

**NUCLEAR REGULATORY COMMISSION
ISSUANCES**

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

January 1, 1989 - June 30, 1989

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PREFACE

This is the twenty-ninth volume of issuances (1 - 558) 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, 1989 to June 30, 1989.

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
Thomas S. Moore
Howard A. Wilber

In the Matter of

Docket Nos. 50-443-OL-1
50-444-OL-1
(Onsite Emergency Planning
and Safety Issues)

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

January 17, 1989

In the absence of an appeal from a Licensing Board's grant of the applicants' motion for summary disposition on an issue relating to the environmental qualification of a particular coaxial cable used principally for data transmission in the Seabrook facility's computer system, LBP-88-31, 28 NRC 652, the Appeal Board conducts a *sua sponte* review of that decision and affirms it.

RULES OF PRACTICE: *SUA SPONTE* REVIEW

It is appeal board practice to review on its own initiative any unappealed licensing board decision that finally disposes of significant safety or environmental issues.

MEMORANDUM AND ORDER

We have before us once again the issue of the environmental qualification of the RG58 coaxial cable used for data transmission in the Seabrook nuclear power facility's computer system and certain other purposes.¹ Following our most recent remand of that issue to the Licensing Board in ALAB-891,² the applicants filed a motion for summary disposition of the issue in their favor. In a December 7, 1988 memorandum and order, the Licensing Board granted the motion, which had been supported by the NRC staff but opposed by the New England Coalition on Nuclear Pollution (the intervenor that had raised the issue in the first instance).³

Despite its position below, the Coalition has not appealed the December 7 memorandum and order.⁴ Accordingly, in conformity with our established practice in such circumstances, we have reviewed it on our initiative. That review has disclosed no error requiring corrective action. Because we are in essential agreement with not only the result but also the reasoning of the Licensing Board's published opinion, a lengthy discussion of the matter is unnecessary and we therefore confine ourselves to these brief observations.

From the outset, the applicants have maintained that the environmental qualification of the RG58 cable — i.e., its ability to continue to perform its intended function for such period after an accident as might be necessary⁵ — was demonstrated by the results of tests performed on RG59 coaxial cable supplied by the same vendor (the International Telephone and Telegraph Corporation). Although on the prior occasions that this issue was under scrutiny, we determined that the record did not support the thesis that the RG58 and RG59 cables were sufficiently similar to warrant the environmental qualification of the former on the basis of the testing of the latter, the applicants' motion for summary disposition advanced it anew. But the motion went beyond that claim and rested on two additional assertions: (1) the RG58 cable has now undergone testing and has been found environmentally qualified, and (2) despite this development, the

¹ We were initially led to understand that the cable would be used solely in the computer system. More recently, however, we were given reason to believe that some of the cable would be put to use outside of that system. See ALAB-896, 28 NRC 27, 29 n.2 (1988).

² 27 NRC 341 (1988). ALAB-891 details the history of the extended litigation of the issue and that history need not be rehearsed here.

³ See LBP-88-31, 28 NRC 652.

⁴ In a January 3, 1989 order (unpublished), we concluded that, because it disposed of the last remaining safety issue before it in this operating license proceeding, the Licensing Board's action was immediately appealable under the test set forth in *Toledo Edison Co. (Davis-Bease Nuclear Power Station)*, ALAB-300, 2 NRC 752, 758 (1975). Inasmuch as it has not sought reconsideration of that conclusion, we infer that the Coalition made a conscious decision not to pursue the cable matter further.

⁵ See 10 C.F.R. § 50.49; 10 C.F.R. Part 50, Appendix A, General Design Criterion 4.

applicants have substituted RG59 cable for all of the RG58 cable that, because of its particular location, required environmental qualification.

In granting the summary disposition motion, the Licensing Board relied exclusively on these assertions — i.e., it did not pass upon the applicants' renewal of their insistence that, for present purposes, any differences between the RG59 and RG58 cables are of no moment. We think that course was a wise one. For, in common with the Licensing Board, we are satisfied that the affidavits and analyses offered in support of the motion sufficiently demonstrate *both* the environmental qualification of the RG58 cable on the basis of the testing of that cable and the substitution of RG59 cable to the extent relevant here. Yet it would have sufficed had the applicants established either one of those factors.

The fact that RG59 cable has now replaced the RG58 cable does, however, give rise to a possible concern. The record discloses that, in the event of an accident, the substituted RG59 cable will not perform a safety-related (i.e., accident-mitigation) function. Rather, its sole responsibility will be to remain intact to the extent necessary to ensure that it will not impede the performance of other components that are involved in accident mitigation.⁶ The record additionally reveals that a color-coding system is to be employed to provide a ready differentiation between cable that has a safety-related function and cable that does not.⁷ This being so, we expected to find some indication in the papers accompanying the summary disposition motion that the substituted RG59 cable has a color tracing in its jacket that reflects that it does not possess a safety-related function. Our search for that indication, however, has proved unavailing.

This consideration does not affect our ability to affirm the result below. For that purpose, it is enough that the environmental qualification of the RG59 cable — i.e., its ability (when substituted for the RG58 cable) to avoid impeding the performance of components with accident-mitigation functions — is not in question. Rather, we have noted the uncertainty with respect to observance of the color-coding scheme only because we have been given reason to believe that the scheme has practical significance in the operation and maintenance of the facility.⁸ Accordingly, the staff should ensure that it has in fact been observed with respect to the substituted RG59 cable.

⁶ See Memorandum in Support of Applicants' Motion for Summary Disposition of NECNP Contention I.B.2 (RG-58 Coaxial Cable) (September 9, 1988), Affidavit of Richard Bergeron (hereinafter, "Bergeron Affidavit"). In ALAB-891, we noted that, as it then existed, the record did not adequately demonstrate that fact with regard to the RG58 cable. 27 NRC at 349-51.

⁷ See Bergeron Affidavit at 2-3. As the affidavit reflects, the Final Safety Analysis Report (FSAR) for the Seabrook facility commits the applicants to use the color-coding system.

⁸ See p. 8.3-53 of the FSAR except that was one of the attachments to the Bergeron Affidavit.

The Licensing Board's December 7, 1988 memorandum and order, LBP-88-31, 28 NRC 652, is *affirmed*.
It is so ORDERED.

FOR THE APPEAL BOARD

Eleanor E. Hagins
Secretary to the
Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

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

In the Matter of

Docket No. 50-322-OL-5R
(ASLBP No. 89-581-01-OL-5R)
(EP Exercise)

LONG ISLAND LIGHTING
COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

January 3, 1989

Applying the standards set out in this proceeding in ALAB-903, 28 NRC 499 (1988), the Licensing Board accepts for litigation portions of five (out of a total of twenty) contentions advanced with respect to the 1988 exercise of the Applicant's offsite emergency plan for the Shoreham Station which adequately allege a failure in an essential plan element requiring significant plan revisions to correct. The Licensing Board denies contentions that allege facts that do not materially differ from those found not to constitute a fundamental flaw in the litigation of the 1986 exercise and admits those alleging facts that do not materially differ from those found to constitute a fundamental flaw in the earlier litigation.

RULES OF PRACTICE: CERTIFICATION OF RULING

Because litigation of offsite emergency plan exercises must be completed in 2 years following the exercise, an appellate decision that follows an initial

decision and reverses the denial of a contention would leave little if any time to hear and decide that contention. Therefore, the Licensing Board concludes that deferring appeals of its rulings on contentions could affect the proceeding in a pervasive or unusual manner and certifies those rulings to the Appeal Board.

EMERGENCY PLANS: EXERCISES (PARTICIPATION IN)

Footnote 4 to 10 C.F.R. Part 50, Appendix E, ¶ IV.F.1 defines the scope of the "full-participation exercise" that is required prior to full-power operation of a reactor as one in which "appropriate offsite local and State authorities and licensee personnel" participate. It does not require the participation of organizations such as the American National Red Cross, the U.S. Departments of Commerce and Agriculture, the Federal Aviation Administration, and the Long Island Rail Road.

RULES OF PRACTICE: CONSOLIDATION OF CONTENTIONS

It is inappropriate to consolidate an otherwise inadmissible contention with one that is admissible if to do so would require an applicant to mount a defense that is substantially different or expanded from that which is required by the admitted contention.

MEMORANDUM AND ORDER **(Ruling on Contentions)**

INTRODUCTION

Following an exercise of the LILCO emergency plan for the Shoreham Station held in February 1986, the Commission directed that a licensing board be appointed to hear any acceptable contentions that Intervenor might put forward alleging that fundamental flaws had been demonstrated.¹ Subsequently, Intervenor put forward acceptable contentions which alleged that the scope of the exercise failed to comply with the Commission's regulations and that the results of the exercise demonstrated fundamental flaws. In two Initial Decisions, this Board upheld Intervenor's position in part.²

¹ CLI-86-11, 23 NRC 577 (1986).

² LBP-87-32, 26 NRC 479 (1987), *aff'd*, ALAB-900, 28 NRC 275 (1988), *review declined*, CLI-88-11, 28 NRC 603 (1988); and LBP-88-2, 27 NRC 85 (1988), *modified in part*, ALAB-903, 28 NRC 499 (1988), *appeal pending in part*. In a third ruling, LBP-88-7, 27 NRC 289 (1988), this Board determined that its jurisdiction ended when it decided all of the issues in controversy before it related to the 1986 exercise. In ALAB-901, 28 NRC 302
(Continued)

LILCO requested a second exercise which was held on June 7, 8, and 9, 1988. In unpublished Memoranda and Orders of September 22 and October 12, 1988, we set a schedule for the filing of contentions and responses. ALAB-903, which modified the definition of fundamental flaw that we had adopted in LBP-88-2, was issued shortly before the Intervenor's reply to LILCO's and Staff's objections were due. Relying on ALAB-903, LILCO filed a motion to dismiss Contentions 4 through 20 on November 21. Intervenor's opposed this on December 1, and Staff supported it on December 6.³ Then, on November 29, Intervenor's filed a motion seeking permission to amend their contentions in light of ALAB-903. At a conference of counsel held on December 6, Intervenor's motion to amend was granted.⁴ LILCO's motion to dismiss was denied with the understanding that the arguments set forth in it, and in Intervenor's and Staff's responses would be considered in the context of the amended contentions.⁵

On December 1, 1988, the Commission issued CLI-88-9, 28 NRC 567, which, among other things, sets an expedited schedule for this proceeding, eliminates formal discovery, and places the burden of going forward with the evidence on Intervenor's. At the conference of counsel, Intervenor's raised and considerable discussion was devoted to the schedule set by the Commission and discovery. Subsequent to the conference, on December 9, Intervenor's filed a motion with the Commission seeking reconsideration of CLI-88-9. Consequently, pending a Commission ruling we will not further consider Intervenor's concerns on these points.

At the conference of counsel, we raised with the parties the problem posed by LILCO's response which, as will be seen from the discussion of the individual contentions, often raises factual arguments against the admission of a particular basis for a contention. Considerable discussion was devoted to this topic which illustrates the problem well.⁶ In the course of that discussion, we indicated to the parties that it had been our intention, following the example of Rule 12(b)(6), Federal Rules of Civil Procedure, to treat LILCO's opposition as a motion for summary disposition, permit LILCO to supplement its opposition, and afford Intervenor's the opportunity to demonstrate that LILCO's factual arguments are either incorrect or at least subject to dispute. In this way it would have been

(1988), the Appeal Board remanded the litigation of the results of the 1988 exercise to this Board, noting that the conclusion reached in LBP-88-7 was incorrect. 28 NRC at 308 n.6.

³ Staff's paper was served on the Board and the parties at the conference of counsel held on December 6. The parties were afforded an opportunity to review it over the lunch break and respond during the afternoon session of the conference. Tr. 86-87.

⁴ All references to the contentions in this Memorandum and Order are to the amended contentions.

⁵ Tr. 60, 62. On December 27, LILCO also filed a letter with us drawing our attention to the December 15 Memorandum and Order ruling on contentions issued in the ongoing *Seabrook* exercise litigation and asserting that it is relevant precedent for our disposition of the *Shoreham* contentions. This filing was not authorized and has not been considered.

⁶ Tr. 63-86. See also Intervenor's Reply at 17-23.

possible in the process of ruling on contentions to avoid the necessity of making precise, and ultimately useless, factual distinctions, find those facts that are not subject to genuine disputes, and set down those that are for hearing. However, because CLI-88-9 eliminated summary disposition motions, we are bound by CLI-86-11, *supra*, 23 NRC at 581, and ALAB-903, *supra*, 28 NRC at 506, to accept for litigation all those contentions that establish a sufficient foundation for further inquiry by setting out bases with reasonable specificity alleging facts that could amount to a fundamental flaw. In applying this standard, we have sought to avoid accepting bases that are fairly characterized by the example of an unacceptable basis given by LILCO's counsel: "The moon is made of balsawood."⁷ However, very few bases fall into that category, and very seldom are the facts so clear as to permit us to safely rely on them.

