (Baldwin, Husar, Keller); LILCO Exh. 1 at 9 (Crocker, *et al.*). That guidance asserts that planning to monitor 20% of the EPZ population would be an

adequate basis. However KLD performed additional analyses based on an assumption that 30% of the EPZ population would be monitored. According to LILCO's plan it would take steps to expand its monitoring capability on an *ad hoc* basis if more than 30% of the EPZ population sought monitoring in an emergency. *Id.* at 4, 52-55.

In performing its analysis, KLD made route assignments from the EPZ to the three centers, considered traffic congestion on the main east-west routes from the EPZ to the vicinity of the three reception centers, assessed traffic problems at intersections on the local streets that would be used to access the three centers, estimated the time it takes to monitor vehicles, and considered dispersion of traffic exiting from each center. KLD assumed without numerical analysis that traffic on the major routes between the EPZ and the reception centers would flow at "Level of Service F" (LOS F) which is described in the Highway Capacity Manual (HCM) as a condition where the volume of traffic (V) demanding space on the highway exceeds its capacity (C), and breakdown of flow occurs. That condition is determined analytically when the volume-to-capacity ratio exceeds 1 (V/C greater than 1). The effect of LOS F is congested flow characterized by low average traffic speeds, stop-and-go traffic, and formation of traffic queues. Average highway speeds under those conditions are known from experience to be in the range of 17-30 miles per hour (mph). KLD estimated the volume of evacuating traffic that would actually be serviced under those conditions, assuming that the entire EPZ population evacuates and either 20% or 30% of the population goes to the three reception centers. In so doing, KLD first analyzed cases where either 50% or 100% of the measured peak period background traffic could also be on the roads when an evacuation began but later accepted that 100% of background should be used in its analysis.

After performing its traffic analysis, KLD reached the conclusion that the monitoring rates at each of the three reception centers, and not highway capacity, control the rate at which evacuees can be serviced (monitored, decontaminated if needed, and assigned to congregate care centers if requested). They found further that the hourly monitoring capacity was sufficient to process 30% of the evacuees in less than the 12 hours called for in NUREG-0654 § J.12 and that, in fact, LILCO's ultimate capacity for monitoring would permit it to monitor about 46% of all of the evacuees from a complete evacuation of the EPZ in that time period. An important finding from the analysis is that although traffic congestion would exist on the roads and highways, congestion would not prevent the timely monitoring of all evacuees expected to arrive at reception centers under the planning basis even though there would be delaying effects relative to unimpeded traffic flow. Indeed KLD assumed that traffic will be congested on the major routes from the EPZ, and the analyses show that local streets and intersections would be congested and that lines of waiting traffic will form at the entrances to each of the reception centers. Such lines, however disagreable

to evacuees, are an advantage to the monitoring process according to KLD since they provide a continuous supply of cars to the reception centers that keeps them working at full capacity until the monitoring task is finished. Tr. 18,581 (Lieberman). In LILCO's view, since the reception centers have more than the requisite capacity to monitor its specified planning basis for evacuees, there is no need to expand the capacity of the centers themselves simply because they are rate controlling under its plan. LILCO Exh. 1 at 3-4, 30-32 (Crocker, *et al.*). Although there was some disagreement about decontamination rates, all parties came to accept that monitoring and not the other services of reception centers controlled their capacity.

KLD performed its traffic analysis by first assigning traffic from various entry points within the EPZ to major highways and then assigning routes to the reception centers. Routing assignments were made to maximize available reception center capacity and road capacity. According to KLD, the routes were also chosen for simplicity so that evacuees could successfully follow them in an evacuation. The State claims, however, that the maximization of capacity utilization that was achieved by this exercise was only a theoretical benefit that might not be achieved in practice. Individuals might not follow their assigned routes in an evacuation, with the result that some routes will be overutilized and some underutilized, causing congestion and delay not accounted for in the KLD analysis. KLD believes, however, that route switching by evacuees will be minimal and, in any event, will tend to balance out with no net adverse impact on highway congestion. LILCO Exh. 26 at 4-5 (Lieberman).

LILCO's analysis of traffic capacity employed standard procedures specified in the 1985 HCM, published by the Transportation Research Board. These procedures were programmed for computer use by the Federal Highway Administration, and this software was used for the studies contained in KLD TR-201 and 201A. Intervenor did not challenge the use of the HCM software and in fact used it themselves in their effort to rebut LILCO's case. The substance of Intervenor's case against LILCO was that the analyses done by KLD were improper because it had used unrealistic EPZ population estimates for evacuating traffic, or faulty traffic data bases or assumptions in its analyses. Intervenor produced a number of analyses, using their own models and the HCM software, showing that if different data were used or different assumptions made, the results would show a less-favorable traffic flow than found by KLD. This, in turn, would render the reception center plan unworkable. NY Exh. 6 at 16 (Hartgen, Millsbaugh).

The analysis performed by KLD required KLD to obtain field data on traffic before it could run the HCM software. Field data were collected on background traffic flow during peak periods, using machines to record the flow and on traffic signal timing by direct observation and measurement. KLD also obtained data

on turn movements of existing traffic at key intersections that would be utilized by evacuating traffic to approach the reception centers.

Intervenors assert that these efforts resulted in unreliable data that could not be used to plan for monitoring at reception centers. According to Intervenors, machine counts of traffic turn movements are more reliable than counts taken by observers over short intervals and should have been used to estimate turn movements. Similarly, it was alleged, KLD could have used actual traffic signal settings supplied by the State to estimate "green time" for evacuation traffic, but in many cases it did not. The field data collected by observers were unreliable, assert Intervenors, because the signals are traffic actuated, and exact estimates of maximum green time cannot be obtained by this method. Additionally, LILCO's assertion of adequacy rests also on monitoring times at reception centers, which intervenors claim to be seriously understated. NY Exh. 5 at 55-56, 61-63, 67 (Hartgen, Millspaugh).

Intervenors' Position

The State presented testimony of expert witnesses Dr. David Hartgen and Mr. Robert C. Millspaugh who conducted their own traffic analysis of the reception center plan using a traffic model termed CARS. NY Exh. 5 at 33, Exhs. 1, 2 (Hartgen, Millspaugh). The State assessed eight cases or scenarios which it said constitute a sensitivity analysis that reveals the impact of assumptions on the estimated volume of traffic that would have to be served in an emergency. The cases started with a low estimate consisting of 30% of the EPZ population and background traffic at 50% of normal. Traffic volume was increased in successive cases, culminating in three that used projections of 150% of normal background combined with other assumptions such as the anticipated volume after 5 years of projected population growth. NY Exh. 5 at 33-41, Attachs. 10-13 (Hartgen, Millspaugh).

Results of the analyses were expressed in part as the ratio of volume of traffic divided by the capacity of the specific road link being analyzed (V/C ratio). This ratio is assertedly important to traffic analyses because its magnitude corresponds to the degree of expected traffic congestion. When $V/C = 1$, traffic congestion occurs because the demand for capacity is equal to actual road capacity. When V/C exceeds 1 for a link, forced flow, congestion, and queuing occur (LOS F). The State's analyses show that long traffic queues would exist on the roadways after 12 hours. NY Exh. 5 at 61, 67, 70 (Hartgen, Millspaugh).

The V/C ratio cannot physically exceed one on any real roadway because that would indicate the impossible situation where more traffic passes along a road than it can accommodate. Nevertheless it is reasonable to compute a ratio greater than 1, and the result is meaningful because the projected demand

((V)olume) in an emergency may well exceed the existing road capacity for substantial periods of time.

The State's results show at least some intersections on routes leading to reception centers as having projected *V/C* values near 1 or larger for each of the cases it considered. Not surprisingly, the number of such instances increased with the State's assumption of severity of demand. In the State's case, DOT 4, for example, which assumed 100% background traffic, 50% of the EPZ population going to centers, and 50% evacuation shadow, the State found twenty-two intersections on routes to the reception centers for which demand would exceed their respective capacities. Queues of 3 miles would form, taking longer than 12 hours to dissipate if this case materialized in an actual evacuation. NY Exh. 5 at 43 (Hartgen, Millspaugh).

The State analyzed three critical intersections, one near each of the reception centers, found high *V/C* ratios for each, and projected that, in an emergency, long traffic queues would form and still remain after 12 hours. The State assumed higher and, in its view, more realistic traffic demand than LILCO did in its analysis of the same intersections.

The State's critique of KLD's analyses was based primarily on its view that KLD should have used a larger planning basis to assess the traffic flow in an emergency. The several cases it analyzed differed from one another, and LILCO's, primarily in the assumptions made initially as to how many vehicles would be on the road. The value of the exercise, Intervenor's claim, is that it demonstrates the sensitivity of the conclusions to the input assumptions. Thus, in their view, we cannot accept LILCO's analysis because even though it shows that traffic congestion will not be a factor in the Applicant's ability to monitor the number of evacuees in their planning basis, the conclusion is unreliable and would change for the worse if one of the State's more realistic planning bases were used instead. While at first glance the dispute between the parties appears to be a war of computer models, in reality it is not. It is instead a conflict over subjective assumptions to be used in computer models. The Intervenor's use their analyses to press their views that we should reject FEMA's (and LILCO's) planning basis because a large shadow evacuation will take place, or because more than 20% or 30% of evacuees from the EPZ will seek monitoring in an emergency.

The litigation also produced an array of detailed technical disputes on narrow issues related to quantitative traffic assessment through prefiled testimony, cross-examination of experts, and a flurry of rebuttal and surrebuttal testimony filed by LILCO, the Staff, and the State. These are all considered in this Decision to the extent parties briefed them in their proposed findings.¹²

¹² Intervenor's did not brief several of these issues in dispute and we consider them abandoned. These include: effects of road construction, gridlock, average highway speed, delay times calculated by HCM software, time
(Continued)

The State claims that KLD erred in its analysis by assuming that vehicles would make left turns in two lanes instead of one as permitted by lane markings and signals at the intersections of Route 107 and Old Country Road serving the Hicksville center and at the Long Island Expressway (LIE) eastbound service road and Willis Avenue serving Roslyn. Such turns are said to be both dangerous and illegal because they conflict with oncoming traffic and drivers have obstructed views. While police control might improve the situation, Intervenor claimed that police control in an emergency would not be available because LILCO has no agreement with the Nassau County Police Department to implement its emergency plan. Governments' Proposed Findings at 243-45. Additionally, it is stated, the police have not reviewed the plan so that they could not make it work even if they do agree to participate.

The Intervenor also claim error because LILCO did not consider future growth in traffic congestion which is likely to be worse than now. Error is also alleged regarding LILCO's assessment of traffic within the reception centers themselves and of traffic exiting the centers. The interiors of the centers are said to have obstructions and equipment in place which will slow the circulation of traffic. Traffic exiting the centers will encounter congestion causing traffic to backup into the centers which will reduce their capacity to monitor. NY Exh. 5 at 55-58 (Hartgen, Millspaugh).

The foregoing factors assertedly combine to show that LILCO's reception center plan is unacceptably faulty and that traffic congestion will prevent LILCO from monitoring the population it has planned and certainly any larger and more realistic population volume. Therefore, in Intervenor's view, the plan should be rejected.

Staff Position on Traffic Issues

Dr. Thomas Urbanik II presented testimony on traffic issues on behalf of the NRC Staff. Dr. Urbanik is an Associate Traffic Engineer with Texas A&M University who has previously been accepted as a qualified expert in the Shoreham proceedings. Staff Exhs. 3, 4 (Urbanik).

Dr. Urbanik reviewed, on behalf of the NRC Staff, the analyses performed by KLD Associates reported as KLD TR-192 and KLD TR-201. These documents, in Dr. Urbanik's judgment, were found to follow a traditional traffic engineering approach of estimating traffic demand and capacity in order to ascertain the magnitude of potential problems. According to Dr. Urbanik, the KLD analysis was a standard analysis that meets a simple test of reasonableness, and it properly

distribution of traffic demand, HCM procedures, effects of truck traffic, the State's use of average annual daily traffic data, right turn on red, and capacity of the Meadowbrook Parkway ramp. Governments' Proposed Findings at 169 n.133.

relied on the HCM for calculating the capacities of the roadways. Staff Exh. 3 at 4-6.

In rebuttal testimony, Dr. Urbanik opined that the CARS model employed by the State experts is a transportation planning model for use in assessing land-use impacts of proposed developments. The CARS model is not a traffic operational tool and cannot be used to predict driver behavior on a link-specific basis. It was a misuse of the model to use it for detailed traffic analysis in this proceeding although it can be used to identify alternatives on a broad scale. On the other hand, Dr. Urbanik agrees with New York experts that congestion will be extensive and that delays will be substantial. He finds, however, that the notion of level of service or V/C ratio is largely irrelevant because the roads retain the capacity to function even under severe loading. The Long Island Expressway, for example, has level of service F (V/C over 1) every day for substantial periods. Nevertheless, thousands of people use it and make it to work each day. The level-of-service designation is, in reality, a measure of convenience or quality in negotiating the highways and not an indicator of gridlock or breakdown of function. Staff Exh. 4 at 2-3 (Urbanik).

The successful implementation of LILCO's reception center plan depends on the capacity of the proposed reception centers to service the anticipated number of evacuees and on the capacity of the road and highway system between the EPZ and the centers to deliver the evacuees within the time prescribed by NUREG-0654 § J.12. The time requirements, however, are not directly related to protection of public health but are a means of ensuring that adequate resources exist to implement the reception center plan. Tr. 19,225-26 (Kantor). We resolve issues related to each component in the following sections.

Reception Center Capacity

LILCO designed its reception center operations to perform monitoring of 30% of evacuees from the EPZ even though FEMA guidance endorses a figure of 20% as being adequate. The three monitor centers — Hicksville, Bellmore, and Roslyn — will provide a total of sixty-three monitoring stations, each of which according to plan can monitor a vehicle and its occupants in 100 seconds. LILCO Exh. 1 at 4, 41 (Crocker, *et al.*). The total hourly capacity to monitor was calculated to be 1152 vehicles at Hicksville, 576 at Roslyn, and 540 at Bellmore. *Id.* at 32. At those rates, 30% of 58,000 vehicles from a full EPZ evacuation could be monitored in times ranging from about 6½ hours at Roslyn to 9¾ hours at Bellmore. *Id.* at 33. While these are estimates for clear weather, LILCO could also monitor 30% of evacuees under 12 hours in inclement weather. *Id.*

At the indicated monitoring rates, FEMA's planning guidance of 20% of EPZ evacuees could be monitored in somewhat more than 6 hours at all three locations. *Id.* at 37. If more than 30% of evacuees arrive, LILCO will implement

backup procedures by calling on INPO (Institute of Nuclear Power Operations) and Department of Energy for additional assistance. LILCO Exh. 1 at 52 (Crocker, *et al.*). The centers and roads, however, have the ultimate capacity of serving about 46% of the EPZ population in 12 hours. LILCO Exh. 26 at 5 (Lieberman).

Intervenors raised many detailed issues concerning reception center capacity in their prefiled testimony. NY Exh. 5 at 53-73 (Hartgen, Millsbaugh). However, they briefed only five issues related to capacity in their proposed findings. Governments' Proposed Findings at 220-28. The capacity of the centers to serve evacuees, found by LILCO, is inaccurate, Intervenors claim, because the 30% planning basis is too small, monitoring will take longer than 100 seconds per vehicle, long lines will back up into intersections, exiting traffic will back up into the centers themselves, and the centers have obstructions that will interfere with internal circulation.

The Board addresses and resolves issues of planning basis, time required for monitoring, queueing at intersections, and internal obstructions at the centers elsewhere in this Decision.

The Board accepts FEMA's and LILCO's planning basis of 20% of the EPZ population as appropriate for assessing the capacity of reception centers. It accepts as additional evidence of adequacy the fact that the centers can monitor 30% of the EPZ population before assistance is requested and that the ultimate capacity of the centers without assistance would permit monitoring of about 46% of the EPZ population within 12 hours. *See infra*.

The Board finds separately that queueing at intersections or the blockage of upstream intersections by evacuation traffic streams has no bearing on the capacity of the centers to monitor at the planned rate. Finally, we find separately that LILCO has remedied or commits to remedy deficiencies related to internal obstructions at the centers. *See infra*.

Intervenors asserted in prefiled testimony that it is possible that traffic exiting reception centers could encounter congestion causing it to back up into the sites and thus set the rate-limiting times for servicing evacuees. No evidence, beyond a general assertion of opinion, was cited. NY Exh. 5 at 58, 68, 72. LILCO considered exit streets and traffic control strategies and concluded that they would be adequate to service exiting traffic. LILCO Exh. 26 at 37 (Lieberman); Tr. 18,659-60, 18,706-11 (Lieberman). It is a simple inference from the record that street capacity available to service incoming traffic is reasonably similar to that available to service outgoing traffic and that departing traffic cannot for reason of inherent limited street capacity be the rate-limiting step in the overall process of serving evacuees. Provisions for active traffic control on outbound routes must be made, however, to avoid conflict between incoming and outgoing traffic at critical intersections. Tr. 18,976-80, 18,983, 18,985, 19,138-39 (Urbanik). KLD recommends police control of critical intersections

in an emergency although it structured its analysis to demonstrate that adequate capacity exists generally without additional control. LILCO Exh. 1, Attach. T at 33 (Crocker, *et al.*). The Board accepts that, with police control of exiting traffic, no restriction of reception center capacity will occur that is sufficient to disturb LILCO's conclusion that reception centers are the rate-determining step in the overall processing of evacuees. We provide later in this Decision for a requirement that LILCO inform the Nassau County Police Department of the provisions of its reception center plan which we expect will include requirements for control of traffic exiting reception centers.

The Board accepts LILCO's capacity analysis for reception centers as reasonable and finds no need to alter its estimates of average time to process evacuees.

Route Assignments

LILCO is said to have erred in its original route planning along major highways, which assigned residents of the EPZ to one of the three reception centers using predesignated routes. The error arises according to Intervenor because there is no assurance that evacuees will actually follow their assignments. This is assertedly true because the routes are not simple and people may perceive for themselves a better route to take to one of the centers. This will allegedly cause additional congestion and delay in reaching the reception centers. NY Exh. 5 at 13 (Hartgen, Millspaugh).

LILCO asserted that a conscious effort was made in planning to keep the routes as simple as possible and that in any event the routes are not complex. Moreover, there is no reason to conclude that route switching by evacuees will cause delay because any that occurs will tend to balance out among designated routes and traveling on unassigned routes will be a benefit by reducing traffic on assigned routes. Finally, LILCO claims, the highways have substantial excess capacity over the planning basis of 20%, which was endorsed by FEMA, to be able to accommodate reasonable imbalances caused by some people choosing different paths. LILCO Exh. 26 at 5 (Lieberman); Tr. 19,025-28 (Urbanik); Tr. 17,641-43 (Crocker).

Litigation of this question degenerated into a subjective dispute over whether the routes to the reception centers are simple. We did not find it illuminating. LILCO used prominent routes that actually exist between the EPZ and the reception centers in its analysis. There is no evidence that it selected nonfeasible routes for planning. KLD TR-192 at 3-7. There is also excess highway capacity (30%) beyond LILCO's planning basis and FEMA's to accommodate traffic imbalances. Its assignment of routes appears reasonable because its choices are constrained by the existing highway system. It is immaterial to our decision whether or not the routes are simple or whether some other routes might have been chosen. We regard the traffic analysis that LILCO performed as an

assessment of the capability of evacuees to reach the reception centers within the time required. The analysis was not a prescription of a single acceptable means for doing so. There is no record basis for believing that projected dose reduction could be improved by further analysis, and there is therefore no regulatory basis to inquire further on speculative questions about the future behavior of evacuees or to attempt to predict with precision how a future evacuation will play out. The Board concludes that LILCO's traffic assignment process was reasonable and does not raise serious questions regarding the overall validity of its traffic assessment for reception centers.

Highway Capacity Estimates

LILCO began its overall capacity analysis with the assumption that the major highways between the EPZ and the reception centers would flow at Level of Service F (forced flow) in an emergency and that average vehicle speeds would be about 17-20 mph based on experience and technical references. Tr. 18,643-46 (Lieberman). The NRC Staff agreed that that speed was reasonable for those conditions. Tr. 19,123 (Urbanik). KLD calculated the actual hourly volume of traffic that could pass over those routes at those average speeds, although in reality forced-flow traffic can move at speeds of up to 30 mph. LILCO Exh. 1, Attach. T at 21-25 (Crocker, *et al.*); LILCO Exh. 26 at 6-8 (Lieberman); LILCO Exh. 51 at 9-10 (Lieberman); Tr. 18,645-46 (Lieberman). Intervenor was dissatisfied because no analysis of capacity was made for routes between the EPZ and the reception centers and because KLD had just assumed that these routes would not be the limiting factor. It is claimed that such factors as number of lanes, lateral clearance, number of trucks, and others could cause a reduction of freeway capacity by 30%. NY Exh. 5 at 13 (Hartgen, Millspaugh); NY Exh. 7 at 18-19 (Hartgen, Millspaugh).

LILCO asserted that it had already assumed worst-case conditions during peak background flow conditions. Tr. 18,644-46 (Lieberman). Further, since the highways are already assumed to be operating at LOS F, where demand exceeds capacity and queues form according to the HCM, the question of capacity really focuses on the capacity of the on-ramps between the EPZ and the reception centers. LILCO Exh. 26 at 7; Tr. 18,973 (Urbanik). The on-ramp capacity will be severely restricted in flow for non-EPZ travelers because the highways will be congested from evacuation traffic originating further east. LILCO Exh. 1, Attach. T at 13 (Crocker, *et al.*).

The Board concludes that LILCO's assumption of worst-case conditions of traffic flow along the major routes between the EPZ and the reception centers is acceptable as the assumption of an expert based on experience and technical literature. The assumption was reasonable because a detailed analysis would not have shown any important additional information that was not already included

in the assumption. Tr. 18,645-46 (Lieberman). The experts have said repeatedly that LOS F traffic moves, but at lower speeds than normal, that highways retain capacity to serve vehicles, and that additional demand does not cause failure of function either at intersections or on highways. Tr. 19,121-23 (Urbanik). Although Intervenor's experts repeatedly asserted or promoted an inference that highways under those service conditions would break down or become unworkable, they were unable to support that view under cross-examination. Tr. 18,794-96 (Hartgen, Millspaugh). The main effect of additional traffic demand on saturated roads is to cause queuing, and that effect will be felt at the access routes between the EPZ and the centers and not on the highway itself, which is already assumed to be at capacity. LILCO Exh. 26 at 33 (Lieberman).

LILCO assumed LOS F for the LIE which did not require further capacity reduction, and it found that Intervenor had used a 7.5% reduction factor in their analysis, which actually would result in higher estimated capacities for the LIE than are used in the Shoreham plan. LILCO Exh. 51 at 17-18 (Lieberman). Intervenor could not quantitatively support a larger reduction, did not use 30% capacity reduction in their own analysis, and declined to brief the effects of truck traffic in their proposed findings because it was a matter of lesser significance. See note 12, *supra*.

The Board concludes that Intervenor's criticism of LILCO's highway assessment was lacking in credibility and that LILCO has adequately explained the reasons for making the assumptions that it used in the traffic analysis of major routes. LILCO's consideration of major routes is adequate to establish that they constitute no barrier to evacuees reaching reception centers in the numbers LILCO plans for and that the rate of transport on major highways will not limit the overall rate with which they can be served at reception centers.

Capacities of Local Streets and Intersections

LILCO's analytical approach for local traffic was to estimate the existing peak-period background traffic on many local streets and intersections, add to it the projected evacuation traffic volume, and then determine with the HCM traffic model whether the capacity is sufficient, with both components present, to deliver the evacuees to the centers within about 12 hours. That basic approach is not disputed. Neither is the validity of the HCM traffic model. Therefore the validity of LILCO's conclusions depends on whether the input data and assumptions used for modeling are accurate and whether its interpretations are reasonable. If they are, the results are valid.

After performing the traffic analysis, LILCO found that the streets and intersections in the vicinity of each center would be congested, that traffic would move more slowly than normal, that lines of waiting traffic would form temporarily at key intersections near each center, and that, nevertheless, the

capacity of the local streets and intersections exceeded the capacity of the reception centers to monitor evacuees. Therefore the capacity of the local roads would not limit LILCO's ability to timely monitor the number of evacuees in its plan. Tr. 18,585, 18,735-38 (Lieberman); LILCO Exh. 1, Attach. T at 12-13, 26 (Crocker, *et al.*).

Before the HCM traffic model could be used to assess the capacity of streets in the vicinity of the centers, it was necessary to collect a substantial volume of traffic data in the field. Measured parameters needed for the analysis were background traffic volume, geometry of intersections and approach lanes, signal timing at key intersections, and frequency of left- and right-turn movements by background traffic. Data collection was the responsibility of LILCO's consultant, KLD Associates. LILCO Exh. 1, Attach. T at 16.

There is no dispute concerning the accuracy of the measured volume of peak background traffic although there was speculative testimony that something other than 100% of the measured background traffic should be used in the analysis of projected evacuation traffic volume. LILCO analyzed some examples using 50% of background, and Intervenor analyzed some examples using 150% of background. Neither party had strong empirical reasons for doing so although both presented arguments that their approach was defensible. NY Exh. 5 at 39, 44-45 (Hartgen, Millspaugh); Tr. 18,838-39 (Hartgen); LILCO Exh. 1, Attach. M at 15, Attach. T at 20 (Crocker, *et al.*). The Board concludes that the least speculative analysis is the most reliable and that an acceptable traffic analysis should be based on 100% of the actually measured peak background traffic. Tr. 19,111-12 (Urbanik). The examples that LILCO relies on in its most recent analyses use that number. LILCO Exh. 1, Attach. T at 20, 26 (Crocker, *et al.*).

Intervenor raised a host of objections to LILCO's traffic analysis based on perceived errors in analysis and on its alleged failure to take contingencies for future traffic flow into account: in a future emergency, background traffic near the reception centers will be higher than normal (NY Exh. 5 at 17); county traffic volumes will grow in the future (*id.*); shadow evacuation will cause more traffic than that for which LILCO plans (*id.* at 19); a delay analysis was not performed and drivers will be frustrated (*id.* at 22); traffic signals may malfunction on the day of the emergency (*id.* at 23); KLD should have used highest traffic flow expected (*id.* at 24); queues and gridlock may form at intersections (*id.*); there will be future road repairs that could affect future capacity (*id.* at 26); KLD employed a meaningless approach to its analysis of capacity and queues in an emergency (*id.* at 29); KLD used faulty turn movement data (NY Exh. 6 at 4); there was impermissible assumption of left-turn movements from two lanes (*id.* at 7-8); departure volumes instead of approach volumes were used at intersections (*id.* at 9); improper assumptions about right turn on red were used (*id.*); there was use of improper signal timing data (*id.* at 10); truck traffic was underestimated (*id.*); the number of congested intersections was underestimated

(*id.* at 13); there were improper conclusions drawn from the ramp-capacity analysis of KLD TR-210A (NY Exh. 7 at 10); and there was improper analysis of the consequences of Level of Service F (*id.* at 12-13).

Intervenors specifically abandoned several of these issues in their proposed findings (*see* note 12, *supra*) and ignored others without comment. Therefore not all require resolution in this Decision.

Intervenors also challenged LILCO's conclusions with calculations of their own showing that there would be many instances where intersections would have *V/C* ratios equal to 1 or greater. They produced a total of eight scenarios using a model termed "CARS" which was criticized by the Staff and Applicant as inappropriate for the intended purpose. NY Exh. 5 at 33, 39-40; Staff Exh. 4 at 2-3; LILCO Exh. 26 at 27. Intervenors used the HCM model, utilized by LILCO, for detailed analyses of several intersections.

Intervenors also performed an analysis of three critical intersections, one near each center, the results of which are alleged to be indicative of what is likely to occur at most critical intersections. The locations were identified as: (1) Rt. 107--Old Country Road (to Hicksville); (2) Rt. 27--Newbridge Road (to Bellmore); and (3) Long Island Expressway--Willis Avenue (to Roslyn). NY Exh. 5 at 46-50 (Hartgen, Millspaugh). The substance of Intervenors' concern, which was meant to be illustrative of the local road network in general, is that KLD improperly analyzed left-turn movements, found *V/C* ratios that were too small, and that long queues will form which will take up road space, causing gridlock. *Id.* In rebuttal testimony, Intervenors added the intersection of Meadowbrook Parkway southbound exit ramp to eastbound Route 27 (to Bellmore) and the intersection of Old Country Road and South Oyster Bay Road (to Hicksville) to their list of concerns. The substance of their criticism is that these intersections will be well over capacity for a substantial period of time in an evacuation. NY Exh. 6 at 14-15 (Hartgen, Millspaugh).

Intervenors declined to brief their concerns about Meadowbrook Parkway ramp in their proposed findings, claiming that this was a matter of lesser importance. *See* note 12, *supra*. As to the other intersections, the Board treats them as illustrative of the alleged problems generally applicable to traffic near reception centers. The issues cited for these intersections are that they will be over capacity (*V/C* greater than 1), they will be congested, long queues will form, planned left turns are improper or illegal and that they will in some manner fail to function as planned. These are the most significant alleged problems with LILCO's traffic analysis in general. Our resolution of these problems will be inclusive of the named intersections cited by Intervenors; however, because they are cited as illustrative examples, we see no need to focus undue separate attention on them.

Intervenors relied on the computed *V/C* ratio as an indicator of function for intersections, alleging variously that when the ratio approached or exceeded 1,

the intersections would perform poorly, break down, or cease functioning (NY Exh. 5 at 33, 40, 47, 50, 74; NY Exh. 6 at 6, 8, 12, 13, 16; NY Exh. 7 at 9, 13). LILCO acknowledged that delays occur when V/C is greater than 1; however, it asserted that it has already accounted for that in its analysis which shows that there will be congestion on the highways and streets.

Intervenors effectively ended their quantitative analyses of intersections with the determination of the V/C ratio. They relied thereafter on subjective interpretations that invariably took the form of assertions that where the ratios were greater than 1, congestion would be worse than LILCO found or that traffic service will break down and the reception center plan will be unworkable. NY Exh. 6 at 12 (Hartgen, Millspaugh); Tr. 18,784-86; 18,793, 18,795 (Hartgen). Intervenors did not systematically calculate the actual volume of traffic that could be served under the difficult conditions that both parties agree will prevail. Tr. 18,781-800, 18,805, 18,820, 18,895 (Hartgen, Millspaugh). LILCO, however, did compute the amount of traffic that could be served under congested conditions for the local road network. LILCO Exh. 51 at 16 (Lieberman).

We reject Intervenors' assertions of breakdown of intersection function where it is based on subjective interpretation of large V/C ratios because quantitative analyses show that road capacity exists to serve traffic even when V/C ratios are 1 or more. Even if Intervenors' computations of V/C are correct for critical intersections, ratios above 1 are not indicators of total breakdown of the traffic system. Tr. 19,048-49 (Urbanik). The HCM refers to breakdown of flow, not function. NY Exh. 7 at 13 (Hartgen, Millspaugh). What is indicated by high ratios is that traffic will be congested, it will move in stop-and-go fashion at reduced average speed, and queues will form. While possibly inconvenient to motorists this does not imply cessation of service.

Queue Formation

The main consequence of conditions where V/C ratios are greater than 1 is that the fraction of traffic in excess of road capacity forms queues at the bottlenecks which in this analysis will be at highway entrance ramps and approaches to signal-controlled intersections. LILCO Exh. 1, Attach. T at 12-26 (Crocker, *et al.*). Results from the traffic analyses of both LILCO and the State show that traffic queues will form upstream from many local intersections in an emergency. Tr. 18,581, 18,735-38 (Lieberman); Tr. 18,794-97 (Hartgen). The experts differ in their opinions concerning the likely length of queues and their impact on the workability of the reception center plan. Queues found by Intervenors were substantially longer than those found by LILCO. However, this resulted from postulated planning bases that anticipate more evacuating vehicles than LILCO does. NY Exh. 5 at 39-45 (Hartgen, Millspaugh).

The Board does not accept Intervenor's queues of extraordinary estimated length for the purpose of assessing LILCO's plan because they are based on an assumption of effectively unlimited population of evacuating vehicles. Intervenor estimated queue lengths by determining the hourly excess of demand, assigning the excess to queues, and multiplying the hourly excess by 12 to obtain a resultant queue after 12 hours. No allowance was made for the likelihood that the demand will not be constant for that period, because Intervenor assumed a very large excess population over that anticipated from the EPZ. NY Exh. 5 at 48-49 (Hartgen, Millspaugh). LILCO allowed for a pulse-like distribution of demand arising from the EPZ over a 6- or 9-hour period. In this model, which we take to be more realistic, vehicle demand rises to a maximum and then declines as the evacuation of the EPZ is completed and demand for service is satisfied. LILCO Exh. 1, Attach. T at 26-29 (Crocker, *et al.*). The queues follow the same pattern, first growing and then dissipating in the 6-hour scenario, while none form in the 9-hour scenario.

The Board accepts the findings of both parties that queues will form at intersections near the reception centers but does not accept that queue formation will directly inhibit or interfere with the planned monitoring operations at the three reception centers. The monitoring operations will draw vehicles from the head of the queues near the reception centers while later-arriving vehicles will join queues at the tail end. Tr. 18,577 (Lieberman); Tr. 19,085-86 (Urbanik). An intersection serves traffic at its capacity from the front end of the queue even though drivers within the queue may perceive that traffic has stopped. Tr. 19,048-49 (Urbanik). The length of queues, therefore, has no generally applicable bearing on the rate with which the monitoring operation can be conducted or on the further capacity reduction of intersections already saturated.

Further, Intervenor's finding that long queues will form is consistent with LILCO's finding that monitoring capacity within the reception centers is the rate-limiting process for serving evacuees. The queues form a ready reservoir of vehicles to supply the centers. Put simply, the centers cannot run out of work to do while vehicles waiting for service are present. Tr. 18,581 (Lieberman).