In its opposition to the contentions, Staff takes the position that, at least to the extent they are based on Intervenor's observations of the exercise as opposed to the FEMA Report, the contentions are late filed and should be dismissed for failure to address the factors set out in 10 C.F.R. § 2.714(a)(1). Intervenor's oppose this position.⁸ We are in general agreement with Intervenor's. Staff does not dispute the materiality of the FEMA Report to this proceeding and the formulation of contentions. Indeed, in view of the fact that FEMA's findings constitute a rebuttable presumption,⁹ and in view of the holding in *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), that a hearing must be afforded on issues of material fact, the contrary position is not arguable. Whatever Intervenor's may have observed or learned prior to the issuance of the FEMA Report, the fact remains that, given that FEMA has issued findings favorable to LILCO, they must refute those findings if they are to be successful. No useful purpose would be served by requiring that contentions be filed in advance of the FEMA Report, and nothing in the history of this proceeding suggests that the Commission intended that some earlier deadline should apply. Staff's position is rejected.

In this Memorandum and Order, we address complex and, to some extent, novel issues¹⁰ concerning the proper scope of litigation of the results of a second exercise of a utility's offsite emergency plan. Moreover, the litigation of this exercise must be resolved within 2 years (i.e., June 1990) if the exercise is to qualify as the precicensing full-participation exercise required by 10 C.F.R. Part 50, Appendix E, ¶ IV.F.1. This situation prompted the Commission to change

⁷ Tr. 64.

⁸ See Staff's Response to the Contentions at 6-11, Response to LILCO's Motion to Dismiss at 4-5; Intervenor's Reply to LILCO's and Staff's Objections at 23-30.

⁹ 10 C.F.R. § 50.47(a)(2); CLI-88-9, *supra*, 28 NRC at 571; ALAB-903, *supra*, 28 NRC at 507.

¹⁰ For example, ALAB-903, which defines the critical concept, "fundamental flaw," was issued less than 2 months ago.

the procedures that normally apply in order to reduce the time necessary to complete the proceeding.¹¹

The Rules of Practice provide that appeals from rulings such as those made herein must normally await the conclusion of the hearing and the issuance of an initial decision.¹² The *Shoreham* Appeal Board has pointed out that rulings of a licensing board that merely admit or deny contentions in the context of an ongoing proceeding rarely provide reason for an exception to that rule.¹³

We believe that the circumstances of this proceeding dictate a different conclusion. Here, should an appeal following an initial decision result in a ruling that we have improperly excluded a contention or contentions, little if any time would be left in which to hear those contentions.¹⁴ Thus we conclude that deferring appellate review of our rulings, as called for by the Rules of Practice, could affect this proceeding in a pervasive or unusual manner by possibly preventing, CLI-88-9 notwithstanding, the completion of the proceeding in the time allotted. Accordingly, pursuant to 10 C.F.R. § 2.718(i) and (m), we certify our rulings herein to the Atomic Safety and Licensing Appeal Board.

CONTENTIONS 1-3: THE SCOPE OF THE EXERCISE, THE ASSUMPTIONS UNDERLYING IT, AND FEMA'S EVALUATION WERE DEFICIENT

Contention 1: Scope of the Exercise

This contention alleges that the exercise did not comply with 10 C.F.R. §§ 50.47(a)(1), (b)(14), and Part 50, Appendix E, ¶ IV.F "in that critical elements of preparedness were omitted from or insufficiently tested during the exercise." It is supported by the following bases:

Basis A asserts that the public notification system was insufficiently tested because there was no adequate testing or evaluation of the siren system, no test broadcast of an EBS message, and the test of the EBS radio network did not involve the lead station and did involve a station that had withdrawn prior to the exercise. The Appeal Board in this proceeding has held that the public alert and notification system is a major element of emergency planning and has pointed

¹¹ CLI-88-9, *supra*.

¹² See 10 C.F.R. § 2.714a. Of course, under the terms of this section, LILCO may appeal our order by asserting that all of the contentions should have been denied.

¹³ ALAB-861, 25 NRC 129, 134-35 (1985), quoting *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-838, 23 NRC 585, 592 (1986).

¹⁴ Given the protracted nature of this litigation and the fact that this is the second relicensing exercise hearing, it may also be appropriate to review our rulings admitting contentions. Cf. *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-869, 26 NRC 13, 25-27 (1987).

out that Appendix E, ¶IV.F., makes it clear that this system is to be tested in the exercise.¹⁵

In its response, LILCO cites the FEMA Report at 44 for the proposition that LERO met the objective of demonstrating the ability to sound the sirens in a timely manner and in connection with the dissemination of emergency information. LILCO asserts that the participating EBS station, WPLR, was according to the FEMA Report at 44, prepared and equipped to carry out the broadcast and did conduct a test broadcast within the station. LILCO notes that political opposition led to WPLR's decision not to conduct a public broadcast. Finally, LILCO notes that at the time of the exercise, WPLR was the lead station for Shorcham, and its subsequent replacement by WCBS does not invalidate this portion of the exercise, and that its decision to rely on the realism principle in order to utilize WCBS and the Nassau-Suffolk Operational Area EBS was approved in LBP-88-24, 28 NRC 311, 331 (1988). Intervenor counter that to accept LILCO's assertions in opposition to basis A would be to impermissibly decide the merits of the contention without an evidentiary record.¹⁶ Intervenor are correct. We may not consider the merits of this basis at this time.

Basis B asserts that LILCO's plan for school preparedness was not sufficiently tested because only one school district participated and then only to a limited extent. LILCO points to ALAB-900, *supra*, 28 NRC at 297, for the proposition that it should attempt to obtain the participation of a sufficient number of schools and, if the schools decline, establish that fact under 10 C.F.R. § 50.47(c)(1) and Appendix E, ¶IV.F.6.¹⁷ LILCO has documented the schools' refusal to participate, in its Attachment 2.

Intervenor take issue with LILCO's position that public school districts are government entities, assert that in any event there are a number of private schools that did not participate, and that, in opposing the basis, it is improper for LILCO to seek to prove the participation issue through Attachment 2. They also assert that LILCO has made no showing that satisfies the criteria of § 50.47(c)(1) on this issue.¹⁸

Again, we find that LILCO's response goes to the merits of this basis and is thus inappropriate for consideration at this juncture. The questions concerning

¹⁵ See ALAB-900, *supra*, 28 NRC at 294.

¹⁶ See LILCO's November 3 Response at 9-11; Intervenor's November 15 Reply at 41-45. Staff does not object to this basis beyond noting that the adequacy of the EBS system was determined in LBP-88-24, *supra*, thus precluding relitigation of that issue here. See Staff's Response of November 8, 1988, at 24. Intervenor assure us that they do not seek to relitigate that issue but to raise the question whether what was tested was in the plan. See Intervenor's Reply at 42 n.33.

¹⁷ ALAB-900 also noted that the potential evacuation of schools within the EPZ is a major element of the offsite plan, and thus a sufficient number of school personnel must participate in the exercise in order to assess their response capability. See 28 NRC at 297.

¹⁸ See LILCO's Response at 11; Intervenor's Reply at 45-48. Staff does not oppose this basis. See Staff's Response at 24.

the status of the school districts as governmental entities and the exact nature of their refusal to participate may well raise factual issues that should be aired in an evidentiary setting. In this regard, the parties should be guided by our discussion of bases J and N, *infra*.

Basis C alleges that the provisions of LILCO's plan for schools located outside of the EPZ were not exercised. Although it solicited participation by these schools, LILCO takes the position that these provisions do not constitute a major observable portion of the plan, citing the FEMA Report and FEMA Guidance Memorandum EX-3. Staff opposes on the ground that 10 C.F.R. § 50.47(b)(10) does not require LILCO to develop protective actions outside of the plume exposure EPZ. Intervenor's assert that LILCO and Staff are improperly opposing this basis by arguing its merits and have taken issue with those arguments.¹⁹ With regard to Staff's position, Intervenor's believe that the fact that many of the schoolchildren reside within the EPZ and could be released back into it brings these schools within the purview of § 50.47(b)(10), despite the fact that that provision is clearly limited to protective actions within the EPZ. They believe that it is clearly wrong to argue that this situation is outside the scope of the regulations, especially given the existence of provisions within the LILCO plan covering it. They also believe that this situation presents a kind of access control problem covered by EOC Objective 20.²⁰

Clearly, this situation is within the spirit but not the literal scope of the regulation. It should be, and has been, covered by a plan provision. But that does not make it a major observable portion of the plan which must be tested. We do not believe that LILCO may be fairly penalized for not including matters in the exercise which, although covered in the plan, lie outside the literal scope of the regulation's requirements.²¹

Basis D alleges that although the LILCO plan calls for EPZ schoolchildren to be evacuated, if necessary, to the Nassau County Coliseum and the Nassau County Community College, and although such an evacuation was called for in the exercise, these relocation facilities were not activated, staffed, tested, or evaluated. LILCO opposes this basis on the grounds that first, these facilities do not constitute a major observable portion of the plan; and second, that their refusal to participate has been documented. Staff opposes for the same reason

¹⁹ See LILCO's Response at 12; Staff's Response at 25; Intervenor's Reply at 49-51.

²⁰ See FEMA Report at 13.

²¹ Moreover, in ALAB-900 the Appeal Board held that the FEMA Objectives set forth in "Procedural Policy on Radiological Emergency Preparedness Plan Reviews, Exercise Observations and Evaluations, and Interim Findings" (August 5, 1983) "can provide an appropriate measure for determining whether an exercise meets the regulation's 'major observable portions of the plans' criterion for full participation." See 28 NRC at 291. Objective 19 set forth in that document covers school evacuation and does not include this situation. That objective was modified in FEMA GM EX-3, "Managing Pre-Exercise Activities and Post-Exercise Meetings," February 26, 1988, on which LILCO relies. Modified Objective 19 was used in this exercise (see FEMA Report at 10-11, 13). While it is less clear, we do not believe that it should be interpreted in such a way as to require demonstration of matters that are outside the literal terms of the applicable regulation.

advanced against basis C. Intervenors again assert that LILCO improperly argues the merits in opposing this contention, take issue with those arguments, and point out that Staff's objection is not relevant because reception facilities should be outside the 10-mile EPZ.²²

We agree with Intervenors that Staff's objection is not relevant. However, LILCO is correct in its position that school relocation facilities by themselves do not constitute a major observable portion of the plan. The FEMA Objectives do not specifically include testing of relocation facilities.

Nonetheless, Intervenors correctly point out that FEMA evaluated school relocation centers under Objective 19: "Demonstrate the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ."²³ Intervenors also assert that this basis should not be considered in a vacuum, but should be viewed as a part of their overall challenge to the scope of the exercise of school plans. We agree that this matter can be appropriately considered in that context. We also agree that LILCO's other objections raise merit considerations which may not be properly considered now.

Basis E alleges that there was an inadequate test of LERO's ability to provide buses for and manage an evacuation of the EPZ schools. While Staff does not object, LILCO objects that this basis is "so lacking in specificity and clarity as to make it impossible to understand what Intervenors are alleging," and disagrees with the accuracy of some of the factual allegations of the contention. In reply, Intervenors assert that the basis is both specific and clear, and that LILCO once again improperly argues the merits.²⁴

We agree with Intervenors that this basis should be considered as part of their contention that school plans were not adequately tested. We interpret it as raising issues under that portion of footnote 4 to Appendix E, ¶ IV.F.1 which states that: "personnel and other resources [shall be tested] in sufficient numbers to verify the capability to respond to the accident scenario." We also agree that LILCO's reliance on the FEMA Report improperly invites us to consider the merits.

Basis F asserts that there was no participation by special facilities and that there was no meaningful interaction between LILCO and the ambulance companies, and between the latter and the evacuated or relocation special facilities. LILCO responds that every special facility identified in the plan was contacted and asked to participate. Those that agreed apparently were contacted during the exercise. With regard to the allegation that insufficient resources (ambulances and ambulettes) were employed to provide meaningful results, LILCO asserts that to have involved a greater number would have impinged on the ban against mandatory public participation by depriving Suffolk Countians

²² See LILCO's Response at 12; Staff's Response at 25; Intervenors' Reply at 51-53.

²³ See FEMA Report at 13, 113.

²⁴ See Staff's Response at 24; LILCO's Response at 13-14; Intervenors' Reply at 54-58.

of their services. LILCO also asserts that the FEMA Report indicates that the ability to manage an evacuation was demonstrated. Staff does not object to this basis to the extent that it alleges that the evacuation of special facilities was not adequately tested. Staff does object to Intervenor's allegation that there was no "meaningful interaction" on the ground that it is overly vague, an objection that LILCO also raises.