Intervenor objects that queues will back up from the centers to block upstream intersections. LILCO found that the queues will not be long enough for that to happen, but, in any event, police control will be present to prevent it if they are wrong in their assessment. Tr. 18,586-88, 18,738 (Lieberman). The validity of LILCO's assessment, however, is not dependent on prevention of blockage in upstream intersections. The only meaningful blockage is that which would interfere with another evacuation stream going to another center with sufficient impact that the inflow rate becomes less than the monitoring rate for that center. That is unlikely. Tr. 18,586-87 (Lieberman); LILCO Exh. 1, Attach. T at 27 (Crocker, *et al.*). Traffic backup affects the total capacity of the intersection, not the capacity for evacuation traffic. If upstream intersections become clogged

with evacuation traffic, the impact will be predominantly on the crossing traffic not going to reception centers. Tr. 19,013 (Urbanik).

The Board concludes that queuing under emergency conditions is not a serious concern for monitoring evacuees, except under speculative circumstances. Police control will lessen the likelihood that intersecting queues could interfere with evacuation traffic flows among centers. The testimony of opposing parties combines to convince us that evacuation traffic will dominate the scene for many hours (6-9 hours in LILCO's scenario) in the vicinity of reception centers. It is reasonable to infer that purposes of other travellers might well be temporarily frustrated by the traffic congestion. Even if true, this has no bearing on dose reduction, and we may not deny or condition a nuclear power plant operating license for the purpose of preventing that possibility.

The Board concludes from the queue analysis of opposing parties that LILCO correctly found that the ultimate capacity to monitor the number of evacuees in its plan depends on the rate with which the reception centers can monitor them, and not the capacity of the road system to deliver evacuees to the centers.

Signal Timing

The capacity of intersections for evacuation traffic depends on the degree and mode of traffic control that can be relied upon. In LILCO's analysis, that control will be provided by traffic signals and the Nassau County police. In LILCO's view and the Staff's, the performance or timing of traffic signals is largely irrelevant to the question of intersection capacity in an emergency because the police will adjust capacity to take account of the evacuation traffic. Tr. 18,738-39 (Lieberman); Tr. 19,096-98 (Urbanik). No party has alleged that key intersections near reception centers lack the intrinsic capacity to serve the evacuation flow. The litigation addressed the effectiveness of control that can be relied upon. Intervenors focused this part of their critique on the alleged inadequacy of LILCO's assessment of traffic-signal function in an evacuation, since they deny that police have familiarity with the appropriate control strategies or that they will even agree to participate in a radiological emergency.

The Board is not permitted to consider the possibility that police will not assist the public in a Shoreham emergency. CLI-86-13, *supra*; 10 C.F.R. § 50.47(c). That fact standing alone might be sufficient to resolve any issue related to capacity of intersections since no party thought that police control would be ineffective except on grounds of unfamiliarity with LILCO's plan which is easily remedied.

Nevertheless, LILCO performed an analysis of traffic signals as part of the overall traffic analysis for reception centers, the issue was vigorously litigated, and the parties submitted proposed findings on the issue. The Board concludes that issues surrounding traffic-signal timing should be resolved on the merits

because there could be some intersections that would go untended by police for reasons other than recalcitrance (Tr. 19,140 (Urbanik)) and because traffic-signal data formed a part of the input to the HCM model that LILCO relied on for its demonstration of adequacy of the reception center plan.

In the absence of police, the capacity of signal-controlled intersections depends on the amount of green time that will be available to evacuees who will be traveling in preferred directions toward the reception centers. Maximum and minimum green time was measured by KLD observers at the intersections studied, for the initial analyses. Later the State supplied actual signal settings which KLD compared with its measured values. LILCO Exh. 26 at 14; Tr. 18,744 (Lieberman). KLD used the State data in a subsequent analysis, unless the field data showed that longer green time actually existed than was shown in the State records. Tr. 18,606 (Lieberman). More weight was given to the measured values because signal-dial-setting records are not always accurate. Tr. 18,607 (Lieberman).

Intervenors claim that actual signal settings should have been used for signal timing in that the settings would provide more accurate data than field measurements. NY Exh. 5 at 22; NY Exh. 6 at 10; NY Exh. 7 at 9 (Hartgen, Millspaugh). The State experts claim this to be so because the signals are traffic actuated, and the green time in any particular direction varies, between preset limits, as a function of actual traffic flow. Because the signals have variable timing, an observer allegedly cannot reliably obtain maximum green times from field measurements. Tr. 18,892 (Millspaugh).

LILCO asserted that, even if true, the error is not large enough to alter its conclusion that monitoring rates at reception centers are the rate-limiting step in the process. Tr. 18,745 (Lieberman). Additionally, says LILCO, the signal settings are sometimes changed in the field without record, and the State records might not be reliable. Tr. 18,607 (Lieberman). The NRC Staff agreed. Tr. 19,115-16 (Urbanik). The State could not confirm that its signal records were accurate. Tr. 18,888 (Millspaugh). The State experts pointed to several intersections where they thought that KLD had used values that overstate green time and thereby inflate the capacity of the intersection. NY Exh. 6 at 10; NY Exh. 7, n.5.

The Board concludes that the record is inconclusive regarding the possible existence of error in the signal timing used to analyze the capacity at some specific locations because there are possible sources of error both in direct measurement and in the State records. The NRC Staff asserted, however, that field measurements are accurate at actuated signals if queues are present when the measurements are made. Tr. 19,115-16 (Urbanik). KLD says that it took measurements while heavy traffic was present so that the signals would be actuated to their maximum phase duration. Tr. 18,607 (Lieberman). There is evidence, therefore, that the signal measurements taken by KLD were reasonably

accurate, although uncertainty remains because the measured values do not always agree with the State signal settings which might themselves be in error. The Board concludes, from the fact that the actuated signals have a preset upper limit of green time, that the most probable systematic error, if any at all exists, is by underestimating rather than overestimating maximum green time.

If measured values have systematic error, it is likely to be by generally underestimating maximum green times, since a capable worker could not observe more green time than the actual (as opposed to the nominal) preset upper limit of the signal would permit. The only uncertainty is whether measurements were taken at the signal's preset maximum. If they were not, the measured values would be shorter than the true values. The likelihood of this kind of error is small, however, because measurements taken of traffic-actuated signals where queues are present would likely be with the signal activated to its longest phase. Moreover, the error of underestimation is harmless to LILCO's capacity analysis. KLD was therefore reasonable in favoring measured times where they exceeded the State's recorded signal settings.

The likely direction of possible error in measurement favors LILCO's case because, if the true maximum green times are in reality longer than LILCO used in its analysis, the capacity of the respective intersections would be somewhat larger than LILCO found. Further, the magnitude of error in the opposite direction, asserted by Intervenor for specific intersections, would not reduce the intersection capacity enough to alter the conclusion that reception centers are the rate-limiting step in the overall monitoring process. Tr. 18,608-10 (Lieberman).

The Board finds no evidence, however, that the existing signal phases near reception centers are optimal for the special case presented by an evacuation. LILCO's analysis is therefore accepted as a general demonstration of capacity of intersections to cope with evacuation traffic and not a specific prediction of future events. Police should be present at key intersections in an actual emergency to ensure that their capacity is fully utilized for moving evacuees toward reception centers. The Board concludes that any possible errors in the signal-timing data used by LILCO are not of such magnitude as to invalidate its conclusion, that controlled intersections in the vicinity of reception centers have the capacity to serve the traffic flow encompassed within its planning basis.

Turn Movements

Part of the intersection capacity estimate depends on the proportion of traffic making turn movements rather than passing straight through the intersection. LILCO measured background flow using traffic-counting machines that use a tube placed in the road to detect passing vehicles. At several intersections the tube was placed in a lane that permitted drivers to turn or go straight after the tube was passed. The machines could not record the proportion of turning

vehicles. Tr. 18,634-36, 18,741 (Lieberman); Tr. 19,117 (Urbanik). The missing information was obtained by observers who recorded the proportion of turning vehicles at intersections. Tr. 18,639-40 (Lieberman). Intervenors fault this procedure, arguing that turn movements obtained by machine should have been used because such data are more accurate than data taken by observers for short time periods. Intervenors allege that LILCO's use of observer data resulted in biasing estimated capacities of some critical intersections to make LILCO's case appear more favorable. NY Exh. 7 at 5 (Hartgen, Millsbaugh). LILCO asserted that there were intersections where the machine could not distinguish turning movements and that, when it modified its initial estimates with observer data, it found 13 of 28 cases where turn movements were lower than originally estimated and 15 of 28 cases where the turn frequency was higher. When all the data are considered, no bias is evident. LILCO Exh. 51 at 2 (Lieberman).

The Board finds no evidence that LILCO's turn-movement data were deliberately biased to make its traffic analysis appear more favorable than warranted. LILCO has adequately explained why it was necessary to supplement traffic data obtained by machine with turn-movement data obtained by observers. The actions taken by LILCO in revising its estimates of turn movements were efforts to refine a complicated analysis. It was not credible for Intervenors to assert that machine data are invariably more accurate for turn movements, considering the obvious limitations of the counting machines for distinguishing turns in lanes that permit either straight through or left-turn movements. The Board concludes that there is nothing in LILCO's assessment of background turning traffic that causes doubt concerning the capacity of critical intersections to serve reception centers at the required rates.

The State argued that the plan is unworkable at some critical intersections because LILCO assumed that left turns required to reach reception centers are planned from two lanes instead of one as permitted by lane markings and signals. The critical locations were identified as the intersection of Route 107 and old Country Road and the intersection of the LIE South Service Road and Willis Avenue. NY Exh. 6 at 6-7 (Hartgen, Millsbaugh). LILCO asserted that it is reasonable to assume left turns from two lanes in an emergency even though not permitted routinely, and that police will be present to control this movement. LILCO Exh. 51 at 3 (Lieberman); Tr. 18,534-41 (Lieberman). However, the adequacy of intersection capacity is not dependent on an assumption of the use of two lanes at critical intersections since the left-turn capacity of one lane is adequate to serve the centers if police traffic control is present. Tr. 19,097-98 (Urbanik). The NRC Staff in fact asserted repeatedly that control at critical intersections should be provided. Tr. 18,981, 18,986, 19,150 (Urbanik). Intervenors do not disagree with the conclusion but assert that police participation in emergency response in Nassau County cannot be ensured because there are no agreements between the County and LILCO, and the County

police have not reviewed the plan. Tr. 18,660 (Lieberman); Tr. 19,147-49 (Urbanik); SC Exh. 22; Governments' Proposed Findings at 244-46.

A flurry of controversy erupted as to whether KLD had conducted its analysis of traffic under the assumption that police control would be unnecessary for implementation of the reception center plan. It appears that active control was not assumed for the purposes of the analysis although police control was recommended. LILCO Exh. 1, Attach. T at 33 (Crocker, *et al.*). The Staff was uncertain on the question of how the analysis was conducted although it was certain that police control of, at least, a few intersections would be necessary. Tr. 18,980-82, 18,986-88, 18,998-19,001, 19,109-10, 19,129-30 (Urbanik).

In the circumstances of this case, it was reasonable for KLD to conduct its analysis as it did, even though police control of traffic in an emergency is clearly preferable to not having it. The analysis performed by KLD is a worst-case analysis that shows in LILCO's view that the system would work adequately with traffic signal control alone. Even though that result might be valid, however, all experts agree that police control will produce a more satisfactory result. KLD's analytical approach was consistent with its uncertainty, which was shared by all parties and the Board, as to how the legal authority and government participation questions in this case would ultimately be resolved. However, it is not for technical witnesses to resolve those issues either explicitly or implicitly in testimony. The witness apparently did the best he could under the circumstances. That effort did not result in bias, however, because the analysis presented was less favorable to LILCO's case than one assuming police control would have been. The matter of the assumptions used in KLD TR-201A is now immaterial to the resolution of issues because the testimony demonstrated convincingly that police control of critical intersections should be provided in an emergency.

The Board concludes that LILCO's estimate of capacity of critical intersections was not dependent on its assumption of left turns from two lanes since, with police control, adequate capacity to serve reception centers exists even if turns from one lane are assumed. The Board agrees with Dr. Urbanik that police presence at key intersections in an emergency renders technical disputes about left turns from one or two lanes, or about signal timing, inconsequential. Tr. 18,977, 19,007, 19,137 (Urbanik). The dispute about the number of left turn lanes to be utilized reduces to a question of intersection management in an emergency, which is a part of what police do. The evidence shows that intersections throughout the network have the capacity to deliver traffic to the reception centers at a rate well in excess of that needed to keep them continuously supplied with vehicles during an emergency. LILCO Exh. 1, Attach. T at 21-25 (Crocker, *et al.*). This is also true for critical intersections even if the police decide at the time of an emergency to restrict turning movements to one lane. The Board concludes that LILCO's capacity analysis of key intersections in the vicinity of reception centers during an emergency was reasonable, and with police control

at critical intersections, adequate capacity exists to accommodate the number of evacuees in LILCO's plan.

Participation of Nassau County Police

The Board gives no credence to the possibility that Nassau County Police will not provide assistance to the public in an actual emergency because the "best-efforts" assumption of the Commission and the regulations prohibit such consideration. CLI-86-13, *supra*; 10 C.F.R. § 50.47(c). See also SC Exh. 22, ¶¶ 2, 3; Tr. 19,177-78. LILCO plans to request the assistance of the Nassau County Police Department in an emergency. LILCO Exh. 1 at 37 (Crocker, *et al.*). The record does not reflect whether the Nassau County Police have reviewed the plan for reception centers or are familiar with its provisions. That deficiency can be remedied by providing the police with copies of the most current plan and keeping them informed of changes as they occur. However, prior familiarization or training of police, though desirable, is not crucial to implementation of traffic control. Tr. 18,982 (Urbanik). The Board therefore directs that LILCO provide current copies of its emergency plan as it pertains to reception centers to the Nassau County Police Department. LILCO is also directed to consult directly with the Nassau County Police Department to inform them of the provisions of its emergency plan that involve police participation. Confirmation of these actions prior to the issuance of any operating license is delegated to the NRC Staff; however, refusal of local government agencies to participate in planning will not in itself prevent the issuance of an operating license if the NRC requirements for emergency planning are otherwise adequately met. 10 C.F.R. § 50.47(c).

Future Traffic Growth

The State experts argued that traffic is growing annually both within the EPZ and outside it and that LILCO's traffic analysis should have taken account of the growth projected for Nassau and Suffolk Counties. NY Exh. 5 at 17 (Hartgen, Millspaugh).

LILCO and the NRC Staff claim that it is inappropriate to consider future growth because emergency planning is an ongoing process. Staff Exh. 3 at 6 (Urbanik); LILCO Exh. 26 at 9 (Lieberman). LILCO claims further that, even if we were to consider projected traffic growth, its magnitude is not as large as Intervenor's claim. LILCO and the Staff state that growth in Nassau County where the reception centers are located will be only a few percent over the next 5 years. LILCO Exh. 26 at 10, Attach. A; Tr. 18,617 (Lieberman); Tr. 19,131 (Urbanik).

Prior to the hearing, the Board admitted Intervenor's testimony on future traffic growth over LILCO's motion to strike because we are obligated to assure ourselves that there are no barriers to emergency planning that cannot be removed prior to license issuance. We observed, however, that LILCO was generally correct in its assertion that future developments must be addressed in the future. Memorandum and Order (Ruling on LILCO's Motion to Strike the Testimony of David T. Hartgen and Robert C. Millspaugh) at 5, June 22, 1987 (unpublished). There was speculative testimony in the hearing over likely future growth rates; however, Intervenor's assert in their proposed findings only that it is not imprudent to consider the matter and that significant future growth can be expected. Governments' Proposed Findings at 267. The Governments asserted that the magnitude of projected growth in Suffolk County could be about 22% by the year 2010. NY Exh. 7 at 19 (Hartgen, Millspaugh). Intervenor's testimony even if accepted as true falls far short of demonstrating a future barrier to implementation of LILCO's emergency plan because LILCO has demonstrated a greater excess capacity over its planning basis than the alleged population growth.

The Board concludes that LILCO's emergency planning for reception centers was correctly based on current traffic data because reasonably predictable growth presents no barrier to future emergency response. NRC guidance provides for future developments by requiring that emergency plans be reviewed and updated periodically. NUREG-0654 § II.P.4 provides: "Each organization shall update its plan and agreements as needed, review and certify it to be current on an annual basis." Section II.P.9 provides in pertinent part: "Each licensee shall arrange for and conduct independent reviews of the emergency preparedness program at least every 12 months." In the absence of uncorrectable barriers, the foregoing guidance applies, and makes clear that the Staff is correct in its assessment that emergency planning is an ongoing process. LILCO will be obligated to periodically review and update its planning for reception centers if an operating license for Shoreham is issued. Intervenor's assertion that projected growth in traffic on Long Island must be considered prior to licensing is correct, but, in the absence of barriers, the regulatory scheme for periodically updating the plan is the applicable provision for changing conditions during the term of the license.

Board Decision

This is the second occasion we have had to probe the intricacies of the Long Island highway system and its likely function in a radiological emergency. The results we find are similar to those found the first time. As in our Partial Initial Decision, we find that Intervenor's have proved again that uncertainty exists in predicting how traffic will flow in an actual emergency. Many different but

plausible scenarios exist that could materialize in an emergency, some worse than others, but they are all in some measure speculative and not subject to rigorous proof. LILCO has proved that the existing highway and road system has the capacity to deliver the number of evacuees within its planning basis to the reception centers within the time limits prescribed by NUREG-0654 § II.J.12 and that it has assigned an adequate level of resources to accommodate the number of evacuees in its plan. *See infra*. Whatever uncertainties still remain, we are now confident that traffic performance in an emergency has been probed to bedrock. Experts from both sides resorted to speculative answers to traffic questions as the inquiry increasingly focused on minutiae and departed from the settled knowledge of the engineering professions. We have therefore reached the limits of what expert testimony can reliably contribute, if the goal is to predictively resolve all uncertainties about traffic flow in an emergency.

We conclude, however, that that is not the proper goal of our inquiry. A fair demonstration of capability based on existing highway capacity and adequate prior allocation of resources is all that can reasonably be demanded in assessing LILCO's plan, because this is all that the regulations require and all that we can scrutinize without resorting to speculation. That task is formidable, however, and we are aware that experts are not immune from error in performing it. However, in overview, we find that the State experts lost credibility by their assertion of comprehensive error that found fault with LILCO's analysis at virtually every step. Our findings could not confirm the existence of wholesale error in LILCO's analysis, and the record is inconclusive even on individual computations or observations where error might exist. Even a first reading of the KLD traffic analysis would reveal to a professional that it was at least carefully done by experts in the field and worthy of being taken seriously even if there might be individual points of error or technical disagreement. We expected, but did not receive from State experts, a discriminating analysis that would bring to focus significant error or bias if it existed. The State review was not only not discriminating but it brought into litigation every arguable fault, whether significant or not, and in that respect it comported more with the controversial nature of litigation than with objective standards of technical peer review.

When stripped of the imperatives for advocacy, however, the findings of the opposing experts regarding technical aspects of traffic movements toward reception centers reasonably coincide. Painted in broad strokes, and with only insignificant variation, the experts from both sides produce an emergency traffic picture characterized by congested, slow-moving, stop-and-go traffic with frequent queues. Both sides find that traffic queues will extend upstream from key intersections and that police control and direction of traffic will be needed to facilitate turns and to keep intersections clear. The disagreement reduced to conflicting opinions about planning details and subjective interpretations of severity and consequences of those conditions during an emergency.

The subjective opinions of Intervenor's experts also lost a measure of credibility, in the Board's view, on the question of the consequences of congestion on traffic movement. Their testimony, taken as a whole, invited the Board to a concluding inference that when traffic demand reaches or exceeds road capacity ($V/C = 1$), street and intersection function is effectively lost or grossly diminished so that LILCO's plan would be unworkable. In reality, however, the road network retains capacity to function under those conditions. We expect experts in the field to know that. It is the road capacity that exists under congestion (as opposed to full unimpeded capacity) that LILCO relies on for its conclusion of adequacy of traffic flow in emergency conditions. Intervenor's experts did not explicitly acknowledge that reality, but instead emphasized subjectively that traffic conditions will virtually always be worse than LILCO found. LILCO's consultant, however, candidly acknowledged the results of its analytical findings which showed difficult, congested traffic conditions in an emergency. The Board concludes that the KLD analysis was not biased to favor LILCO's prospects for gaining regulatory approval of its plan.

The standard of decision we employ is one of reasonable assurance that public health and safety can be protected in an emergency. The standard of public health protection is that the plan be adequate to achieve an unquantified dose reduction to the public in an emergency. Those standards do not require the submission of a theoretically optimal plan nor do they require resolution of all predictive uncertainty about how future emergencies will unfold. The standards can be met by a practical demonstration of existing capability, without regard to all possible future contingencies, if the underlying analysis is reasonable and does not depend on flawed or distorted data or assumptions. We conclude that LILCO's traffic analysis was grounded on reasonable assumptions, data, techniques of analysis, and interpretations, even though other data and methods might have been used. We have not found gross or disabling error in its analysis. The Board is convinced from LILCO's analysis that sufficient highway and reception center capacity exists so that traffic problems will not frustrate the timely monitoring of the number of evacuees in LILCO's plan. The Board therefore finds reasonable assurance that implementation of LILCO's reception center plan would achieve significant dose reduction for affected populations in an emergency at Shoreham. The concern of the Appeal Board that caused this issue to be remanded, we believe, has also been resolved. LILCO's reception centers are not beyond the reach of the persons they are set up to serve. The overall analysis further shows that LILCO's choice of reception centers was not flawed on account of transportation or traffic problems that might arise from their location and distance from the EPZ. We determined separately in this decision that LILCO's planning basis was adequate and that there is no regulatory reason for requiring that some other planning basis be adopted. There is therefore no need to scrutinize with equal care the traffic consequences of Intervenor's

traffic models which were based on larger populations than used by LILCO. The Board finds reasonable assurance that the traffic plan for reception centers LILCO submitted is workable and would help ensure the degree of protection of public health and safety required by NRC regulations.

3. *Distance of Reception Centers from EPZ Issues*

Two additional issues designated for hearing relating to the location of the reception centers were:

Whether the [reception centers'] location[s] might create problems in regard to the evacuation shadow phenomenon; and whether the distance of the [reception centers] from the plume EPZ would increase exposure to radiation, causing additional problems.

We address each of these matters in turn.

The Evacuation Shadow Phenomenon

The presence or absence of a shadow evacuation has, of course, been the subject of extensive litigation in this case, and our earlier Partial Initial Decision addressed it. LBP-85-12, *supra*, 21 NRC at 655-71. There, however, we dealt with the phenomenon as it would be met were there no aggravating circumstances. Here, Intervenor's allege that the placing of the reception centers at a considerable distance from the EPZ will increase the chance that a shadow evacuation will occur. They reason that evacuees seeking to escape a disaster will attempt to find a place of refuge that is far enough from the danger. With the reception centers located 40 miles from the plant, many people between the plant and the reception centers will perceive that they are in an unsafe area because the designated safe refuge centers are farther from the plant than they are. SC Exh. 15 at 10, 12 (Johnson, Saegert). The result will be a greater tendency to evacuate, and an expansion of the geographic scope of the evacuation shadow phenomenon. *Id.* at 11-12.

The County's witnesses believe that what they call "spatial factors" are important in determining behavior in a radiological emergency, where environmental cues, such as flood waters or noxious gases, do not provide sensory evidence defining the zone of risk. *Id.* at 11. In the absence of such cues, they believe the location of the reception centers will become a "primary objective factor" in defining the zone of risk. *Id.*

The County's witnesses also argue that the reception centers will constitute a "locally unwanted land use" in the view of the people in surrounding towns. The centers will be perceived as presenting a threat to those in the towns and, in the event of a radiological emergency, people will attempt to evacuate from

the areas surrounding the centers, adding to the congestion and further delaying the arrival of the evacuees from the EPZ. *Id.* at 17-19. NY Exh. 5, Attach. 3-6, is cited for the fact that the surrounding area is heavily developed.

LILCO's witnesses tell us that the perceived area of risk (and hence the "shadow") is determined by the information the public hears, not by the position of reception centers or shelters. LILCO Exh. 1 (Mileti) at 25. LILCO would also characterize as "circular" the reasoning of County witness Johnson, who believes that the reason the reception center at TMI was little used was that people saw it as too close (10 miles) to the plant, but who also believes that the distance of a reception center will help define the zone of risk. LILCO Proposed Findings at 37, *citing* Tr. 17,883, 17,885; LILCO Exh. 9. We do not think such reasoning necessarily circular; the County's witnesses have repeatedly expressed the view that people so fear radiation that 10 miles seems close in a nuclear accident. The notion that, for larger distances, the public might view the position of a reception center as a factor in determining "how far is far enough" is not illogical.

LILCO would also have us decide that Intervenor's argument about the position of reception centers is a challenge to the Commission's rule that the EPZ should extend "about ten miles." LILCO Proposed Findings at 37. We do not see it as such a challenge. We see the dispute as centered around the issue of human behavior and the need to provide for an enhanced degree of voluntary evacuation.

As to the theory that this "local unwanted land use" will cause people to evacuate the area around the reception centers, LILCO's witnesses believe that the evidence is "overwhelming" that people do not flee from places simply because those places involve some sort of radiological activity. LILCO Exh. 1 at 23 (Lindell, Mileti). They note that experience at TMI, Love Canal, and Times Beach showed that people only leave hazardous areas after the hazard has been defined by an "authoritative source." *Id.*

The NRC Staff treats the "shadow evacuation" phenomenon as simply part of the overall traffic picture. The Staff points out that the traffic analyses that LILCO relies upon assume Level of Service F on all roads along the evacuation routes. Staff Proposed Findings at 44-45, *citing* LILCO Exh. 26 at 11 (Lieberman). Thus the bulk of any "shadow" traffic would enter the highways behind vehicles from the EPZ and would have a limited effect on those vehicles' arrival times. *Id.* The Staff's witness on traffic matters testified that "shadow" traffic in general has been considered in evacuation time estimates. *Id.*; Staff Exh. 3 at 5 (Urbanik); Tr. 19,014-15.

Board Decision on Evacuation Shadow Phenomenon

We treated the evacuation shadow phenomenon extensively in our earlier Partial Initial Decision (LBP-85-12, *supra*, 21 NRC at 655-71). There, we found that "a rational public will behave predominantly in accordance with public information that is disseminated at the time an emergency happens." *Id.* at 670. We do not believe that so small (and likely so recondite) a matter as the distance from the EPZ to the reception centers could shake our earlier conviction to any great degree. We noted then, and we repeat here, that a "shadow" could develop if confused or conflicting information is disseminated to the public, but we do not think that distance to the reception centers will be the straw that breaks the informational camel's back.

The Staff's argument we regard as a makeweight. It is hard to see how the minor effect we would expect from an evacuation shadow could strongly influence transit times in the face of a Level of Service F assumption on the part of the planners.

Here we find LILCO has carried the day.

The Increase in Radiation Exposure

Intervenors' witness Dr. Radford notes that the dose an individual receives from radioactive contamination is a function not only of the amount of radioactive material deposited but also of the time that elapses before the contamination is removed. Governments' Exh. 16 at 32 (Radford). Thus any delay in decontamination will be reflected in an increase in dose for the people who receive contamination in the EPZ. If the arrival of contaminated individuals at the reception (and decontamination) centers is delayed because these centers are far from the EPZ, their dose will be increased. Dr. Radford then calculates, for an individual whose dose would have totaled 5 rad after a delay of 10 hours, the dose would total 10 rad after a delay of 20 hours. Similarly, lengthening the time until decontamination from 10 to 20 hours would turn a 10-rad dose into a 20-rad dose. *Id.* at 34.¹³ Dr. Radford then asserts that these increases would increase the chance that an individual would develop cancer by 3.5% and 7%, respectively. *Id.* He gives no reason why his assumed doses are in the region of 0.5 to 1 rad per hour, nor does he explain what the corresponding doses from plume or ground contamination exposure would be. He says only that the doses due to contamination "could be highly significant in comparison to the direct radiation from the plume." *Id.*, n.85.

¹³ As LILCO correctly points out in its proposed findings, this assumption of a linear relation between dose and time is an approximation. It would only be correct for contamination composed of radioisotopes of relatively long half-life, that is, half-life long compared to the times used in the example. For shorter-lived materials the increase in dose would be less. LILCO Proposed Findings at 35.

LILCO's witnesses, Linnemann and Watts, testified that, on the contrary, "[a]s a general matter, the dose received from the contamination on a person's body is small compared to the dose he received from having been in the plume in the first place, even if it is several hours before he or she gets decontaminated." LILCO Exh. 1 at 38 (Linnemann, Watts). On the basis of the scenario used in the February 1986 exercise, these witnesses calculated the dose an individual would receive during a 20-hour delay for decontamination after a 3-hour exposure to the plume. They used standard health physics formulas. Dose from the plume prior to evacuation under these circumstances would be 180 millirem; that from the residual contamination prior to its removal would be 9 millirem, about 5% of the plume dose. *Id.* They also calculate the increase in thyroid dose due to delay in decontamination for the same scenario. They obtain similar results — about a 4% increase. *Id.* at 39. These witnesses stress that the additional doses would not result in any "acute, detectable" effects on the whole body or the thyroid gland. *Id.*

While Intervenor's witnesses do not credit the calculations of witnesses Linnemann and Watts, they produce no real alternative. They simply state that higher doses are "entirely possible" but present no scenario for evaluation. SC Exh. 16 at 35 (Radford). Cross-examination of FEMA witnesses elicited the fact that the particulate release postulated for the February 1986 exercise was not very high, although the iodine release was substantial. Tr. 18,413-14 (Keller). During that same cross-examination the FEMA witness opined that the incremental exposure incurred by delay in decontamination would "[g]enerally speaking . . . not be a medically significant increase," although there might be some scenarios wherein people located especially close to the plant in a very severe accident would experience a significant dose increment. Tr. 18,415 (Keller).

Board Decision on Increased Exposure to Radiation

We are faced here by a direct conflict in the testimony of expert witnesses, the County's witness saying that the distance to the reception centers could result in significantly increased doses and LILCO's witnesses (and FEMA's) saying that such a result is extremely unlikely. In order to resolve the conflict, we must look quite closely at the basic assumptions involved in the two positions. To begin with, all the witnesses assumed delays of 20 hours, a very substantial delay considering the distances involved. Secondly, the County's witness assumed larger releases than did the witnesses for LILCO, releases much larger, indeed, than those hypothesized for the exercise of February 1986. Finally, and perhaps most important, the two groups of witnesses applied different standards to the determination of what is "significant": LILCO (and FEMA) deem an increment of exposure "significant" only if it is large enough to cause immediate medical

damage. Tr. 18,294 (Keller); LILCO Exh. 1 at 39 (Linnemann). The County's witnesses deem a dose increment "significant" if it causes a few percent increase in the probability of cancer. SC Exh. 16 at 34-35 (Radford). The County's witnesses also envision far larger releases than LILCO's witnesses, but without enlightening us as to how those very large releases could come about.

We cannot believe that the Commission's standard of "no undue hazard to the health and safety of the public" could be meant to establish a requirement that there be no increment whatever in projected cancer probabilities for conceivable accidents whatever their size. Such a standard could not be met for any plant. Indeed, the Commission's Policy Statement on Safety Goals for the Operations of Nuclear Power Plants (51 Fed. Reg. 30,028 (1986)) suggests that even the risk of prompt fatalities would not be excluded for extremely improbable accidents.

We accordingly find that the fact that the reception centers at Shoreham are located some 40 miles from the plant does not, through the mechanism of delay in decontamination and the resulting possible increase in radiation dose, disqualify them from their intended use.

4. Monitoring-Related Issues

The issues considered involving LILCO's plan to send evacuees to its newly proposed shelters and the adequacy of staffing allocations raised questions concerning the viability of LILCO's monitoring and decontamination procedures. During the hearing, changes to accommodate adverse FEMA RAC comments were made to Revision 8 of LILCO's emergency plan and admitted into evidence without objections. February 1987 Revision, LILCO Exh. 1, Attach. P.

The basic LILCO monitoring and decontamination scheme is designed to operate in the following manner: sixty-three monitoring stations for registering, monitoring, and decontaminating evacuees are to be established at the Roslyn, Bellmore, and Hicksville reception centers, with each station manned by two monitors and a traffic guide. Vehicles are directed by traffic guides to monitoring stations where monitoring of evacuees will be performed while seated in automobiles. Monitors located on both sides of cars will scan the head, shoulders, hands, and feet of each passenger while the traffic guide takes a swipe of part of the car's hood and wheel well for signs of contamination. The traffic guide will also record, for registration purposes, each vehicle license plate, number of passengers and whether clear tags for noncontamination have been issued a car and all its passengers. If an automobile or any passenger shows any contamination, everyone in the vehicle will be directed to a decontamination trailer for additional monitoring. It is planned to monitor all passengers and a vehicle within 100 seconds, the time based on an estimated 2.8 passengers per vehicle.

Evacuees without private transportation will be taken by bus to the Hicksville reception center for monitoring. Each bus passenger will be scanned front and back in an "X" pattern while standing, a procedure completed in 60 seconds of time. If contamination is found, the individual will be sent to the decontamination trailer. The program calls for one trailer to be located at the Bellmore and Roslyn centers and two at Hicksville. Trailers are equipped with showers and wash basins for washing exposed skin surfaces, and paper clothing for those requiring it. Detailed information on the decontamination and procedure used for each individual in trailers is to be compiled.

The Applicant contends that 20% of the EPZ population can be monitored through its procedures in 5 to 6 hours and over 46% during a 12-hour period.

LILCO presented as witnesses Douglas Crocker, Diane Dreikorn, Dale Donaldson, Michael Lindell, Dennis Mileti, Richard Watts, and Roger Linnemann. Intervenor's witnesses for Suffolk County were Edward Radford, Gregory Minor, Susan Saegert, James Johnson, Jr., David Harris, and Martin Mayer; and for New York State, James Baranski, Lawrence Czech, and James Papile. FEMA's witnesses were Thomas Baldwin, Ihor Husar, and Joseph Keller. The Staff presented no witnesses.

Intervenor's witnesses contested both the procedures used by LILCO for monitoring and decontamination and the time period assigned for completing the process. The Intervenor's case raises the issue whether limited monitoring of evacuees in automobiles will miss areas of contamination on the lower back, back of legs, abdominal area, and the buttocks and it is contended that a scan of the entire body alone will provide assurance that all significant areas of contamination are detected. In proposed findings, Intervenor's argue that the limited scanning procedure and in-vehicle monitoring were designed by LILCO to curtail time in order to meet the regulatory 12-hour standard of § J.12 in NUREG-0654 and that such an expediency is inconsistent with safety standards and cannot be approved. Government's Proposed Findings at 88-91. The claim is made that only a whole-body scan will ensure contamination detection and that a whole-body scan cannot be done correctly in less than 2 to 3 minutes per individual. NY Exh. 1 at 23 (Papile, *et al.*); SC Exh. 16 at 27 (Radford, *et al.*). Intervenor's also contend that thyroid monitoring, only provided in LILCO's plan for persons where contamination has been detected, should be required for all evacuees. Treatment with potassium iodide (KI) can be helpful, Intervenor's allege, if radiation iodine is detected within a few hours after exposure. Tr. 18,040-41 (Radford). The Intervenor's also criticize LILCO's automobile monitoring plan, stating that adequate procedures require a scan of most of the outside surface of the vehicle as well as the vehicle's trunk. Radford SC Exh. 16 at 12. LILCO's plan is to monitor inside of trunks only if contamination is found on passengers or the vehicle.

The Intervenor also question the ability of LILCO to augment its monitoring personnel if the number of EPZ's population arriving at reception centers exceeds expectations. In addition to having the resources required to operate monitoring activities at the three reception centers, and an additional 50% of backup monitors to provide relief in cases of stress or fatigue, LILCO claims to have arrangements with INPO and Brookhaven Laboratories to provide additional personnel monitoring assistance if the number of evacuees reaches 30%. If such additional help is not sufficient, LILCO's fall-back procedure is to monitor only the automobile driver, other passengers from different points of origin, and also passengers who request monitoring. Intervenor question the time required to obtain assistance from INPO and the adequacy of the additional personnel to monitor all evacuees within the required 12-hour period. And LILCO's fall-back procedure does not provide, in their opinion, reasonable assurance that the public health and safety will be protected.

An Intervenor's witness testified that it would take 3 to 5 minutes to adequately monitor both a vehicle and its passengers and that traffic obstructions and evacuee delays due to stress and frustration will contribute to making LILCO's 100-second time estimate too low. NY Exh. 5, Attachs. 3-6; SC Exh. 16 at 20 (Radford, *et al.*). Also, Intervenor claim as a deficiency the fact that FEMA does not plan to make findings on monitoring time estimates until an exercise is held. Intervenor also question LILCO's registration procedures on grounds that it may become necessary to contact uncontaminated individuals to verify the use of proper monitoring. With regard to decontamination facilities, Intervenor argue that estimates of the number of those requiring showers are too low, would require more time than provided for, and its backup procedures of sending people to private facilities for showering are inadequate. It claims that delays in detecting cases of contamination will have a public health impact particularly in an accident with significant releases of particulates. SC Exh. 16 at 35 (Radford, *et al.*). The absence of trained medical personnel and first-aid facilities in LILCO's plan, a lack of adequate sanitary facilities and food or water supplies for evacuees, and inadequate sheltering for inclement weather conditions all contribute, in Intervenor's opinion, to negative health consequences. *Id.* at 36-37; NY Exh. J at 68 (Hartgen, Millsbaugh). As a consequence of the deficiencies noted, Intervenor conclude that there is no reasonable assurance that adequate measures to protect the public can be or will be taken at the reception centers.

The Staff indicates in proposed findings that the evidence supports LILCO's staffing procedures and facilities as being adequate and as providing the required reasonable assurance. Staff Proposed Findings at 33, 34, and 37. With regard to time estimates, the Staff points out that LILCO's figures of 100 seconds per vehicle were based on actual test trials and that Intervenor provided no empirical basis for their estimate of 3 to 5 minutes. Similarly, allegations concerning

evacuees' behavior were discounted on grounds that no supporting data were supplied. *See* Staff Proposed Findings at 33, *citing* Tr. 18,029 (Saegert). Since it concluded that LILCO's time estimates were more reasonable, it found that staffing levels were sufficient to provide monitoring for up to 30% of the EPZ population within the 12-hour period called for by §J.12 of NUREG-0654.

In connection with LILCO's monitoring procedure, the Staff pointed out that Intervenor were not opposed to monitoring passengers in automobiles, but merely pointed out certain difficulties connected with it. The Staff noted that FEMA had not reviewed LILCO's revised plan for monitoring, but the evidence of record was sufficient for a conclusion that, although imperfect, LILCO's monitoring method was sufficiently accurate to be acceptable. Staff Proposed Findings at 30. The Staff cited favorably LILCO's estimate of the number of contaminated people requiring showering as consistent with the experience of previous incidents. *Id.* at 36. The Staff noted that no regulatory requirement exists that a certain number of people must go through decontamination within a particular period of time. *Id.* at 34.

It is LILCO's contention that its monitoring method covers those areas where contamination is most likely to be found. They contend that their procedure is conservative in sending all persons for decontamination when any contamination is discovered on any passenger or vehicle and that their 100-second time period has been based on two time trials and a training session. It is also alleged that thyroid monitoring is not likely to be useful by the time that evacuees are at reception centers. Tr. 17,763 (Linnemann); Tr. 18,037-38 (Radford); Tr. 17,572 (Dreikorn); Tr. 17,555 (Watts).

With respect to conditions for becoming contaminated, LILCO refers to testimony by FEMA witness Keller, and its own witness Watts, to the effect that the most likely place to pick up contamination during evacuation was on the hands and feet, areas of the body covered by LILCO's monitoring method. Tr. 18,001 (Keller); Tr. 14,475-76 (Watts). There was testimony that the areas to be surveyed in vehicle passengers were accessible with cooperation from such persons. LILCO's Exh. 1 at 44 (Crocker, *et al.* Direct Testimony). And, LILCO is also providing a separate monitoring lane for vehicles that due to their model characteristics or number of occupants may be difficult to scan. OPIP 4.2.3, § 5.4.6 (February 1987 Revision). In connection with thyroid contamination, LILCO points to the evidence that it is too late to take any preventive measures when radioactive iodine is in the body and that New York State policy is not to administer potassium iodide (KI) to the public. Tr. 18,037-38 (Radford); LILCO Exh. 1 at 58 (Crocker, *et al.*); Tr. 18,163-64 (Papile).

The Applicant alleges that traffic guides are to be placed strategically to direct evacuees through the facilities, an information sheet will be distributed to evacuees at the centers, EBS stations will also be broadcasting pertinent information, stalled vehicles will be simply pushed out of the way so as to avoid

obstructions, and these procedures will assist LILCO in meeting its monitoring schedule time. Tr. 18,023-28 (Saegert); LILCO Exh. 1 at 47 (Crocker, *et al.* Direct Testimony); Tr. 17,621 (Crocker); Tr. 17,718 (Mileti); *see* LILCO Proposed Findings at 52-54.

On the question of registration procedures, LILCO claims that its record-keeping of full details on individuals going to decontamination trailers and limited recordkeeping on noncontaminated passengers in vehicles is adequate and in keeping with FEMA testimony that detailed information for evacuees not contaminated is not needed. Tr. 18,274-76 (Keller). If necessary, LILCO testimony states, communication with people in noncontaminated groups can be made through license plate numbers or announcements in newspapers and radios. LILCO Exh. 1 at 47 (Crocker, *et al.* Direct Testimony); Tr. 17,715 (Dreikorn). LILCO also contends its monitoring equipment (Eberline RM-14) is a tested and reliable instrument that has been used by industry and also during adverse weather conditions. Tr. 18,435 (Keller); Tr. 17,597-99 (Watts, Dreikorn). LILCO also states that there is no requirement for medical personnel to be available at reception centers, that individuals will only be there for a short — 15-minute — period of time and most of those monitored will not even get out of their vehicles. LILCO Exh. 1 at 54-55, Attach. T at 27 (Crocker, *et al.* Direct Testimony). LILCO's testimony indicates that 20% of the EPZ population can be monitored in about 6 hours and 46.6% in about 12 hours. LILCO Exh. 1, Attach. T at 26-27 (Crocker, *et al.* Direct Testimony); LILCO Exh. 26 at 5 (Lieberman Rebuttal Testimony); Tr. 17,728 (Watts); Tr. 17,744 (Dreikorn).

LILCO contends that it has gone beyond the regulatory requirements of Criterion J.12 in establishing several backup procedures in the event that accident conditions require them. These include increasing the number of monitoring stations from 63 to 140 and bringing in additional monitors from INPO and other federal and private sources. As a secondary backup, as noted, LILCO proposes the alternative of monitoring only the driver or passenger who comes from a different location and anyone else requesting a scan, and finally, as a last alternative, to advise evacuees to proceed to their ultimate destinations to take showers, change clothes, bag old ones and then return for monitoring at a later time if desired. LILCO Exh. 1 at 53, 59 (Crocker, *et al.* Direct Testimony); Tr. 17,664-65 (Dreikorn). This later procedure, it is claimed, is consistent with federal guidance in a draft EPA manual (Ch. 7, June 27, 1986). *Also see* Tr. 17,739 (Watts).

LILCO indicates that its more extended method for monitoring bus evacuees who are standing is designed to accommodate the fact that they will be coming from different places, will be bussed to several different transfer points, and will possibly encounter exposure to cross-contamination while on the buses. This would, in LILCO's view, increase chances that isolated spots of contamination

might not be detected if monitored in the same way as passengers in private vehicles. LILCO Exh. 1, Addendum (Crocker, *et al.* Direct Testimony); Tr. 17,573 (Dreikorn). LILCO contends that having the bus evacuee monitoring station at the center (Hicksville) which is also the locale for the LERO Family Relocation Center is not a problem since only a few hundred family members are expected at the center and the two functions are located in different areas of the facility. LILCO Exh. 1, Attach. J (Crocker, *et al.* Direct Testimony); Tr. 18,434 (Keller).

It is contended by LILCO that the monitoring procedures for vehicles is adequate since driving through a radioactive plume or picking up contamination after a plume has passed would result in contaminants being on the hood or wheel well of the vehicles. Tr. 17,557-58 (Dreikorn, Watts). With respect to monitoring the inside of vehicle trunks, LILCO does plan to accomplish this if any contamination is found on the vehicle or its passengers. LILCO Exh. 1 at 46 (Crocker, *et al.* Direct Testimony).

In connection with decontamination procedures, LILCO plans to have available eight to ten workers at each trailer. *Id.* at 58. LILCO contends that there is no regulation or guidance requiring any particular capacity for decontamination of the public and that its estimate of 10% has not been challenged by any facts. *See id.* at 57; Tr. 17,683-84 (Watts); Tr. 17,686-88 (Linnemann); LILCO Proposed Findings at 67-69. LILCO also contends that its centers have adequate capacity to shelter evacuees, and plans exist for providing additional sanitary facilities, if required, as well as blankets and supplies. *See* LILCO Proposed Findings at 69-70.

Board Decision

The regulatory standards and criteria applicable to appropriate procedures for the monitoring of contamination in nuclear incidents are set forth in 10 C.F.R. § 50.47(b)(10) and NUREG-0654 § J.12.

Intervenors challenge every phase of Applicant's monitoring plan including the adequacy of its proposed monitoring method for vehicles, their occupants and bus passengers, staffing requirements and monitoring time, the decontamination process, registration procedures, backup monitoring provisions, utilization of the Hicksville center for dual functions, and the monitoring equipment to be utilized. We treat below, in turn, the sufficiency of LILCO's undertaking to meet NRC's regulatory prescriptions in these areas.

The controversy over LILCO's monitoring method centers around whether a scan of the selected parts of the body — head, shoulders, hands, and feet — will miss other areas of possible contamination and whether monitoring of people in vehicles would result in improper scanning and inaccurate results. LILCO's revised provisions for scanning evacuees was designed to overcome deficiencies

in its previous method that, in monitoring only the hands and areas around vehicle and driver, did not receive a favorable review from FEMA. Although there is no uniform method required for a monitoring operation, the evidence of record is convincing that medically significant contamination would be unlikely unless it were picked up by the hands and feet, both of which will be scanned by LILCO's procedures. The probabilities of major contamination going undetected on parts of the body or vehicles other than those to be monitored are too low for us to conclude that LILCO's scanning methods are inadequate. And even though FEMA had not been able to review LILCO's February 1987 revision prior to providing testimony at the hearing, its witness (Keller) testified that the Applicant's monitoring method would most likely detect contamination picked up in the most realistic scenarios, that is, people evacuating through a plume or just after a plume had passed before evacuation. Although the Board would have preferred to have FEMA's review of LILCO's revised procedures in the record, the weight of the evidence indicates that there is nothing unworkable or fundamentally wrong with its current monitoring proposal. FEMA's witness did testify that any local contamination would probably be picked up from contact with previously contaminated objects but that such contamination would not likely be medically significant. *See* FEMA Exh. 2 at 19; Tr. 18,395-400 (Keller).

Although LILCO's method of monitoring occupants in vehicles does pose some physical awkwardness, we cannot conclude that individuals seeking monitoring assistance would not cooperate with instructions from monitors, nor can we conclude that its time estimate of 100 seconds per vehicle is erroneous. The evidence reflects that the method was tested during two separate trials and training session and the time estimates are based on those tests.

Intervenors' criticism that the time per vehicle must be longer was a general assertion with no supporting evidence that it was based on a realistic trial. SC Exh. 16 at 16; NY Exh. 1 at 23-26 (Hartgen, Millspaugh). Actual monitoring time may vary and is not precisely known; however, FEMA has graded an exercise based on 90 seconds per individual albeit without enthusiasm for the accuracy of that number. Tr. 18,420-21 (Keller). According to FEMA, high levels of radiation can be found by monitors in less than 90 seconds, while low levels may require 90 seconds or more to detect. Tr. 18,391-92, 18,420 (Keller). The monitoring time varies inversely with the radiological threat to public health and safety. Tr. 18,391-93 (Keller). LILCO's time trials show that about 100 seconds are required on an average, but when variation from the average is considered, the longest monitoring times are required to detect the least significant doses.

The Board concludes that monitoring time is not defined by any general technical consensus. Neither does any law of nature govern monitoring time, and it is evident that planning can do no more than achieve a rough approximation to the time that might be required in practice. The dispute about monitoring

time in this case appears to depend as much on the parties' perceived need for meticulous measurement as on any more fundamental consideration. The initial monitoring to be done at reception centers, however, is a population screening process. Meticulous measurements will be done for those who are found by the screening process to be contaminated. We infer that, in designing the process, a practical balance must be struck between the need to detect all low-level radiation on each individual and the need to process large numbers of individuals. In monitoring, however, it is the least doses (those near background) that require the most search time to detect, while larger, more health-threatening doses can be found quickly. Under those circumstances we conclude that more total dose can be saved by a monitoring strategy that favors processing large numbers of people than by one that favors meticulous searches for small amounts of radiation on each individual in the initial screening.

The Board cannot confidently endorse the precision or accuracy of any particular average monitoring time because the record reflects little empirical basis and no technical consensus to support it. There is no basis for thinking, however, that LILCO's planning choice of 100 seconds per vehicle and occupants was biased or that it struck the balance between individual and population imperatives improperly. We therefore accept its estimate of 100 seconds as reasonable. Although uncertainty persists, there is no significant remaining opportunity to reduce projected doses to the public by adopting Intervenor's longer monitoring times or by requiring further refinement of LILCO's monitoring time estimates.

The testimony in the record from Intervenor's did not erode LILCO's time estimates in any substantial way, and Intervenor's own estimate of 3 to 5 minutes per vehicle is not based on testing procedures, but more on unverified claims that delays will be caused by vehicle breakdown, behavioral problems, and operator fatigue. LILCO's response to the latent potential of these problems is answered satisfactorily in the Board's view, by its answer that any vehicles breaking down will be simply moved out of the path, behavioral problems will be minimized by supplying adequate public information, and inspector fatigue will be alleviated by having available an excess number of monitors.

The State expressed concern that the reception center sites are small and filled with obstructions, which will cause slow traffic circulation within the sites and lengthen the time needed for processing. NY Exh. 5 at 55 (Hartgen, Millsbaugh). LILCO agreed that improvements are needed at the centers and has made or commits to make changes that eliminate the State's concerns. These include widening of a gate at Bellmore, removal of debris from reception center sites, and plans to remove cars and equipment stored on site before evacuees arrive. LILCO Exh. 26 at 35-36 (Lieberman); Tr. 17,646-49 (Crocker). The Board concludes that LILCO's response is adequate.

The adequacy of staff for any monitoring procedure is, of course, dependent on the number of people that can be monitored in a given period of time. Based

on LILCO's time estimates for monitoring, the validity of which we accept here, LILCO calculates it can monitor, with three personnel at each station, 20% of the EPZ population within about 6 hours. We can find no miscalculation in LILCO's figures and conclude that both its staffing arrangements and monitoring method meet NRC's regulatory standards and criterion.

As a final note on LILCO's monitoring method, it is apparently Intervenor's position that, since a whole-body scan is a preferred method for the detection of contamination, NRC's regulations, which look to prudent risk-reduction measures, require that method if it can be accomplished. We disagree. Planning standards and criteria are developed on the basis of selecting reasonable, but effective, protective response actions, and the requirement in monitoring is simply a capability to monitor all EPZ residents and transients arriving at reception centers within a 12-hour period. No requirement exists, that we are aware of, that dictates that a different, even if better, method of detection must be installed even if it is available. This would be particularly valid, where, as in the present case, no substantial deficiencies are present in the system proposed and where further detailed monitoring of all passengers occurs if a vehicle or anyone in it is found to require decontamination.

The Intervenor also challenge the scanning procedure scheduled for bus-carried evacuees at the Hicksville Center, stating that a whole-body scan was required here too. LILCO plans contemplate a total of twenty-four monitors who will scan each bus passenger standing in the same area as those in private vehicles plus doing an X pattern front and back. This is in recognition that such passengers will come from different places of origin and may have been exposed to cross-contamination while on the buses. The time period estimate is 60 seconds per passenger, and 11,080 people (8% of EPZ winter-time population) are expected to be monitored well within the 12-hour-period standard — about 7.7 hours — of NUREG-0644 § J.12. It is apparent to the Board that Intervenor's objection in this area, where it submitted no testimony, must fail as it does in the area of passengers on private vehicles. The basis of Intervenor's argument again is the limited method of LILCO's scanning procedures as opposed to a full-body scan, as well as the time period allocated for LILCO's preferred method. For substantially the same reasons discussed in connection with scanning of passengers and private vehicles, we find no deficiencies in LILCO's bus-monitoring procedures. Nor do we detect any difficulties with assigning bus passengers to the Hicksville Center, the facility programmed to accommodate LERO family members. The testimony indicates that several hundred family members will congregate at Hicksville, a small percentage of those who would be requiring monitoring or decontamination, and they would be segregated, after monitoring, to a place separated from the monitoring and decontamination facility operations. We are persuaded also by FEMA's testimony that the adequacy of all reception centers will be evaluated in a future exercise, and

that the two functions discussed here should not have a negative impact on each other.

LILCO's decontamination process calls for remonitoring and decontamination of all evacuees sent to any of the four trailers located at three reception center sites. Each trailer contains wash basins and showers, separated to accommodate males and females, and separate dressing areas. There are eight to ten LERO workers planned for assisting in the monitoring and decontamination activities at each trailer. Intervenor's objection to LILCO's decontamination process principally concerns the number of people who may require showering. LILCO has provided showers to handle 10% of 32,000 evacuees (planning-basis number) over the proscribed 12-hour period at a rate of 15 minutes for showering and subsequent monitoring. It appears evident that this number is more than adequate based as it is on 32,000 evacuees being contaminated, a highly unlikely number. The testimony of LILCO's and FEMA's witnesses agree and is convincing that experience demonstrates that the vast majority of people contaminated do not require a full shower, with simple washing effective to remove most contamination.

With regard to other matters raised as objections to LILCO's decontamination procedures, the record is adequate with respect to arrangements providing solutions to the adequacy of facilities for those waiting to be decontaminated, the availability of sanitary facilities and other supplies that may become necessary.

The Applicant has provided several backup procedures for monitoring and decontamination, to be implemented in the unexpected event that the number of evacuees arriving at reception centers exceeds the planning basis. As noted, *supra*, these range from increasing the number of monitoring stations, to adding more monitors from government and private agencies, to restricting monitoring only to drivers of vehicles and others who come from different places of origin, or, finally to sending people to private facilities for showering before returning for monitoring at a subsequent time. We find no requirement that must be met for backup procedures in emergency planning of reception centers, although we do not discourage planning for them in the event necessity dictates their use. However, we see no need to consider their adequacy in depth in this Decision except to state they appear sufficient to address a larger-than-planned evacuee population if one should develop.

In regard to LILCO's registration procedures, the Applicant's plan to record full details of only those going through the decontamination process is criticized by Intervenor as too limited. In their view, registration names of everyone monitored is necessary to protect public health and safety, arguing that all other plans in FEMA's Region II require these data. The FEMA testimony, which we consider persuasive on this issue, is to the effect that detailed information on those not contaminated is not needed. It is needed only for those going through the decontamination process. It appears to the Board that LILCO's

plan to contact noncontaminated individuals, if necessary, through license plates or public service announcements, would more than provide for the unusual event where subsequent communication would be required. LILCO's planned registration procedure is adequate in the Board's judgment.

There are several other areas — lack of medical personnel, thyroid contamination, and monitoring equipment — in LILCO's monitoring procedures that raised Intervenor's skepticism. One contention is that the lack of organized medical personnel at reception centers constitutes a deficiency in LILCO's plan. It is not clear to the Board how medical personnel would be helpful at a reception center that basically acts as a screening station to identify those who might require further medical attention. Other regulatory standards and criteria call for reception hospitals to be available to treat severely contaminated individuals, but for most of those arriving at reception centers, the stay will be brief and the washing to remove contamination will be adequate. Where it is not, the reception hospitals with existing radiation treatment equipment will be the place where medically trained personnel will be available and required.

Intervenor's argument that thyroid monitoring for everyone, not just those found contaminated, should be included in LILCO's plan is based on their belief that thyroid contamination poses a substantial threat to public health and safety and can be easily monitored to provide some treatment protection for some of those contaminated. The fact is that neither federal nor New York State standards require thyroid monitoring, and the use of potassium iodide (KI) for treatment is controversial. According to testimony in the record, if radioactive iodine is already in the body, it is essentially too late to take protective measures, and if monitoring is done too early, no contamination is likely to be absorbed in the thyroid. Under those circumstances, which we believe to be probable ones, and with the lack of any regulatory requirement, we cannot conclude that LILCO's plan is deficient with respect to thyroid monitoring.

And finally, Intervenor's refer to the potential for monitoring-equipment difficulties as a reason for discounting LILCO's monitoring time estimate of 100 seconds. The record amply demonstrates that the equipment planned for monitoring use, the Eberline RM-14, is simple to use and its reliability has proven itself under various conditions in other nuclear plants. There is also uncontradicted testimony that the alarm on the RM-14 was available and working satisfactorily during training sessions. The Board finds no deficiency with regard to LILCO's monitoring equipment.

In light of the foregoing, the Board concludes that LILCO's Plan for registering, monitoring, and decontamination of evacuees during a radiological accident and its facility arrangements are adequate to meet the requirements of NRC's regulatory standards and criteria.

5. Zoning Issues

In proposed findings, LILCO and the Governments refer to the applicability of local zoning ordinances and Town Resolutions on the use of three LILCO facilities as radiological emergency reception centers. The parties agree that the Towns of Hampstead, North Hampstead, and Oyster Bay (the centers' situs) adopted resolutions declaring LILCO's proposed use of these facilities to be in violation of their respective zoning laws. The Board has been provided with a certified copy of these resolutions by the Governments. The two parties also attest that the Town of Hampstead has an action pending in the State Supreme Court of Nassau County requesting injunctive relief against LILCO in using the Bellmore Center as a reception center.

In all, LILCO asks the Board to find that the Town Board's Resolutions have no conclusive legal status on grounds that there were irregularities in local hearing procedures, that the Towns lack enforcement authority, and finally that the prospective nature of any zoning violations present no current litigable problem. The Applicant also suggests that the Board defer to the State Courts as the proper forum for construing the applicability of local zoning laws and asserts that due process would be denied LILCO by Board enforcement of local government resolutions since no opportunity for a hearing on the issue had been provided. Finally, LILCO alleges that federal law preempts the town resolutions and, that in any event, application of the "realism" principle enumerated in CLI-86-13, *supra*, would ensure that officials would make proper arrangements to overcome any legal zoning obstacles during an emergency. LILCO requests Board certification of the preemption issue to the Commission if the Board's rulings are adverse to its position.¹⁴

The Governments, citing New York State law granting zoning power to the towns, cities, and villages of New York, urges the Board to take official notice of the Town Resolutions and provide them with the same respect we did earlier in regard to a New York State Supreme Court decision on legal authority issues. *See* Governments' Proposed Findings at 181 n.40. In the Governments' view, since town boards have the authority to determine in the first instance the validity of land uses within their borders, and have so determined here, there is no necessity for us to await the outcome of a New York State Court decision for interpretation of local zoning laws and their applicability to the facts herein. LILCO having failed to apply for a zoning variance with any of the three local jurisdictions or not having received a State Court ruling favorable to its proposed use of the property, the Governments conclude that we must find LILCO's reception centers inadequate to meet NRC regulations. With regard to the preemption issues, the Governments cite judicial authority previously relied

¹⁴ LILCO Proposed Findings at 118-19; Reply to Governments' Findings at 67-76.

on by the Board, (PID, LBP-85-12, *supra*, 21 NRC at 904), and allege that neither the agency's organic statute nor NRC regulation preempt local zoning laws. See Governments' Proposed Findings at 182-84. On the applicability of CLI-86-13 to the matter here, the Governments claim that a "best-effort" response under these circumstances cannot be construed to legalize an activity illegal under local zoning laws. In our Decision, below, we have not considered, as appropriate, Intervenor's request of October 1, 1987, to respond to LILCO's Reply Findings. See 10 C.F.R. § 2.754(a)(3).

Background

The issue of possible violations of local zoning ordinances by the proposed use of LILCO's facilities as reception centers was first brought to the Board's attention in a January 22, 1987 pleading of the Intervenor. In a motion for reconsideration of a Board Order on a discovery and hearing schedule, Intervenor suggested that a hearing on the remanded reception center issues be held in abeyance pending some statement from LILCO on a possible substitution for its reception center facilities. The abeyance was required, in the Governments' view, by receipt of notice from two towns that the proposed use of the Bellmore and Roslyn facilities were in violation of town zoning laws. We ruled then that violations of local zoning ordinances are matters to be adjudicated in a State Court and, pending such a ruling, we delayed any decision on the issue until all other issues were resolved. See Board Memorandum and Order, February 9, 1987 (unpublished). In the closing minutes of the hearing on the reception center issue, however, the Board and parties were put on notice by Governments' counsel that they intended to file a pleading dealing with the legality of the use of LILCO reception centers. After discussion among the parties and the Board on whether such a pleading would be considered, the Board stated that it would be bound by its previous Order, *supra*, and would evaluate any problems raised by the pleading at the time it was submitted. See Tr. 19,243. Both the Applicant and Intervenor have now submitted their contentions on this matter in the context of proposed findings and conclusions of law.

The Staff made no reference to the issue in its proposed findings of fact.

Board Decision

The Board experiences difficulty here in evaluating the Governments' arguments in the context of proposed findings of fact and conclusions of law. Although set forth in form as a legal issue which the Board had previously deferred, the Governments would have us dispose of LILCO's reception center

program by taking official notice of the three Town Resolutions and providing them with immunity against confrontation by other parties in the proceeding. This we are not permitted to do. Although the Board is authorized to take official notice of facts such as certified acts of government bodies, parties obviously affected are entitled under 10 C.F.R. § 2.743(c) to an opportunity to confront the facts noticed. That opportunity is not available through the vehicle of proposed findings submitted to the Board.

Following are the dates where relevant events connected with the Town Resolutions occurred:

- January 14, 1987: Board Order establishing discovery and hearing schedule on reception center issues.
- January 22, 1987: Governments' motion requesting a hearing delay on basis of Town actions giving notice that Bellmore and Roslyn reception centers would violate local zoning laws.
- February 4 and 9, 1987: Board Orders denying Governments' motion and stating it would delay making a decision to see if a State Court ruling on the zoning matter was obtained.
- June 30–July 30, 1987: Eleven days of hearing on reception center issues with no evidence submitted on Town Board resolutions.
- June 9, 23, and 30, 1987: Town Boards of Hampstead, Oyster Bay, and North Hampstead adopt resolutions finding LILCO's proposed use of Bellmore, Hicksville, and Roslyn properties as violations of Building Zone Ordinances.
- July 30, 1987: Governments indicate on final day of hearing their intention to submit motion on zoning matter.
- August 14, 1987: Town of Hampstead files suit to enjoin LILCO from using Bellmore property as a reception center.

The Board is not persuaded by the Governments' contention that the Town Government Resolutions can stand procedurally on an equivalent footing with a New York State judicial decision. That argument has no substance where the Applicant has not had an opportunity to present its side of the issue. The Board is being asked to rule in the Governments' favor on an issue that has no foundation in the record and that other parties have had no opportunity to confront.

We decline to take official notice of the Town Resolutions. The facts concerning the validity of the resolutions are not indisputable, and the issue surfaced here on the reception center controversy could have been raised substantively prior to the close of the record. As we have stated, the basic question on zoning use is now before the State Courts, which is the proper forum for the adjudication of local zoning controversies. We see no reason to act contrary to the intent of our Order of February 9 which was to delay any decision on the matter to ascertain whether a proceeding were to be undertaken

in a State tribunal. Such an action has now commenced. In the event a Court decision is made that is adverse to LILCO's position, the subject can be brought to the Board's attention by any party with the filing of proper motions under the Commission's Rules of Practice.

Although a request to take official notice of a Government action can be raised at any time and we do not view it favorably here, we possibly might alternatively consider the Governments' contention as a motion for summary disposition of the issue. However, even if viewed in that form, such a motion could not be successfully maintained in view of LILCO's challenge of its validity and legal conclusiveness. These are material issues that would require litigation. See Applicant's Reply to Governments' Proposed Findings at 70-72.

Although alleged local zoning violations have not been litigated in this proceeding to date, it is possible that a decision by the New York State Courts on the issue may impact the reception center issue. However, the dimensions of any such impact are not before us now and we refrain from any speculation in that regard.

Board Conclusions

The foregoing sets forth the Board's findings of fact. Based on these findings, and upon consideration of the entire evidentiary record in this proceeding, the Board makes the following conclusions of law: 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 and criteria of 10 C.F.R. § 50.47(b) and NUREG-0654 § II.J.12.

ORDER

On the basis of the foregoing findings of fact, conclusions of law and opinion, and the entire record, it is this 9th day of May 1988, ORDERED:

1. The issues remanded by the Appeal Board in ALAB-832, issues raised by Intervenor, and a population planning-basis issue are resolved in favor of the Applicant as described in this Decision.

2. In accordance with 10 C.F.R. §§ 2.760, 2.762, 2.764, 2.785, and 2.786, as amended, this Partial Initial Decision shall become effective immediately and will constitute, with respect to the matters resolved herein, the final decision of the Commission thirty (30) days after issuance hereof, subject to any review pursuant to the above-cited Rules of Practice. Any party may take an appeal from this Partial Initial 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 the 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 such appeal(s).

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**James P. Gleason, Chairman
ADMINISTRATIVE JUDGE**

**Dr. Jerry R. Kline
ADMINISTRATIVE JUDGE**

**Frederick J. Shon
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 9th day of May 1988.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Sheldon J. Wolfe, Chairman
Elizabeth B. Johnson
Cadet H. Hand, Jr.

In the Matter of

Docket Nos. 50-361-OL
50-362-OL
(ASLBP No. 87-538-06-OLR)

SOUTHERN CALIFORNIA EDISON
COMPANY, *et al.*
(San Onofre Nuclear Generating
Station, Units 2 and 3)

May 9, 1988

After considering and approving the stipulation of the parties wherein, among other things, the Intervenor declined to request a hearing following a remand by the Commission, and upon consideration of the showing presented by the Licensees and the evaluations of the NRC Staff and FEMA with respect to emergency medical arrangements, in this Order the Licensing Board concludes that there is reasonable assurance that adequate measures to protect the public in the event of a radiological emergency at San Onofre 2 and 3 have been taken.

ORDER
(Resolving Remanded Medical Services Issue)

The Board has reviewed and considered the Interim Findings issued by FEMA on or about November 19, 1987. Said findings evaluated medical arrangements at San Onofre 2 and 3 in conformance with FEMA guidance

set forth in Guidance Memorandum MS-1, Medical Services. The Board has also considered the findings of reasonable assurance of adequate safety set forth in NRC Staff Memorandum of November 19, 1987, issued by the Director, Division of Radiation Protection and Emergency Preparedness, Office of Nuclear Reactor Regulation. Finally, the Board has considered and approved the Stipulation (the attached copy excludes the parties' proposed order) of the parties, including Intervenor GUARD, wherein GUARD declines to request a hearing following the Commission's Remand Order of September 12, 1986.