Intervenor's again make the point that LILCO is improperly arguing the merits of the basis, not whether it is acceptable. They also assert that the "meaningful interaction" allegation is specific enough to assert that there was insufficient interaction to test response capabilities and that it is not possible to be more specific without discovery.²⁵ We agree with Intervenor's that this basis is acceptable.

Basis G asserts that there was an inadequate test of LERO's ability to evacuate the homebound disabled. LILCO focusses on Intervenor's assertion that an actual individual should have been transported and points to the ban on public participation. Staff also makes this point. Further, LILCO quarrels with the Intervenor's assertion that the testing of only two ambulances was inadequate for the same reasons as those given in connection with Basis F. Intervenor's note that neither LILCO nor Staff objects to the thrust of this basis — that there was an inadequate test of the ability to evacuate the homebound disabled. Further, they clarify that they did not intend, by asserting that an individual should have been transported, that a disabled person should have participated. Rather, their intent was that such a person should have been "simulated."²⁶ We agree that this basis is admissible.

Basis H alleges that during the exercise there was no designation, as called for by the plan, of hospitals, nursing homes, and similar facilities outside the EPZ to provide relocation services and health care. LILCO objects that this basis fails to allege that a major observable portion of the plan was not tested. Staff asserts that there is no requirement to plan for such facilities outside the EPZ and that this basis raises a planning, not an exercise, issue. Intervenor's take issue with the assertion that this basis does not involve a major observable portion of the plan. They point out that it is necessary to plan for these facilities outside the EPZ and that this basis must be considered together with bases F and G. Together, these assert that part of the plan relating to special-facility and homebound individuals was not tested.²⁷

The evacuation of mobility-impaired individuals is covered by FEMA Objective 18. Consequently, we agree with Intervenor's that this basis should be

²⁵ See LILCO's Response at 14-15; Staff's Response at 24; Intervenor's Reply at 58-60.

²⁶ See LILCO's Response at 16; Staff's Response at 24; Intervenor's Reply at 60-61.

²⁷ See LILCO's Response at 16; Staff's Response at 25; Intervenor's Reply at 61-63.

considered together with bases F and G. As Intervenor point out, these individuals must be evacuated to a specific place.

Basis I alleges that the test of LERO's ability to transport and care for contaminated injured individuals was too limited. LILCO argues that this basis lacks specificity, would require mandatory public participation for the reasons given in response to Basis F (in that it quarrels with the number of ambulances that participated), and is contrary to the facts set out in the FEMA Report. Staff does not object to the extent that the basis asserts that there was an inadequate test of LILCO's ability to transport and care for contaminated injured individuals. Intervenor reply that the basis is specific and clear, and that LILCO is once again improperly arguing the merits.²⁸ We agree with Intervenor that this basis is admissible.

Basis J points out that there was no activation or testing of procedures and communications with regard to the congregate care centers run by the Red Cross. LILCO maintains that this basis is inadmissible because the failure to test the congregate care centers resulted from the Red Cross' refusal to participate, bringing into play the provisions of Appendix E, ¶ IV.F.6. Similarly, Staff asserts that the Red Cross' refusal to participate does not dictate the conclusion that the exercise failed to meet the full-participation requirements.

Intervenor point to FEMA Exercise Objective 22 and assert that clearly, the congregate care centers constitute a major observable portion of the plan. They also maintain that the arguments based on the Red Cross' refusal to participate improperly seek a determination on the merits.²⁹

The subject matter of this basis appears to be covered by FEMA Objective 28: "Demonstrate adequacy of facilities for mass care of evacuees." Thus a major observable portion of the plan is involved. We believe that the Red Cross' refusal to participate presents a legal issue appropriate for resolution at this time. As Intervenor point out, the Red Cross clearly is not a state or local government provided for in § 50.47(c) and Appendix E, ¶ IV.F.6. Thus its refusal does not excuse its participation under those provisions. However, neither is the Red Cross "State, local, and licensee personnel and other resources" which, under footnote 4 to ¶ IV.F.1, must participate in sufficient numbers to verify response capability. As the Commission noted in CLI-87-5, 25 NRC 884 (1987), *reconsideration denied*, CLI-88-3, 28 NRC 1 (1988), the Red Cross does not furnish assistance under an agreement with LILCO, but rather honors the obligation imposed by its federal charter to provide assistance. Apparently the obligation imposed by its charter does not require the Red Cross to participate

²⁸ See LILCO's Response at 16-17; Staff's Response at 24; Intervenor's Reply at 63-64.

²⁹ See LILCO's Response at 17; Staff's Response at 25-26; Intervenor's Reply at 65-66.

in exercises.³⁰ Under these circumstances, we do not believe that LILCO may be faulted for a refusal to participate over which it has no control. The regulation clearly does not require participation by the Red Cross, and the fact that a major observable portion of the plan was omitted as a result does not dictate the conclusion that the exercise was less than "full participation."

Basis K alleges that procedures for public education and the dissemination of public information were not tested, nor was the adequacy of the public education materials demonstrated. LILCO cites LBP-87-32, 26 NRC 479, 491 n.13 (1988), for the proposition that the public information and education materials do not need to be tested in the exercise. Staff asserts that this is a planning issue. Intervenors correctly point out that the cited portion of LBP-87-32 did not set forth the proposition asserted by LILCO, but rather that actions taken by Suffolk County had prevented any test of these materials. They go on to argue that that ruling did not hold that the contention should not have been admitted, and indicate that they wish to proffer evidence that these materials constitute a major observable portion of the plan. Finally, they assert that there is no basis for the Staff's planning issue argument.³¹

Public information materials of this sort do not constitute a major observable portion of the emergency plan for purposes of an exercise. While 10 C.F.R. § 50.47(b)(7) provides for them, that provision contemplates that these materials are to be distributed periodically, not in connection with a specific emergency. They do not constitute the type of function that can be effectively tested in an exercise and are not covered by a FEMA Exercise Objective.

Basis L alleges that procedures related to the monitoring and decontamination of special-facility evacuees were not tested. LILCO counters that these procedures are not a major observable portion of the plan, relying on FEMA Objective 21 and LBP-87-32, 26 NRC at 501, and that even so, they were in fact tested. Staff points out that the exercise did test the ability to monitor and decontaminate emergency workers, and that Intervenors have put forward no reason why any additional demonstration was needed. Intervenors reply that the question whether these procedures constitute a major observable portion of the plan, and the question whether they were tested, is one of fact which they will contest.³²

LILCO is correct that LBP-87-32 held that there was "no reason to reject LILCO's position that the monitoring and decontamination of special-facility populations requires no showing in addition to that made for the general

³⁰ An April 27, 1988 letter from Douglas M. Crocker, Manager of Nuclear Emergency Preparedness for LILCO, to the Executive Director of the Nassau Chapter of the Red Cross alludes to the Red Cross' position that it only responds to state requests for its participation in exercises. See Attachment 5 to LILCO's Response to the Contentions.

³¹ See LILCO's Response at 17-18; Staff's Response at 25; Intervenors' Reply at 66-69.

³² See LILCO's Response at 18; Staff's Response at 26; Intervenors' Reply at 69-70.

population.” Intervenors argued this point in connection with the 1986 exercise and lost. There is no reason why they should be permitted to argue it once again.³³

Basis M alleges that the Long Island Rail Road, the Federal Aviation Administration, the U.S. Department of Agriculture, and the U.S. Department of Commerce, although relied on by the plan, did not participate in the exercise. LILCO asserts that this does not amount to a major observable portion of the plan and that, in any event, its ability to contact outside agencies and request assistance was demonstrated. Staff states that there is no regulatory requirement that federal agencies participate in the exercise and that Intervenors have offered no reason to believe that the functions of the railroad under the plan constitute a major observable portion of the plan. Intervenors assert that these objections raise a factual question, that the basis somehow raises the question of LILCO’s ability to communicate with these entities, and that the lack of a regulatory requirement calling for their participation is irrelevant to the question of the requirements of Appendix E, ¶ IV.F.1.³⁴

We find that this basis is governed by the same rationale governing basis J concerning participation by the Red Cross. None of the organizations that Intervenors assert should have participated are within the category of personnel or other resources of the state, local government, or licensee set out in footnote 4 to Appendix E, ¶ IV.F.1. Thus there is no regulatory requirement that they participate in the exercise.

Basis N alleges that the exercise improperly failed to test the implementation of ingestion pathway protective actions in Connecticut. LILCO and Staff assert that this failure is not contrary to the requirements of Appendix E, ¶ IV.F.6, because Connecticut refused to participate. Intervenors assert that this objection raises a question of fact which may not properly be addressed in the contention admission process.³⁵

Appendix E, ¶ IV.F.6, specifically excuses the participation of state and local governments that LILCO identifies “as refusing to participate further in emergency planning activities, pursuant to 10 C.F.R. 50.47(c)(1).” LILCO has furnished a letter from Connecticut indicating that it would not participate in the 1988 exercise absent coordination with other state and local governments.³⁶ It is beyond question that the other state and local governments that are affected have steadfastly asserted that they will never participate in emergency planning

³³ Intervenors rely on ALAB-900, *supra*, 28 NRC at 299-300, for the proposition that monitoring and decontamination should be included in the exercise of the special-facility portion of the plan. Nothing in the Appeal Board’s opinion intimates that our conclusion in LBP-87-32 on which LILCO relies was incorrect. Indeed, because Intervenors did not appeal, it is doubtful that that issue came to the Appeal Board’s attention.

³⁴ See LILCO’s Response at 19; Staff’s Response at 25-26; Intervenors’ Reply at 71-72.

³⁵ See LILCO’s Response at 19; Staff’s Response at 25-26; Intervenors’ Reply at 72-73.

³⁶ See Attachment 6 to LILCO’s Response to the Contentions.

activities. Under these circumstances, Connecticut's failure to participate is excused. This basis is denied.

Bases O and P allege that there were an insufficient number of bus and ambulance companies and ambulances participating in the exercise and there was no check of the availability of the nonparticipating companies. LILCO argues that this basis is precluded by our earlier conclusion that there was no reason to require a greater role in the exercise for these companies, citing LBP-87-32, 26 NRC at 494. Staff does not object to the assertion that there were an insufficient number of companies participating, but does object to the asserted need to check the availability of those that did not participate. Intervenors assert that our conclusion in LBP-87-32 is not dispositive on the question of the compliance of the 1988 exercise with Appendix E. They also take issue with Staff's objection to the allegation of a need to check the availability of nonparticipating companies. They believe that LBP-87-32 and ALAB-900 support their admission.³⁷

We find that Staff's position is the correct one. In the portion of LBP-87-32 cited by LILCO, we held that there was no need, in order to meet the full-participation requirements of the regulation, for FEMA to count available buses. Nothing in ALAB-900 appears to contradict that conclusion. However, in ALAB-900 the Appeal Board expressed agreement with the proposition that the participation of only one ambulance and one ambulette was insufficient to meet the "sufficient numbers" requirement of Appendix E, ¶ IV.F.1.³⁸ Clearly, Intervenors may raise the same challenge with regard to the 1988 exercise.

Basis Q alleges that the exercise failed to test the plan's communications network. LILCO maintains that this basis should be excluded as being duplicative of other bases and unsupported in law or fact. Staff objects that this basis is unsupported and overly vague. Intervenors point out that this basis is most specific in enumerating those communications that were not tested and that Appendix E, ¶ IV.F, requires the testing of communications networks. They believe that LILCO's objections are unavailing.³⁹

In an exercise, an applicant or licensee must "[d]emonstrate the ability to communicate with all appropriate locations, organizations, and field personnel."⁴⁰ Thus Intervenors have raised a major observable portion of the plan in this basis. Moreover, we agree with Intervenors that this basis is sufficiently specific. It lists the organizations with whom it is alleged that communications were not demonstrated.

In conclusion, we find that Contention 1 is admissible to the extent of bases A (concerning public notification); B, D, and E (concerning protective actions in

³⁷ See LILCO's Response at 19-20; Staff's Response at 25; Intervenors' Reply at 73-75.

³⁸ See ALAB-900, *supra*, 28 NRC at 300.

³⁹ See LILCO's Response at 20-21; Staff's Response at 26; Intervenors' Reply at 75-76.

⁴⁰ FEMA Objective 5, Exercise Objective 4.

schools); F, G, and H (concerning evacuation of disabled persons); I (concerning contaminated, injured individuals); O and P (concerning the number of buses and ambulances that participated); and Q (concerning communications).