FINDINGS OF FACT

On the basis of the foregoing, this Board finds that:

(1) The purposes of the Commission's Remand Order have been fulfilled, and further proceedings on the medical services issue are not necessary; and

(2) Based on the Board's review of Licensee's submittals and the evaluations by FEMA and NRC Staff, the Licensees have satisfied the requirements of 10 C.F.R. § 50.47(b)(12) and there exists reasonable assurance that, with respect to emergency medical arrangements, adequate measures to protect the public in the event of a radiological emergency at San Onofre Units 2 and 3 have been taken.

CONCLUSIONS OF LAW

Upon consideration of the showing presented by Licensees and the evaluations by NRC Staff and FEMA with respect to emergency medical arrangements, there

is reasonable assurance that adequate measures to protect the public in the event of a radiological emergency at San Onofre Units 2 and 3 have been taken.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Sheldon J. Wolfe, Chairman
ADMINISTRATIVE JUDGE**

**Elizabeth B. Johnson
ADMINISTRATIVE JUDGE**

**Cadet H. Hand, Jr.
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 9th day of May 1988.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

Docket Nos. 50-361-OL
50-362-OL

SOUTHERN CALIFORNIA EDISON
COMPANY, *et al.*
(San Onofre Nuclear Generating
Station, Units 2 and 3)

**STIPULATION AND PROPOSED ORDER RE
REMAND OF MEDICAL SERVICES ISSUE**

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Southern California Edison Company,
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City of Anaheim, California and
City of Riverside, California

Dated: March 22, 1988

I. BACKGROUND

During the course of the operating license proceeding for the above-captioned power plant, San Onofre Nuclear Generating Station, Units II and III (San Onofre 2 & 3) the Nuclear Regulatory Commission (Commission) was called upon to interpret 10 C.F.R. 50.47(b)(12) relating to arrangements for medical services as applied to individuals, including members of the general public. In CLI-83-10, 17 NRC 528 (1983) the Commission determined that the "arrangements . . . for medical services" requirement was satisfied by the development of an inventory of medical facilities available in the area of the plant. In *GUARD v. NRC*, 753 F.2d 1144 (D.C. Cir. 1985) the court found the Commission's interpretation of the regulation was not reasonable and remanded the issue to the Commission for further proceedings.

The Commission, in turn, issued its Remand Order of September 12, 1986, turning the proceeding to this Atomic Safety and Licensing Board (Board). The Commission directed further proceedings be held once the NRC Staff had developed a detailed generic guidance with respect to 10 C.F.R. 50.47(b)(12).

Subsequent to the Commission's Remand Order of September 12, 1986, the Federal Emergency Management Agency (FEMA), in coordination with the NRC Staff, issued Guidance Memorandum MS-1, Medical Services (MS-1). That document provided interpretation and clarification of requirements contained in 10 C.F.R. 50.47(b)(12) and the then-existing associated guidance found in NUREG-0654/FEMA-REP-1, Revision 1, relating to medical services for members of the general public in the event of an emergency.

On January 13, 1987, the Atomic Safety and Licensing Board issued its Order requiring Licensees to submit their showing of implementation of the upgraded emergency medical requirements to the Board, parties, and FEMA by July 1, 1987.

On or about June 29, 1987, there was submitted to the Board and served on all parties "Licensee" Submittal re Emergency Medical Services (10 C.F.R. 50.47(b)(12))."

Subsequently, on or about November 19, 1987, FEMA issued its Interim Finding which reviewed Licensees' implementation of MS-1 at San Onofre 2 & 3. The FEMA conclusion stated

There is reasonable assurance that the plans for medical services for members of the general public who may be contaminated/injured as a result of a radiological emergency at the San Onofre Nuclear Generating Station are adequate and can be implemented as demonstrated in the exercise.

In a memorandum of November 19, 1987, by Frank J. Congel, Director, Division of Radiation Protection and Emergency Preparedness, Office of Nuclear

Reactor Regulation, the NRC Staff issued its finding that "regarding offsite medical services at San Onofre, the Staff finds that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency."

The FEMA and NRC Staff evaluations were distributed to the Board and all parties by letter to the Board of November 23, 1987, from Benjamin H. Vogler, Senior Supervisory Trial Attorney within the Commission.

On December 12, 1987, the Board conducted a telephone conference with all parties, specifically including the attorney for Intervenor GUARD, Charles E. McClung, Jr.

Mr. McClung advised the Board that based on Licensees' submittal and the results of NRC Staff and FEMA appraisals, Intervenor do not desire to raise any further issues with respect to Licensees' compliance with 10 C.F.R. 50.47(b)(12).

II. STIPULATION

Based on the foregoing facts, it is hereby stipulated, by and between the parties hereto, through their respective undersigned attorneys, that:

1. The Parties hereto have reviewed the relevant documentation on this record concerning Licensees' compliance with 10 C.F.R. 50.47(b)(12) including Licensees' submittal of June 29, 1987, and FEMA's Interim Finding of November 19, 1987.

2. Intervenor GUARD, et al., do not request a hearing on the issue of whether Licensees have met the requirements of 10 C.F.R. 50.47(b)(12).

3. The Board may issue its decision on whether Licensees have complied with 10 C.F.R. 50.47(b)(12) based on the existing record, including prior submittals of Licensees and NRC Staff/FEMA.

Dated: March 23, 1988 DAVID R. PIGOTT
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 600 Montgomery Street
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Dated: March 31, 1988 NUCLEAR REGULATORY
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. George C. Anderson
Frederick J. Shon

In the Matter of

Docket No. 50-409-OL
(ASLBP No. 78-368-05-OL)
(FTOL Proceeding)

DAIRYLAND POWER COOPERATIVE
(LaCrosse Bolling Water Reactor)

May 13, 1988

In a proceeding involving an application to convert a provisional operating license to a full-term operating license, in which the Applicant has shut down the facility and has submitted a proposed decommissioning plan to the NRC, the Licensing Board dismisses the remaining unresolved safety contentions, authorizes conversion of the provisional license to a full-term "possession only" license, and grants the Applicant's motion to terminate the proceeding.

RULES OF PRACTICE: MOTIONS

A motion that has not been opposed by any party may be granted on procedural grounds. 10 C.F.R. § 2.707.

RULES OF PRACTICE: RENEWAL OF LICENSES

Where a licensee has made timely application for renewal of a license authorizing activities of a continuing nature, the existing license will not be

deemed to have expired until the renewal application has been finally determined. 10 C.F.R. § 2.109.

RULES OF PRACTICE: JURISDICTION OF BOARDS

In considering a full-term operating license, a licensing board's authority with respect to safety and environmental issues is limited to resolving those matters put into controversy by a party, unless the board should determine that a serious safety or environmental matter exists. 10 C.F.R. § 2.760a.

NEPA: ENVIRONMENTAL IMPACT STATEMENT (NEED)

The decommissioning of a reactor requires the preparation of an environmental impact statement. 10 C.F.R. § 51.20(b)(5).

NEPA: LONG-TERM STORAGE

The Commission has made a generic determination that the storage of spent fuel for at least 30 years beyond the expiration of reactor operating licenses will result in no significant environmental impact and, accordingly, no environmental review need be taken of the storage of spent fuel in reactor storage pools after the cessation of reactor operation. 10 C.F.R. § 51.23.

RULES OF PRACTICE: WITHDRAWAL OF LICENSE APPLICATION

Withdrawal of a license application after issuance of a notice of hearing may be "on such terms" as the licensing board may prescribe. 10 C.F.R. § 2.107(a).

MEMORANDUM AND ORDER **(Motion to Terminate Proceeding)**

On February 19, 1988, Dairyland Power Cooperative (Applicant or DPC) filed a motion to terminate this proceeding. On March 10, 1988, the NRC Staff filed an answer in support of this motion. The Intervenor, Coulee Region Energy Coalition (CREC), has not responded.¹ For the reasons set forth, we are

¹The Applicant initially served its motion on CREC at an incorrect address. The Staff served its response to the correct address (insofar as is reflected by the Board's records). Upon telephone request from the Board Chairman, the Applicant agreed to re-serve the Intervenor at the correct address. More than 30 days has elapsed from the
(Continued)

granting the Applicant's motion, subject to a condition. If any party objects to this condition, it may file a petition for reconsideration within 10 days of the date of service of this Memorandum and Order.

1. This proceeding involves DPC's application to convert its provisional operating license for the LaCrosse Boiling Water Reactor (LACBWR) to a full-term operating license. Although DPC's provisional license (No. DPR-45) expired in February 1975 under its own terms, it has remained in effect during the pendency of this proceeding by virtue of 10 C.F.R. § 2.109 and DPC's timely application for a full-term license. In 1982, this Board issued a Partial Initial Decision on environmental contentions and other questions. LBP-82-58, 16 NRC 512 (1982), *aff'd, sua sponte*, ALAB-733, 18 NRC 9 (1983). The safety questions raised by the application (except for those encompassed by a show-cause order or by an expansion of the facility's spent fuel pool storage capacity, on which we issued other decisions²) had been deferred pending the Staff's preparation of a Safety Evaluation Report.

On April 29, 1987, prior to the Staff's completion of that report, DPC advised the Commission of its intent to permanently shut down and decommission LACBWR. DPC advises us that LACBWR was shut down on April 30, 1987, and that final defueling of the reactor was completed by June 11, 1987. In response to an amendment request by DPC, dated May 22, 1987, the NRC Staff on August 4, 1987, issued Amendment No. 56 to the LACBWR provisional operating license, deleting the authority to operate the reactor and converting the license to a "possession-only" license.³

We are further advised that on December 21, 1987, DPC submitted its proposed decommissioning plan to the NRC⁴ and that, on February 10, 1988, DPC amended the application that is currently before us to delete the request to convert the license to a full-term operating license and to amend the license to authorize DPC to continue to maintain LACBWR in a possession-only status during the safe storage and decontamination periods specified in the decommissioning plan. (Neither the plan nor the amended application referenced in this paragraph has been provided to this Board.)

date of that telephone request. After several attempts, the Chairman of this Board contacted the Intervenor's representative by telephone on May 12, 1988, to ascertain CREC's interest (if any) in the termination motion. CREC's representative advised that he had received the motion but had not responded because of the lack of time and resources for further litigation. He mentioned two potential issues that he believed should be litigated. See note 7, *infra*.

² LBP-80-2, 11 NRC 44 (1980), *aff'd, sua sponte*, ALAB-617, 12 NRC 430 (1980), *in part vacated as moot*, ALAB-638, 13 NRC 374 (1981); LBP-81-7, 13 NRC 257 (1981), LBP-83-23, 17 NRC 655 (1983), *both aff'd sua sponte*, ALAB-733, *supra*.

³ 52 Fed. Reg. 32,215 (Aug. 26, 1987). The Staff made the "no significant hazards" finding of 10 C.F.R. § 50.91 in conjunction with its approval of the license amendment. The proposed finding was noticed in the *Federal Register* (52 Fed. Reg. 24,542, 24,546 (July 1, 1987)) and no one objected to, or provided comments on, that finding. The Staff provided us a copy of Amendment 56 on August 6, 1987.

⁴ A Notice of Opportunity for Hearing on the plan was published on April 8, 1988 (53 Fed. Reg. 11,718).

1. DPC's motion has not been opposed by any party. Accordingly, on procedural grounds, we could grant it. 10 C.F.R. § 2.707. However, that action, without more, would leave DPC without a currently effective license. Its provisional license, which was modified by Amendment 56, has expired by its own terms and only remains in effect through the pendency of this proceeding. Amendment 56 changed the authority granted by the license but did not modify its expiration date or its status as a provisional license. To permit a continuation of licensed storage of spent fuel in the reactor storage pool, as apparently intended by DPC, we would have to authorize a full-term operating license with operating authority limited as under Amendment 56.⁵

2. In considering a full-term license, our authority with respect to safety issues is limited to resolving those matters put into controversy by a party, unless we should determine that a serious safety matter exists. 10 C.F.R. § 2.760a. We have examined the remaining proposed safety contentions previously submitted by CREC (Nos. 3, 10, 13-17, and 25-27). CREC has not attempted to pursue any of these contentions in the context of the proposed onsite storage of spent fuel to be carried out by DPC under the "possession only" license. Moreover, we are unable to determine whether, or to what extent, CREC intends these generally worded contentions to be applicable to activities under the "possession only" license. Given CREC's lack of further interest in pursuing these contentions, and perceiving no "serious safety matter" as contemplated by § 2.760a, we are dismissing these contentions.⁶ Beyond that, no other safety matters regarding the proposed termination or the proposed full-term "possession only" license have been raised by a party, nor are we aware of any safety matters that would warrant our attention at this time.⁷

3. With regard to environmental matters, our jurisdiction is similarly defined. 10 C.F.R. § 2.760a. In LBP-82-58, *supra*, we ruled on the environmental questions at issue in this proceeding. Although no environmental issues bearing

⁵ We express no opinion with respect to whether the application for decommissioning authority would constitute an "application for a renewal or for a new license for the activity" authorized by the provisional license, sufficient to keep the provisional license in effect pursuant to 10 C.F.R. § 2.109. That question becomes moot as a result of the order we are now issuing. In particular, however, we note that the decommissioning activities would continue beyond the period for which a full-term license could have been issued, and that permission for decommissioning was not sought prior to the technical expiration date of Provisional License DPR-45. Both of these considerations raise doubt as to whether § 2.109 could be used to extend the provisional license pending consideration by NRC of a decommissioning plan.

⁶ In dismissing these contentions, we express no opinion on their litigability in conjunction with the "possession only" license, or on their merits (except to the extent we are determining that they do not warrant consideration pursuant to § 2.760a).

⁷ During the May 12, 1988 telephone communication between the Board Chairman and CREC's representative (see note 1, *supra*), the representative mentioned two issues that he believed warranted consideration. The first involved leakage in the spent fuel pool and alleged unsuccessful attempts by the Applicant to repair such leaks. We expect that the Staff will investigate such leakage to ascertain any safety implications. The other issue concerned potential storage of spent fuel from other reactors in the LACBWR pool — a situation that could not occur without a further license amendment and Notice of Opportunity for Hearing. Cf. LBP-80-2, *supra*, 11 NRC at 53-55.

on termination or a full-term "possession only" license have been raised by a party, one matter has come to our attention which may need resolution: the potential requirement that the Staff prepare an environmental review document for the proposed termination and/or proposed full-term "possession only" license.

The environmental review documents are of two types: an environmental impact statement (EIS) for actions set forth in 10 C.F.R. § 51.20, and an environmental assessment (EA) for actions set forth in 10 C.F.R. § 51.21. EAs must be prepared for all actions other than those for which an EIS is required or which are categorically excluded by 10 C.F.R. § 51.22.

The decommissioning of LACBWR will require the preparation of an EIS. 10 C.F.R. § 51.20(b)(5). DPC's proposed decommissioning plan, although submitted to NRC, is not currently before us for review. The action giving rise to the request for termination is DPC's withdrawal of its application for a full-term operating license and the conversion of its provisional operating license to a full-term "possession only" license. The *Federal Register* notice accompanying Amendment 56 reflects that the Staff prepared a safety evaluation report but not an environmental review document in connection with that amendment. 52 Fed. Reg. 32,215 (1987). The license amendment itself, however, recites that the provisions of 10 C.F.R. Part 51 have been satisfied. We presume (although we have not been formally advised) that the Staff regarded the amendment as an "amendment . . . which changes a requirement with respect to installation or use of a facility component" within the meaning of 10 C.F.R. § 51.22(c)(9) and hence subject to a categorical exclusion.

Upon granting the Applicant's motion, DPC's application for a full-term operating license will have been "finally determined" and DPC's provisional license will expire. 10 C.F.R. § 2.109. DPC's "new" possession-only license, the major purpose of which is to authorize DPC to possess spent fuel, would normally require the preparation by the Staff of at least an EA. Under the terms of 10 C.F.R. § 51.23, however, the Commission has made a generic determination that the storage of spent fuel "for at least 30 years beyond the expiration of reactor operating licenses" will result in no significant environmental impact and, accordingly, no environmental review need be taken of the storage of spent fuel in reactor storage pools after the cessation of reactor operation.

The authorized exemption from environmental review of the storage of spent fuel in reactor storage pools following the termination of reactor operation does not appear to be indefinite or to extend for an unlimited period of time. Given the finding in 10 C.F.R. § 51.23, we believe it is limited to onsite storage of no more than 30 years. We assume that DPC's decommissioning plan will be acted upon by NRC in less than 30 years. (The Notice of Opportunity for Hearing has already been published.) As indicated earlier, such action by NRC will require preparation of an EIS. Nonetheless, to comply with the requirements of the National Environmental Policy Act, as implemented through

NRC's regulations in 10 C.F.R. Part 51, we believe that (pending final approval of decommissioning) a technical limit to the period of onsite spent fuel storage should be imposed on the "possession only" license. That limit, from the standpoint of the environmental review, could be as long as 30 years but is subject to the termination date of the full-term license heretofore sought by DPC.

Our approval of DPC's motion (which amounts to the withdrawal of the license application that is before us) may be "on such terms" as we may prescribe. 10 C.F.R. § 2.107(a). We will grant DPC's motion, as long as the "possession only" license that remains is converted to a full-term license and limited to a period ending either with the approval by NRC of a decommissioning plan and grant of decommissioning authority for LACBWR or the term of the full-term license previously sought by DPC, whichever comes earlier. The full-term license previously sought by DPC extends until March 29, 2003 — i.e., 40 years from the date of issuance of the construction authorization, and less than 30 years from the date of this Memorandum and Order. 10 C.F.R. § 50.51; 43 Fed. Reg. 15,021 (Apr. 10, 1978); LBP-82-58, *supra*, 16 NRC at 515. Because none of the parties has addressed this termination condition, we will permit parties, if they wish to eliminate or modify the license condition we are imposing, to file a petition for reconsideration within 10 days of service of this Order (*cf.* 10 C.F.R. § 2.771).

For the reasons stated, it is, this 13th day of May 1988, ORDERED:

1. CREC's remaining safety contentions in this proceeding (Nos. 3, 10, 13-17, and 25-27) are *dismissed*.

2. DPC's motion to terminate this proceeding is *granted*, and DPC is granted permission to *withdraw* its application for full-term operating authority, subject to the condition set forth below.

3. This termination is *conditioned* upon the grant by the Director, Office of Nuclear Reactor Regulation, which grant is hereby *authorized*, of an amendment to Provisional Operating License DPR-45, as amended, to convert the license for LACBWR to a full-term operating license containing terms and conditions similar to those governing license DPR-45, in particular those provided under Amendment 56 which limit the license to a "possession only" license. DPC's "possession only" license for LACBWR is to expire on March 29, 2003, or upon final approval by NRC of a decommissioning plan and grant of decommissioning authority for LACBWR, whichever comes earlier.

4. A petition for reconsideration of the above termination condition may be filed within 10 days of service of this Memorandum and Order.

5. In accordance with 10 C.F.R. §§ 2.760, 2.762, 2.764, 2.785, and 2.786, this Memorandum and Order becomes effective upon expiration of the period

within which petitions for reconsideration may be filed. If a petition is filed, the effectiveness of this Memorandum and Order is suspended pending resolution of the petition for reconsideration. This Memorandum and Order will constitute the final decision of the Nuclear Regulatory Commission thirty (30) days following its effective date, subject to any review pursuant to the above-cited Rules of Practice.

6. Any party may take an appeal from this Memorandum and Order by filing a Notice of Appeal within ten (10) days after the effective date specified above. 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 the 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 such appeal(s). *See* 10 C.F.R. § 2.762.

THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer
ADMINISTRATIVE JUDGE

Dr. George C. Anderson
ADMINISTRATIVE JUDGE

Frederick J. Shon
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 13th day of May 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judge:

Charles Bechhoefer

In the Matter of

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

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

May 18, 1988

The Presiding Officer clarifies his Decision of April 20, 1988, LBP-88-10, 27 NRC 417, to indicate that his "direction" to the Staff to issue a license did not preclude the Staff from making findings and determinations on certain matters that were not in controversy in the proceeding.

MEMORANDUM AND ORDER
(Staff Motion for Clarification)

This proceeding involves the application by Mr. Alfred J. Morabito for a Senior Reactor Operator (SRO) license for the Beaver Valley Power Station, Unit 1. The NRC Staff had denied the license because of Mr. Morabito's failure to pass both the written and simulator examinations that had been administered to him. In a Decision dated April 20, 1988 (and served one day later, on April 21, 1988), LBP-88-10, 27 NRC 417, I determined that Mr. Morabito had passed both the written and simulator examinations and, accordingly, "directed" that he be issued an SRO license, subject to the standard terms and conditions that govern such licenses.

On May 4, 1988, the NRC Staff filed a motion for clarification of one aspect of that Decision. On May 11, 1988, Mr. Morabito filed his response.

Specifically, the Staff seeks clarification of my direction to the Director, Office of Nuclear Reactor Regulation (NRR), or, as appropriate, the Regional Administrator, Region I, to issue an SRO license to Mr. Morabito. The Staff acknowledges that the Decision is dispositive of all issues in controversy before me (subject to Commission review on its own motion). It points out, however, that there are other issues and requirements in 10 C.F.R. Part 55 that were not in controversy before me and that the Director, NRR, or, as appropriate, the Regional Administrator, Region I, must make the necessary findings on issues not in controversy. The Staff seeks clarification on whether my "direction" could be read as precluding the appropriate official from making those findings.

For his part, Mr. Morabito suggests that an SRO license should be issued to him consistent with the date of the licenses for other candidates who were examined at the same time. He states that, insofar as he was aware, all requirements of 10 C.F.R. Part 55 were satisfied at the time the license examination was administered. He indicates that, if a problem were to arise with respect to matters not related to the examination, the Staff could follow well-established procedures for cancelling the license.

The Staff is correct in reading my Decision as not precluding the appropriate official from making the requisite findings on issues not related to the examination, such as are required under 10 C.F.R. §§ 55.11(a) and (c) (1987). My Decision holds only that Mr. Morabito has fulfilled the examination requirement for an SRO license, set forth in 10 C.F.R. § 55.11(b) (1987). As Mr. Morabito suggests, the record before me demonstrated that, prior to taking his examination, the other requirements would have to be, and had been, satisfied; and, accordingly, after passing the examination, he was entitled to a license. *See, e.g.,* 10 C.F.R. § 55.10(a)(5)-(7) (1987); Decision, LBP-88-10, 27 NRC at 447; *id.*, Conclusion of Law No. 3, 27 NRC at 450. My "direction" related only to the requirement in § 55.11(b) that an applicant pass a prescribed written examination and operating test or simulated operating test. In other words, it was intended to preclude the Staff from any further regrading of the examination, whether or not particular answers may have been contested. But it was not intended to limit the Staff's appropriate exercise of its authority under sections unrelated to the examination requirement, which (to repeat) was the only matter under consideration in this proceeding.

Almost 2 years have elapsed since Mr. Morabito took his examination. Various factors bearing upon Mr. Morabito's license eligibility, unrelated to the examination, may have changed. Moreover, the term of the SRO license which I directed to be issued ran from the date of issuance, not from the date of the licenses for others who were examined at the same time. LBP-88-10, *supra*, 27 NRC at 447 n.142. Contrary to Mr. Morabito's suggestion in his

response to the Staff's motion, my "direction" was not intended to preclude the Staff, before issuing an SRO license, from taking into account information on these other matters which may have developed during the period during which Mr. Morabito's appeal was under consideration, to assure itself that all license requirements as of the date of license issuance have been satisfied. If the Staff determines that matters unrelated to the examination would preclude its issuance of an SRO license, it should, of course, provide Mr. Morabito with a reasonable time to satisfy these other requirements, were he to seek to do so.

To preclude any misconceptions caused by the wording of my Decision, and subject to the understandings set forth above, I am hereby modifying the word "*directed*" at 27 NRC at 450 to read "*directed*, subject to the satisfaction by Mr. Morabito of requirements set forth in 10 C.F.R. §§ 55.11(a) and (c) (1987)."

IT IS SO ORDERED.

PRESIDING OFFICER

Charles Bechhoefer
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 18th day of May 1988.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges:

Robert M. Lazo, Chairman
Glenn O. Bright
Richard F. Cole

In the Matter of

Docket Nos. 30-13435-SC-1
30-13435-SC-2
(ASLBP Nos. 88-559-01-SC
88-572-02-SC)

FINLAY TESTING LABORATORIES,
INC.

May 23, 1988

The Licensing Board approves a Settlement Agreement entered into by both parties and terminates the proceeding. Based upon its review, the Board is satisfied that approval of the Settlement Agreement and termination of the proceeding based thereon is in the public interest.

ORDER APPROVING SETTLEMENT AGREEMENT
AND TERMINATING PROCEEDING

On May 13, 1988, the parties to this enforcement proceeding, the NRC Staff and Finlay Testing Laboratories, Inc. (Licensee), filed with the Atomic Safety and Licensing Board (1) a Settlement Agreement that had been accepted by both parties and was in the process of being signed and (2) a joint motion requesting the Board's approval of the Agreement and the entry of an order terminating this proceeding, with a proposed Order. A fully executed copy of the Settlement Agreement was received by the Licensing Board on May 20, 1988. The Board

has reviewed the Agreement under 10 C.F.R. § 2.203 to determine whether approval of the Agreement and consequent termination of this proceeding is in the public interest. Based upon its review, the Board is satisfied that approval of the Settlement Agreement and termination of this proceeding based thereon is in the public interest.

Accordingly, the Board approves the Settlement Agreement attached hereto and incorporated by reference into this Order. Pursuant to §§ 81, 161(b), 161(c), 161(i) and 161(o) of the Atomic Energy Act of 1954, as amended (42 U.S.C. §§ 2111 and 2201(b), (c), (i) and (o)) and 10 C.F.R. § 2.203, the Board hereby terminates this proceeding on the basis of the Settlement Agreement.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

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

**Glenn O. Bright
ADMINISTRATIVE JUDGE**

**Richard F. Cole
ADMINISTRATIVE JUDGE**

Dated at Bethesda, Maryland,
this 23d day of May 1988.

SETTLEMENT AGREEMENT

On September 21, 1987, the Nuclear Regulatory Commission (NRC) Staff issued an Order, effective immediately, that suspended the byproduct material license of Finlay Testing Laboratories, Inc. (the Licensee) pending further investigation of the Licensee. The Licensee requested a hearing on that suspension and the matter was referred to this Atomic Safety and Licensing Board. The further investigation was conducted and, as a result of that investigation, on April 11, 1988, the Staff issued an Order Continuing Suspension of License (Effective Immediately) and Order to Show Cause Why the License Should Not Be Revoked (Revocation Order). Licensee responded with a request for hearing on the Revocation Order. The NRC Staff and Gordon W. Finlay, individually and as owner and president of the Licensee, hereby agree as follows:

1. In response to the Revocation Order, the Licensee withdraws its request for a hearing dated May 2, 1988, and agrees to a termination of License No. 53-17854-01. Termination of this license is subject to compliance with 10 C.F.R. 30.36(d). Licensee agrees to submit all information required by section 30.36(d) and to transfer all licensed material to an authorized recipient within 30 days of this agreement. All other activities under License No. 53-17854-01 shall remain suspended until the license has been terminated.
2. The Licensee and Gordon W. Finlay deny the findings made in the Revocation Order and accompanying Notice of Violation, not otherwise admitted in the answers of October 5, 1987, and May 2, 1988. However, both the Licensee and Gordon W. Finlay agree not to deny the findings in the Revocation Order and Notice of Violation should the findings be used in considering any future application by the Licensee or Gordon W. Finlay for an NRC or Agreement State materials license or in any other NRC or Agreement State materials licensing or civil enforcement proceeding which may be brought in the future in which the Licensee or Gordon W. Finlay may be adversely affected. These findings may be accepted as evidence in any such future proceeding, provided however, that the Licensee or Gordon W. Finlay shall not be precluded from offering evidence of explanation, mitigation or changed circumstances.
3. For a period of three years from September 21, 1987 (until September 20, 1990) the Licensee agrees not to apply to the NRC or to any Agreement State for a new license under the present or any assumed corporate name and Gordon W. Finlay agrees not to apply for such a license on his own behalf or on behalf of any entity which he owns or controls during that same period.
4. For a period of 3 years from September 21, 1987 (until September 20, 1990), Gordon W. Finlay agrees that he will not perform the duties of a radiographer or a supervisor of radiographers. For that same period he further agrees that he will provide prior written notice to the NRC or any Agreement State with applicable regulatory authority before performing any other duties related to licensed activity, for example, serving as a controlling officer of a licensee or as an assistant radiographer. The notice is to be provided in writing to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 or the applicable Agreement State, 10 working days prior to commencement of the activity.
5. The Licensee and Gordon W. Finlay agree to notice dismissal with prejudice of the action pending in the United States District Court for

the District of Hawaii, *Finlay Testing Laboratories, Inc. vs. U.S. Nuclear Regulatory Commission, et al.*, Civil No. 88-00276 VAC.

6. The NRC Staff agrees that it will not seek civil penalties against the Licensee or Gordon W. Finlay for violations asserted in the Notice of Violation accompanying the Revocation Order.
7. The NRC Staff and the Licensee shall jointly move the Atomic Safety and Licensing Board for an Order approving this settlement agreement and terminating this proceeding. This agreement shall become effective upon the Board approval.

FOR THE NUCLEAR
REGULATORY COMMISSION

Stephen H. Lewis, Esq.
Senior Supervisory Trial
Attorney

Dated this 13th day of May 1988

FOR GORDON W. FINLAY
AND FINLAY TESTING
LABORATORIES, INC.:

Barry D. Edwards, Esq.

Dated this 16th day of May 1988

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)

May 26, 1988

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by Ms. Stevi Stephens and Mr. Robert V. Eye, on behalf of the Nuclear Awareness Network, concerning members of the public trespassing on the Wolf Creek Generating Station (Wolf Creek) restricted areas to fish in the Wolf Creek cooling lake.

RADIOLOGICAL EFFECT OF TRESPASSING AT A NUCLEAR SITE

In response to a petitioner's claim that trespassing onto a nuclear site raises serious public health questions, the Director of NRR finds that no such health hazard existed since the trespassing had occurred at portions of the owner-controlled area of the site outside the restricted area and the radiological releases of the reactor had not exceeded the limits specified in 10 C.F.R. § 20.106.

RADIOLOGICAL EFFECT OF EATING FISH FROM A NUCLEAR REACTOR'S COOLING LAKE

In response to a petitioner's allegation that eating fish caught in a nuclear reactor's cooling lake may be a health hazard, the Director of NRR finds that no hazard existed based on the plant's technical specifications limiting radioactive releases into the lake and the acceptably low level of radioactivity in the fish sampled at the lake.

BREACHES IN A PLANT'S PHYSICAL SECURITY

In response to a petitioner's allegation that trespassing incidents at a nuclear site may be indicative of a serious security breakdown, in violation of 10 C.F.R. Part 73, the Director of NRR finds that the only locations at a reactor site where licensees are required to exclude unauthorized individuals are protected areas, material access area, and vital areas. No trespassing in these areas had occurred at this nuclear site.

EXCLUSION AND RESTRICTED AREAS

The presence of individuals in exclusion or restricted areas would not normally violate the Commission's regulations except if such individuals were in those portions of those areas containing the protected area, the material access area, and the vital area. There is no violation of 10 C.F.R. § 20.3(a)(14) or 10 C.F.R. § 100.3(a) if individuals are in other portions of the exclusion or restricted area so long as the licensee has full authority for removing these individuals if an emergency occurs.

EMERGENCY PREPAREDNESS

There was no violation of 10 C.F.R. § 50.47 and Appendix E to 10 C.F.R. Part 50 when only a very small number of trespassers (six in 5 years) had entered the owner-controlled area of a nuclear site which was posted as private property and which had no recreational or public use within its boundaries. However, because unauthorized persons may, albeit infrequently, trespass into this area, the Staff requested that the Licensees provide assurance that in the future such unauthorized persons are warned or advised of protective actions in accordance with NUREG-0654 § IIJ, "Protective Response."

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

I. INTRODUCTION

By petition dated November 12, 1987, and submitted to the Commission pursuant to 10 C.F.R. § 2.206, Ms. Stevi Stephens and Mr. Robert V. Eye, on behalf of the Nuclear Awareness Network (NAN), allege that members of the public are trespassing on the Wolf Creek Generating Station (Wolf Creek) restricted areas to fish in the Wolf Creek cooling lake. NAN claims that these trespassers may be exposed to undue radiation during normal operation of the

facility and that Wolf Creek emergency plans may not be adequate to ensure that trespassers are notified and evacuated during a radiological emergency. It further claims that this trespassing represents a security breakdown that could be exploited by terrorists and, when included with several other past security problems that have occurred at the site, is symptomatic of an overall security breakdown at Wolf Creek.

NAN requests that the NRC investigate whether this trespassing violates any NRC regulations or conditions of its license, and, if so, that appropriate enforcement and corrective actions be taken. It specifically suggests that there may be violations of 10 C.F.R. § 20.3(14), 10 C.F.R. § 50.47, 10 C.F.R. Part 50, Appendix E, 10 C.F.R. Part 73, 10 C.F.R. § 100.3(a), and Wolf Creek Technical Specifications 5.1.1 and 5.1.3 and Figure 5.1-1.

By letter dated December 16, 1987, I acknowledged receipt of this petition and informed NAN that appropriate action would be taken within a reasonable time. A discussion of the issues involved and my decision in these matters follows.

II. DISCUSSION

The results of the NRC Staff's investigation of each of NAN's requests and the determination of compliance with the applicable regulations is provided below.

A. Trespassing on the Wolf Creek Site

The Wolf Creek site consists of 9818 acres of owner-controlled property, which contains the 5090-acre cooling lake. The plant's owners include Kansas Gas and Electric Company, Kansas City Power and Light Company, and Kansas Electric Power Cooperative, Inc. (Licensees). The plant is located on a point of land that extends into the cooling lake and is surrounded by the lake on three sides. In accordance with 10 C.F.R. § 20.3(a)(14), the Licensees have designated a 1200-meter-radius circle around the containment as the restricted area for the purpose of protecting individuals from radiation and radioactive materials. The restricted area is located entirely within the owner-controlled area and contains 1118 acres. Approximately 50% of the restricted area consists of a portion of the cooling lake. The only access to the restricted area is via the plant access road.

NAN contends that individuals are penetrating the Wolf Creek site boundary and are routinely eating fish that are caught in the cooling lake. Wolf Creek security personnel periodically inspect the lake area after work hours. The Licensees report that there have been six known incidents of trespassing on

the Wolf Creek site over a period of approximately 5 years. Three of these incidents involved fishermen, two involved hunters, and one involved persons in an automobile that became stuck after straying off the paved road surface. None of these trespassers were inside the restricted area of the Wolf Creek site.

Licensees' statement is consistent with the experience of NRC personnel. Although trespassing on site property is not an event that requires a report to the NRC unless there is a threat to safety, the NRC resident inspector assigned to the site states that he is aware of only two or three occasions of trespassing during the 3 years that he has been assigned to the site.

On the basis of the small number of trespassing events detected by Wolf Creek security personnel, it does not appear that trespassing on the Wolf Creek cooling lake is a frequent occurrence.

B. Radiological Effect of Trespassing on the Wolf Creek Site

NAN further claims that failure to exclude people from restricted areas where radiation can occur raises serious public health questions. However, the Technical Specifications for the Wolf Creek Generating Station include limiting conditions for operation to control the release of liquid and gaseous radioactive effluents. Experience with the design, construction, and operation of nuclear power reactors indicates that compliance with these conditions will keep average annual releases of radioactive materials in effluents at small percentages of the limits specified in 10 C.F.R. § 20.106.

The limiting conditions for operation, which are part of the Wolf Creek operating license, limit the annual dose from liquid and gaseous effluents from the facility that members of the public can receive in unrestricted areas to less than the following:

For liquid effluents	3 millirem to the whole body 10 millirem to any organ
For gaseous effluents as noble gases	10 millirads for gamma radiation 20 millirads for beta radiation
For gaseous effluents as iodine-131 and -133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days	15 millirem to any organ

These dose limits, which are a small fraction of the maximum permissible dose of 500 millirem per year for members of the public in unrestricted areas, specified in 10 C.F.R. Part 20, are conservatively established using the measured quantities of radioactive effluents actually released. The calculations assume that

the person exposed is located at the 1200-meter restricted area boundary for the entire year and drinks water and eats fish from the cooling lake.

Because of the conservative nature of these limiting conditions for operation, the NRC Staff concludes that there would be no health hazard to trespassers entering any portions of the Wolf Creek owner-controlled area outside the restricted area during normal plant operation. The Staff is not aware of any instances where trespassers have been present inside the restricted area or have been present on other portions of the site frequently or for extended periods.

C. Radiological Effect of Eating Fish from the Wolf Creek Cooling Pond

NAN suggests that exposure to radiation caused by eating fish from the Wolf Creek cooling lake could potentially be seriously damaging to the public health. There is no valid basis for this claim. The Wolf Creek Technical Specifications limit the amount of radioactive materials that can be deposited into the lake. They also require that the Licensees carry out a sampling program that determines the amount of radioactive material present in various environmental samples collected in the vicinity of the plant. Among the samples collected and analyzed are fish from the cooling lake.

The results of the most recently submitted testing reveal that only naturally occurring potassium-40 (K-40) activity in all fish samples taken from the Wolf Creek cooling lake. No other radionuclides were detected in the samples. Similar naturally occurring K-40 activity has recently been observed in the control samples taken from the nearby John Redmond Reservoir and is believed to be present in all biological samples taken worldwide.

On the basis of the Technical Specifications that limit the release of liquid effluents into the Wolf Creek cooling lake and the acceptably low level of radioactivity in the fish sampled at this lake, the NRC Staff concludes that eating fish caught from there will not result in a hazard to the public health.

D. Compliance with 10 C.F.R. Part 73

NAN also suggest that the trespassing incidents at Wolf Creek may be in violation of Part 73 of the NRC's regulations and that they are indicative of a serious security breakdown at the facility which potentially could be exploited by terrorists. In support of this claim, NAN refers to an NRC report entitled "Trends and Patterns Analysis of the Operational Experience of Newly Licensed United States Nuclear Power Reactors," August 1986, AEOD/P604, which states that Wolf Creek had experienced a higher-than-average number of security

violations. NAN also refers to NRC Information Notice 87-27 which discusses potential attacks by terrorists.

Contrary to these concerns, the physical plant security at Wolf Creek is satisfactory. Facility Operating License NPF-42 for Wolf Creek requires that the Licensees fully implement and maintain the Wolf Creek Physical Security Plan and the Security Training and Qualification Plan.¹ The NRC Staff has reviewed these plans and has concluded that the protection provided against radiological sabotage meets the requirements of Part 73. In addition, as part of Staff's function to periodically evaluate the effectiveness of physical security plans, Staff has evaluated Wolf Creek security program three times since 1984 in its Systematic Assessment of Licensee Performance (SALP). For each of these assessments, Licensees' security program was rated as Category 2, signifying that NRC attention for this program only needs to be maintained at normal levels.²

The violations that NAN refers to in the referenced August 1986 NRC report are not of present concern at the facility. The report refers to four violations that occurred almost 3 years ago during the 6-month period from September 1985 through January 1986, following the issuance of the Wolf Creek operating license. Three of these violations were rated Severity Level III³ (on a scale of I to V where I is the most significant) and one was rated Severity Level II. The Severity Level II violation was considered to be a breakdown in physical security and resulted in the imposition of a \$40,000 civil penalty. The Licensees were required to inform the Staff of the actions that they had taken to correct these violations and prevent their recurrence. The Staff reviewed these corrective actions and found that they were responsive to the concerns raised in the notices of violation. Because these violations occurred several years ago and have been fully corrected, we conclude that they do not lend support to NAN regarding its trespassing contention.

Regarding NRC Information Notice 87-27, this notice was a generic communication regarding potential threats reported in the media which was sent by

¹The details of these plans are protected against public disclosure under the provisions of 10 C.F.R. § 73.21; however, a summary of the Staff's review and acceptance of the plans is provided in § 13 of Supplement No. 5 to NUREG-0881, "Safety Evaluation Report Related to the Operation of Wolf Creek Generating Station, Unit No. 1."

²When a licensee qualifies for Category 2, the NRC has concluded that licensee management attention and involvement are evident and that management is concerned with nuclear safety. For this category, the NRC has also determined that licensee resources are adequate and reasonably effective so that satisfactory operational safety is being achieved.

³The details of these violations are protected from public disclosure under the provisions of 10 C.F.R. § 73.21. However, for a general description of the Severity Level III violations, see items 8517-01, 8527-01, and 8527-02 of NRC Inspection Reports 85-34 and 86-12 for the Wolf Creek facility, dated March 6, 1976, and July 21, 1986, respectively. For the Severity Level II violation, see item 8544-01 of NRC Inspection Report 87-34 for the Wolf Creek facility, dated December 29, 1987. (The Severity Level II violation is also referred to in NUREG-0090, "Report to Congress on Abnormal Occurrences July-September 1986," Vol. 9, No. 3.)

the NRC to all nuclear power plants. The notice was merely a part of Staff's ongoing program of ensuring that licensees are made aware of such issues, and the threats in question cannot be considered as a specific threat to Wolf Creek alone.

NAN's theory that the trespassing incidents represent a security breakdown that could be exploited by terrorists is similarly unfounded. Under NRC regulations, the only locations at a reactor facility where licensees are required to exclude unauthorized individuals are protected areas, material access areas, and vital areas. Such areas are equipped with barriers and physical security to prevent access. See 10 C.F.R. §§ 73.2, 73.20, and 73.45. The Wolf Creek cooling lake is not part of any of these areas.

On the basis of Staff's evaluation of NAN's concerns, no violation of Part 73 has been identified and no enforcement or corrective actions are required.

E. Compliance with 10 C.F.R. § 20.3(14), 10 C.F.R. Part 100, and Technical Specifications 5.1.1 and 5.1.3

NAN contends that penetration of the Wolf Creek site boundary by trespassers fishing in the cooling lake may indicate the inability of the Licensees to control activities within the Wolf Creek exclusion and restricted areas as required by §§ 20.3(14) and 100.3(a) of the Commission's Regulations and by §§ 5.1.1 and 5.1.3 of Licensees' Technical Specifications. It also requests that the NRC investigate whether the integrity of the Wolf Creek exclusion and restricted areas is being maintained.

To evaluate NAN's concerns, an understanding of the regulations and technical specifications in question is necessary. Restricted areas are defined by 10 C.F.R. § 20.3(14) as areas that must be controlled by licensees for purposes of protecting individuals from exposure to radiation and radioactive materials. A restricted area cannot include any areas used as residential quarters, although a separate room or rooms in a residential building may be set apart as a restricted area. Exclusion areas are defined by 10 C.F.R. § 100.3(a) as areas where licensees have the authority to determine all activities including exclusion or removal of personnel or property. Residence within exclusion areas is not always prohibited, but residents are subject to ready removal in the case of necessity. The exclusion area and restricted area for Wolf Creek (both areas are the same for this facility) are set out in §§ 5.1.1 and 5.1.3 of the Licensees' Technical Specifications as a 1200-meter-radius circle centered around the Unit 1 containment. The exclusion/restricted area for the facility is only a small portion of the Wolf Creek owner-controlled site which encompasses 9818 acres.

As can be seen by the definitions of these terms, the presence of individuals (whether authorized or not) in an exclusion or restricted area would not normally violate either § 20.3(14) or § 100.3(a) since these regulations are not concerned

with excluding individuals from these areas during safe operations. As noted above, the only locations at a reactor facility where Licensees are required to exclude unauthorized individuals are protected areas, material access areas, and vital areas. Although these protected areas are normally located within the exclusion and restricted areas, there is no indication in this case that they were penetrated by trespassers.

There is no violation of either § 20.3(14) or § 100.3(a) at Wolf Creek since the Licensees have owned and controlled all portions of the exclusion/restricted area and have had full authority for removing all individuals from this area if an emergency had occurred. Moreover, in this case no information has been offered by NAN that persons fishing at the cooling lake have ever trespassed into the 1200-meter Wolf Creek exclusion/restricted area.

On the basis of the above, the Staff concludes that the Licensees are in compliance with § 20.3(14) and § 100.3(a) and are operating the facility in accordance with Technical Specifications 5.1.1 and 5.1.3. Accordingly, the NRC Staff has determined that the Licensees are able to maintain the integrity of the exclusion-restricted area at Wolf Creek and that no enforcement or corrective actions are required.

F. Compliance with 10 C.F.R. § 50.47 and Appendix E to 10 C.F.R. Part 50

NAN suggests that trespassers who are fishing at the Wolf Creek cooling lake may be endangered during a radiological emergency at the site and requests that the NRC determine whether the Licensees' emergency plans are adequate to notify and evacuate such individuals if such an exigency occurs.

The NRC Staff has reviewed the Licensees' emergency plan to determine if adequate provisions exist to notify and evacuate persons within the Wolf Creek site, including potential trespassers who might be fishing at the cooling lake. The Staff has concluded that the plan is sufficient for persons within the exclusion/restricted area of the site, but it does not include provisions to notify and evacuate people in the remainder of the owner-controlled Wolf Creek site. This remaining portion of the site, which is posted as private property, has no recreational or public use areas within its boundaries.

Sections 50.47 and Appendix E to Part 50 set forth the Commission's regulations for emergency preparedness. The NRC Staff uses the guidance in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," to determine the adequacy of emergency plans at nuclear power plants. Evaluation Criterion J.1.d of NUREG-0654 states: "Each licensee shall establish the means and time required to warn or advise onsite individuals and individuals who may be in areas controlled by the operator including . . . (d)

other persons who may be in the public access areas or passing through the site or within the owner-controlled area.”

On the basis of its review of the Wolf Creek Emergency Plan, and taking into consideration that the owner-controlled area is posted as “private property — no trespassing” and the known incidents of trespassing are few (six in 5 years), the NRC Staff continues to find that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. However, because unauthorized persons may, albeit infrequently, trespass onto owner-controlled property at the Wolf Creek site, the Staff will request the Licensees to address this issue, and will obtain assurance from them that unauthorized persons are warned or advised of protective actions in accordance with NUREG-0654 § II.J, “Protective Response.”

III. CONCLUSION

The NRC Staff has reviewed the issues raised by NAN related to trespassing at Wolf Creek. On the basis of these reviews, the Staff has determined that the Licensees are operating the facility in compliance with § 20.3(14), § 50.47, Appendix E to Part 50, Part 73, and § 100.3(a), and Technical Specifications 5.1.1 and 5.1.3 and that these regulations and license conditions for Wolf Creek have not been violated as a result of the alleged trespassing incidents at Wolf Creek.

Accordingly, NAN’s request for action pursuant to § 2.206 is denied as described in this Decision. Because the possibility does exist that unauthorized persons may trespass onto owner-controlled property, the Staff will request the Licensees to address the issue of unauthorized individuals present within the owner-controlled area of the Wolf Creek site, and will ensure that unauthorized individuals are warned or advised of protective actions in accordance with NUREG-0654 § II.J, “Protective Response.”

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 26th day of May 1988. .

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Dr. Thomas E. Murley, Director

In the Matter of

Docket No. 50-293

BOSTON EDISON COMPANY
(Pilgrim Nuclear Generating Station)

May 27, 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 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.

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.

TECHNICAL ISSUES DISCUSSED: PROBABILISTIC RISK ASSESSMENT

Petitioners have not identified any unique or unacceptable severe accident risk for the Pilgrim plant that would warrant delay of restart until a probabilistic risk assessment is conducted.

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 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.

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.

On November 13, 1987, receipt of the petition was acknowledged. The Petitioners were advised that their Petition would be treated under the requirements of 10 C.F.R. § 2.206 of the Commission's regulations and that appropriate action would be taken within a reasonable time. The request for an immediately effective order to modify the Pilgrim license to preclude BECo from taking any

steps in its power ascension program until an adjudicatory hearing is held was denied. Notice of receipt of the Petition was published in the *Federal Register* (52 Fed. Reg. 44,503 (1987)).

On December 17, 1987, Governor Dukakis wrote a letter to NRC Chairman Zech and restated the position of the Commonwealth of Massachusetts that an adjudicatory hearing should be held before any decision is reached on the plant's future. On January 6, 1988, NRC Chairman Zech wrote Governor Dukakis, stating that the series of planned meetings described in Chairman Zech's letter would result in more citizens being heard by the Commission than would have been likely if an adjudicatory hearing had been held.

The Commission intends to hold a public meeting to be briefed by the Staff on the readiness of Pilgrim to resume operations before allowing restart. The filing of a 2.206 Petition, however, does not require the NRC to hold adjudicatory hearings with respect to issues raised by the Petition. *Illinois v. NRC*, 591 F.2d 12, 14 (7th Cir. 1979); *Porter County Chapter of the Izaak Walton League of America, Inc. v. NRC*, 606 F.2d 1363 (D.C. Cir. 1979); *Eddleman v. NRC*, 825 F.2d 46 (4th Cir. 1987); *Lorion v. NRC*, 785 F.2d 1038 (D.C. Cir. 1986). See also *Florida Power & Light Co. v. Lorion*, 740 U.S. 729 (1985). Petitioners' request for an adjudicatory hearing is denied.

For the reasons stated below, the Petitioners' request, insofar as it relates to the conduct of a PRA, is denied; a final decision with respect to the management and emergency preparedness issues is deferred.

BACKGROUND

The NRC Staff found the overall performance at Pilgrim acceptable during the assessment period covered by the 1985 Systematic Assessment of Licensee Performance (SALP No. 85-99).¹ There was sufficient concern, however, about the facility's performance that Region I conducted a special in-depth Diagnostic Team inspection from February 18 to March 7, 1986 (Inspection Report No. 50-293/86-06, issued April 2, 1986). The team found that performance improvements were inhibited by (1) incomplete Staffing, particularly operators and key mid-level supervisory personnel; (2) a prevailing (but incorrect) view in the organization that the improvements made to date had corrected the problems; (3) reluctance on the part of the Licensee's management to acknowledge some

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

problems identified by the NRC; and (4) the Licensee's dependence on third parties to identify problems, rather than implementing an effective program for self-identification of weaknesses. Nonetheless, as stated in a letter from Region I to the Licensee, dated May 23, 1986, the Diagnostic Team inspection results confirmed the SALP Board conclusions for SALP No. 85-99. In that letter, Region I restated the belief that "performance in the operation of the facility was . . . acceptable although some areas were only minimally acceptable."

On April 12, 1986, the Licensee shut down Pilgrim because of equipment problems and operational difficulties. The NRC Regional Administrator for Region I acknowledged this shutdown in Confirmatory Action Letter (CAL) 86-10, which was issued that same date. On July 25, 1986, the Licensee stated that the facility would remain shut down for the completion of various modifications and for refueling. In an August 27, 1986, letter to Mr. J. Lydon of BECo, the Regional Administrator stated that although the Licensee's actions in response to CAL 86-10 appeared to be thorough, additional issues had been identified that had to be resolved before the reactor could be restarted. These issues included certain technical issues (overdue surveillances, malfunction of recirculation pump motor-generator field breakers, seismic qualification of emergency diesel generator phase-differential relays, and completion of modifications required by Appendix R to 10 C.F.R. Part 50), programmatic matters (the Licensee's action plan for improvements and the role of the Licensee's safety review committees), and the readiness of the plant and corporate Staffs to support restart. Further, the Regional Administrator stated in the same letter: "In light of the number and scope of the outstanding issues, I am not prepared to approve restart of the Pilgrim facility until you provide a written report that documents BECo's formal assessment of the readiness for restart operation."

At this time, Pilgrim remains shut down. The Staff has issued SALP Report No. 86-99 (June 17, 1987). Although this report identifies a number of performance problems (as did the previous SALP report), the Staff believes that the Licensee is dealing effectively with identified problems and is making progress toward improving performance.

The NRC asked the Licensee to submit a readiness report at least 45 days before the planned restart of the plant. In response to this request, the Licensee submitted a report entitled, "Pilgrim Nuclear Power Station Restart Plan" (Plan), on July 30, 1987. This Plan, which consists of two volumes, describes not only the programs, plans, and actions considered necessary by BECo management for a safe and reliable restart, but also the longer-term actions that are designed to ensure that there is continuing improvement in the safe operation of Pilgrim Station. Specifically, Volume 1 of the Plan contains descriptions of all the utility's programs that are either in progress or planned to correct and prevent recurrence of previously identified weaknesses, as well as a very limited discussion of the early results of some of the programmatic efforts

already undertaken. Volume 2 provides the status of the Licensee's efforts to meet commitments or resolve concerns in specific performance areas identified by either the Licensee, NRC, or the Institute of Nuclear Power Operations (INPO).

On October 26, 1987, and January 4, 1988, the Licensee provided revisions to Volume 2 of the Plan. The Licensee plans to submit a final update (to be presented as a Plan revision) on the overall progress of the Plan approximately 3 weeks before the scheduled restart of the Pilgrim Nuclear Power Station.

Because NRC is preparing to assess the overall effectiveness of the Plan in resolving previously identified weaknesses, NRC has welcomed public comments on the perceived strengths and weaknesses of both the programmatic efforts contained in the Plan (Volume 1) and the success of specific actions in meeting specific commitments/concerns (Volume 2). NRC provided an opportunity for such public comments at a public meeting held in Memorial Hall, Plymouth, Massachusetts, on February 18, 1988, and will factor the resulting oral and written comments into its assessment of the operational readiness of the Pilgrim Nuclear Power Station.

A discussion of each of the three bases for this Petition follows.

DISCUSSION

A. Management

The Petitioners allege that serious managerial deficiencies continue to exist at Pilgrim. As the bases for their Petition, the Petitioners cite: (1) consistently low ratings in 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 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 (hereinafter referred to as the Golden Interim Decision) 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. A copy of the Golden Interim Decision is attached to this Decision (published as DD-87-14, *supra*) and is incorporated by reference; we will not repeat here the discussion of the management issue given in that decision.

Because the Pilgrim Station is shut down and will not be allowed to restart until authorized to do so by the NRC, there is no additional safety assurance to

be gained by addressing this aspect of the Petitioners' request at this time. A final Director's Decision regarding management issues is deferred until (1) the management deficiencies have been suitably addressed by the Licensee and (2) the NRC Staff completes its assessment of the Licensee's efforts. The management portion of this Petition will, therefore, be addressed in a subsequent decision.

B. Probabilistic Risk Assessment and Attendant Plant Modifications

The Petitioners have requested that the Pilgrim operating license be modified to require, prior to restart from the current outage, a plant-specific probabilistic risk assessment (PRA) and implementation of all safety modifications indicated therein. The Petitioners assert that such a requirement is necessary because of the combination of three factors that influence the potential risk of a postulated severe accident at Pilgrim Station. These factors are (1) a vulnerable primary containment (Mark I design), (2) a secondary containment (reactor building) not designed to provide an effective backup barrier, and (3) a large population in the immediate vicinity of the plant. Central to the Petitioners' request is the assertion that these three factors preclude consideration of the findings in draft NUREG-1150 concerning the remote probability of a severe accident and attendant early fatalities.² Finally, the Petitioners maintain that the Licensee, by its voluntary action in initiating a Safety Enhancement Program has, in effect, raised as a restart issue the question of the adequacy of the proposed plant modifications that are part of the Safety Enhancement Program.

The draft assessment documented in NUREG-1150 concluded that the probability of a severe accident with early fatalities is extremely remote. The Petitioners incorrectly assert that the finding of draft NUREG-1150 is not applicable to Pilgrim because of the characteristics cited by the Petitioners: a Mark I containment, an ineffective secondary containment, and a large surrounding population. It is inappropriate to apply the specific numerical risk estimates from draft NUREG-1150 to Pilgrim. Nevertheless, it is also inappropriate to conclude that unacceptable risk follows by virtue of the fact that Pilgrim uses a Mark I containment design.

In the Golden Interim Decision, the Staff provided an extensive discussion of the design basis and adequacy of the Pilgrim containment. The Petition has not identified any issues with respect to the Pilgrim containment design that were not previously considered by the Staff and resolved in the Golden Interim Decision. See DD-87-14, 26 NRC at 95-106.

²The Reactor Risk Reference Document, Draft (NUREG-1150), February 1987.

Petitioners assert that the "large population in the immediate vicinity of Pilgrim" (Petition at 13) constitutes part of the basis for their request for a PRA. Petitioners allege that there is a "large population surrounding the plant" (*id.* at 14), and that "the EPZ population at this plant is among the highest in the country" (*id.* at 21). Section 2.206(a) of 10 C.F.R. requires petitioners to "set forth the facts that constitute the basis for the request." Petitioners do not provide amplifying information or details in support of these statements concerning population.

Although Pilgrim has an above-average population residing within 10 miles of the site, a number of other facilities have an even larger population residing nearby. Using 1982 data based on the 1980 Census, the resident population (about 41,000) surrounding Pilgrim up to a radius of 10 miles ranked twenty-sixth of eighty sites in operation or in the licensing process at that time. As of 1987, the population residing within a 10-mile radius of the Pilgrim plant is estimated by the Licensee to be about 62,000, with about 70,000 within the 10-mile Emergency Planning Zone (EPZ).³ The 1982 data for U.S. nuclear power plants indicates that at least seventeen sites already had over 70,000 people residing within a 10-mile radius of the site. Petitioners present nothing unique about the population in the vicinity of Pilgrim that would merit further consideration.

Although the Commission requested PRAs of the Millstone 3 and Limerick facilities during the licensing review process, the Commission's regulations do not require the conduct of a PRA as part of the licensing basis for nuclear power plants. PRAs also have been conducted by some utilities as part of facility upgrades, such as those made under the Commission's Systematic Evaluation Program (SEP) or voluntarily by individual licensees. Although some licensees with facilities in areas of substantially above-average population density (Indian Point, Zion, Limerick) have conducted PRAs, other licensees with facilities located in areas of higher population density than Pilgrim, such as Oyster Creek, Beaver Valley, and Turkey Point, have not been required to conduct a PRA.

The Petitioners have not provided sufficient evidence of significant risk vulnerabilities associated with the primary and secondary containment design that are unique to Pilgrim, or unique aspects of the surrounding population (when taken individually or when considered in combination) to warrant the requirement for a plant-specific PRA prior to restart of Pilgrim.

The Staff has reviewed all points raised in the seven-page affidavit prepared by Steven C. Sholly that accompanied the Petition. This affidavit concerns the Pilgrim power ascension program, the potential risk associated with operation of Pilgrim at progressively higher power levels (based upon consideration of

³The EPZ includes all of the town of Plymouth, Massachusetts, some of which is slightly more than 10 miles from Pilgrim.

the Shoreham PRA and the potential impact of external events), and the need for a plant-specific PRA for Pilgrim. The affidavit also discusses the Pilgrim Mark I primary containment and secondary containment. The Staff has dealt with the Pilgrim containments earlier in this response and in the Golden Interim Decision.

Regarding the Pilgrim power ascension program, Petitioners assert that the details have not been supplied and that it will be a "rapid ascension" to full power. A description of the Licensee's power ascension program was provided to the NRC on October 15, 1987 (BECO Letter 87-163). If power operation is approved by the NRC, the power ascension program to be performed as part of the Pilgrim restart effort will be a controlled and orderly process. It will have prior Staff review and approval, augmented monitoring by the NRC Staff, and "hold points" that require oral approval from the NRC before proceeding further. Thus, Petitioners' assertions regarding the Pilgrim power ascension program are without merit.

Regarding the potential risk of operation at progressively higher power levels and the potential impact of external events, the Staff agrees that operation at higher power levels may present higher risk than when operating at low power. Nevertheless, operation of the Pilgrim facility up to 100% power (1998 megawatts-thermal) has been previously analyzed and found acceptable by the Staff. Applicable documents include the Final Safety Analysis Report (FSAR) and the associated Safety Evaluation Report (SER), dated August 25, 1971. Additionally, the design basis for Pilgrim to withstand external events has already been considered and found acceptable in the FSAR and SER. Neither the Petition nor the affidavit provides information that renders these conclusions incorrect.

The affidavit refers to a PRA for Pilgrim that has been in progress. The Staff is aware that BECO has been conducting PRA activities for Pilgrim. However, this effort has not been completed nor has any portion of it been provided to the Staff. The regulations do not require a PRA as part of the licensing basis for nuclear power plants.⁴ If analyses being voluntarily conducted by the Licensee reveal new information that materially alters the licensing basis, the Pilgrim Technical Specifications and 10 C.F.R. § 50.72 require that the NRC be informed and appropriate corrective actions be taken.

Accordingly, the affidavit does not present evidence that warrants the requirement of a plant-specific PRA prior to restart of Pilgrim.

⁴ The Commission is presently considering imposing requirements for plant-specific evaluations under an Individual Plant Evaluation (IPE) program. This program would include assessments of severe-accident risk of individual facilities. Conduct of the IPE program would not be a prerequisite to restart of Pilgrim or inhibit operation of other operating facilities. The Office of Nuclear Regulatory Research (RES) is also assessing the performance of the Mark I primary containment design. This assessment may impact decisions or yield regulatory action affecting Mark I facilities.

With regard to the Safety Enhancement Program, the Staff also addressed this matter in the Golden Interim Decision. The Staff is reviewing the modifications associated with the Safety Enhancement Program to ensure that they have no overall adverse safety impact on existing systems. Moreover, the Licensee's initiative to improve plant safety beyond the point of complying with NRC regulations is not a basis for opening the issue of the efficacy of any proposed plant modifications.

Because the Petitioners have not identified any unique or unacceptable severe-accident risk for the Pilgrim plant or documented that it poses an unreasonable threat to public health and safety, there is no merit in their request that restart be delayed until a PRA is conducted. Therefore, this request is denied.

C. Emergency Preparedness

The Petitioners allege deficiencies in the current state of emergency planning and preparedness for Pilgrim Station. The Petitioners cite assessments performed by the Federal Emergency Management Agency (FEMA)⁵ and the Massachusetts Executive Office of Public Safety⁶ that conclude that emergency planning and preparedness at Pilgrim are inadequate to protect the health and safety of the public in the event of an accident. The Petitioners state that both agencies have identified deficiencies in (1) evacuation plans for public and private schools as well as day-care centers, (2) evacuation plans for the special-needs population, (3) evacuation plans for the transport-dependent population, (4) identifiable public shelters for the beach population, (5) a reception center for people evacuating by the northern route, and (6) the overall progress in planning and the apparent diminution in the state of emergency preparedness.

FEMA forwarded its report on the adequacy of emergency preparedness at Pilgrim to the NRC on August 6, 1987. In this report, FEMA specifically addressed the information provided in the First Barry Report in developing its findings.

On August 18, 1987, the NRC requested that the Licensee provide an action plan and schedule for assisting the Commonwealth of Massachusetts and local governments in addressing the FEMA-identified emergency planning issues for Pilgrim. The NRC stated that it viewed the emergency planning issues to be a matter of serious concern and that the determination to restart the plant will involve, in part, consideration of the resolution of the emergency planning issues

⁵Federal Emergency Management Agency "Self-Initiated Review and Interim Finding for the Pilgrim Nuclear Power Station," dated August 4, 1987.

⁶Massachusetts Executive Office of Public Safety, Secretary of Public Safety, Charles V. Barry, "Report to the Governor on Emergency Preparedness for an Accident at the Pilgrim Nuclear Power Station," dated December 16, 1986 (the "First Barry Report").

identified by FEMA. (A similar conclusion was stated in the Golden Interim Decision).

By letter dated September 17, 1987, the Licensee submitted to NRC an action plan and schedule summarizing the status of the issues and the assistance being provided by the Licensee to the Commonwealth and local authorities in the improvement of their emergency response programs. These efforts have included the development of an updated evacuation time estimate (ETE) study and traffic management plan, a study to identify public shelters for the beach population, and the identification of and provision for the special-needs and transportation-dependent populations within the 10-mile EPZ. In addition, the Licensee is providing professional planners to assist local governments and the Commonwealth in upgrading their plans and in the development of a new training program for offsite emergency response personnel. On October 26, 1987, the Licensee provided additional information on beach population and sheltering to the Commonwealth. In a letter to the Commonwealth, dated December 23, 1987, the Licensee forwarded a report entitled "Reception Center Feasibility Analysis."

The Petitioners acknowledge some progress has been made toward improving emergency preparedness, including identification of school/day-care populations, estimates of available resources to evacuate these populations, an updated ETE study, and estimates of the beach population and sheltering data. However, the Petitioners continue to identify concerns regarding the current planning efforts involving the identification of the special-needs and transport-dependent populations, shortcomings in the ETE study, inadequacies in the sheltering data, determination of a replacement for the northern reception center, and the conduct of an exercise.

On December 17, 1987, Governor Dukakis forwarded to the NRC a report prepared by Secretary Barry entitled, "Report on Emergency Preparedness for an Accident at Pilgrim Nuclear Power Station" (Second Barry Report). In this report, Secretary Barry provided additional information and background concerning the issues raised in the Petition.

The current status of the efforts to improve the offsite emergency response programs is as follows:

- Drafts of the local emergency plans have been completed. Six of these drafts have been forwarded by the Commonwealth to FEMA for informal technical review.
- Drafts of the local emergency plan implementing procedures have been prepared and are being reviewed by town officials.
- The draft Massachusetts Civil Defense Agency Area II Plan is complete and being reviewed by the Commonwealth.
- The draft of the Commonwealth Plan for Pilgrim is complete and being reviewed by the Commonwealth.

- A training program has been jointly developed by the Licensee and the Massachusetts Civil Defense Agency. The Massachusetts Civil Defense Agency, which has approved the training program, is reviewing the attendant lesson plans as they are being developed. Training for offsite emergency response personnel has begun.
- A northern reception center has been designated by the Commonwealth.

The NRC will continue to monitor the progress of the Licensee's efforts to assist Massachusetts and local governments in improving their emergency response programs. The Licensee has committed to conduct a full-participation exercise following the completion of these efforts. On September 17, 1987, the Licensee requested an exemption from the NRC requirement to conduct a biennial full-participation exercise in 1987. On December 9, 1987, the NRC granted the exemption, stipulating that the Licensee is to conduct a full-participation exercise for Pilgrim no later than June 30, 1988. On April 4, 1988, the Licensee requested a further extension of the full-participation exercise to the end of 1988. On May 11, 1988, the NRC granted a further extension of this requirement, but stipulated that a full-participation exercise be conducted prior to the end of calendar year 1988.

A decision on this portion of the Petitioners' request is deferred. However, the determination as to whether to restart Pilgrim will involve consideration of the emergency planning issues identified by FEMA.

CONCLUSION

For the reasons discussed above, a decision cannot be made at this time regarding the management and emergency preparedness issues. These portions of the Petition will be addressed in a subsequent response. However, the NRC has required, and will continue to require, that the Pilgrim facility remain shut down until the management and emergency preparedness issues are dealt with to the satisfaction of the NRC.

For the reasons discussed above, the information identified by the Petition does not warrant the initiation of the requested actions in regard to the probabilistic risk assessment and attendant plant modifications. 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 27th day of May 1988.