Contention 2: The Exercise's False Premises and Assumptions

This contention challenges the assumption that the various affected governments would interact with LERO in such matters as approving EBS messages, authorizing LERO to take various actions, and delegating certain authority to LERO, and the assumption that these governments would provide certain resources. Any test of LERO's ability to interact is invalid unless there is a realistic basis for the assumption that the affected governments would in fact act in such a manner. The contention asserts that there is no such basis.

Both LILCO and Staff assert that this contention is a challenge to the Commission's realism rule, § 50.47(c)(1). LILCO goes on to assert that the contention is also a collateral attack on the findings reached in LBP-88-24, *supra*, 28 NRC at 385, and that it lacks basis and specificity.

Intervenors argue that there is nothing in the realism rule that requires the assumption that the affected governments would authorize illegal acts, such as directing traffic. They also argue that FEMA's assumptions must be open to scrutiny, and that the contention is adequately supported by reasonably specific bases.⁴¹

We agree with LILCO and Staff that this contention constitutes a challenge to the realism rule and thus is inadmissible. That rule specifically directs us to presume that the affected governments will follow LILCO's plan in an emergency unless these governments rebut that presumption. These Intervenors were afforded an opportunity to do just that in the OL-3 proceeding, but refused to do so.⁴² Almost 3 years ago, the Commission found the proposition that these governments would be legally precluded from making use of the LILCO plan in an actual emergency to be "too preposterous an abrogation of [their] obligations . . . to be taken seriously."⁴³ Despite that conclusion, the Intervenors persist in making this argument. This argument clearly violates the realism rule. Consequently this contention is denied.

Contention 3: The FEMA Report's Unfounded Conclusions

This contention asserts that no weight should be given to FEMA's conclusion that the exercise results permit FEMA to make a reasonable assurance finding.

⁴¹ See LILCO's Response at 21-22; Staff's Response at 27; Intervenors' Reply at 76-78.

⁴² LBP-88-24, *supra*, 28 NRC at 357-60.

⁴³ See CLI-86-14, 24 NRC 36, 40 n.1 (1986).

To support this assertion, Intervenor attack FEMA's review process. They assert that they are clearly entitled to do this. Both LILCO and Staff counter that the contention does not allege a fundamental flaw and improperly brings FEMA's review process into issue.⁴⁴

LILCO and Staff are clearly correct. FEMA's review process cannot constitute a fundamental flaw in the plan. Thus the contention fails to satisfy the essential requirement for admission. Moreover, it is not appropriate to challenge FEMA's (or Staff's) review process in this proceeding. See *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant), ALAB-728, 17 NRC 777, 807, *review declined*, CLI-83-32, 18 NRC 1309 (1983). This is not to say that Intervenor are precluded from arguing that FEMA reached inappropriate conclusions. They remain free to assert that, contrary to FEMA's conclusions, the exercise did demonstrate fundamental flaws in the plan. See ALAB-903, 28 NRC at 508.⁴⁵ But they are not entitled to challenge the integrity of FEMA's review process as an independent matter.

CONTENTION 4: FUNDAMENTAL FLAWS RELATING TO LILCO'S INTERFACE WITH STATE AND LOCAL GOVERNMENTS

This contention alleges that the exercise demonstrated a fundamental flaw in LERO's ability to interface with state and local governments as required by 10 C.F.R. §§ 50.47(b)(1) and (b)(3) and 50.47(c)(1)(iii)(B). It is supported by the following bases:

Basis A alleges that LERO did not keep the simulated government officials informed of the status of the emergency on a timely basis, citing two examples.

Basis B alleges that LERO did not inform the governments of the failure of fifty-seven of the system's eighty-nine sirens.

Basis C provides nine examples of allegedly "wrong, confusing, or unhelpful" information that was provided to the simulated governments.

Basis D alleges that many LERO representatives exhibited difficulty in conveying and eliciting pertinent information from simulated government officials.

⁴⁴ See LILCO's Response at 22-23; Staff's Response at 29; Intervenor's Reply at 79-81.

⁴⁵ We recognize that the statement in ALAB-903, *supra*, 28 NRC at 507-08, that a party seeking to establish that a FEMA finding is incorrect "has a greater, but not impossible, task . . ." may not be entirely consistent with the holding in *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), ALAB-698, 16 NRC 1290, 1298-99 (1982), that a FEMA finding is akin to a Regulatory Guide and is to be treated simply as evidence of compliance with regulatory requirements. We do not believe that possible inconsistency is relevant at the contention admission stage and have not applied a more stringent standard in ruling on contentions that challenge FEMA's conclusions. (In this regard, we agree with Intervenor that the presumption that attaches to the FEMA findings is not relevant at this stage. See Intervenor's Reply at 13-16.) However, these two holdings will need to be reconciled when dealing with the evidence addressing the question whether a fundamental flaw was demonstrated by the exercise.

Basis E alleges that many LERO workers requested information from the simulated government representatives that was in the plan.

Basis F alleges that LERO representatives contacted the wrong simulated government to obtain information.

Basis G provides two examples of LERO representatives allegedly taking actions without having first consulted with the simulated government concerned.

Basis H alleges that LERO representatives prematurely requested government approval of certain actions.

Basis I alleges that LERO's difficulties in interfacing with the simulated governments resulted in delays in the broadcast of Protective Action Recommendations (PARs).

LILCO believes that bases supporting this contention, either singly or collectively, raise only minor *ad hoc* problems that occurred on the day of the exercise. LILCO also notes that some of the bases are fatally nonspecific and that others raise unrelated incidents which do not have any impact on the public health and safety. Staff raises the same objections but would accept bases A, C.1, C.2, C.6, C.9, and D. Intervenor believe that these objections, in the main, improperly invite us to determine the issue raised by Contention 4 on the merits.⁴⁶

LILCO, Intervenor, and Staff all agree that in order to be admitted under ALAB-903, a fundamental flaw contention must allege that the exercise revealed a failure in an essential element of the plan, and that that failure can only be corrected through significant plan revisions.⁴⁷ They sharply disagree with regard to the application of this standard. LILCO believes that this standard states an extremely difficult test. LILCO concedes that the requirement that the contention identify an essential element of the plan is relatively easy to satisfy.

Contention 4 cites §§ 50.47(b)(1), (b)(3), and (c)(1)(iii)(B) as the essential elements that allegedly failed. The first two relate to the assignment of responsibilities and arrangements for requesting and using assistance. We interpret the citation of the last to refer to that provision which states that the Commission will presume that nonparticipating state and local governments will respond with their best efforts in an emergency and will, in the absence of evidence to the contrary, follow the utility emergency plan.

We do not believe that the factual allegations set out in the bases supporting Contention 4 concern § 50.47(b)(1). Because subsection (b)(1) requires the assignment of responsibilities in advance of an emergency, it is not implicated by allegations concerning communications and coordination during an emergency exercise with governmental units that refuse to participate in emergency planning. Subsection (b)(3) is arguably relevant because it concerns requests for as-

⁴⁶ See LILCO's Response at 23-28; Staff's Response at 33; Intervenor's Reply at 82-97.

⁴⁷ See LILCO's Motion to Dismiss Contentions 4-20 of November 21 at 4-5; Intervenor's Opposition of December 1 at 10-11; Staff's Response of December 6 at 2-4.

sistance. Subsection (c)(1)(iii)(B) seems clearly implicated because it implicitly raises the question of communication between LERO and the nonparticipating governments. Indeed, the contention recognizes that one of the objectives of the exercise was to:

[d]emonstrate the capability of utility offsite response organization personnel to interface with nonparticipating state and local governments through their mobilization and provision of advice and assistance.⁴⁸

Thus we agree with Intervenorers that Contention 4 implicates subsection (c)(1)(iii)(B) and perhaps (b)(3) relating to communications between LERO and the nonparticipating governments.

There is disagreement among the parties with regard to what is required in order to successfully allege a failure in an identified essential element. LILCO maintains that it is not easy to satisfy this element, arguing that minor or isolated problems do not show a failure in an essential element unless they are pervasive and show a pattern of repeated failures. LILCO also argues that a FEMA deficiency does not necessarily amount to a failure, that an allegation of delay must be substantial and likely to affect PARs in an actual emergency, and that an allegation that a particular individual failed to discharge his responsibilities must also allege that that individual's role is critical and there is no backup. LILCO bases its position on ALAB-903. Staff generally agrees with LILCO.⁴⁹

Intervenorers assert that LILCO has, in arguing that it is most difficult to meet this standard, confused the standards for pleading with that for proof. Intervenorers argue that the Appeal Board did not intend that an intervenor offer proof that its allegations are correct in order to have a contention admitted, citing, among other authority, the Commission's statement to this effect in CLI-86-11, 23 NRC at 581. Intervenorers maintain that the test set out in ALAB-903 is designed to ensure that any contentions that are admitted at this late stage in the proceeding are well focussed.⁵⁰

Intervenorers are correct that ALAB-903 did not and of course could not establish a standard for contentions that is not in accord with CLI-86-11. There is no requirement that evidence be pleaded in order to have a contention admitted for litigation. What is required is that the bases be set forth with sufficient specificity so that all parties are on notice of what the intervenor intends to litigate and so that the board can determine whether the assigned bases, if true, demonstrate that a fundamental flaw exists. We also agree with Intervenorers

⁴⁸ See Contentions at 20. While it is not totally clear, we believe that "their" in the quoted objective refers to the offsite response organization personnel, not the governments.

⁴⁹ See LILCO's Motion at 4-5; Staff's Motion at 2-3.

⁵⁰ See Intervenorers' Opposition at 10-13.

that we should consider the bases collectively, not in isolation, in determining whether they allege a failure.

Basis A alleges that LERO failed to keep simulated government officials informed of the emergency on a timely basis, citing a delay from 05:40, when an alert was declared on Day 1, until 06:43 on the same day, when the State was informed, and allegedly “very slow” communication of dose rate estimates to Suffolk County. Basis G alleges that LERO did not always consult with the governments prior to taking action, citing as examples a failure to coordinate prior to extending the ingestion PAR to 50 miles and prior to implementing access control in certain zones. Basis B asserts that the governments were not informed of the siren failures. Basis C lists nine examples of allegedly wrong, confusing, or unhelpful information conveyed to the governments.⁵¹ Basis D alleges that LERO had difficulty in conveying important information, citing as an example the alleged inability to relate how many emergency vehicles were needed for hospital evacuation purposes.⁵² Bases E and F allege that LERO personnel in some instances called government officials for information that was available in the plan and in others called the wrong officials for information, respectively. Basis I alleges that, as a result, delays were incurred in broadcasting PARs, citing a 35-minute delay in EBS 2, and a 53-minute delay in the initial evacuation and sheltering notification.⁵³

These allegations indicate that Intervenor may be able to show that a failure in communication and coordination required by §§ 50.47(b)(3) and (c)(1)(iii)(B) exists following a hearing. While the examples cited in support of the allegations may not be sufficient to demonstrate such a failure in themselves, to deny admission to the contention on that basis would be tantamount to requiring the Intervenor to prove their case at this stage of the proceeding. That would not be proper. *See* CLI-86-11, *supra*. The bases that we accept are set out with reasonable specificity and establish a sufficient foundation for the contention to warrant further inquiry into the question whether a failure in this element has occurred.⁵⁴

However, Intervenor has not, in the bases for this contention, addressed the second part of the ALAB-903 test: Would correction of the alleged failure require significant changes to the plan. The amendments that they submitted in response to ALAB-903 argue that such is the case, but Intervenor provides no factual underpinning for that position, despite the fact that ALAB-903 requires

⁵¹ Examples 4, 5, and 7 are overly vague.

⁵² This basis' references to “vague,” “nondescript,” and “incomplete” information and to a LERO representative who appeared “very shook up” are overly vague.

⁵³ We regard basis H as being overly vague.

⁵⁴ *See* ALAB-903, *supra*, 28 NRC at 506.

it.⁵⁵ Rather, they argue that, while not explicit, such factual underpinning is implicit in the contention.⁵⁶

The bases contain three references to the plan. All three of these provide citations to plan provisions that require certain actions that the bases allege were not accomplished. Intervenor's have extensive knowledge of the plan. It is not unreasonable to require more than mere argument on this point, and to deny admission to any contention that does not provide factual allegations concerning the plan provisions that must be revised or reassessed and why. Moreover, ALAB-903 (28 NRC at 506) made it clear that such is required:

Any contention alleging that an exercise revealed a fundamental flaw in the emergency plan must address both of these factors in order to satisfy the Commission's requirement that "the bases for each contention [be] set forth with reasonable specificity." 10 C.F.R. § 2.714(b). See CLI-86-11, 23 NRC at 581.

Although they sought to amend their contentions, and although they have extensive knowledge of the plan, Intervenor's did not seek permission to add factual bases to their contentions on this point. Contrary to their assertion, the significant changes that they believe are necessary to the plan are not implicit in the bases given. Consequently, this contention is denied.