Attachment:
Golden Interim Decision

[The attachment has been omitted from this publication but may be found in the *NRCIs* as DD-87-14, 26 NRC 87 (1987), or in the NRC Public Document Room, 1717 H Street, NW, Washington, DC 20555.]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF THE EXECUTIVE DIRECTOR FOR OPERATIONS

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

In the Matter of

Docket No. PRM 50-25a

PORTER COUNTY CHAPTER OF THE
IZAACK WALTON LEAGUE OF
AMERICA, *et al.*

April 1, 1988

The Nuclear Regulatory Commission is denying a petition for rulemaking submitted by the Porter County Chapter of the Izaak Walton League of America, *et al.* The Petitioner requested a change in the Commission's regulations governing the extension of construction permits. Specifically, the Petitioner requested that the Commission not limit its inquiry in granting an extension to those reasons why construction was not timely completed but would require the Commission to consider whether good cause had been shown for continued construction of the reactor in light of all the circumstances at the time the request for an extension was filed. Commission decisions since the filing of the petition have emphasized that the decision to grant an extension should not be used to conduct a broad-based reconsideration of the initial decision to grant a construction permit. Since the petition would, in essence, require such broad-based reconsideration, the Commission has decided to deny the request for rulemaking.

**NRC: AUTHORITY OF EXECUTIVE DIRECTOR FOR
OPERATIONS TO DENY PETITIONS**

Pursuant to the 10 C.F.R. § 1.40(o), the Executive Director for Operations is authorized to deny petitions for rulemaking of a minor or nonpolicy nature where the grounds for denial do not substantially modify existing precedent. In fact, the Commission has recently addressed this very issue and has seen no reason to modify its existing policy.

**CONSTRUCTION PERMIT: EXTENSION OF COMPLETION DATE
(SCOPE OF PROCEEDING)**

The purpose of the construction permit extension process is not to engage in an unbridled inquiry into matters already addressed in the initial construction permit hearing. *Washington Public Power Supply System* (WPPSS Nuclear Project Nos. 1 & 2), CLI-82-29, 16 NRC 1221, 1227 (1982). A person who wants to raise health, safety, or environmental issues can do so in a request for the Commission to institute a show-cause proceeding under 10 C.F.R. § 2.206 or, to the extent appropriate, can seek to litigate such issues in the context of an operating license proceeding. The approach to deciding whether good cause has been shown is to limit the challenges to the request for an extension to those based on the reasons proffered by the permittee for the delay. *Id.* at 1228.

**CONSTRUCTION PERMIT: EXTENSION OF COMPLETION DATE
(SCOPE OF PROCEEDING)**

The construction extension process is not a forum for the reconsideration of issues addressed in the construction permit hearing, nor is it an avenue for raising issues that can be addressed in a more appropriate forum such as a § 2.206 proceeding or an operating license proceeding. *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 1), CLI-86-4, 23 NRC 113 (1986), *aff'd*, *Citizens Association for Sound Energy v. NRC*, 821 F.2d 725 (D.C. Cir. 1987).

**CONSTRUCTION PERMIT: EXTENSION OF COMPLETION DATE
(SCOPE OF PROCEEDING)**

The Commission has repeatedly rejected attempts to broaden the scope of a construction permit extension proceeding. Avenues exist in which persons can raise safety and environmental concerns. The Commission does not believe that a full-scale relitigation in "a good-cause proceeding" of issues addressed elsewhere or that can be raised in a different proceeding would substantially improve the protection of public health and safety.

**CONSTRUCTION PERMIT: EXTENSION OF COMPLETION DATE
(SCOPE OF PROCEEDING)**

The Commission has developed a test for determining whether a contention falls within the perimeter of the construction permit extension process. The contention must show that the applicant is responsible for the delay and has

acted intentionally and without a valid business purpose. *Public Service Co. of New Hampshire* (Seabrook Station, Unit 2), CLI-84-6, 19 NRC 975, 978 (1984).

CONSTRUCTION PERMIT: EXTENSION OF COMPLETION DATE (GOOD CAUSE)

A permittee may demonstrate that there was good cause for the past delay in plant completion or a permittee may show that its current and future actions are "good cause" for an allowance of more time for plant completion. This is so even when the delay results from past conduct by the permittee that sought to violate NRC requirements, which then resulted in a requirement to correct safety deficiencies flowing from the past conduct. *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 1), CLI-86-15, 24 NRC 397 (1986). If the permittee discards and repudiates its past policy of violating NRC requirements, "any delays arising from the need to take corrective action would be delays for good cause." *Id.* at 403.

DENIAL OF PETITION FOR RULEMAKING

I. BACKGROUND

In a submittal dated December 20, 1979, the Porter County Chapter of the Izaak Walton League, the Concerned Citizens Against Bailly Nuclear Site, the Businessmen for the Public Interest, Inc., James E. Newman, and Mildred Warner filed with the Commission, petition for rulemaking PRM-50-25a. An identical petition was filed on the same date by the State of Illinois and was denominated petition for rulemaking PRM-50-25. The Petitioners requested that the Commission modify 10 C.F.R. § 50.55(b) which provides:

If the proposed construction or modification of the facility is not completed by the latest completion date, the permit shall expire and all rights thereunder shall be forfeited: *Provided, however,* That upon good cause shown the Commission will extend the completion date for a reasonable period of time. The Commission will recognize, among other things, developmental problems attributable to the experimental nature of the facility or fire, flood, explosion, strike, sabotage, domestic violence, enemy action, an act of the elements, and other acts beyond the control of the permit holder, as basis for extending the completion date.

The Petitioners sought to amend this section as an alternative to their attempt to intervene in the construction permit proceeding for Northern Indiana Public Service Company's (NIPSCO) Bailly Nuclear Generating Station. NIPSCO

canceled the plant and Petitioners' desire to intervene became moot as a result of cancellation. However, the Petitioners requested that the Commission consider modifying § 50.55(b). Specifically, the Petitioners requested that the good-cause determination must consider "whether the permittee has shown good cause for the continued construction of the plant in light of all the circumstances at the time of considering the application [for the extension]." In the view of the Petitioners, this rule would prohibit the Commission from limiting the extension proceeding to the reasons why construction was not completed by the latest completion date in the construction permit. The Commission received four comments on the petition from law firms representing various owners and operators of nuclear power plants. The comments were unanimous in their opposition to the petition.

In early 1985, both the State of Illinois and the private-citizen groups were contacted by the NRC in order to determine whether the Petitioners wanted to withdraw their request in light of the cancellation by NIPSCO of the Bailly Generating Station. On February 28, 1985, the State of Illinois sent a letter to the Secretary of the Commission withdrawing its petition for rulemaking (PRM 50-25). Attorneys for the private-citizen Petitioners were contacted and they agreed to withdraw the petition (PRM 50-25a). Approximately a year later, the attorney for the private citizens was again contacted and he stated that he would withdraw the petition. Followup information was sent on January 31, 1986. No response was forthcoming. Rather than delay further, the Commission will act upon the petition.

II. DISCUSSION

Subsequent to the filing of the petitions, the Commission clarified the meaning of § 50.55(b). In *Washington Public Power Supply System* (WPPSS Nuclear Project Nos. 1 & 2), CLI-82-29, 16 NRC 1221 (1982), the Commission addressed the scope of the "good-cause" determination. First, the Commission noted that the purpose of the extension process was not to engage in an unbridled inquiry into matters already addressed in the initial construction permit hearing. *Id.* at 1227. The Commission then noted that a person who wanted to raise health, safety, or environmental issues could do so in a request for the Commission to institute a show-cause proceeding under 10 C.F.R. § 2.206 or, to the extent appropriate, would seek to litigate such issues in the context of an operating license proceeding. The Commission concluded that the approach to deciding whether good cause had been shown was to limit the challenges to the request for an extension to those based on the reasons proffered by the permittee for the delay. *Id.* at 1228. Thus, for example, a challenge to a permittee's need for an extension based on delays due to unusually severe weather could not be based on the need for the facility but only on the severity of the weather as it affected

permittee's ability to construct the facility. The Commission again addressed the issue of good cause shown in *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 1), CLI-86-15, 24 NRC 397 (1986). In that case, the Commission held that a permittee may demonstrate that there was good cause for the past delay in plant completion or a permittee may show that its current and future actions are "good cause" for an allowance of more time for plant completion. This is so even when the delay results from past conduct by the permittee that sought to violate NRC requirements, which then resulted in a requirement to correct safety deficiencies flowing from the past conduct. In short, if the permittee discarded and repudiated its past policy of violating NRC requirements, "any delays arising from the need to take corrective action would be delays for good cause." *Id.* at 403.

The Commission revisited the construction permit extension process in *Public Service Co. of New Hampshire* (Seabrook Station, Unit 2), CLI-84-6, 19 NRC 975 (1984). The Commission reaffirmed and expanded on the WPPSS decision. Specifically, the Commission developed a test for determining whether a contention falls within the perimeter of the construction permit extension process. The contention must show that the applicant is responsible for the delay and has acted intentionally and without a valid business purpose. *Id.* at 978.

The Commission reemphasized the narrow scope of the construction permit extension proceeding in *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 1), CLI-86-4, 23 NRC 113 (1986). In *Comanche Peak*, the Commission had to determine whether it could grant an extension of a construction permit after the construction permit had expired. The Commission determined that it could do so. More importantly, the Commission rejected a plea by the Citizens Association for Sound Energy (CASE) for a full-scale hearing on a new construction permit. 23 NRC at 117-20. Rather, the Commission referred the request for a hearing to the Atomic Safety and Licensing Board Panel for appropriate action. In the referral, the Commission limited the scope of any hearing to challenges to Texas Utilities' effort to demonstrate the existence of good cause. *Id.* at 121. By rejecting CASE's plea, the Commission reiterated its policy that the construction extension process is not a forum for the reconsideration of issues addressed in the construction permit hearing; nor is it an avenue for raising issues that can be addressed in a more appropriated forum such as a § 2.206 proceeding or an operating license proceeding. The Commission's determination in this case was upheld by the D.C. Circuit Court of Appeals on June 26, 1987. See *Citizens Association for Sound Energy v. NRC*, 821 F.2d 725 (D.C. Cir. 1987).

In summary, the Commission has repeatedly rejected attempts to broaden the scope of the construction permit extension proceeding. Avenues exist in which persons can raise safety and environmental concerns. The Commission does not believe that a full-scale relitigation in "a good cause proceeding" of

issues addressed elsewhere or that can be raised in a different proceeding would substantially improve the protection of public health and safety.

III. FINDINGS

Based on the above considerations, the Commission hereby denies the petition for rulemaking PRM 50-25a, dated December 20, 1979, filed by the Porter County Chapter of the Izaak Walton League, *et al.*

Pursuant to the 10 C.F.R. § 1.49(o), the Executive Director for Operations is authorized to deny petitions for rulemaking of a minor or nonpolicy nature where the grounds for denial do not substantially modify existing precedent. This petition does not raise new policy issues and the grounds for denial of the petition are in accordance with existing precedent. In fact, the Commission has recently addressed this very issue and has seen no reason to modify its existing policy. Thus, denial of the petition falls within the scope of the Executive Director's delegated authority.

For the Nuclear Regulatory
Commission

Victor Stello, Jr.,
Executive Director for
Operations

Dated at Rockville, Maryland,
this 1st day of April 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 40-24

UNION CARBIDE CORPORATION

April 11, 1988

The Nuclear Regulatory Commission (NRC) is denying a petition for rule-making (PRM 40-24) submitted by the Union Carbide Corporation. The Petitioner requested that the NRC amend its regulations in four areas pertaining to uranium milling operations and closure requirements. Three of the amendments requested by the Petitioner are being denied due to changes made in NRC's regulations as a result of standards issued by the Environmental Protection Agency (EPA). The NRC regulatory changes that were necessary to conform to EPA's standards are required by law. The Petitioner's requests, which were received prior to promulgation of EPA's standards, are inconsistent with existing EPA requirements. The fourth area deals with a requested change to the assumed real interest rate used to cover the cost of long-term surveillance. This request is denied on the basis that the proposed change is inconsistent with the government's historical real rate of return.

UMTRCA (URANIUM MILL TAILINGS RADIATION CONTROL ACT OF 1978): COMPLIANCE WITH EPA REGULATIONS

A petition for rulemaking requesting the amendment of portions of the NRC regulations implementing UMTRCA (10 C.F.R. Part 40, Appendix A) which was filed before the revision of those regulations to conform to EPA standards (as required by law), will be assessed against the revised regulations, rather than the regulations to which the petition was addressed. Those proposals that are inconsistent with the EPA standards, as incorporated in NRC regulations, are rejected.

REGULATIONS: INTERPRETATION (10 C.F.R. PART 40, APPENDIX A, CRITERION 1)

Criterion 1 of Appendix A covers the selection of new tailings disposal sites or the adequacy of existing tailings disposal sites. A proposal to amend this criterion to provide for a long-term isolation period of 100 to 200 years would be inconsistent with EPA's longevity standard, now part of NRC's regulations. EPA requires reasonable assurance that control of radiation hazards be effective for 1000 years, to the extent reasonably achievable, and in any case, for at least 200 years.

REGULATIONS: INTERPRETATION (10 C.F.R. PART 40, APPENDIX A, CRITERION 5)

NRC requirements for groundwater protection contained in Criterion 5 (which covers the restoration of groundwater contaminated by seepage of toxic materials from mill tailings sites) have been totally revised as a result of EPA standards. At any site, new or existing, an applicant can apply for an alternate concentration limit (ACL) for groundwater constituents. Use of the aquifer is one of the factors upon which the ACL could be based.

REGULATIONS: INTERPRETATION (10 C.F.R. PART 40, APPENDIX A, CRITERION 6)

The NRC requirements for radon control have been significantly changed as a result of EPA requirements. The minimum 3-meter cover over tailings or wastes is no longer required. The radon release rate has been changed to not exceed the EPA-established average release rate of 20 picocuries per square meter per second to the extent practicable throughout the effective design life.

REGULATIONS: INTERPRETATION (10 C.F.R. PART 40, APPENDIX A, CRITERION 10)

This criterion imposes a charge on each mill operator to cover the cost of long-term surveillance. The total charge must be such that "with an assumed 1 percent annual real interest rate, the collected funds will yield interest in an amount sufficient to cover the annual costs of site surveillance." Petitioner's proposal to use a 2% annual real interest rate, which is asserted to be a more accurate reflection of the historic earning power of investments versus the 1% rate used in NRC regulations, is rejected. The 2% annual real interest rate is based on an industrial yield, and it would not be appropriate to use those figures.

DENIAL OF PETITION FOR RULEMAKING

I. BACKGROUND

On November 30, 1982 (47 Fed. Reg. 53,899), the Nuclear Regulatory Commission (NRC) published a notice of receipt of a petition for rulemaking filed by the Union Carbide Corporation. The petition requested that the NRC amend portions of its regulations concerning criteria for the operation of uranium mills and the disposition of tailings or wastes resulting from these activities.

The Petitioner suggested specific amendments to Criteria 1, 5, 6, and 10 of Appendix A to Part 40. That appendix sets out the technical, financial, ownership, and long-term site surveillance criteria relating to the siting, operation, decontamination, decommissioning, and reclamation of uranium mills and associated tailings. Appendix A was issued as part of the NRC's regulations implementing the Uranium Mill Tailings Radiation Control Act of 1978 (Pub. L. 95-604, 42 U.S.C. 7901, *et seq.*). These regulations were published in the *Federal Register* on October 3, 1980 (45 Fed. Reg. 65,531).

The Petitioner believes that the suggested amendments will continue to adequately protect the public health, safety, and the environment from radiation hazards associated with uranium milling. In addition, the Petitioner asserts that its suggested amendments are more cost-effective in that they would significantly reduce the costs of compliance at the facilities covered by the regulations.

The Suggested Amendments: Criterion 1

Criterion 1 covers the selection of new tailings disposal sites or the adequacy of existing tailings disposal sites. The Petitioner suggests that the long-term isolation of tailings and associated contaminants be defined as a 100-200-year period rather than the "thousands of years" period.

The Petitioner bases this suggestion on testimony before the NRC, the states of Colorado and New Mexico, the Environmental Protection Agency, and the Military Nuclear Systems Subcommittee of the Committee on the Armed Services. The Petitioner contends that this testimony indicates that:

1. The thousands-of-years period is unreasonable.
2. Technology does not exist to ensure the isolation of tailings for thousands of years.
3. The present requirement is costly and speculative.
4. It is difficult, if not impossible, to design a reclamation plan for a tailings pile that will withstand erosion over a period of thousands of years.

5. Tailings disposal should be based on a realistic period of time, such as 100-200 years.
6. The thousands-of-years requirement tends to relieve the government of any responsibility for ultimate control (Criterion 11).
7. The funds for long-term surveillance and control will be available to pay for any repair necessitated by damages resulting from any unexpected event (Criterion 10).

The Suggested Amendments: Criterion 5

Criterion 5 covers restoration of groundwater contaminated by seepage of toxic materials from mill tailings sites. The Petitioner contends that Criterion 5 attempted to distinguish existing from new sites. For new sites, the Petitioner states that seepage would not result in deterioration of groundwater supplies, and technical alternatives are provided to ensure that deterioration does not occur. The Petitioner states, however, that for existing sites no guidance was given concerning the standards to be used in developing the required site-specific seepage control and groundwater protection methods. The Petitioner's proposed amendment is intended to provide guidance it believes is missing for existing sites by specifically including consideration of the current use of the groundwater, naturally occurring characteristics of the groundwater, potential use of the groundwater based on needs of the community, size of the aquifer, availability of other drinking water sources, and the practicability of restoration.

The Suggested Amendments: Criterion 6

Petitioner proposes amendments to Criterion 6 that would delete requirements for (1) a 3-meter cover over tailings or wastes and (2) a surface exhalation of radon emanating from the tailings or wastes to less than 2 picocuries per square meter per second. Instead, suggested revisions would include cover designs that are based on site-specific analyses and concentrations of radon and other radioactive material beyond a small buffer zone of approximately 500 feet established around the covered areas. These concentrations would not exceed limits specified in Appendix B, Table II of 10 C.F.R. Part 20, excluding background. The Petitioner requests that remedial actions be cost-effective and based on a realistic assessment of the health hazard to the public that uranium mill tailings may pose. The Petitioner believes that health risks to the public from exposure to radium and radon from uranium mill tailings should be compared with risks from exposure to other natural sources of radium, radon, and their daughters as well as to other risks commonly accepted by the public. The Petitioner contends that, if such comparisons are made, it is clear that the

health risks to the public associated with uranium mill tailings have been greatly overestimated. The Petitioner believes that its proposal will ensure that mill tailings are controlled in a safe manner and that people and the environment will be protected from radiation hazards associated with tailings disposal.

The Suggested Amendments: Criterion 10

This criterion imposes a charge on each mill operator to cover the cost of long-term surveillance. The total charge must be such that, "with an assumed 1 percent annual real interest rate, the collected funds will yield interest in an amount sufficient to cover the annual costs of site surveillance." The Petitioner proposes the use of a 2% interest rate rather than the current 1% interest rate. The Petitioner requests that this rate, which it considers to be a more accurate percentage spread between inflation and interest rates, be used.

II. BASIS FOR REQUEST

As a basis for the requested action, the Petitioner stated it has facilities that are affected by the NRC regulations in both Agreement and Non-Agreement States. The requirements of Appendix A of 10 C.F.R. Part 40 also apply to Agreement States. As a result of Agreement States conforming their regulations to be compatible with NRC's, hearings and public comments were solicited. The Petitioner claims that "additional testimony and evidence have been elicited which were not available to the NRC in the consideration of its own regulations." In light of this new information, the Petitioner requests that the NRC reconsider its regulatory program. It is the Petitioner's contention that compliance with the amendments it proposes will protect public health and safety and the environment from radiation hazards associated with uranium milling byproduct material while significantly reducing the costs of compliance at its uranium mills.

III. PUBLIC COMMENTS ON THE PETITION

A notice of filing of petition for rulemaking was published in the *Federal Register* on November 30, 1982 (47 Fed. Reg. 53,889). Interested persons were invited to submit written comments or suggestions concerning the petition by January 31, 1983. At the request of several commenters, the comment period was extended until May 2, 1983. The NRC received eleven comments in response to the notice; five from environmental groups; three from state agencies; and one each from the industry, an industrial representative, and a private citizen.

All the commenters, with the exception of the two from the industry and the industrial representative, were opposed to the petition. The main reasons cited by these commenters were:

1. Based upon Pub. L. 97-415 (issued January 4, 1983), which amended UMTRCA, the Environmental Protection Agency is to develop general environmental standards by October 1, 1983. The NRC will then review and revise its regulations to conform to the EPA standards. Therefore, any changes now would be premature.
2. The additional information provided by the Petitioner is of limited value.
3. Changes proposed by the Petitioner are not adequate to protect public health, safety, and the environment. The existing regulations will provide for this and are reasonable considering the hazards involved.

The comments from the industry and industrial representative are in total support of the petition. These commenters also identified other parts of the regulations that they felt should be changed.

IV. STAFF ACTION ON THE PETITION

The response to the petition for rulemaking was delayed because Pub. L. 97-415 (NRC Authorization Act of 1983, issued January 4, 1983) required EPA to develop general environmental standards by October 1, 1983, and for the NRC to then conform its regulations to those issued by the EPA. Most of the issues raised by the Petitioner were addressed in the final EPA environmental standards (48 Fed. Reg. 45,926 (Oct. 7, 1983)).

NRC's conformance to the EPA standards was completed in a two-step process. The first step resulted in a final rule published on October 16, 1985 (50 Fed. Reg. 41,852). This rule revised Appendix A to 10 C.F.R. Part 40 in order to conform to the EPA requirements except for those relating to groundwater protection. The second step also amended Appendix A and completed conformance to the EPA groundwater protection requirements. The NRC began this step with advance notice of proposed rulemaking on November 26, 1984 (49 Fed. Reg. 46,425) prior to developing amendments for the groundwater-protection-conforming changes.

As stated in the proposed rule to conform to groundwater protection requirements (51 Fed. Reg. 24,697 (July 8, 1986)), "When the NRC publishes its final rule on groundwater protection, the rulemaking proceedings necessary to conform its regulations to EPA standards will be completed. At that time, the NRC will make a final determination on the issues raised by the Petitioner and publish its findings in the *Federal Register*." The final rule conforming groundwater protection requirements, which completed the actions necessary to

conform NRC regulations to EPA standards, was published on November 13, 1987 (52 Fed. Reg. 43,553).

V. REASON FOR DENIAL

The first three amendments to Appendix A to 10 C.F.R. Part 40 suggested by the Petitioner relate to Criteria 1, 5, and 6. These criteria were changed based on requirements in Pub. L. 97-415 that the NRC conform its regulations to the EPA standards. Accordingly, the Petitioner's proposals are assessed against the revised NRC regulations, rather than the regulations to which the petition was originally addressed. The reasons for denial follow.

Criterion 1. The Petitioner's proposal of a long-term isolation period of 100-200 years would be inconsistent with EPA's longevity standard, now part of NRC's rules. EPA requires reasonable assurance that control of radiological hazards be effective for 1000 years, to the extent reasonably achievable, and in any case for at least 200 years.

Criterion 5. The requirements for groundwater protection contained in Criterion 5 have been totally revised as a result of conformance to EPA standards. The current requirements are more stringent than those that the Petitioner requested to be changed. The Petitioner's proposed changes would be inconsistent with current EPA requirements now part of NRC's rules. However, the concerns of the Petitioner as far as contamination and use of an aquifer at existing sites have been incorporated into the current regulations. At any site, new or existing, an applicant can apply for an alternate concentration limit (ACL) for groundwater constituents. Use of the aquifer is one of the factors upon which an ACL could be based.

Criterion 6. The NRC requirements for radon control have been significantly changed as a result of EPA requirements. The minimum 3-meter cover is no longer required. The radon release rate has been changed to not exceed the EPA-established average release rate of 20 picocuries per square meter per second to the extent practicable throughout the effective design life. The requirements in this criterion have been reduced from those that the Petitioner requested be amended. However, further changes would be inconsistent with EPA requirements.

The fourth change suggested by the Petitioner is that dealing with Criterion 10. This criterion was not affected by the EPA standards. The Petitioner indicates that a 2% annual real interest rate is a more accurate reflection of the historic earning power of investments versus the 1% rate used in NRC's regulations.

The Petitioner's request is based on comments provided to the Colorado Department of Health by the Colorado Mining Association on June 5 and 17, 1981, and June 5, 1982. The basis for the 2% rate is "that a 2 percent annual

real interest rate is a more accurate reflection of the historic earning power of investments. Research performed by Union Carbide Corporation's corporate finance group has shown that the average domestic bond yield over the last 30-year period (1950-1980) exceeds the GNP deflator by 2 percent." The domestic bond yield is derived from Moody's Investors Services average corporate yield from the four rating classifications (Aaa, Aa, A, Baa) and is also the average of three groups (railroad, public utility, and industrial).

The real rate of return used in Criterion 10 is based on the difference between the long-term government bond rates and the consumer price index. Long-term government bond rates are less than corporate rates.

The government's real rate of return should be based on government yields because the funds are paid to the Treasury. The Treasury will not be investing these funds in corporate bonds or, for that matter, in any other investment vehicle. Conceptually, these funds can be viewed as displacing the need for government borrowings. Therefore, their true investment value can be measured by the government's ability to forego the payment of interest on government bonds at the margin. Because these investments have historically averaged approximately a 1% real rate of return, this is its appropriate value.

Furthermore, even if one assumed the government could invest these funds in corporate bonds, and earn a higher rate of return, such a practice would be counter to the intended purpose for these funds. The higher corporate real rate of return reflects a risk premium whereas government bonds are essentially risk-free investments. Given the need to ensure funds in perpetuity, it would be imprudent to invest in corporate bonds and be exposed to potential losses. Because the Petitioner's request is based on an industrial yield, it would not be appropriate to use these figures. Therefore, the proposed change is denied.

For the Nuclear Regulatory
Commission

Victor Stello, Jr.,
Executive Director for
Operations

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

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. 50-335-OLA
(SFP Expansion)

FLORIDA POWER & LIGHT
COMPANY

(St. Lucie Nuclear Power Plant,
Unit 1)

June 13, 1988

On the appeal of the applicant pursuant to 10 C.F.R. § 2.714a(c), the Appeal Board affirms the Licensing Board's grant of the intervenor's petition to intervene in this spent fuel pool expansion proceeding.

APPEAL BOARD: STANDARD OF REVIEW

A licensing board order that was not appealed is not entitled to any *stare decisis* effect. See *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), ALAB-713, 17 NRC 83, 85 (1983); *Duke Power Co.* (Cherokee Nuclear Station, Units 1, 2, and 3), ALAB-482, 7 NRC 979, 981 n.4 (1978).

APPEARANCES

Harold F. Reis and Michael A. Bauser, Washington, D.C., and John T. Butler, Miami, Florida, for the applicant, Florida Power & Light Company.

Campbell Rich, Stuart, Florida, intervenor pro se.

Benjamin H. Vogler for the Nuclear Regulatory Commission staff.

DECISION

We have before us the appeal of the applicant, Florida Power & Light Company, from the Licensing Board's April 20, 1988 Memorandum and Order granting the intervention petition of Campbell Rich in this spent fuel pool expansion proceeding. The Board, in agreement with the positions of the applicant and the NRC staff, first determined that Mr. Rich had standing to intervene. It then found that seven of his proffered contentions were admissible.¹

The applicant appeals pursuant to 10 C.F.R. § 2.714a(c). That section permits an interlocutory appeal of an order granting an intervention petition on the ground that the petition "should have been wholly denied." Accordingly, the applicant claims the Licensing Board erred in admitting all seven of the intervenor's contentions and that the petition should have been denied and the proceeding terminated. Rather than analyze each of the admitted contentions with a view toward showing why the individual contentions are inadmissible, however, the applicant levels a broadside attack claiming that the admitted contentions all suffer from a common infirmity. Specifically, the applicant asserts that our cases impose an affirmative duty upon the intervenor to include, as part of his proffered contentions, a critical analysis of any previously published solutions to the issues raised by the contention that may have been proposed by either the applicant or the staff. According to the applicant, the intervenor failed to satisfy this duty with respect to all seven of the admitted contentions. The intervenor and staff oppose the applicant's appeal.

Most charitably stated, the applicant's argument is baseless and it need not detain us long.² In its brief, the applicant states that it fully recognizes the basic

¹ Mr. Rich originally proffered sixteen contentions. He withdrew two of them and the Licensing Board found six contentions inadmissible and deferred ruling on one. The applicant opposed the admission of all the contentions and, of the seven admitted, the NRC staff did not oppose the admission of five of them.

² On June 7, 1988, the applicant filed a motion requesting that we hold oral argument on its appeal. The holding of oral argument is a matter solely within our discretion and we normally hold arguments only when one or more members of the Board have questions of the parties on their arguments. In light of the insubstantiality of the applicant's position, no purpose would be served by an oral argument in this instance, and the motion is denied.

principles governing the admissibility of contentions and it further represents that it does not challenge any of them. Yet, as the staff points out, "[a]lthough [applicant] states that it is not in any way challenging this general doctrine . . . the criteri[on] it proposes does, in fact, impose a far more stringent standard for evaluating this *pro se* Intervenor's proffered contentions."³

The applicant purports to base its argument on that part of a sentence from our decision in *Catawba* stating that "an intervention petitioner has an ironclad obligation to examine the publicly available documentary material pertaining to the facility in question with sufficient care to enable it to uncover any information that could serve as the foundation for a specific contention."⁴ From this language, the applicant creates a duty on the part of the intervenor to answer in his proffered contentions anything found in publicly available documentary material that might be contrary to the intervenor's position.⁵ As is apparent from even the most casual reading of *Catawba*, the applicant has taken this snippet from the case totally out of context: that decision manifestly does not place on an intervenor a duty of the ilk asserted by the applicant.⁶

The Commission's Rules of Practice in 10 C.F.R. § 2.714(b) require that "the bases for each contention [be] set forth with reasonable specificity." In *Catawba*, we addressed the generic question of whether a contention that failed to meet that bases requirement could be conditionally admitted, subject to its being fleshed out later through discovery or being revised subsequently upon receipt of previously unavailable information. We held that the Commission's Rules of Practice preclude a contention from being admitted conditionally for any reason.⁷ We then turned to the question whether a contention could be rejected as untimely under the five-factor test of section 2.714(a)(1) when an adequately specific contention could not have been earlier filed because of the unavailability or nonexistence of documentation that was an essential element of the license application or the staff's prehearing review. We held that, as a matter of law, the untimeliness factor (the first of the 2.714(a)(1) factors) could

³ Response of NRC Staff (May 24, 1988) at 6.

⁴ *Duke Power Co. (Catawba Nuclear Station, Units 1 and 2)*, ALAB-687, 16 NRC 460, 468 (1982), *rev'd in part*, CLI-83-19, 17 NRC 1041 (1983).

⁵ The applicant also purports to rely upon the unappealed denial of the intervention petitions in *Commonwealth Edison Co. (Dresden Nuclear Power Station, Unit No. 1)*, LBP-82-52, 16 NRC 183 (1982). Such a licensing board order, however, is not entitled to any *stare decisis* effect because it was never appealed. See *Arizona Public Service Co. (Palo Verde Nuclear Generating Station, Units 1, 2 and 3)*, ALAB-713, 17 NRC 83, 85 (1983); *Duke Power Co. (Cherokee Nuclear Station, Units 1, 2, and 3)*, ALAB-482, 7 NRC 979, 981 n.4 (1978).

⁶ In its brief, the applicant complains that the staff chose not to address this same argument before the Licensing Board and that the Board below also ignored the argument in its memorandum and order admitting Mr. Rich's contentions. Applicant's Brief (May 9, 1988) at 4-5 & n.5, 16. We suspect that both the staff and the Licensing Board found the applicant's argument so obviously groundless that they quite properly concluded no reply was necessary or deserved.

⁷ 16 NRC at 466-67.

not be overridden in such circumstances by the other four factors governing late-filed contentions.⁸

As part of our discussion in *Catawba*, we reviewed our earlier decision in *Prairie Island*.⁹ There, we rejected the argument that it was not possible for the petitioners to state specific contentions until they had been able to conduct discovery. For, as we pointed out, there already was sufficient information publicly available at the time of publication of the notice of hearing to formulate specific contentions.¹⁰ The language from *Catawba* quoted out of context by the applicant was made in direct reference to that rationale. In full, we stated: "Implicit in this [*Prairie Island*] observation was the belief that an intervention petitioner has an ironclad obligation to examine the publicly available documentary material pertaining to the facility in question with sufficient care to enable it to uncover any information that could serve as the foundation for a specific contention."¹¹

As is clear from the context of our statement in *Catawba*, we were not in any way creating, referring to, or even suggesting a duty applicable to an intervenor like that now claimed by the applicant, and no such duty exists under the bases requirement of 10 C.F.R. § 2.714(b). As we recently stated in *Comanche Peak*,

the bases requirement is merely a pleading requirement designed to make certain that a proffered issue is sufficiently articulated to provide the other parties with its broad outlines and to provide the Licensing Board with enough information for determining whether the issue is appropriately litigable in the instant proceeding. The requirement generally is fulfilled when the sponsor of an otherwise acceptable contention provides a brief recitation of the factors underlying the contention or references to documents and texts that provide such reasons. But the fact that a contention complies with the bases requirement of section 2.714(b) does not mean that the issue is destined to go to hearing — such a contention is subject to being rejected on the merits prior to trial under the summary disposition provisions of the Rules of Practice.¹²

Contrary to these established principles regarding the admission of contentions, the applicant would require the intervenor first to anticipate the applicant's response to the issues he raises and then answer that response in his initial contention. Such matters go directly to the merits of the contention and

⁸ *Id.* at 468-70. Upon its *sua sponte* review of *Catawba*, the Commission reversed that part of our holding and determined instead that all five factors of 10 C.F.R. § 2.714(a)(1) must be considered and balanced in every case in assessing the acceptance of a late-filed contention. 17 NRC at 1047.