CONTENTION 5: FUNDAMENTAL FLAWS RELATED TO NOTIFICATION

This contention alleges that a fundamental flaw was demonstrated in that LILCO was unable to promptly notify the public as required by 10 C.F.R. §§ 50.47(b)(5) and (b)(7) and Appendix E, ¶ IV.D.3. The contention is supported by the following bases:

Basis A alleges that during the exercise, when the sirens were activated to test the public alerting capabilities, fifty-seven of a total of eighty-nine failed.

Basis B alleges that LILCO did not follow the provisions of the plan when confronted with this failure in that it did not notify the governments or dispatch route-alert drivers.

Basis C alleges that LILCO did not comply with the regulatory standards governing timely notification to the public of PARs.

Basis D alleges that in several instances, route-alert drivers assigned to notify the deaf were unable to identify the homes of the deaf or the routes they were to drive.

⁵⁵ See *id.* LILCO and Staff argue that Contentions 4-20 should be dismissed for this reason. See LILCO's Motion at 5-8; Staff's Response at 7.

⁵⁶ See Intervenor's Opposition at 16.

LILCO responds that the siren failure presents a minor *ad hoc* problem which can be dealt with through additional testing, that the siren failure was overridden by a controller message that stated that only three sirens had failed and that the response to that failure was appropriate, that the assertion that LILCO did not comply with the standards governing the timing of public notification is based on an erroneous view of those standards, and that the alleged problem concerning notification of the deaf is a minor *ad hoc* occurrence. Staff agrees with LILCO with respect to bases B, C, and D, but appears to regard basis A concerning siren failure as a matter that is not relevant to the exercise. Intervenor maintain that LILCO's and Staff's interpretation of the regulations concerning the timing of public notification is erroneous and that their other objections raise questions of fact.

Applying the ALAB-903 standards to the amended contention reveals that Intervenor have adequately alleged that there was a failure in a major element of the plan, but once again have failed to allege that specific portions of the plan require significant revision or reassessment as a result.

Contention 5 cites §§ 50.47(b)(5), (b)(7), and Appendix E, ¶ IV.D.3, as the elements that are implicated by the contention. We agree that the first and last citations are relevant to the allegations stated in these bases. They both concern prompt notification of the public.⁵⁷ Further, we believe that the factual allegations of the bases are sufficiently specific and establish a sufficient foundation to warrant further inquiry. While LILCO and Staff may be correct in their positions with regard to such matters as the siren failure and the dispatch of route-alert drivers, those positions invite us to make factual findings prematurely.⁵⁸

However, the bases provide no factual allegations whatsoever concerning which provisions of the plan might require significant reassessment or revision as a result of the above failure. While the statement of contention does provide general references to provisions of the plan in order to demonstrate LILCO's recognition of the need for prompt public notification, these provisions are lengthy and complex. Thus the unsupported assertion that they must be revised is too vague to put LILCO and Staff on notice as to what is to be litigated or to permit us to determine whether a fundamental flaw has been alleged. Consequently, this contention must be denied.

⁵⁷ However, § 50.47(b)(7) principally concerns information materials distributed in advance of an emergency, as well as the coordinated dissemination of information to the public, matters that are not called into question by this contention.

⁵⁸ Whether the siren activation was a part of the exercise and whether FEMA overrode the actual failure with a message that required a different assumption are questions that appear to be amenable to a resolution at this juncture if the FEMA Report were clear on these points. It is not.

CONTENTIONS 6-10: FUNDAMENTAL FLAWS CONCERNING PUBLIC INFORMATION

These contentions raise matters that are similar to those heard in the litigation concerning the 1986 exercise. Following that hearing, we found that fundamental flaws were demonstrated with regard to some aspects of the public information program, and that they were not demonstrated with regard to others. While we will apply the ALAB-903 standards to these contentions, the similarity of these contentions to those litigated previously cannot be ignored. Therefore, where a contention raises matters that are not materially different from those decided in LBP-88-2 and where ALAB-903 does not require a different result, we will be guided by LBP-88-2 to the following extent:

First, we will deny allegations that do not materially differ from facts found not to constitute a fundamental flaw; and

Second, we will admit allegations that do not materially differ from facts found to constitute a fundamental flaw even if Intervenors have failed to allege that significant plan changes are required to remedy the alleged flaw. In this situation, we believe that the possible persistence of a fundamental flaw from one exercise to the next amply supports the inference that a significant reassessment of the plan is necessary in order to remedy the situation.

Contention 6: EBS Messages

This contention alleges that the EBS messages "broadcast" during the exercise were confusing, inaccurate, inconsistent, untimely, and poorly organized. It alleges that the fundamental flaw that we found to have been revealed by the 1986 exercise has not been corrected and additional fundamental flaws exist. It is supported by basis A, which provides six examples of allegedly incorrect information; basis B, which provides ten examples of the alleged omission of important information; basis C, which provides five examples of allegedly poor organization; and basis D, which provides thirteen examples of allegedly confusing and vague aspects of the messages.

The contention cites 10 C.F.R. § 50.47(b)(6) as that planning element which is implicated, and argues that ALAB-900 and LBP-88-2 both support the conclusion that the EBS messages constitute a major element. We agree. There can be no doubt that the EBS messages are a major element of the plan.

LILCO points out that the EBS messages have been litigated twice before, citing LBP-85-12, 21 NRC 644, 660-63, 669-71, 687-91, 698 (1985), and LBP-88-2, *supra*, 27 NRC at 168-74. LILCO argues that LBP-88-2 found only three significant problems, despite allegations that the messages were

inaccurate, vague, and confusing, which, together with other problems in the public information area, contributed to a fundamental flaw.⁵⁹ Intervenor argue that prior litigation does not shield the EBS messages from scrutiny. They take issue with the conclusion that only three significant problems were found in LBP-88-2.

In this connection they argue that the first significant problem cited in LBP-88-2 is similar to the examples given in bases C.2 and D.8. That problem concerned statements in the same EBS message that a minor release had occurred and that a release was not imminent.⁶⁰ The first, but not the second,⁶¹ example in basis C.2 and the example in basis D.8 are indeed similar.

Similarly, Intervenor draw a parallel between the second and third significant problems, concerning statements about the thyroid dose at 10 miles, and bases D.10, D.11, and D.12. We agree that these similarities exist. We also agree that these problems formed a part of the overall problem that LBP-88-2 found with the EBS messages, that the overall problem was not limited to the three examples cited by LILCO.⁶²

LILCO next argues that the bases given in support of Contention 6 all state minor, *ad hoc* problems or planning problems. Staff takes a similar position with respect to bases C and D. Intervenor disagree.⁶³ We have reviewed the bases in the light of ALAB-903 and have concluded that bases A.1, A.4-A.6, B.1-B.10, C.1, C.2 (first example only), D.2, D.7, D.8, D.12, and D.13 collectively allege a failure in the EBS messages. The remaining bases allege trivial or planning matters which do not add any substance to the alleged failure.

Finally, LILCO argues that bases A, C, and D allege minor problems similar to those that were previously litigated and found insignificant, that basis B has no regulatory foundation, and that many of the alleged problems are not EBS problems at all, but decisionmaking issues. Intervenor disagree.⁶⁴ LILCO's arguments raise issues that may be appropriately addressed at hearing. The first two arguments are not sufficiently specific to be addressed now, and the third raises factual matters that require an evidentiary record.

⁵⁹ See LILCO's Response at 32-33.

⁶⁰ See LBP-88-2, *supra*, 27 NRC at 171. Intervenor somewhat misstate the record in that the Board did not make a finding that this was significant because LILCO conceded that the error was not trivial and could be confusing.

⁶¹ The second example in basis C.2 does not appear to constitute an inconsistency in the message.

⁶² See Intervenor's Reply at 108-11.

⁶³ See LILCO's Response at 33-36; Staff's Response at 47. Staff does not object to bases A and B; Intervenor's Reply at 112-16, 119-20.

⁶⁴ See LILCO's Response at 37; Intervenor's Reply at 116-19.

Contention 7: Emergency News Center

This contention alleges that LILCO was unable to provide timely, accurate, consistent, and nonconfusing information to the news media. It focusses on the operations of the ENC, which, it is alleged, demonstrate a failure in the planning elements embodied in §§ 50.47(b)(6) and (b)(7).⁶⁵ It is supported by basis A, which alleges that the organization and management of the ENC and the skill of the spokespersons were inadequate; basis B, which alleges that the first press briefing at the ENC was tardy; basis C, which alleges that the spokespersons would be unable to control the press briefings in a real emergency; basis D, which alleges that information that conflicted with EBS messages then being broadcast was disseminated; basis E, which alleges that information was not made available at the ENC on a timely basis; basis F, which alleges that in a real emergency the tardiness of the EBS messages would create major confusion among the media and the public; basis G, which alleges that there was inadequate coordination between LERO and LILCO; and basis H, which alleges that the fact that only fifty-seven of eighty-nine sirens sounded on request was kept from the media.

LILCO and Staff oppose the admission of this contention, while Intervenor's argue for its admission.⁶⁶ The former regard basis A as stating trivial matters, while the latter assert that it asserts that the ENC did not provide timely information and cites LBP-88-2, *supra*, 27 NRC at 167, for the importance of this function. While it is true that in LBP-88-2 we regarded the tardy provision of EBS messages to the media to be significant, this basis does not raise any issue of similar import. Rather, it faults the Emergency News Manager for failing to adhere to the scheduled starting time of certain news conferences, cites "LILCO/LERO spokespersons joust[ing] with reporters" and failing to respond properly to the latter, and complains of a failing to post a knowledgeable spokesperson, in addition to a technical advisor who was available, between briefings. Even when considered with the rest of the bases supporting this contention, this basis raises only minor, *ad hoc* problems.

LILCO and Staff correctly assert that facts not materially different from those alleged in basis B were rejected in LBP-88-2, 27 NRC at 153. While Intervenor's have, as they point out, framed this contention in terms of the time that elapsed between the activation of the ENC and the first press briefing, as opposed to their earlier complaint that the ENC was not activated promptly enough following the

⁶⁵ We agree that these elements are implicated by this contention.

⁶⁶ See LILCO's Response at 37-42; Staff's Response at 52, Response to LILCO's Motion at 11; Intervenor's Reply at 121-30.

Alert at the plant, the fact remains that, according to this basis, approximately 2.5 hours elapsed between the Alert and the first press briefing, while in LBP-88-2, we found that a span of 3 hours between those events was not unacceptable. Basis B is rejected.

Moreover, Intervenor's position to the contrary notwithstanding, we agree with LILCO and Staff that bases C, D, and G are speculative, lacking foundation in the events of the exercise, and fail to adequately set forth the facts sought to be litigated. We disagree with their position that basis H is inadmissible for the same reason given with respect to Contention 5.B.

Bases E raises the question of whether the media were promptly provided with EBS messages. In LBP-88-2, we agreed 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 . . . fundamental flaw" concerning the failure to promptly provide the Call Boards with these messages.⁶⁷ Therefore, we find that this basis adequately alleges a failure in the cited planning elements in order to be admitted.

Basis F must be similarly treated. When stripped of speculation, this basis alleges that confusing information was being promulgated by LILCO/LERO. In LBP-88-2, we found that another integral part of the fundamental flaw relating to public information was the fact that some confusing information was included in the EBS messages and also noted the importance of providing the media with accurate information.⁶⁸ Consequently it too adequately alleges a failure in the cited planning elements.

Contention 8: Rumor Control

Intervenor candidly admit that this contention raises problems that are essentially the same as those that were reviewed in LBP-88-2 and found not to rise to the level of a fundamental flaw.⁶⁹ They argue, however, that the fact that these problems persist dictates the conclusion that LILCO's inability to institute effective rumor control procedures must be viewed as a fundamental flaw. We disagree. The mere passage of time is not an element to be considered in determining whether a fundamental flaw exists. This contention is denied.

⁶⁷ See 27 NRC at 157.

⁶⁸ See LBP-88-2, *supra*, 27 NRC at 172 and 151, respectively.

⁶⁹ Although Intervenor's attempt to distinguish the 1988 Rumor Control contention from its 1986 predecessor in their reply to LILCO's opposition (at 130-34), they have not cited any material differences between the two which could lead to a different result.

Contention 9: The Public Would Reject LILCO's Flawed EBS Messages as a Primary Source of Information

The title of this contention neatly sums up its content. LILCO, Staff, and Intervenor argue over whether the contention alleges a fundamental flaw, with Intervenor pointing out that it does because it alone alleges that the public would not accept the EBS messages as a source of information.⁷⁰ However, the contention furnishes no bases for this assertion other than those furnished in other contentions. Indeed, because the public did not participate, it is unlikely that the exercise would have furnished any information concerning the public's reaction which might support this contention. Consequently this contention cannot be admitted.

Contention 10: Evacuation Shadow Phenomenon

Here, Intervenor put forward the proposition that, because the public information made available during the exercise was not clear and unambiguous, a substantial evacuation shadow would develop. It is based on a conclusion reached in LBP-85-12, *supra*, 21 NRC at 670, that conflicting information would have that result. LILCO and Staff oppose.⁷¹

In LBP-88-2, we concluded that conflicting information had been provided to the public in the 1986 exercise. Accepting the conclusion reached in LBP-85-12 as the law of the case, we also concluded that a fundamental flaw was demonstrated in that, in those circumstances, "a controlled evacuation . . . probably could not be achieved."⁷² There is no reason why Contention 10 is essential in order to permit us to reach the same conclusion again. So far as we are aware, the conclusion reached in LBP-85-12 remains the law of the case. If Intervenor once again demonstrate that conflicting information was furnished to the public, the conclusion that we reached in LBP-88-2 would appear to be warranted. Contention 10 is denied.

Rulings on Contentions 6-10

We have identified a number of bases for Contention 6,⁷³ concerning EBS messages, which collectively adequately allege a failure in those messages. We have also identified bases E and F of Contention 7 which adequately allege failures relating to the ENC. However, Intervenor have provided no bases that

⁷⁰ See LILCO's Response at 43-45; Staff's Response at 56; Intervenor's Reply at 134-38.

⁷¹ See LILCO's Response at 45-47; Staff's Response at 57; Intervenor's Reply at 138-43.

⁷² LBP-88-2, *supra*, 27 NRC at 173.

⁷³ Specifically, bases A.1, A.4-A.6, B.1-B.10, C.1, C.2 (first example only), D.2, D.7, D.8, D.12, and D.13.

would support the proposition that correction of these alleged failures would require significant revisions to the plan. The problems alleged in these bases are, however, sufficiently similar to the problems that we found following the 1986 exercise to justify the conclusion that earlier problems have not been corrected, and that significant plan changes, if not required before, are indicated now.

The only other bases that we have identified as adequately alleging a failure is basis H to Contention 7, concerning an alleged withholding of information from the media at the ENC. No similar problem was identified in LBP-88-2; consequently, there is no reason to infer that this alleged failure might require significant plan changes.

CONTENTIONS 11-12: PROTECTIVE ACTION RECOMMENDATIONS

At the outset, it should be noted that none of the allegations of these contentions relate to a fundamental flaw that was identified in LBP-88-2.

Contention 11: Ingestion Pathway PARs

This contention alleges that the exercise revealed failures with respect to the elements embodied in 10 C.F.R. §§ 50.47(b)(6), (b)(7), (b)(9), (b)(10), and Part 50, Appendix E, ¶ IV.F.1. It is supported by basis A, which alleges that LILCO should not have waited until Day 3 of the exercise to issue ingestion pathway PARs; basis B, which alleges that prior to issuing a PAR on Day 3, LILCO knew that it would become necessary to issue PARs for the ingestion pathway but took no action to warn residents; basis C, which alleges that the EBS messages improperly sought to minimize the hazard in the ingestion pathway; basis D, which alleges that LILCO never issued ingestion pathway PARs to those persons who chose not to evacuate; and basis E, which alleges that certain PARs that are to automatically issue following a Site Area Emergency and a General Emergency were unjustifiably delayed. We agree with Intervenors that subsection (b)(10) is clearly implicated, and that subsection (b)(9) may be implicated. The other citations seem of dubious relevance to this topic.

LILCO opposes bases A and B on the grounds that they state minor, *ad hoc* problems, and that the FEMA Report does not support Intervenors' claim that there were sufficient data available on Day 1 to justify the issuance of ingestion pathway PARs. Intervenors counter that the problems alleged are not minor, *ad hoc* ones in terms of the provisions of the plan, and LILCO is again arguing

the merits of the contention.⁷⁴ Because these allegations concern the issuance of PARs, we believe that Intervenor's are correct that they adequately state a failure in the elements covered by the implicated regulations. Moreover, we find that LILCO's opposition does indeed raise factual issues which are not appropriate for resolution at this time.

LILCO opposes basis C by defending the statements that this basis calls into question and asserting that the complaints stated in this basis are trivial. Staff agrees with the latter point. Intervenor's urge that this basis should be considered with the others, and not in isolation.⁷⁵ Because its substance concerns supposedly confusing information, basis C does not appear to allege a failure of an element related to PARs at all.⁷⁶ LILCO opposes basis D by contradicting the facts alleged. Intervenor's argue correctly that LILCO's opposition raises merits considerations.⁷⁷ Moreover, we agree that this basis adequately alleges a failure in the implicated elements.

Both LILCO and Staff oppose basis E on the ground that the alleged 35-minute delay in issuing the PAR related to milk-producing animals, which is automatically required following a Site Area Emergency, does not violate any regulatory requirement, citing Appendix E, ¶ IV.D.3. Again, Intervenor's assert that this argument improperly raises the merits.⁷⁸ While we cannot categorically rule out the possibility that the facts alleged by this basis state a failure in the implicated elements, it seems unlikely that they do. A determination that a failure is demonstrated by these facts will depend upon whether Intervenor's can show that the exercise events required the virtual immediate issuance of this PAR to the public.⁷⁹

Contention 12: Plume Exposure Pathway PARs

This contention alleges that "LERO personnel were untimely in making PARs for the plume exposure pathway, made inappropriate recommendations in violation of 10 C.F.R. § 50.47(b)(6), (7), (9), and (10) . . . , failed to amend

⁷⁴ See LILCO's Response at 48-49; Intervenor's Reply at 144-46. Staff does not oppose these bases; Staff's Response at 61-62 and response to LILCO's Motion to Dismiss at 12-13.

⁷⁵ See LILCO's Response at 49; Intervenor's Reply at 146-47. Staff did not oppose this basis originally (see Staff Response at 61-62), but did oppose it in its Response to LILCO's Motion (see *id.* at 11-12).

⁷⁶ Indeed, basis C is very similar to Contention 6.A.2, which was denied because it raises a trivial matter which does not add any substance to the failure alleged by the other bases of that contention.

⁷⁷ See LILCO's Response at 49-50; Intervenor's Reply at 147-48. Staff does not oppose this basis. See Staff's Response at 61-62; Staff's Reply to LILCO's Motion at 12-13.

⁷⁸ See LILCO's Response at 50; Staff's Response at 61-62; Intervenor's Reply at 149-50.

⁷⁹ Appendix E, ¶ IV.D.3 provides in part that "[t]he use of [the 15-minute] notification capability will range from immediate notification of the public (within 15 minutes of the time that State and local officials are notified that a situation exists requiring urgent action) to the more likely events [sic] where there is substantial time available for the State and local government officials to make a judgment whether or not to activate the public notification system."

emergency broadcasts containing PARs in a timely manner, and failed to satisfy EOC Objective 18. It is supported by basis A, which alleges that a delay on Day 1 from 09:37, when the LERO EOC was notified of the EOF's evacuation and sheltering recommendations, until 10:20, when the EOC decided to accept them, and then until 10:26, when the public was notified, was unjustified; basis B, which alleges that LERO's PAR issued to schools at 06:13 on Day 1 to implement early dismissal was inappropriate and contrary to the plan; basis C, which alleges that LERO delayed issuing a PAR for those persons who did not follow the recommendation to evacuate from 10:26 on Day 1 until 11:35 on Day 2; basis D, which alleges that LERO delayed for 1 hour after determining that evacuees should report to reception centers before advising the public to do so; basis E, which alleges that LERO was tardy in issuing advice to the public concerning road impediments; and basis F, which alleges that LERO did not issue any PARs to residents of special facilities. We agree with Intervenors that the elements embodied in § 50.47(b)(10) are implicated by this contention, but we disagree as to the other subsections cited. Further, we note that Appendix E, ¶ IV.D.3 is also implicated.

LILCO and Staff oppose bases A and B as being "without basis" in that they fail to allege a violation of any regulation. LILCO also asserts that they are duplicative of Contention 5. Intervenors believe that litigable factual disputes exist.⁸⁰ While these bases do not appear to overlap Contention 5, basis A does present the same controversy as basis 11.E, delay in issuing PARs, and is governed by the same rationale, and basis B the same controversy as Contention 6.A.3, which was rejected as alleging a trivial matter.

LILCO asserts that basis C raises the same issues as those presented by Contention 11.D. Intervenors point out that this basis alleges a failure to issue plume EPZ PARs for those who did not evacuate, while Contention 11.D concerns ingestion EPZ PARs.⁸¹ While basis C does not specify which PARs should have been issued, we will accept Intervenors' explanation and treat it in the same way as Contention 11.D.

LILCO opposes basis D on the grounds that it fails to tie the alleged failure to adequately advise evacuees to report to reception centers to a regulatory standard, it is contrary to the facts recited by FEMA, and it does not allege facts that show that the public health and safety would have been threatened. Intervenors counter that the basis does allege a failure in a planning element and that LILCO's opposition improperly raises factual issues.⁸² We agree with Intervenors.

⁸⁰ See LILCO's Response at 51; Staff's Response at 64, Staff's Response to LILCO's Motion at 13-14; Intervenors' Reply at 151-53.

⁸¹ See LILCO's Response at 51; Intervenors' Reply at 153-54.

⁸² See LILCO's Response at 52-53; Intervenors' Reply at 154-56.

LILCO opposes basis E on the grounds that it has no factual basis and does not concern PARs. Intervenor correctly point out that the basis is adequately supported with specific factual allegations and that it does allege a failure in the PAR concerning evacuation.⁸³

LILCO opposes basis F on the grounds that it alleges that LERO followed the plan in not broadcasting separate PARs for special facilities. Intervenor's argument to the contrary amounts to an assertion that the plan should be changed.⁸⁴ This basis clearly raises a planning issue not appropriate for this proceeding.

We find that Contentions 11.A, 11.B, 11.D and 12.C, 11.E and 12.A, 12.D, and 12.E adequately allege failures in planning elements. Once again, however, Intervenor have failed to allege that a significant plan revision or reassessment is necessary as a result of these failures. However, although they implicate different planning elements, many of these failures are duplicative of matters admitted under Contention 6. Therefore it is necessary to consider whether it is appropriate to consolidate these failures with the latter on the assumption that the former will not entail the expansion of the planning elements on which proof is required. Because these failures are not independently admissible under the standards set out in ALAB-903, it would be inappropriate to consolidate them with admissible allegations if to do so would expand the scope of the hearing substantially. Thus, these alleged failures should not be admitted if to do so would require LILCO to defend against matters that it had successfully opposed at the contention stage. But where their consolidation with properly admitted matters does not require LILCO to mount a defense that is substantially different or expanded from that which would be required by the admissible matters, we believe that the public interest weighs in favor of consolidation.

We have compared the above bases with the admitted portions of Contention 6 and find that Contentions 11.A and 11.B, which concern an alleged delay in issuing ingestion EPZ PARs and a failure to warn residents of the ingestion EPZ of the possibility that such might be necessary, respectively, properly may be consolidated with Contentions 6.A.4 and 6.A.5, which concern the same subjects. Similarly, Contentions 11.D and 12.C, which both concern the issuance of PARs directed to residents who remained in zones that had been recommended to evacuate, may be consolidated with Contention 6.B.3. And Contentions 11.E and 12.D may be consolidated with Contentions 6.B.4 and 6.B.2, respectively. The first set concerns an alleged delay in issuing a mandatory PAR for dairy animals, and the second a delay in issuing appropriate recommendations concerning the need to report to a reception center. Contention 12.E concerns delays in advising the public concerning three traffic impediments. It may be consolidated with

⁸³ See LILCO's Response at 51; Intervenor's Reply at 157.

⁸⁴ See LILCO's Response at 53; Intervenor's Reply at 157-58.

Contentions 6.B.7 and 6.B.10.⁸⁵ Finally, there is no counterpart for Contention 12.A in Contention 6; consequently it is not consolidated and is denied.

CONTENTIONS 13-17: FUNDAMENTAL FLAWS RELATING TO IMPLEMENTATION OF PROTECTIVE ACTIONS

Contention 13: Medical Services

This contention alleges that the plan fails to satisfy 10 C.F.R. § 50.47(b)(12) in that the hospitals participating in the exercise did not properly handle contaminated injured individuals. It is supported by basis A, which alleges that the radiation safety officer (RSO) at Brunswick Hospital used improper techniques to monitor patients; basis B, which alleges that contamination control was inadequate; basis C, which alleges that LILCO failed to provide sufficient RSOs; basis D, which alleges that, no one having played the role, there was no demonstration of the ability to transport a contaminated injured individual; and basis E, which alleges that the ambulance driver who simulated transport of such an individual did not know the proper entrance to the hospital, and hospital personnel were not present to receive him.