⁹ *Northern States Power Co. (Prairie Island Nuclear Generating Plant, Units 1 and 2)*, ALAB-107, 6 AEC 188, *aff'd* CLI-73-12, 6 AEC 241 (1973), *aff'd sub nom. BPI v. AEC*, 502 F.2d 424 (D.C. Cir. 1974).

¹⁰ 6 AEC at 192. Then, as now, the Commission's Rules of Practice, 10 C.F.R. § 2.740(b)(1), provided that discovery on the subject matter of a contention can only be obtained after the contention is admitted.

¹¹ 16 NRC at 468.

¹² *Texas Utilities Electric Co. (Comanche Peak Steam Electric Station, Unit 1)*, ALAB-868, 25 NRC 912, 930 (1987) (footnotes omitted).

belong in an applicant's summary disposition motion, not in the intervenor's initial pleading. Thus, the applicant's argument is meritless.

Because the applicant has not shown that all seven contentions were erroneously admitted, the Licensing Board's grant of the intervention petition is *affirmed*.¹³

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

¹³ Except as to contention 4 (which, according to the applicant's June 8, 1988 letter to us, has been overtaken by recent events), the applicant has not individually briefed the question whether Mr. Rich pleaded an adequate basis for the contentions admitted by the Licensing Board. It should go without saying that unbriefed claims do not deserve appellate attention.

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)

June 14, 1988

The Appeal Board grants an intervenor's motion for leave to file out of time a notice of appeal from a Licensing Board order dismissing two of the intervenor's contentions as abandoned.

RULES OF PRACTICE: APPEAL TIME LIMITS

Time limits established by the Rules of Practice with regard to appeals from licensing board decisions and orders are not jurisdictional. *Nuclear Engineering Co.* (Sheffield, Illinois, Low-Level Radioactive Waste Disposal Site), ALAB-606, 12 NRC 156, 160 (1980).

RULES OF PRACTICE: APPEAL TIME LIMITS

Although the Appeal Board's general policy has been to enforce strictly the time limits for appeals from licensing board decisions and orders, it may lay

to one side the untimeliness of an appeal where the lateness likely was not occasioned by a lack of diligence but, rather, stemmed from an unfortunate misapprehension respecting the immediate appealability of the order in question. *Ibid.*

RULES OF PRACTICE: APPEAL TIME LIMITS

Although 10 C.F.R. 2.762 speaks in terms of appeals from "initial decisions," that phraseology should not be taken too literally. Any licensing board action that is final is immediately appealable.

RULES OF PRACTICE: APPELLATE PROCEDURE

The test of "finality" for appeal purposes before this agency (as in the courts) is essentially a practical one. As a general matter, a licensing board's action is final for appellate purposes where it either disposes of at least a major segment of the case or terminates a party's right to participate; rulings which do neither are interlocutory. *Toledo Edison Co.* (Davis-Besse Nuclear Power Station), ALAB-300, 2 NRC 752, 758 (footnotes omitted).

POLICY STATEMENT: CONDUCT OF LICENSING PROCEEDINGS

Commission policy mandates an expeditious inquiry into a claim that has been properly raised, particularly where it poses a potential safety problem and the proceeding has already been protracted. *See Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 453 (1981).

APPEARANCES

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

Thomas G. Dignan, Jr., George H. Lewald, 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.

MEMORANDUM AND ORDER

In ALAB-892 in the onsite emergency planning and safety issues phase of this operating license proceeding,¹ we took note of the Licensing Board's unpublished May 12, 1988 Memorandum and Order in which the Board dismissed as abandoned two contentions advanced by the intervenor New England Coalition on Nuclear Pollution (Coalition).² One of those contentions concerned the adequacy of the applicants' proposal for the inservice inspection of the Seabrook facility's steam generator tubes; the other focused upon the accumulation of aquatic organisms and other foreign matter in the facility's cooling systems.³

The basis of the Licensing Board's action in the May 12 order was the Coalition's announced decision not to litigate further either contention. In the case of the cooling systems contention, however, that decision was founded upon the Licensing Board's previous ruling that, although addressed to the possibility of a coolant flow blockage resulting from the buildup of *macrobiological* organisms, the contention did not also encompass *microbiologically*-induced corrosion. The Coalition, however, told the Licensing Board that it did not accept that interpretation of the contention and, moreover, that it continued to believe that the applicants' program for detecting and controlling microbiologically-induced corrosion was inadequate.

After setting forth these facts in ALAB-892, we observed that the Coalition had additionally informed the Licensing Board, and reiterated in a filing with us, that it intended to take an appeal "at the appropriate time" from the Board's determination that the cooling systems contention did not embrace the issue of microbiologically-induced corrosion.⁴ We went on to point out that the Coalition had not asked for guidance respecting whether the appeal (1) had to have been taken from a March 18, 1988 Licensing Board Memorandum and Order reaffirming the Board's interpretation of the cooling systems contention; (2) would appropriately be taken from the May 12 Memorandum and Order dismissing the contention; or (3) could "await subsequent events."⁵ While stressing that guidance was not being supplied uninvited, we did mention that "the time for the filing of a notice of appeal from the May 12 order has not as yet expired (*see* 10 C.F.R. 2.762) and, thus, an appeal from that order is still possible as of this writing."⁶

¹ 27 NRC 485 (1988).

² *See id.* at 488-89.

³ Both contentions had been submitted to, and rejected at the threshold by, the Licensing Board several years ago. In ALAB-875, 26 NRC 251 (1987), we concluded that the rejection was erroneous and, accordingly, remanded both contentions to the Licensing Board for consideration on the merits.

⁴ 27 NRC at 489 n.12.

⁵ *Ibid.*

⁶ *Ibid.*

The Coalition's counsel was orally notified of the issuance of ALAB-892 on the day it was rendered (May 24) and, in the absence of any representation to the contrary, it may be assumed that counsel (located in Washington, D.C.) had the opinion in hand by May 27 — the date upon which the period for noting an appeal from the May 12 order expired.⁷ In the circumstances, out of an abundance of caution if nothing else, one might have expected counsel to have placed a notice of appeal from that order in the mail no later than the 27th. Apparently, however, counsel does not subscribe to the familiar adage to the effect that an ounce of prevention is worth a pound of cure. For no notice of appeal was filed by the 27th. Rather, counsel waited five additional days and then, on June 1, filed a motion seeking either (1) a declaration, in the guise of "clarification" of ALAB-892, that the May 12 order was interlocutory and consequently an appeal from it would have been premature; or (2) leave to file out of time an attached notice of appeal from the May 12 order.⁸

Although the matter may not be entirely free from doubt, we agree with the applicants that the May 12 order is appealable.⁹ For this reason, we deny the declaratory relief sought by the Coalition. Over the applicants' opposition, we are nevertheless accepting the untimely notice of appeal from that order. As the applicants themselves acknowledge, it is settled that "the time limits established by the Rules of Practice with regard to appeals from Licensing Board decisions and orders are not jurisdictional."¹⁰ And while it is nonetheless true that "our general policy has been to enforce [those limits] strictly," there is precedent for "lay[ing] to one side the untimeliness of [an] appeal" where the "lateness likely was not occasioned by a lack of diligence but, rather, stemmed from an unfortunate misapprehension respecting the immediate appealability of [the order] in question."¹¹ Despite the judgment lapse inherent in the course that the Coalition followed in the wake of ALAB-892, we are satisfied that that precedent is applicable here.

⁷ The May 12 order was officially served on counsel by ordinary mail on the date of its issuance. Thus, any notice of appeal from the order was due to be filed (i.e., mailed) within 15 days thereafter. See 10 C.F.R. 2.710, 2.762(a).

⁸ See New England Coalition on Nuclear Pollution's Motion for Clarification or, in the Alternative, Motion for Leave to File a Notice of Appeal Out of Time (June 1, 1988) [hereinafter, Coalition's Motion].

⁹ See Applicants' Response to New England Coalition on Nuclear Pollution's Motion for Clarification or, in the Alternative, Motion for Leave to File a Notice of Appeal Out of Time (June 6, 1988). For its part, the NRC staff disagrees with the applicants on that score but maintains that, in the exercise of our discretion to undertake an interlocutory review of non-final orders, we should entertain at this time the Coalition's challenge to the Licensing Board's interpretation of the cooling systems contention. See NRC Staff Response to NECNP Motion for Clarification or, in the Alternative, Motion for Leave to File a Notice of Appeal Out of Time (June 13, 1988) [hereinafter, Staff's Response]. See also 10 C.F.R. 2.718(i); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478, 482-83 (1975).

¹⁰ *Nuclear Engineering Co.* (Sheffield, Illinois, Low-Level Radioactive Waste Disposal Site), ALAB-606, 12 NRC 156, 160 (1980).

¹¹ *Ibid.*

A. The Coalition's insistence that the May 12 order is not appealable rests on the proposition that only "initial decisions" are subject to appeal. In this connection, the Coalition emphasizes that the May 12 order neither is labelled an initial decision nor contains the ingredients of such a decision.¹² We are also reminded that the order did not end the onsite emergency planning and safety issues phase of the proceeding or conclude the Coalition's participation in it.¹³ To the contrary, the Licensing Board presiding over that phase still has before it another issue raised by the Coalition — the environmental qualification of certain coaxial cable used for data transmission in the facility's computer system.¹⁴

All this is true. But it is also quite beside the point. Although 10 C.F.R. 2.762 speaks in terms of appeals from "initial decisions," we long ago decided that that phraseology was not to be taken too literally. As explained in our 1975 decision in the *Davis-Besse* proceeding (which the Coalition itself cites):

The test of "finality" for appeal purposes before this agency (as in the courts) is essentially a practical one. As a general matter, a licensing board's action is final for appellate purposes where it either disposes of at least a major segment of the case or terminates a party's right to participate; rulings which do neither are interlocutory.¹⁵

Because it manifestly did not affect the Coalition's right to participate in the proceeding, the crucial question here is whether the May 12 order disposed of "a major segment of the case." Had the dismissal of the cooling systems and steam generator tube integrity contentions taken place at an early stage of this phase of the proceeding, when there remained for trial many additional safety or onsite emergency planning issues, the negative answer suggested by the NRC staff might have been required. But the context of the dismissal of the two contentions just last month is significantly different. As earlier noted, several years ago the Licensing Board rejected both contentions at the threshold.¹⁶ That rejection was one of the issues the Coalition raised on its appeal from the Board's March 25, 1987 partial initial decision authorizing the issuance of a low-power license for the facility.¹⁷ Although that decision was affirmed in large measure, we agreed with the Coalition that the contentions should have been accepted for litigation. Accordingly, they were remanded to the Licensing Board with directions to consider them on the merits.¹⁸

¹² See Coalition's Motion at 3-4.

¹³ *Id.* at 4-5.

¹⁴ *Ibid.* That issue was most recently returned to the Licensing Board in ALAB-891, 27 NRC 341 (1988). In addition, the Board has before it on remand the public notification issue raised by another intervenor. See ALAB-883, 27 NRC 43 (1988).

¹⁵ *Toledo Edison Co. (Davis-Besse Nuclear Power Station)*, ALAB-300, 2 NRC 752, 758 (footnotes omitted).

¹⁶ See *supra* note 3.

¹⁷ See LBP-87-10, 25 NRC 177.

¹⁸ See ALAB-875, 26 NRC at 275.

In these circumstances, we encounter no great difficulty in concluding, contrary to the staff's belief, that the Licensing Board's dismissal of the two remanded contentions in the May 12 order can and should be deemed to have disposed of a "major segment" of what remained of the onsite emergency planning and safety issues phase of the proceeding and, as such, to meet the *Davis-Besse* test of finality.¹⁹ We are aided in reaching this conclusion by the consideration that there is no apparent, good, or practical reason to defer to some undetermined later day our resolution of the Coalition's claim that the Licensing Board misinterpreted its cooling systems contention. That claim has nothing whatever to do with any other matter still pending below. And, assuming that the claim is valid — i.e., that the cooling systems contention does extend to microbiologically-induced corrosion — established Commission policy mandates an expeditious inquiry into the merits of the Coalition's assertion that such corrosion poses a potential safety problem.²⁰ This is especially so inasmuch as this proceeding has already been protracted.

B. We have previously referred to our belief that, no matter what might have been the Coalition's own thinking on the appealability of the May 12 order, prudence dictated the filing of a timely notice of appeal from that order. The most that the Coalition would have risked would have been a dismissal of the notice on the ground of prematurity. Had that contingency materialized, the Coalition would, of course, have lost nothing. The dismissal necessarily would have been without prejudice to the renewal of the notice at the appropriate future time.²¹

But it scarcely follows that the Coalition can be charged with a lack of due diligence. Nor are we prepared to say that its conclusion on the appealability question was so untenable as to indicate a possible lack of good faith in pressing

¹⁹ As the basis for its opposite conclusion, the staff states that:

A "major segment of a case" appears to be a segment of a case separated for discrete proceedings, such as has been done to consider on-site safety issues, environmental issues or off-site emergency planning issues. No discrete proceeding had been established to consider the cooling system; rather it was part of on-site issues that resulted in the remand in ALAB-875, which also included the environmental qualification issue still pending in this proceeding.

Staff's Response at 6 n.2. But we are cited to no authority that might support the staff's premise that, to be treated as final for appellate purposes, an order necessarily must dispose of all pending issues in that "discrete" proceeding in which it was entered. The seeming absence of any precedential foundation for the premise is scarcely surprising. For, if the staff's view were accepted, it would necessarily follow that, in circumstances where the particular case had not been "separated for discrete proceedings," no order that fell short of disposing of all remaining issues in the entire case could ever be deemed appealable. We are satisfied that *Davis-Besse* did not contemplate such a result.

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

²¹ Even without the advantage of the discussion in footnote 12 in ALAB-892, the sensible course would have been the filing of a timely, precautionary notice of appeal. But any uncertainty on that score should have evaporated once the Coalition learned from that footnote that, although not there ruling on the matter, we thought it at least possible that an appeal from the May 12 order was the available mechanism for challenging the interpretation below of the cooling systems contention. Needless to say, the precautionary notice could have been accompanied by a statement of the Coalition's reasons why it thought an appeal to be premature.

the position that the May 12 order was not the proper vehicle for triggering its appellate claim that the cooling systems contention had been misconstrued. We are aware of no litmus paper test for determining what constitutes a "major segment" of a particular case and reasonable minds might well differ on that score with respect to the content of the May 12 order. Moreover, only a few days elapsed between May 27 (the deadline for filing a notice of appeal) and June 1 (the date upon which the notice was in fact submitted). Thus, the tardiness of the notice should have little, if any, effect upon the timing of the disposition of the appeal.²²

The June 1, 1988 motion of the New England Coalition on Nuclear Pollution is *granted* insofar as it seeks leave to file out of time a notice of appeal from the Licensing Board's May 12, 1988 Memorandum and Order.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

²² In an unpublished June 6, 1988 order, we denied the Coalition's motion to defer the briefing of its appeal to await our action on the June 1 motion. Given that denial, we will expect the Coalition to file its brief within 30 days of the date of the notice of appeal (as required by 10 C.F.R. 2.762(b)).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF ENFORCEMENT

James Lieberman, Director

In the Matter of

Docket Nos. 50-528
50-529
50-530

ARIZONA PUBLIC SERVICE
COMPANY, *et al.*
(Palo Verde Nuclear Generating
Station, Units 1, 2, and 3)

June 15, 1988

The Director of the Office of Enforcement denies a petition filed by Mr. Myron L. Scott, Ms. Lyn McKay, and Ms. Barbara Bush, on behalf of the Coalition for Responsible Energy Education, concerning their allegation that Arizona Public Service Company had knowingly violated the provisions of 10 C.F.R. § 50.7 by requiring certain employees to submit to polygraph testing.

VIOLATIONS OF 10 C.F.R. § 50.7 BY LICENSEES

Section 50.7 prohibits an employer subject to the regulation from discharging or taking other adverse employment actions against an employee in retaliation for the employee having engaged in protected activities. The protected activities include, but are not limited to, providing information to the NRC regarding violations, requesting the NRC to institute action, or testifying in an NRC proceeding.

PROTECTED ACTIVITIES UNDER 10 C.F.R. § 50.7

There was no violation of § 50.7 with respect to a claim by an employee that he was being unjustly polygraphed for earlier going to the NRC. The record revealed that the employee had not been singled out to be polygraphed since

he was a member of one of the two main groups targeted by the Licensees as having access to security information which the Licensees had reason to believe had been improperly conveyed to the press.

There was also no violation of § 50.7 with respect to other employees who were polygraphed where none were identified as having engaged in protected activities.

CHILLING EFFECT

No chilling effect to employees from polygraph testing was identified when employees had come forward with safety concerns at about the same rate both before and after the polygraph testing. Moreover, the Licensees had taken steps to prevent any chilling effect by notifying employees that the company was only conducting these tests because of security concerns and that it was not attempting to discourage them from communicating with the press.

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

I. INTRODUCTION

By Petition dated July 16, 1986, Mr. Myron L. Scott, Ms. Lyn McKay, and Ms. Barbara S. Bush, on behalf of the Coalition for Responsible Energy Education (CREE or Petitioner), filed a request pursuant to 10 C.F.R. § 2.206 with the Director, Office of Inspection and Enforcement. The Petition was subsequently referred to the Office of Enforcement for response. The Petition alleges that Arizona Public Service Company, *et al.* (APS or Licensees), have knowingly violated the provisions of 10 C.F.R. § 50.7 by requiring certain employees to submit to polygraph testing as a means of discouraging employees from reporting unsafe conditions at the Palo Verde Nuclear Generating Station (PVNGS or Palo Verde). In support of its claim, CREE cites the experience of an individual (Mr. Blaine Thompson) who, it contends, was intimidated and harassed by the Licensees by being required to undergo polygraph testing in retaliation for allegedly reporting certain security problems to the NRC.

As sanctions against Licensees for these alleged violations, CREE requests that the Commission: (1) impose a stringent civil penalty; (2) require the posting of notices to employees advising them of protection afforded under § 50.7 and the Energy Reorganization Act; (3) require the posting of notices of public apology by Licensees for the alleged violations of § 50.7 and the Energy Reorganization Act; and (4) deny or revoke all Palo Verde licenses.

By letter dated August 28, 1986, the Director, Office of Inspection and Enforcement, advised CREE that the Petition was under consideration. Notice of receipt of the Petition was published in the *Federal Register* on September 5, 1986 (51 Fed. Reg. 31,857). The Director further advised CREE, regarding its request for the posting of notices advising employees of protection afforded for whistleblowing activities, that the Licensees are already currently required under § 50.7 to post such notice.

By letter dated November 24, 1986, the Director, Office of Inspection and Enforcement, advised CREE that a decision on its Petition would be delayed pending the outcome of the Department of Labor (DOL) proceeding regarding Mr. Blaine Thompson and to enable the Director to review the evidence, findings of fact, and conclusions of law presented in that proceeding.¹ In an Order Approving Settlement, dated September 17, 1987, the Secretary of Labor approved a settlement agreement entered into by Blaine Thompson, Licensees, and CREE regarding Mr. Thompson's discrimination complaint.

For the reasons set forth below, CREE's requests for imposition of a stringent civil penalty, posting of a public apology by Licensees, and denial or revocation of all Palo Verde licenses are denied. To the extent that CREE requests that Licensees be made to post, pursuant to 10 C.F.R. § 50.7(e), notices to employees asserting the protection afforded under § 50.7 and the Energy Reorganization Act, its request is granted.

II. DISCUSSION

A brief discussion of the factual setting that led to the Petition is appropriate. On about February 11, 1986, the NRC commenced an unannounced inspection of the Licensees' security program at Palo Verde. On February 14, 1986, after completion of the inspection, the NRC conducted an Exit Meeting to discuss preliminary results of the inspection. On February 19, 1986, supervisors in the Licensees' security department were debriefed by Licensees' management regarding the NRC February 14, 1986 Exit Meeting.

On February 25, 1986, Mr. John Staggs of the *Arizona Republic* telephoned Licensees and the NRC regarding the February 1986 NRC security inspection at Palo Verde and questioned them concerning statements made at the Exit Meeting which apparently he had learned about from a confidential source. On

¹ In a memorandum of understanding, the NRC and the Department of Labor have agreed to coordinate and cooperate concerning the employee protection provisions of § 210 of the Energy Reorganization Act of 1974. Generally, when a complaint has been filed with the Department of Labor alleging discrimination by an NRC licensee, the NRC defers its consideration of the matter until the Department of Labor has acted. This policy avoids duplication of effort and the needless expense of resources by deferring NRC actions until the Department of Labor has fully considered the issues. *General Electric Co. (Wilmington, North Carolina Facility)*, DD-86-11, 24 NRC 325, 331-32 (1986).

February 26, 1986, an article reporting on the NRC assessment of security at Palo Verde appeared in the *Arizona Republic*. Although the possibility existed that Mr. Staggs had been given safeguards information, the newspaper article itself did not divulge any safeguards information. On February 27, 1986, through March 4, 1986, Licensees conducted polygraph examination of thirty designated individuals for the announced purpose of investigating the alleged security leak. These individuals either attended the NRC Exit Meeting or received information of the meeting from their supervisors. The examinations did not establish that any of them were responsible for providing information to Mr. Staggs.

One of Licensees' employees who was scheduled for the polygraph examination, but did not take it because of alleged health reasons, was Blaine Thompson, a captain of security at PVNGS. Allegedly for this same health problem, Licensees subsequently transferred Mr. Thompson away from PVNGS. Mr. Thompson, who had complained to the NRC about another matter in December 1985, alleged that the earlier whistleblowing incident was the reason for the Licensees' pressuring him to submit to the polygraph examination. Another PVNGS security officer, Mike Deblo, who was Mr. Thompson's immediate supervisor, was demoted and transferred to another position after taking the polygraph examination.

CREE asserts, as the basis for its requests, that Licensees violated § 50.7 when it required selected Palo Verde workers to take polygraph examinations to identify the source of information to the local media. In support of this assertion, Petitioner claims that: (1) Licensees violated § 50.7 by implementing polygraph testing of plant employees as a means of retaliation for nonprohibited disclosure of negative information to the news media; (2) Licensees also implemented the polygraph testing as a means of intimidating potential whistleblowers; (3) Licensees used the polygraph testing as a means of retaliation against Blaine Thompson for having contacted the NRC in December 1985; and (4) Licensees, by their actions against Mike Deblo, violated § 50.7. Petitioner also contends that, as a result of the polygraph testing, a chilling effect on disclosures by workers has occurred at PVNGS which only the strongest possible sanctions can remove.

A. Polygraph Testing as a Policy Matter

At the outset it should be emphasized that no position is taken in this Decision regarding the appropriateness of polygraph testing in general. Such a finding is not required here since the issues raised by CREE are limited to whether the Licensees improperly used the polygraph testing conducted in February–March 1986 as a means to retaliate against Blaine Thompson and other employees who might have gone to the news media, and whether Licensees' use of polygraph

examinations has had the effect of discouraging workers' disclosures of safety problems such that a substantial public health and safety concern exists.

B. Violation of 10 C.F.R. § 50.7 by Licensees

Section 50.7 prohibits an employer subject to the regulation from discharging or taking other adverse employment actions against an employee in retaliation for the employee having engaged in protected activities. The protected activities include, but are not limited to, providing information to the NRC regarding violations, requesting the NRC to institute action, or testifying in an NRC proceeding. See 10 C.F.R. § 50.7(a). In addition, both the NRC and DOL consider the making of internal reports of safety problems to one's employer as a protected activity. *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), DD-85-9, 21 NRC 1759, 1766 (1985); *Smith v. NORCO*, 85-ERA-17, slip op. at 3 (Oct. 2, 1987). The alleged discriminations against Blaine Thompson, Mike Deblo, and the unknown employee(s) who may have disclosed information to the news media are discussed separately.

1. The Alleged Adverse Action Against Blaine Thompson

Petitioner alleges that Licensees used the February–March 1986 polygraph examinations to retaliate against Blaine Thompson for his December 1985 contact with the NRC. Mr. Thompson also made the same allegation to the Department of Labor (DOL) on March 25, 1986.² DOL investigated this allegation and found that Mr. Thompson had engaged in protected activity by contacting the NRC, but that the Licensees had not discriminated against him, or tried to retaliate, for his engaging in this protected activity.³

It is Licensees' position that the decision to conduct polygraph examinations was made on the evening of February 25, 1986, after having earlier received a phone call from John Staggs of the *Arizona Republic* during which Mr. Staggs referred to security deficiencies at Palo Verde which Licensees allege indicated an unauthorized disclosure of security information.⁴ Licensees further contend

² See Letter to Mr. Blaine Thompson from Edward D. Duncan, Director of Enforcement, DOL Wage Hour Division, Phoenix, Arizona, dated April 24, 1986.

³ See April 24, 1986 Letter from Edward D. Duncan, Director of Enforcement, Department of Labor, to Blaine Thompson. Mr. Thompson appealed that decision and subsequently settled his complaint in a settlement agreement approved by the Secretary of Labor on September 17, 1987. See *Thompson v. Arizona Public Service Co.*, 86-ERA-27, Order Approving Settlement, dated September 17, 1987. CREE had become a party to this proceeding as an intervenor.

⁴ See Letter from William R. Hayden, counsel for Licensees, to James S. Green, U.S. Department of Labor, Phoenix, Arizona, dated April 17, 1986. The letter from Mr. Hayden is a "statement of position" submitted on behalf of Licensees in response to Blaine Thompson's § 210 complaint to the Department of Labor.

that the NRC requested that APS investigate this possible unauthorized leak of security information which could have been a violation of NRC regulations.

CREE, on the other hand, claims that security information prohibited from disclosure by NRC regulations was never divulged to Mr. Staggs since it was not included in the February 26, 1986 *Arizona Republic* article. Thus, according to CREE, the Licensees' stated rationale for the polygraph tests was merely a pretext to harass Mr. Thompson and to discourage other Palo Verde employees from going to the press and the NRC.

Contrary to CREE's contentions, a review of the Petition and its exhibits, the materials compiled by the DOL in its investigation, the DOL Enforcement Director's decision,⁵ and the discovery documents in the Blaine Thompson DOL hearing (hereinafter referred to as the record), does not support the contention that the polygraph examinations were retaliatory toward Blaine Thompson.⁶ Although it is true that there was no safeguards information divulged in the news article that appeared in the *Arizona Republic*, the record establishes that what prompted the Licensees' investigation was a possible security leak at PVNGS suggested by statements in the newspaper article and the telephone calls made by Mr. Staggs to the Licensees and the NRC. The investigation was encouraged by the NRC which had expressed concerns about this matter and had requested that an investigation be initiated by the Licensees. The record also reveals that Mr. Thompson was not singled out to be polygraphed since he was a member of one of the two main groups of employees targeted by Licensees as having had access to the information that Licensees believed had been improperly conveyed to Mr. Staggs. The first group consisted of fourteen employees who attended the February 14, 1986 NRC Exit Meeting which was the subject of Mr. Staggs' newspaper article. The second group was composed of eleven employees, which included Mr. Thompson, who had attended a briefing on February 19, 1986, concerning the Exit Meeting. In total, Licensees scheduled polygraph examinations for thirty-one individuals, twenty-two from those that had attended the two meetings (twenty-five less three overlap employees who attended both meetings) and nine additional employees whom the Licensees determined had access to the information in question. All of these employees, except Mr. Thompson, had polygraph examinations.

Under these circumstances, there is no adequate basis for concluding that Licensees manipulated the scope of their investigation so as to draw in Blaine Thompson in retaliation for his having contacted the NRC in December 1985.

⁵ The DOL Enforcement Director's decision, finding that there was no discrimination against Mr. Thompson, is not binding on the NRC. However, the determinations in that decision are facts considered by us.

⁶ In his DOL complaint, Mr. Thompson alleged various other discriminatory actions by Licensees in addition to the polygraph examination. We are not called on to judge these other incidents since CREE has limited its allegations regarding Mr. Thompson to the polygraph incident. However, our assessment of the record with respect to these other allegations is not contradicted by the DOL Enforcement Director's finding of no discrimination.

Therefore, I have concluded that Licensees' actions in administering the polygraph examinations did not discriminate against Blaine Thompson in violation of § 50.7.

2. The Alleged Adverse Action Against Other Employees

Turning now to the issue of the unnamed individual(s) whom CREE alleges was discriminated against by Licensees' initiating polygraph testing in retaliation for that individual(s) going to the news media, a question quite different than that in the Blaine Thompson issue is presented. CREE lays the foundation for the proposition that communicating with the news media is a protected activity. Assuming that this argument is sound, the question of whether any employee actually engaged in protected activities must be answered.⁷ However, unlike the Thompson discrimination issue, here CREE has not named any individuals who engaged in the protected activity of communicating with the news media, and the record fails to identify such individuals.⁸

As stated, § 50.7 prohibits an employer subject to the regulation from discharging or taking other adverse employment action against an employee in retaliation for the employee having engaged in protected activities. By its terms, before a violation of § 50.7 can occur, an employee must engage in a protected activity.⁹ However, this essential element of proof is missing in this case since there is not identified a specific PVNGS employee engaged in protected activities by contacting the news media. Thus, CREE's allegation of a violation of § 50.7 must be denied. Moreover, as discussed above, the record reflects that the purpose for the examination was to investigate the suspected security leak.¹⁰

CREE's request that I find a violation of § 50.7 for Licensees' actions regarding Mr. Mike Deblo also must be denied. Neither the petition nor the record indicates that Mr. Deblo actually engaged in protected activity. At most, the results of the lie detector test suggested that Mr. Deblo tested "deceptive" regarding his knowledge of who released security information. Although it is undisputed that Mr. Deblo, a member of management, was demoted and later resigned, without more, I cannot conclude that he was discriminated against for

⁷ Even assuming for argument that under appropriate circumstances providing information to the media is a protected activity, it is clear that disclosing safeguard information to the media is prohibited and, therefore, cannot be a protected activity.

⁸ Whether Blaine Thompson contacted the news media and whether he revealed information prohibited from disclosure by regulation remain unanswered questions. Of the thirty-one employees targeted by Licensees for polygraph examinations in their investigation, all but Mr. Thompson were examined. Of the thirty examined, only Mike Deblo tested "deceptive" to questions regarding his knowledge of who had released security information to unauthorized sources. See Hayden Letter at 8-9.

⁹ Whether or not a violation would exist if a licensee discriminated against an employee for erroneously believing the employee engaged in protected activity need not be resolved here.

¹⁰ Under these circumstances, I need not reach the question of whether communicating with the news media is a protected activity.

engaging in protected activity. It is also noted that Mr. Deblo did not file a complaint of discrimination with the NRC or the Department of Labor.

C. The Alleged Chilling Effect at Palo Verde

CREE asserts that Licensees' polygraph examinations during the security-leak investigation had a chilling effect which discouraged the reporting of safety concerns by workers at the facility. In support of this assertion, CREE cites several instances where Licensees' employees claimed that they felt inhibited.

While the Staff has no reason to question that some Licensee employees may have approached CREE with concerns regarding retaliation, the Staff does not have evidence that employees were inhibited from reporting safety concerns at Palo Verde. On the contrary, it is our assessment that Licensees' employees have come forward with safety concerns at about the same rate both before and after the polygraph testing.¹¹ Moreover, NRC personnel, who were aware of these matters and who had access to information from Palo Verde workers, did not believe that any chilling effect had taken place at the plant or that workers were less likely to communicate with them as a result of the polygraph exams.

In regard to this issue, it is also significant that the Licensees, themselves, took steps to prevent any chilling effect by notifying all employees in a notice of March 24, 1986, that the company was not attempting to discourage employees from communicating about Palo Verde matters with the press. Licensees also advised employees in that notice that the company has

never, nor will we ever, utilize polygraph tests or any other means to determine the identity of employees who may have talked to the press, or any other person, regarding any company matter, with the exception of matters involving the possible unauthorized disclosure of classified security information which could threaten the security of safe operation of Palo Verde.

In my view, the March 24 notice, in itself, would have done much to dispel any possible chilling effect at PVNGS caused by the polygraph examinations.

D. The Posting of Notices

With respect to CREE's request for posting of notice to employees concerning protection afforded under § 50.7 and the Energy Reorganization Act, the NRC Staff agrees with CREE. Under the terms of 10 C.F.R. § 50.7(e), Licensees are required to post Form NRC-3, "Notice of Employees" on its premises at

¹¹ For the 1 year prior to the testing, there were twenty-five safety concerns reported to the NRC as opposed to twenty-one concerns reported in the year after testing.

locations sufficient to permit employees protected by § 50.7 to observe a copy on the way to or from their place of work. Thus, to the extent that CREE requests that I require Licensees to comply with the posting requirements of § 50.7(e), its request is granted. Our inspections have found that this posting requirement is being met. Compliance with the requirement will continue to be examined, as it is for all applicable licensees, during routine inspections.

To the extent that CREE requests that I "reassert" the protection afforded by § 50.7 and the Energy Reorganization Act, its request is denied. CREE has not presented facts that suggest Licensees were not in compliance with the posting requirements of § 50.7(e), nor has CREE presented facts that suggest that NRC Form-3 is deficient in its intended purposes of advising employees regarding protection from discrimination. In addition to specifying the action requested, a petitioner under § 2.206 is required to set forth facts that constitute the basis for the request. 10 C.F.R. § 2.206(a); *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), DD-81-1, 13 NRC 45, 46 (1981).

III. CONCLUSION

My Decision has considered CREE's contention that Licensees' use of polygraph examinations at Palo Verde in February–March 1986 violated § 50.7 in that it was a means of discrimination against certain employees for having engaged in protected activities and that it discouraged other employees at Palo Verde from reporting safety concerns. Based on Staff's review of the available record in this matter, I have decided that the discrimination alleged by CREE did not occur and that it is not necessary to cure any chilling effect at Palo Verde.