LILCO, relying on the FEMA Report, maintains that none of the problems cited by these bases rise to the level of a fundamental flaw,⁸⁶ and that Intervenor has provided no basis to discredit the FEMA Report in this regard. Staff takes a similar position but would admit basis C. Intervenor maintains that LILCO may not properly rely on the FEMA Report in order to deny admission to the contention and that they are entitled to present evidence in an attempt to substantiate their claims.⁸⁷

We agree with LILCO that bases A, B, and E state matters that, if true, do not rise to the level of a fundamental flaw. Moreover, we do not need to consider the FEMA Report in order to reach this conclusion. Basis C, however, states a matter that is litigable in that it alleges that the exercise revealed a failure with respect to the planning element embodied in § 50.47(b)(12) in that the plan does not provide for sufficient RSOs.

Basis C is not related to a fundamental flaw found in LBP-88-2, and Intervenor has provided no support for the allegation that basis C, if substantiated,

⁸⁵ Contentions 6.B.7 and 6.B.10 omit one of the impediments treated in Contention 12.E. We suspect, however, that the proof that LILCO would offer on the two that are included in Contention 6 will not be significantly expanded by the inclusion of the third and therefore have consolidated it as well. LILCO is free to seek relief from this ruling if this assumption is in error.

⁸⁶ LILCO maintains that basis D is in error, citing the FEMA Report at 98.

⁸⁷ See LILCO's Response at 53-55; Staff's Response at 55-56; Intervenor's Reply at 158-61.

would require significant plan revisions.⁸⁸ Consequently, this basis must be denied. Basis D raises a scope issue which is embodied in admitted Contention 1.I and is consolidated with that contention.

Contention 14: Schools

This contention alleges that the exercise revealed a failure in the essential planning element related to schools, citing § 50.47(b)(10) and ALAB-900, *supra*, 28 NRC at 296-97. It is supported by bases A through H.

Basis A alleges that so-called "assignment packets," which the school bus drivers must have in order to carry out their assignments, were not available at many school bus companies and bus yards, while *basis G* asserts that in some instances, buses were not available at the yards. LILCO opposes this basis on the ground that, as recited in LBP-88-24, *supra*, 28 NRC at 340, 344, 150% of required bus drivers are mobilized in order to ensure the evacuation of schoolchildren in one wave. Thus, argues LILCO, if an assignment packet or bus was not available to a driver, it was because that driver was surplus to the needs of the day. Staff opposes basis A on the ground that it fails to allege that a bus route was not run because of the lack of an assignment packet, and basis G on the ground that it does not cite a source of facts.⁸⁹

Intervenors contradict LILCO's explanation of bases A and G. They point out that Staff's assertion as to basis A is incorrect and that there is no requirement for them to cite a "source of facts" for basis G.⁹⁰ We agree with Intervenors that the parties' arguments raise factual issues unsuited for resolution now and that these allegations state a failure of an essential planning element.

Basis B alleges that the fact that LILCO implemented protective actions for children who attend school outside of the EPZ, but reside within it, illustrates the need for planning on this subject. LILCO argues that Intervenors have failed to show how the implementation of these unplanned protective actions in any way compromised the health and safety of the students, while Staff asserts that this is a planning issue. Intervenors' reply appears to be that the fact that *ad hoc* measures were taken demonstrates that planning is needed and thus a fundamental flaw exists.⁹¹

We denied Contention 1.C, which asserted that the plan's provisions for these schoolchildren were not adequately tested, on the ground that it raises matters

⁸⁸ Indeed, their argument in the amended contentions is that overall, the contention shows that significant retraining of personnel is required. Moreover, it is hard to imagine that one could mount an effective argument that the addition of personnel possessing particular skills required a significant reassessment or revision so long as such personnel were reasonably available.

⁸⁹ See LILCO's Response at 55; Staff's Response at 68-69.

⁹⁰ Intervenors' Reply at 162-64, 175.

⁹¹ See LILCO's Response at 58; Staff's Response at 68; Intervenors' Reply at 165-66.

that are outside the literal scope of the regulations. This basis must be denied for the same reason. Its allegations simply do not implicate a major planning element embodied in § 50.47(b)(10).

Basis C alleges that a significant number of bus drivers deviated from their assigned routes out of the EPZ. LILCO believes that no fundamental flaw is alleged because the deviations were few and easily corrected through additional training. Staff points out that there is no allegation that the deviations affected the public response. *Intervenors* reply that LILCO improperly raises factual arguments and that Staff's response is not comprehensible.⁹² We find that this basis adequately alleges a failure of an essential planning element.

Basis D alleges numerous problems associated with the implementation of protective actions for the Rocky Point School District. LILCO raises numerous objections to it, many of which invite our attention to exercise documents that are not properly before us at this stage of the proceeding. *Intervenors*, needless to say, take issue with these objections.⁹³ We find that *Intervenors* have adequately alleged a failure in an essential planning element.

Basis E alleges that the exercise revealed that not all school buses are equipped with two-way or AM/FM radios, and *basis F* that LILCO did not demonstrate how schoolchildren at relocation centers would be cared for. LILCO objects that these bases raise planning issues, while Staff points out that there are no such regulatory requirements. *Intervenors* take issue with both assertions.⁹⁴ We agree with both LILCO and Staff as to basis E. The absence of radios certainly was known prior to the exercise. Moreover, we find that these allegations do not demonstrate a failure in an essential planning element. Basis F raises an issue that is within the scope of and is consolidated with admitted Contention 1.D, alleging that the exercise omitted major portions of the plan related to schools.

Basis H alleges that the maps provided to bus drivers were inaccurate. LILCO points out that there is no allegation that the inaccuracies in any way interfered with the drivers' response. *Intervenors* regard this argument as raising factual issues.⁹⁵ LILCO is correct. While we may not consider the merits of the bases advanced by *Intervenors*, *Intervenors* nonetheless have an obligation to allege facts that would demonstrate a failure in a planning element and that establish a sufficient foundation to warrant further inquiry.⁹⁶ They have not done so with respect to this basis.

⁹² See LILCO's Response at 59; Staff's Response at 68; *Intervenors'* Reply at 166-68.

⁹³ See LILCO's Response at 56-57, 59; *Intervenors'* Reply at 168-72. Staff does not object to this basis.

⁹⁴ See LILCO's Response at 57-58; Staff's Response at 68-69; *Intervenors'* Reply at 172-74.

⁹⁵ See LILCO's Response at 59-60; Staff appears to agree with LILCO (see Staff's Response at 69); *Intervenors'* Reply at 175-77.

⁹⁶ ALAB-903, *supra*, 28 NRC at 506.

In summary, we find that Intervenors have alleged failures in the relevant planning element with respect to the availability of bus driver assignment packets, buses, and the propensity of drivers to deviate from their routes. Once again, Intervenors have offered no basis for their position that these alleged failures require significant revision or reassessment of the plan. Nor does it seem likely that these kinds of failures would require such action.⁹⁷ Although there was some demonstration “of the organizational ability and resources necessary to effect an orderly evacuation of the schools within the plume EPZ” in the 1986 exercise, no contention survived to hearing which challenged the results of that demonstration.⁹⁸ Thus there was no fundamental flaw found with respect to these matters. In this situation, this contention must be denied.

Contention 15: Traffic Impediments

This contention alleges that LERO remains unable to adequately respond to traffic impediments. It is supported by three bases. *Basis A* asserts that it took 1 hour and 15 minutes for road crews to respond to an overturned truck on Granny Road. *Basis B* points to the misdirection of traffic by a Traffic Guide and alleges that LERO remains unable to adequately reroute traffic around impediments, and *basis C* raises the delays in advising the public of the impediments alleged in Contention 6. LILCO asserts that the first two bases raise only minor, *ad hoc* problems and that the third should be considered under Contention 6. Staff agrees. Intervenors disagree.⁹⁹ We agree with LILCO and Staff that the allegations of bases A and B represent minor, *ad hoc* problems and do not demonstrate a failure in a planning element. Basis C will be considered under Contention 6. Contention 15 is denied.

Contention 16: Access Control

This contention alleges that LILCO’s plan makes inadequate provision for access control and that, as a result, access control over evacuated areas was not established on a timely basis, apparently was not in place to protect that portion of the population that were “unsheltered” on Day 2, and LERO personnel displayed inadequate knowledge of whom should be allowed access. It is not supported by specific factual allegations. Essentially, the parties’ arguments

⁹⁷ However, as discussed *infra*, we believe the implications for the training program of these failures is another matter.

⁹⁸ See LBP-87-32, *supra*, 26 NRC at 495-96; LBP-88-2, *supra*. However, our determination that the scope of that demonstration was inadequate was affirmed. See ALAB-900, *supra*, 28 NRC at 296-97.

⁹⁹ See LILCO’s Response at 60-62; Staff’s Response at 70, Reply to LILCO’s Motion to Dismiss at 14; Intervenors’ Reply at 177-81.

focus on whether this contention is too vague to be admitted.¹⁰⁰ We agree with LILCO and Staff that it is. The contention simply provides no factual allegations that would permit us to determine whether a failure in a planning element may have occurred that would warrant further inquiry. Therefore, it is denied.

Contention 17: Monitoring and Decontamination of Public and Emergency Workers

This contention alleges a failure with respect to the ability to provide timely and effective monitoring and decontamination for the public and emergency workers which is required by § 50.47(b)(10). It is supported by two bases. *Basis A* alleges that LILCO failed to properly advise the public to report to reception centers for monitoring and possible decontamination. Both LILCO and Staff point out that this basis is redundant of Contention 6.B.2. Intervenors acknowledge that fact but argue that the same facts may support more than one contention.¹⁰¹ Contention 6.B.2 has been admitted. The facts alleged in the two bases are not materially different, and the legal conclusion to be drawn from those facts, if they are substantiated, does not differ between the two contentions. Both allege a failure in the planning element embodied in § 50.47(b)(6), while Contention 17 concerns § 50.47(b)(10). This basis does not support this contention; consequently there is no reason to separately admit it.

Basis B provides four examples in which LERO personnel allegedly followed incorrect monitoring and decontamination procedures. These focus on the Roslyn, Hicksville, and Bellmore reception centers, and on the Emergency Worker Decontamination Facility (EWDF). LILCO and Staff argue that they present only isolated instances which, either singly or in combination, do not amount to a fundamental flaw. Intervenors recognize that, while singly these examples do not amount to a fundamental flaw, together they demonstrate a pervasive problem that does reach that level.¹⁰² While we agree with Intervenors that a sufficient number of the type of problems alleged in this contention could demonstrate that a failure has occurred with respect to this planning element, we do not believe that the allegations of basis B reach that level. They are essentially isolated and unrelated instances which do not show a pervasive pattern. Contention 17 is denied.

¹⁰⁰ See LILCO's Response at 62-63; Staff's Response at 71; Intervenors' Reply at 181-84.

¹⁰¹ See LILCO's Response at 63; Staff's Response at 72-73; Intervenors' Reply at 184-86.

¹⁰² See LILCO's Response at 64; Staff's Response at 73; Intervenors' Reply at 186-87.

CONTENTIONS 18-19: FUNDAMENTAL FLAWS RELATED TO COMMUNICATIONS

Contention 18: Equipment and Reception Failures

This contention alleges that, pursuant to § 50.47(b)(6), LILCO has installed a communications system that was shown by the exercise to be unreliable. It is supported by bases A through G. *Basis A*, which asserts that some radios failed and were replaced, does not allege a failure with respect to this planning element. *Bases C and D*, which rely on the FEMA Report in alleging that inadequate radio coverage hindered communications with respect to two traffic impediments, quote that report out of context and hence do not provide any reason to inquire further. *Basis F* repeats allegations concerning the lack of radios on school buses, which were denied in connection with Contention 14. *Bases B, E, and G* concern the adequacy of the communications system itself and present different considerations. LILCO argues that these bases are inadmissible by contradicting them on the merits. Staff asserts that all of the bases taken together do not allege a fundamental flaw, and that basis G is too vague.¹⁰³ Intervenors defend these bases.¹⁰⁴ We may not properly consider LILCO's arguments at this stage of the proceeding, and we believe that these bases do allege a failure with respect to this planning element which requires further inquiry.

The failure alleged in these bases does not correspond to a fundamental flaw found in LBP-88-2. Therefore, we must consider whether Intervenors have provided a factual basis for their argument that significant plan revisions may be necessary. In contrast with the other instances in which this consideration has arisen thus far, bases B, E, and G themselves indicate that, should they be substantiated, a significant reassessment of the communications methods and resources provided by the plan will be necessary if reliable communications are to be provided.¹⁰⁵

Contention 19: Failure to Communicate Information

This contention alleges that the exercise demonstrated that LERO is "unable to obtain, identify, process, communicate, and transmit essential information and data effectively, accurately and appropriately, and on a timely basis. . . ."