For the reasons stated in this Decision, CREE's requests, except for the request that the Licensees post notices pursuant to § 50.7(e), are denied. As provided in § 2.206(c), a copy of this Decision will be filed with the Secretary for the Commission's review.

James Lieberman, Director
Office of Enforcement

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Dr. Thomas E. Murley, Director

In the Matter of

Docket No. 50-498-OL

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

June 17, 1988

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by Earth First! and others requesting a delay in the Commission's meeting to consider full-power licensing for South Texas Project (STP), Unit 1, because of alleged deficiencies in the NRC's review of allegations relative to STP received through the Government Accountability Project. The Petitioners requested that the Commission meeting be delayed until there had been a complete investigation of all allegations regarding STP and a report disposing of each allegation had been released to the public.

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

INTRODUCTION

On March 17, 1988, Earth First!, Gray Panthers of Austin, Lone Star Green, Public Citizen, South Texas Cancellation Campaign, and Travis County Democratic Women's Committee (the Petitioners) filed a petition pursuant to 10 C.F.R. § 2.206 requesting a delay in the Commission's vote on a full-power operating license for the South Texas Project (STP), Unit 1, because of alleged deficiencies in NRC's review of allegations relative to STP that had previously been provided to NRC by the Government Accountability Project (GAP). The Petitioners requested that the Commission vote be delayed until there had been a complete investigation of all allegations regarding STP and until a report

disposing of each allegation had been released to the public.¹ The petition was referred to the Staff on April 20, 1988.

The deficiencies alleged by the Petitioners in their petition are related to the efforts of the NRC Safety Significance Assessment Team (SSAT) constituted in November 1987 to determine the licensing impact of all STP allegations that GAP made available to NRC. In the March 17 submittal, the Petitioners assert the following as bases for their petition:

- (1) Many allegations are not yet resolved and are to be the subject of future reports or future corrective action (*see* 5.1.4.4, 5.1.6.3, 5.3.2.2(4), 5.3.2.3, 5.4.2.2, 5.6.1.4 and 5.6.4.3, and Part 4, SSAT Report).
- (2) Approximately 240 allegations were classified by the SSAT as harassment/intimidation or wrongdoing and referred by the SSAT to NRC's Office of Investigation (OI) for review. Until OI completes its investigation of the 240 allegations, the basis for the SSAT report is suspect, and no decision on the safety of the plant can be made.
- (3) The SSAT investigation of several allegations relied on a mere sampling of items.
- (4) Some items, such as the essential cooling water system (5.1.6), are expressly left unresolved by the SSAT Report.
- (5) The attitude of the SSAT is deficient because it requires the public to prove that the plant is unsafe as opposed to requiring the licensee to prove that the plant is safe.

In considering a request under 10 C.F.R. § 2.206 or, for that matter, any allegation of substandard workmanship or improper practices involving a nuclear power reactor, the NRC Staff is mindful of the Commission's overriding regulatory responsibilities to ensure adequate protection of the public health and safety in the use of radioactive material and the operation of nuclear power facilities. (*See Power Reactor Development Co. v. Int'l Union of Electrical, Radio, and Machine Workers*, 367 U.S. 396, 406 (1961).) Consistent with these responsibilities, a reactor operating license will be issued by the Commission only if it can be found that there is reasonable assurance that power operation presents no undue risk to the health and safety of the public (*see* 10 C.F.R. § 50.57). When assessing the significance of allegations, the Staff makes an initial determination whether an allegation, if true, is relevant to the safe operation of the facility. Allegations deemed not relevant to safe operation of the facility, and allegations determined to be frivolous, or too vague or general in nature to provide sufficient information for the Staff to investigate, may not receive further consideration. Nevertheless, at STP, the SSAT, in fact, did

¹ While the petition did not arrive in time to enable the NRC Staff to prepare a full response prior to the Commission's scheduled vote on full power, the Commission had been fully briefed on the results of the SSAT review at the time of the March 21, 1988 meeting, at which it unanimously authorized issuance of a full-power license. Prior to the Commission's action, the Staff had published NUREG-1306 which addressed all safety issues raised in the allegations made with respect to STP.

review many allegations that would normally have been considered too vague or general, in order to confirm that the types of deficiencies alleged either did not exist or would not undermine safety.

The results of the SSAT's examination of the allegations received through GAP are contained in NUREG-1306, "NRC Safety Significance Assessment Team Report on Allegations Related to the South Texas Project, Units 1 and 2," March 1988. On the basis of this review, the results of previous inspections, and evaluations that have been documented previously in Safety Evaluation Reports, the Staff has determined that the STP Unit 1 has been built in conformance with applicable regulatory requirements and that the systems in the facility would, if called upon, perform their intended safety function. Thus, for the reasons in this Decision, we find no basis to support the Petitioners' request. Accordingly, the petition is denied.

DISCUSSION

The SSAT, formed in November 1987, reviewed each allegation provided to it by GAP to determine whether further examination of the allegation was appropriate or necessary based on whether it duplicated another allegation or lacked the requisite specificity or safety significance. After several weeks of preparatory efforts, including direct telephone contact with allegers, the SSAT conducted a site inspection during the week of January 18, 1988. On the basis of the information from the inspection, the SSAT evaluated all allegations that appeared to be technically oriented and were considered to have potential safety significance. The results of the SSAT review are documented in NUREG-1306, a copy of which has been enclosed herewith (not published in this issuance). Since the SSAT's conclusions are fully explained in NUREG-1306, a detailed examination of each allegation is not warranted here. The following discussion summarizes some of the issues addressed in NUREG-1306 and provides a response to the matters raised in the petition.

1. Allegation That Many Issues Are Not Yet Resolved

The petition asserts that many GAP allegations are not yet resolved and are to be the subject of future reports or future corrective action. Eight specific sections of NUREG-1306 are cited as examples.

a. Section 5.1.4.4

Section 5.1.4 of NUREG-1306 deals with the allegation that steam generator (SG) 1-D was installed out of plumb so that the steam outlet nozzle is 11 to

13 inches from its required position. This would require piping and support modifications that could affect the original load and stress analysis for those components. The SSAT determined that this allegation was substantiated to the extent that SG 1-D was out of plumb, but that the condition was analyzed and evaluated to be acceptable. The SSAT and NRC technical staff reviewed the site documentation that discussed the analysis and based the conclusions stated in § 5.1.4.3, that the concerns have been satisfactorily resolved, on that analysis. The allegation has been resolved, and future corrective action is not contemplated.

In § 5.1.4.4 of the report, the SSAT imposes the requirement that HL&P must submit a formal report on steam generator verticality prior to ascension from 5% power. This is a requirement that HL&P formally document the analysis that it used to show that the steam generators were acceptable as installed. The final statement in § 5.1.4.4 is a caveat that if the documented analysis differs in any way from the analysis that was reviewed by the Staff, the NRC Staff would review any changes and issue another Safety Evaluation Report, as appropriate.

b. Section 5.1.6.3

Section 5.1.6 of NUREG-1306 deals with the allegation that the design of the essential cooling water system (ECW) is inadequate because the aluminum-bronze piping in the ECW does not have adequate wall thickness to compensate for metal loss due to microbiologically induced corrosion (MIC) over the life of the plant. The SSAT determined that this allegation was not substantiated.

In § 5.1.6.3 of the report, the Staff concludes that MIC would not be a problem in the aluminum-bronze ECW piping at STP. The Staff position is based on its findings that the measures taken to inhibit bacteriological fouling are adequate and that HL&P has adequate procedures and inspection capability to ensure early detection of MIC which would allow corrective actions to be implemented before significant damage is done. As stated in § 5.1.6.3, the NRC Staff is continuing to evaluate the resistance of aluminum-bronze piping to MIC, as part of its ongoing generic study of MIC. There is some evidence that this piping is less susceptible to MIC than carbon steel or stainless steel piping. If it can be shown that aluminum-bronze piping in fact is less susceptible to MIC than carbon steel or stainless steel piping, the Staff conclusion that MIC in the ECW piping at STP will not be a problem will be reinforced. However, the Staff conclusions as stated in NUREG-1306 are not contingent upon, and would not be changed by, such a finding.

c. Sections 5.3.2.2(4) and 5.3.2.3

The second paragraph of § 5.3.2.2(4) and the last paragraph of § 5.3.2.3 of the report address the flammability of TREMCO 440A gasket material, which is used in ductwork at STP. While evaluating the Heating, Ventilation, and Air-Conditioning (HVAC) systems on site, the SSAT was informed by other technical staff that the use of TREMCO 440A had been identified as a problem at Comanche Peak. While the flammability of TREMCO 440A was not the subject of an allegation, the SSAT included it as a generic issue in the report because the material is used extensively at STP. Before the issuance of NUREG-1306, the NRC Staff conducted an inspection of TREMCO 440A material at STP and concluded that its use is acceptable because the design of the HVAC systems at STP does not rely on the material to prevent the spread of fires, and because TREMCO 440A does not represent a significant increase in the total combustible loading in areas where it is used. This conclusion is detailed in Inspection Report 88-02, which is available in the Public Document Room. The SSAT considers this issue to be resolved.

d. Section 5.4.2.2

Section 5.4.2 of NUREG-1306 deals with the allegation that threaded fasteners manufactured outside the United States and not conforming to applicable ASTM and ASME requirements were provided by two companies for use at STP. The concern is that nonconforming fasteners would not meet the design requirements for STP.

In § 5.4.2.3, the SSAT concludes that all questionable fasteners at STP were identified, and corrective actions were taken. Thus, the allegation raised has been resolved by the SSAT. As discussed in the last paragraph of § 5.4.2.2, HL&P is conducting a fastener testing program in response to generic concerns identified in NRC Bulletin 87-02. This is a parallel effort to the SSAT inspection, and the completion of one is not dependent on the other. The results of the testing program will be evaluated by the NRC as they become available.

e. Section 5.6.1.4

Section 5.6.1 of NUREG-1306 deals with the allegations that Raychem electrical cable splices were improperly installed and improperly inspected by Quality Control personnel, and that incorrect hardware was used to install the splices. The SSAT determined that this allegation was substantiated, but that adequate corrective actions had been taken. The SSAT considers the Raychem splice allegation to be resolved. During its review of the Raychem splice allegation, however, the SSAT determined that there were problems with the

computer data base that had been used. During an inspection subsequent to its January 1988 effort, the SSAT determined that the data base problem was unique to the Raychem splice corrective action program, and that the Licensee had taken the necessary steps to eliminate the problem. However, to preclude any potential future similar problems with potential corrective actions on both Units 1 and 2, the SSAT required HL&P to revise its corrective action procedures to include specific verification and reconciliation steps. This is a generic requirement not associated with any specific allegation. The requirement is discussed in § 5.6.1.4 of NUREG-1306. Raychem splices in Unit 2 will be reinspected prior to the licensing of Unit 2.

f. Section 5.6.4.3

Section 5.6.4 of NUREG-1306 deals with the allegation that flexible metallic conduit was bent to form a radius that was below the minimum bend radius (MBR) permitted. The concern was that the insulation on cables inside the conduits would crack due to the too-small radius and cause electrical malfunctions. There were seven issues of MBR violations that the allegor brought to the attention of the SAFETEAM, HL&P's onsite organization for investigation of safety concerns. The SSAT verified the acceptability of the SAFETEAM disposition of this issue. The SSAT determined that the allegation was substantiated to the extent that there had been some MBR violations. However, these violations were documented by HL&P's SAFETEAM, and the SSAT determined that all safety-related components identified as having an unacceptable MBR were re-worked to provide an acceptable MBR. Some nonsafety-related components are scheduled to have their MBR problems corrected at a later date.

g. Section 4

Section 4 of the report, also referenced by the Petitioners, contains a statement of the actions required of HL&P as a result of the SSAT review. The details of these required actions are presented in § 5 of NUREG-1306. The required action involves the revision of HL&P's corrective action procedures to correct deficiencies discovered during the Raychem splice inspection (*see* § 5.6.1.4 of the Report, discussed above in § 1.e), and steam generator reliability (*see* § 5.1.4.4 of the Report, discussed above in § 1.a).

2. Allegation Regarding Harassment/Intimidation and Wrongdoing

The Petitioners assert that the use of SAFETEAM reports by the SSAT is not proper because SAFETEAM is not required to comply with 10 C.F.R. Part

50, Appendix B. The SSAT reviewed SAFETEM records to determine if there were any SAFETEM investigations that paralleled the SSAT inspection activities. Where such parallels existed, the SSAT audited SAFETEM activities to determine if the SSAT agreed with the results. SAFETEM reports were used to augment SSAT inspections, and no reports were used unless they were audited by the SSAT and their adequacy and accuracy were established. Within the above limitations, the use of existing SAFETEM reports is acceptable.

The Petitioners further assert that the investigation of allegations at STP cannot be completed until all allegations of harassment/intimidation and wrongdoing have been investigated, because the basis for the SSAT report is suspect.

The SSAT made a deliberate effort to separate the safety-significant aspects from all harassment/intimidation and wrongdoing allegations. The safety-significant aspects of those allegations were then included within the allegations assessed for licensing impact. Accordingly, the SSAT's conclusions concerning the safety of the plant are based on an assessment of the safety significant aspects of the harassment/intimidation and wrongdoing allegations.

The Petitioners also assert that the NRC cannot know if HL&P has the corporate character and competence to be a license holder until all harassment/intimidation and wrongdoing allegations have been investigated. During its review of allegations pertaining to STP, the SSAT did not observe any trends or patterns that would be indicative of a management breakdown in ensuring the quality of STP installations. The SSAT observations are reinforced by the overall licensing and inspection programs performed by NRC Staff over several years. In addition, the allegations of harassment/intimidation and wrongdoing are, to a large extent, vague in nature and as yet are not substantiated. Efforts to date by OI to contact alleged through GAP in order to pursue their concerns have not been successful. Based on the information summarized above, the NRC Staff has reasonable assurance that HL&P had the requisite corporate character and competence to be a license holder, and has concluded that STP can be operated with no undue risk to public health and safety.

3. Allegation That SSAT Investigation Relied on Sampling

The Petitioners assert that the SSAT investigation of several allegations relied on a sampling of items, and that public safety demands a thorough inspection. The Petitioners cite allegations involving valve installation, valve maintenance and reassembly, weld rod and electrical cable separation as examples. These allegations are covered in §§ 5.2.1, 5.2.2, 5.5.1, and 5.6.6 of NUREG-1306, respectively.

All the above allegations provided to the SSAT by GAP had a common shortcoming; i.e., the allegeders were unable to provide specifics with respect to location of the alleged unacceptable conditions. Absent any specifics, the SSAT

conducted a generic review of the allegations. The SSAT selected systems and components, inspecting them for any indications of the deficiencies alleged. In each case, the SSAT was unable to find any of the alleged deficiencies. The absence of any findings, when viewed in light of the number of items inspected, provided an acceptable basis for concluding that there were no pervasive deficiencies within the systems/components inspected.

With respect to the allegation regarding weld rods, the SSAT pursued the issue well beyond the original allegation, which involved allegedly faulty Type E6013 weld rods. The SSAT determined early on that E6013 weld rods were not used at STP. This information notwithstanding, the SSAT expanded the scope of its inspection to determine if the alleger might have been mistaken regarding the type of weld rod in question. The expanded inspection found no faulty weld rods, so that the SSAT considered the issue satisfactorily resolved. (See § 5.5.1 of NUREG-1306 for a full discussion of this issue.)

The absence of any negative finding in the samples inspected by the SSAT, in conjunction with the extra effort they expended in pursuing allegations, provides adequate assurance that there are no programmatic deficiencies within the systems/components at STP.

4. Allegation That the Essential Cooling Water System Issue Was Left Unresolved

The Petitioners assert that the SSAT did not address the issue of the thickness of the essential cooling water (ECW) aluminum-bronze piping and the alleged reduction in piping wall thickness due to corrosion that had occurred prior to STP Unit 1 operation. In fact, the SSAT determined that the allegation was not substantiated.

The SSAT has determined that the ECW aluminum-bronze piping was adequately inspected prior to operation to determine what, if any, degradation had occurred as a consequence of MIC. By physical inspection, the SSAT determined that there was no degradation of piping wall prior to system operation; consequently, they find no reason for concern over a loss of pipe structural integrity because of reduced pipe wall thickness. The SSAT considers the ECW piping issue closed. The SSAT findings are detailed in § 5.1.6 of NUREG-1306. (See also the discussion in § 1.b, above.)

5. Allegation That the SSAT Attitude Is Deficient

The Petitioners assert that NRC requires the public to prove that the plant is unsafe rather than requiring the applicant to prove the plant is safe. The

Petitioners cite the SSAT conclusion at p. 3-11 of NUREG-1306 as the basis for their position.

Section 3 of the report contains an overview of the SSAT's activities associated with reviewing all allegations provided by GAP to NRC. In § 3.2, the report notes that the SSAT spent in excess of 3300 staff and contractor hours reviewing these allegations. In addition to the SSAT effort, Region IV inspection activities at STP involved in excess of 29,000 hours. With both the SSAT and Region IV inspection efforts, HL&P was required to provide support for these inspections that at least equaled, and often exceeded, NRC's efforts. The collective NRC inspection efforts, and the associated HL&P support, were all for the purpose of determining whether STP was constructed in accordance with applicable requirements and could be operated without undue risk to public health and safety. HL&P is responsible for providing adequate evidence of proper plant construction, and the NRC Staff is responsible for evaluating the evidence and drawing conclusions relative to safety based on that evidence. The fact that the NRC Staff, after extensive expenditure of effort, was unable to substantiate the vast majority of allegations pertaining to safety is indicative that the Licensee's programs and capabilities are functioning in a manner that assures that the plant is safely built.

CONCLUSION

On the basis of the review by the SSAT, the results of which are contained in NUREG-1306, and as described in this Decision, I find no basis to support the Petitioners' request and do not recommend any action with respect to the full-power license for STP Unit 1. Accordingly, the Petitioners' request is denied. A copy of the Decision will be filed with the Secretary for the Commission's review in accordance with 10 C.F.R. § 2.206(c).

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 17th day of June 1988.

[NUREG-1306 is not included with this opinion, but it has been published and is available to the public.]

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)

June 22, 1988

The Director of Nuclear Reactor Regulation denies a petition filed by the Ohio Citizens for Responsible Energy, Inc. (Petitioner), on January 22, 1988, pursuant to 10 C.F.R. § 2.206. The Petitioner alleged various inadequacies in the seismic design of the Perry Nuclear Power Plant of the Cleveland Electric Illuminating Company, *et al.* (Licensees). The Petitioner requested that the Nuclear Regulatory Commission (NRC) grant a variety of relief including suspension of the operating license for the Perry Unit 1 facility and suspension of the construction permit for the Perry Unit 2 facility. The Director denied the petition based on the evaluation by the NRC Staff that the seismic design of the Perry facility is adequate.

TECHNICAL ISSUE DISCUSSED: SAFE SHUTDOWN
EARTHQUAKE

A Safe Shutdown Earthquake (SSE) for the Perry facility of magnitude 5.3 ± 0.5 continues to be appropriate based upon the results of an NRC Staff review which included consideration of the January 31, 1986 earthquake near the Perry facility.

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

INTRODUCTION

On January 22, 1988, Ms. Susan L. Hiatt on behalf of Ohio Citizens for Responsible Energy, Inc. (Petitioner) filed with the Director of the Office of Nuclear Reactor Regulation of the Nuclear Regulatory Commission (NRC) a "Petition for Immediate Action to Relieve Undue Risk Posed by the Inadequate Seismic Design of the Perry Nuclear Power Plant" requesting a variety of relief including immediate suspension of the operating license (OL) for the Perry Nuclear Power Plant, Unit 1, and suspension of the construction permit (CP) for the Perry Nuclear Power Plant, Unit 2, of the Cleveland Electric Illuminating Company, *et al.*¹ (Licensees).

The Petitioner also requested that, before reinstating the OL for Perry Unit 1 and the CP for Perry Unit 2, the Licensees should be required to engage in appropriate geologic and geophysical research, including but not limited to confirmatory studies recommended by Petitioner, to determine the appropriate safe shutdown earthquake (SSE) for the PNPP.

Additionally, the Petitioner requested that the Licensees be required to evaluate whether applicable systems, structures, and components important to safety will remain functional throughout their design life and withstand the vibratory ground motion (and concurrent normal and accident loads) resulting from the earthquake that appropriate geologic and geophysical research reveals to be the proper SSE for the Perry facility. If any system, structure, or component were unable to withstand the appropriate SSE, corrective action should be taken and an adjudicatory hearing should be held to determine whether the corrective actions taken are sufficient. Should the corrective actions not be completed as specified, the Petitioner requested that the OL and CP for Perry Units 1 and 2, respectively, be revoked.

The Petition's allegations are based largely upon an analysis of data and evaluations that had been performed by other groups in response to the January 31, 1986 earthquake that occurred near the Perry facility. The analysis was performed for the Petitioner by Dr. Yash Aggarwal, and his affidavit and report (Aggarwal Report) are attached to the Petition.

The Aggarwal Report notes that, on January 31, 1986, an earthquake with a magnitude of 5.0 occurred with an epicenter about 10 miles south of the PNPP. Dr. Aggarwal concluded (a) that the January 1986 earthquake and historical seismicity can be associated with a tectonic structure (fault) revealed by magnetic

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.

data; (b) that this fault passes within a few miles of the PNPP and is capable of generating much larger earthquakes; (c) that an earthquake with a magnitude of 6.5 is a realistic probability for the purposes of determining the proper SSE for Perry; and (d) that the present magnitude of 5.3 ± 0.5 for the SSE does not provide an adequate margin of safety required for the PNPP. The Petitioner alleges for these reasons that the Licensees are in noncompliance with various regulations of the Commission, specifically, 10 C.F.R. Part 50, Appendix A, General Design Criterion 2, and 10 C.F.R. Part 100, Appendix A, §§ IV, V, and VI.

On March 2, 1988, I acknowledged receipt of the Petition and explained to the Petitioner my reasons for declining to take any immediate actions. I indicated that I would issue a final decision in this matter in the reasonably near future. My decision in this matter follows.

DISCUSSION

The basis for the Petition is the Aggarwal Report. In his report, Dr. Aggarwal asserts that an earthquake with a magnitude of 6.5 or larger is probable on a "feature" that, at its closest approach, is approximately 10 kilometers southeast of the Perry site. This feature is a "boundary" in the magnetic map of Ohio which separates a region of relatively high magnetic relief to the northwest from a region of relatively low magnetic relief to the southeast. Weston Geophysical Corporation identified this boundary as the "Akron Magnetic Boundary" (AMB) (Reference 1, Figure 4-2). Dr. Aggarwal concludes that correlations of magnetic data and "macroearthquakes" known to have occurred historically within 50 miles of the 1986 event strongly suggest that the AMB marks the locus of a preexisting fault or fault zone which must be considered capable of generating an earthquake much larger than the magnitude 5.0 earthquake of January 31, 1986. Dr. Aggarwal concludes that a magnitude 6.5 earthquake is a reasonable possibility for purposes of determining the safe shutdown earthquake for the Perry facility.

Dr. Aggarwal based his findings, to a large extent, on his analysis of recent studies performed by Weston Geophysical Corporation (Reference 1) on behalf of the Licensees, by the U.S. Geological Survey (Reference 2) on behalf of the U.S. Nuclear Regulatory Commission (NRC), and on testimony before the U.S. House of Representatives by Dr. L. Seeber (Reference 3).

Since the occurrence of the earthquake on January 31, 1986, in the vicinity of the Perry site, numerous investigations have taken place to study that earthquake, its aftershocks, and the possible causative structure. The concerns enumerated by Dr. Aggarwal, above, regarding the adequacy of the SSE for the Perry facility have been discussed extensively in supplements to the Perry Safety Evaluation

Report (SER) (Reference 4) prepared by the NRC Staff. The conclusions arrived at by the NRC Staff after reviewing all available pertinent information on the geological and geophysical characteristics of the northeastern region of Ohio were that no discernible geological structure had been identified that could be associated with the earthquake of January 31, 1986, that the earthquake by itself was not uncharacteristic of the general earthquake history of the tectonic province (Central Stable Region) in which the Perry Nuclear Power Plant is located, and that SSE for Perry of magnitude 5.3 ± 0.5 remained appropriate. The Staff still considers these conclusions to be valid.

Since the publication of the above supplements to the Perry SER, the Licensees have continued monitoring the seismic activity in the vicinity of the Perry site. Five quarterly reports have been reviewed by the NRC (References 5-9). The cumulative activity recorded by the seismic monitoring network (Reference 9, Figure 4) exhibits some microseismic activity in the corridor covered by the network. The epicentral locations of these very small tremors (with a magnitude range of -0.7 to 1.3) form a small cluster, parallel to and slightly offset from the AMB. The experience of the NRC Staff indicates that the occurrence of recorded earthquakes of this size are typical of many locations within the eastern United States. Further they are only detectable when a highly sensitive seismic network such as that employed by the Licensees is used. These events by themselves do not indicate potential for large and possibly damaging earthquakes.

The NRC has also received a Preliminary Report (Reference 10) that discusses the earthquake of July 13, 1987, at Ashtabula, Ohio, and its aftershock sequence. In addition to the discussions on the Ashtabula event of 1987, the Preliminary Report also mentions the earthquake of January 31, 1986, at Chardon, Ohio. The authors, including Dr. Seeber who originally provided testimony concerning the event (Reference 3), recognize, as Dr. Aggarwal did, the association of this event with the NNE-trending AMB and suggest that the association may indicate that the magnetic feature could be an expression of a reactivated fault of considerable length on which earthquakes much larger than the 1986 event could occur. However, it should be pointed out that the authors of this Preliminary Report themselves state that, because of the lack of any evidence of the extension of this postulated fault into the Paleozoic platform cover (upper 2 kilometers of rock strata), very large ruptures involving much of any postulated fault are unlikely. For reasons that are discussed below in response to Dr. Aggarwal's specific arguments, the Staff continues to be of the view that the existing seismic design at Perry is appropriate and in compliance with the requirements of 10 C.F.R. Part 100, Appendix A.

Dr. Aggarwal raises two arguments to support his view that the present SSE for the Perry facility is inadequate. First, Dr. Aggarwal argues that the main shock and aftershock focal mechanisms of the January 31, 1986 earthquake

indicate a fault approximately N30°E colinear with the AMB. While a general NNE trend of the main shock and aftershock focal mechanisms appears to be inferred, the uncertainty associated with Dr. Aggarwal's preferred orientation is larger than he indicates. For example, the most recent study of the 1986 earthquake (Reference 11) indicates that the northeast-trending plane of the main shock could vary from N22°E to N55°E depending upon the type of seismic wave analyzed. Dr. Aggarwal appears to be incorrect in his assertion that Herrmann and Nguyen (Reference 12) defined a possible source of the earthquake as being a N28°E westward-dipping fault (82°). Dr. Herrmann (Personal Communication, 1988) indicated that this possible source would be a N21°E eastward-dipping fault.

Dr. Aggarwal next argues that several of the earthquakes that occurred in recent history have a sufficient error band in their epicentral location that they also can be associated with the AMB and that this correlation implies the existence of a fault on which the occurrence of an earthquake much larger than the earthquake of January 31, 1986, must be considered a realistic possibility. The Staff disagrees with this assertion and bases its conclusion on this matter on the following observations:

1. The earthquake of January 31, 1986, itself is not uncharacteristic of the general earthquake history of the tectonic province, which includes the 1937 earthquake at Anna, Ohio; the 1982 earthquake at Sharpsburg, Kentucky; and many other earthquakes in the range of magnitude of 5.0 to 5.3.
2. The nature and depth of the geologic feature or features manifested by the AMB have not been determined. Throughout the eastern United States, there are many magnetic features and many earthquakes the size of the 1986 Ohio event. Some of these earthquakes are near anomalous magnetic features, and others are not. Magnetic boundaries indicate changes in rock properties. However, these changes in rock properties do not necessarily indicate faults or support that the indicated faults are active and capable of large ruptures.
3. Dr. Aggarwal is of the opinion that the macroseismicity criterion in Appendix A to 10 C.F.R. Part 100 can be used to identify the AMB as a capable fault. Past use of macroseismicity to identify capable faults has proven to be a difficult process. Macroseismicity has been considered to be a level of seismicity that implies significant, sustained, and coherent tectonic activity representative of a major deformational movement within the earth's crust (Reference 13). Aside from the well-located 1986 earthquake, Dr. Aggarwal has identified six other earthquakes, one with a magnitude of 4.7 and five in the magnitude range of 2.7 to 3.8, that have occurred since 1885 that, because of location uncertainties, could conceivably be associated

with the AMB. Such correlations based upon historic earthquakes, many of which are demonstrably associated with large uncertainties in location, have not in the past proven to be definitive indicators of earthquake sources. Moreover, the statement by Dr. Aggarwal that the data strongly suggest a causal relationship between earthquakes and the AMB is questionable because he ignores the fact that there are other earthquake occurrences in nearby northeastern Ohio whose locations cannot be associated with the AMB. For example, several earthquakes have occurred to the west of the AMB, between that feature and the city of Cleveland. Most recently, the earthquake of July 13, 1987, with a magnitude of 3.6, discussed in Reference 10, a very-well-located event, occurred some 25 kilometers east of the AMB on an east-west-trending fault. Therefore, the small number of earthquakes used by Dr. Aggarwal to support his correlation, most of which are less than a magnitude of 4, the uncertainties in their location, and the occurrence of earthquakes in areas not associated with the AMB do not, in the Staff's opinion, support use of macro-seismicity to identify a capable fault.

4. Dr. Aggarwal argues that even if the AMB cannot be identified as a capable fault, a higher SSE than presently assigned to Perry is needed since Appendix A to 10 C.F.R. Part 100 indicates that if seismological and geological data warrant, the SSE shall be larger than that derived by the normal procedures outlined in the regulations. In the procedures provided by Appendix A, the SSE is determined by assuming the recurrence at the site of the largest historic earthquake that has occurred in the tectonic province within which the site is located. In Dr. Aggarwal's view, the seismological and geological data he presented imply the existence of a fault that could cause a significantly larger earthquake. As discussed above, the NRC Staff does not believe that the data warrant the existence of such a fault and the need to use an SSE larger than that defined by normal licensing procedures.

The Staff has determined that the arguments presented in the Aggarwal Report indicating the presence of a large fault that could generate an earthquake with a magnitude of 6.5 or greater in the vicinity of the Perry Nuclear Power Plant are not persuasive. The Staff reaffirms its conclusion that the seismic design for the Perry facility is appropriate. Therefore, the request for a suspension of the Perry licenses until additional geological and geophysical studies and engineering evaluations are completed is unwarranted.

Also, given the continued acceptability of the SSE for the Perry facility, the allegations by Petitioner that the Perry facility is in noncompliance with the Commission's regulations in the area of seismic design are unwarranted.

In particular, the Petitioner calls into question the seismic capability of the 8×8 fuel spacer utilized at the Perry facility. The allegation is based upon the occurrence of a near-field magnitude 6.5 earthquake and exposure of the spacer to the resultant acceleration in excess of 0.3g. Our above evaluation indicates that consideration of such an earthquake is inappropriate; therefore concerns related to the seismic capability are unwarranted.

In the absence of a substantial health and safety issue, I decline to grant relief requested by Petitioner pursuant to § 2.206. See *Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 176 (1975); *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). The northeastern Ohio region is an area of continuing investigation by the NRC, university groups, and the Licensees, which, as indicated previously, are monitoring microseismicity in the vicinity of the Perry plant. The Staff is keeping abreast of studies being performed in the region and will evaluate the resulting reports with respect to any changes that might be required in the above conclusions and any effect such changes might have upon the seismic safety of the Perry plant.²

CONCLUSION

For the reasons discussed above, I have concluded that no adequate basis exists for suspending the OL for Perry Unit 1 and the CP for Perry Unit 2. I have also concluded that the geologic and geophysical research and studies requested of the Licensees by the Petitioner also are unnecessary. I have further concluded that, because the Staff does not consider the SSE for the Perry Nuclear Power Plant to be in question, corrective actions and an adjudicatory hearing to judge the adequacy of those corrective actions are unwarranted. Accordingly, the Petitioner's request for action pursuant to § 2.206 is denied.

²The Staff has recently received a June 8, 1988 response to the petition filed by the Licensees. The response contains an enclosure, "Analyses of Northeastern Ohio Seismicity and Tectonics," dated June 1988, prepared by Weston Geophysical Corporation. A review of the Licensees' response indicates that it contains information that supports the Staff's conclusions with regard to the Petition. Since the Staff does not intend to study this document further, it is not basing its conclusions in whole or in part upon this response by the Licensees.

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 22d day of June 1988.

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3. Leonardo Seeber, "Testimony Before the Subcommittee on Energy and the Environment of the Committee on Interior and Insular Affairs of the U.S. House of Representatives" (April 8, 1986).
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5. Weston Geophysical Corporation, "Quarterly Progress Report," Cleveland Electric Illuminating Company, *et al.* (CEI) Seismic Monitoring Program for Northeastern Ohio, October 15, 1986-January 15, 1987.
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7. Weston Geophysical Corporation, "Third Quarterly Report," CEI Seismic Monitoring Network, April 16-July 15, 1987.
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10. L. Seeber and J.G. Armbruster, Lamont-Doherty Geological Observatory of Columbia University, "Recent and Historic Seismicity in Northeastern Ohio: Reactivation of Precambrian Faults and the Role of Deep Fluid Injection," Preliminary Report to the U.S. NRC.
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12. R.B. Herrmann and B.V. Nguyen, "Focal Mechanism Studies of the January 31, 1986 Perry Ohio Earthquake" (abstr.), *Earthquake Notes*, Vol. 57 (October 1986), at 107.
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BABCOCK & WILCOX

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