¹⁰³ Despite Staff's assertion, which on the surface appears to be well taken, LILCO's response indicates that it understands the import of this basis.

¹⁰⁴ See LILCO's Response at 64-66; Staff's Response at 74; Intervenors' Reply at 187-92.

¹⁰⁵ This appears to be so largely because these bases concern a hardware problem, as opposed to an organizational problem where specific remedies are not necessarily obvious.

thus demonstrating a failure with respect to the planning element embodied in § 50.47(b)(6). It is supported by five bases which, to a very large extent, rely on the allegations of other contentions for their support.

LILCO opposes bases A and E, which allege inadequate briefings and communications associated with Staging Areas and inadequate guidance and maps issued to some emergency workers, respectively, on the ground that they are too vague and lack the seriousness of a fundamental flaw. Staff opposes basis E, but not basis A, on the ground that it is too vague. LILCO opposes bases C and D, which allege communications problems in the ENC¹⁰⁶ and EOC, respectively, on the ground that they are redundant of other contentions. It opposes basis B, which alleges communications problems between the EOC and ENC, on the ground that it is not supported by any of the contentions that it cites. Staff opposes bases B, C, and D on the ground that there is no nexus between the factual bases of the contentions to which they refer and their allegations. Intervenors assert that the allegations do demonstrate a fundamental flaw and that they may rely on the same facts to support more than one contention.¹⁰⁷

We find that basis A is too vague in all particulars except its reference to the failure to advise the EOC of the lack of assignment packets for school bus drivers. Although basis B cites Contentions 5-9 for its support, a quick review of the bases of those contentions reveals only one relevant isolated allegation. Because basis C and the relevant portions of Contentions 6-9 on which it relies both allege failures with respect to § 50.47(b)(6), this basis adds nothing new. Basis D, however, concerning LILCO's alleged inability to communicate with the affected governments, does implicate different planning elements than Contention 4, which does provide factual support. Therefore it adequately alleges a failure with respect to § 50.47(b)(6). We agree with LILCO and Staff that basis E is too vague.

Thus only basis D provides reason for further inquiry. However, Intervenors have not alleged facts that would indicate that the alleged failure would require significant plan revisions. Thus this basis can be admitted only if it is sufficiently related to a flaw found in LBP-88-2 to justify the inference that such is indeed the case.

In LBP-88-2, we found flaws related to communications in four specific areas, only one of which was related to the EOC.¹⁰⁸ That area concerned the failure of the Evacuation Route Coordinator to inform his superiors and coworkers of traffic impediments. It seems obvious that any plan revisions that would have been occasioned by that failure are quite different from those that would

¹⁰⁶ Problems concerning the provision of timely advice to the media concerning the status of the emergency will be considered under Contentions 7.E and 7.F.

¹⁰⁷ See LILCO's Response at 67-69; Staff's Response at 76-77; Intervenors' Reply at 192-97.

¹⁰⁸ See LBP-88-2, 27 NRC at 213.

be occasioned by the failure alleged in basis D. We find that basis D is not sufficiently related to justify its admittance.

CONTENTION 20: FUNDAMENTAL FLAWS IN LILCO'S TRAINING PROGRAM

This contention alleges that the exercise revealed a failure with respect to 10 C.F.R. §§ 50.47(b)(14) and (b)(15) in that it demonstrated that LILCO's training program has not been effective. It points out that in LBP-88-2, *supra*, we found that the 1986 exercise revealed a fundamental flaw in the training program. Intervenor's assert that virtually every error made by a LERO player reflects adversely on the training program. The contention is supported by bases A through I which refer generally to other contentions and to specific portions of the FEMA Report for their factual statements.

LILCO mounts an attack on the admissibility of a training contention in this proceeding as a general proposition. LILCO finds support for its position in LBP-88-2, which pointed out that, following the 1986 exercise, FEMA found a significant number of training problems and did not find that the plan could be satisfactorily implemented with the training program then in effect. LILCO also relies on LBP-88-2's conclusion that, because of the fundamental flaws found in the training program, a finding of reasonable assurance would have to await a demonstration in another FEMA graded exercise that these flaws had been corrected. Pointing to the FEMA Report, LILCO asserts that this condition has now been met and, consequently, Contention 20 must be denied in its entirety.¹⁰⁹

LILCO's position overlooks the fact that Intervenor's have clearly alleged a failure in the training program required by §§ 50.47(b)(14) and (b)(15), and that they are clearly entitled to challenge FEMA's conclusions. Consequently, LILCO's position must be rejected.

Staff takes a different position. It also cites LBP-88-2, but for the proposition that the standard to be followed in evaluating the training program is whether a systemic problem or pattern of defects has been shown in LERO's performance.¹¹⁰ Pointing to the fact that Intervenor's have not provided specific factual allegations in the bases to this contention, but rather have generally referenced groups of contentions, Staff argues that Intervenor's have failed to allege a systemic problem or pattern of defects and have failed to satisfy the basis and specificity requirements of 10 C.F.R. § 2.714.¹¹¹

¹⁰⁹ See LILCO's Response at 69-72, citing LBP-88-2, 27 NRC at 174, 212.

¹¹⁰ See LBP-88-2, 27 NRC at 177.

¹¹¹ See Staff's Response at 79-80.

Staff's argument is correct. The very general references provided by the bases to this contention are insufficient to allege a pervasive or systemic problem or to meet the basis and specificity requirements.¹¹² For example, basis B, which alleges that the training program has not prepared LERO personnel to adequately respond to unanticipated and unrehearsed events, states: "Exercise actions and events which support this contention subpart are described in Contentions 4-8, 14-15." The referenced contentions cover sixty-three pages in Intervenors' amended statement of contentions and deal with such diverse topics as access control, rumor control, EBS messages, and monitoring and decontamination. This is the quintessential example of a basis for a contention that fails to adequately inform the board and the parties of its subject matter.

Staff overlooks the fact that, in addition to the general references, Intervenors have also provided references to specific portions of the FEMA Report. We have reviewed these and the performance contentions that we have admitted, as well as those that we have not admitted solely because they did not provide any factual basis on which to conclude that significant plan changes might be required to correct them. Together, these are adequate to permit us to review the bases in order to determine whether a systemic problem or pattern of defects is revealed which implicates the training program.

Basis A alleges that the training program has not prepared LERO personnel to interact with the governments in a timely and effective manner. No specific facts are cited. Contentions 4.A, 4.B, 4.C.1-4.C.3, 4.C.6, 4.C.8, 4.C.9, 4.D, 4.G, and 19.D were all found to adequately allege a failure in the planning element related to interaction with the governments, but were excluded because they did not provide a factual basis for the proposition that significant plan changes were required as a result. They also adequately allege that the training program has failed in this respect.

Basis B is denied for the reasons given above.

Basis C alleges that the training program has not successfully taught LERO personnel the terms of and the necessity to follow the plan. It cites sixteen ARCAs. These all concern school or general-population bus drivers with the exception that two ambulette crews, an EOC communicator, route spotter, traffic guide, radiation monitor, and Radiation Safety Officer each received one ARCA.¹¹³ Additionally, Contention 5.D, which asserts that route-alert drivers could not always identify the homes of the deaf whom they were to alert, raises a similar problem. While the ARCAs pertaining to the EOC communicator, radiation monitor, and Radiation Safety Officer, appear to be isolated events,

¹¹²Intervenors' argument that Staff is in reality attacking the merits of the contention is clearly incorrect. See Intervenors' Reply at 202-03.

¹¹³It is interesting that one of the fundamental flaws found in the training program in LBP-88-2 concerned the basic knowledge of traffic guides and bus drivers.

the remainder may, if substantiated, indicate a systemic problem or pattern of defects with respect to the category of workers represented by bus drivers, ambulette crews, route spotters, and traffic guides. Thus, they allege a failure with respect to this aspect of the training program.

Basis D alleges that the training program has failed to teach LERO personnel to communicate adequately among themselves and with the public. It cites three ARCAs, two of which appear to be isolated instances of inadequate internal communications. The third concerns inaccurate information in EBS messages 4-7. This, when coupled with the contentions we have admitted concerning communications with the public,¹¹⁴ could demonstrate a systemic problem, and thus alleges a failure in this aspect of the training program.

Basis E alleges that the training program has failed to teach LERO personnel to exercise good judgment and use common sense. It cites three ARCAs which concern three unrelated events and thus does not adequately allege a failure with respect to this aspect of the training program.

Basis F alleges that the training program has failed to teach LERO personnel to deal with the media. It cites Contentions 6 and 7 as its support, the admitted portions of which have been accepted under basis D. Consequently, basis F is consolidated with basis D.¹¹⁵

Basis G alleges that the training program is insufficient in the areas of dosimetry, exposure control, potassium iodide (KI), and radiation terminology. It recognizes that a similar contention concerning the 1986 exercise was not successful,¹¹⁶ and cites ten ARCAs as its support. With the exception of the last ARCA cited, these all raise the question whether a systemic training problem exists, particularly with regard to KI. Thus this basis adequately alleges a failure in this aspect of the training program.

Basis H relies solely on general citations to the contentions and is denied.

Basis I alleges that those LERO personnel who participated in the exercise demonstrated that they lacked the training to implement the plan. This is too general an allegation to be litigated and is denied.

We find that bases A, relating to interaction with the governments, C, relating to the training of bus drivers, ambulette crews, route spotters, and traffic guides in the plan's procedures, D, relating to communications with the public, and G, relating to dosimetry, exposure control, KI, and radiation terminology adequately allege a failure in the planning elements related to training. The question remains whether the contention adequately alleges that a significant plan revision or

¹¹⁴ These are Contentions 6.A.1; 6.A.4 and 6.A.5, with which 11.A and 11.B are consolidated; 6.A.6; 6.B.1-6.B.10 (11.D and 12.C are consolidated with 6.B.3, 11.E is consolidated with 6.B.4, 12.D is consolidated with 6.B.2, and 12.E is consolidated with 6.B.7 and 6.B.10); 6.C.1; 6.C.2 (first example only); 6.D.2; 6.D.7; 6.D.8; 6.D.12; 6.D.13; 7.E; and 7.F.

¹¹⁵ This consolidation does not expand the evidentiary inquiry as defined under basis D.

¹¹⁶ See LBP-88-2, *supra*, 27 NRC 204-05.

reassessment is needed. Similar to the situation with respect to Contention 18 concerning communications systems and equipment, we believe that the possible existence of a systemic problem or pattern of defects in an aspect of the training program in itself states a need for a significant revision or reassessment. If, for example, bus drivers are not following plan procedures, a significant reassessment of their training program will be necessary to determine why and correct the problem. Consequently, Contentions 20.A, 20.C, 20.D, and 20.G are admitted.

SUMMARY OF RULINGS ON CONTENTIONS

The following summary lists the admitted contentions. The summary of each contention is given for convenience only and is not intended to supercede the rulings contained in the discussion of each contention and its bases. Contentions that have been consolidated with a given contention are listed with the latter.

- 1.A Public notification system was insufficiently tested. Sirens were not tested, nor was there a test of the EBS.
- 1.B School preparedness was inadequately tested. Only one school district participated; this participation was limited to one school with enrollment of 170 students. There are eight other school districts and twenty-three parochial and private schools within the 10-mile EPZ that were not contacted during the exercise.
- 1.D Exercise omitted major portions of the emergency plan relating to school evacuations. Includes 14.F (Failure to show how children taken to relocation centers would be cared for).
- 1.E School evacuation plans were inadequately tested. There was no demonstration of how bus passengers would be directed after disembarking, only 30 out of 613 drivers were dispatched to the bus yard, and no demonstration of how the buses would be directed at relocation or reception areas, or how potentially contaminated children would be monitored and decontaminated.
- 1.F Evacuation of special-facility residents was inadequately tested. During the operation of the exercise, none of the special facilities participated. None of the special facilities were contacted, either within or outside of the 10-mile EPZ.
- 1.G The exercise failed to test evacuation of homebound disabled population residing within the EPZ. During the exercise, two

ambulances were dispatched to zones B and C, but no actual persons were transported.

- 1.H The reception hospitals did not participate in the exercise, and no capability to implement selection of hospitals at the time of emergency was demonstrated.
- 1.I Testing of evacuation of contaminated injured individuals was inadequate. One ambulance was dispatched to test the ability to transport the injured individuals, while only one radiation officer was present during medical drills designed to test ability to care for injured individuals.
- 1.O & 1.P An insufficient number of bus and ambulance companies participated in the exercise.
- 1.Q The communications network in the plan was not tested sufficiently.
- 6.A.1 EBS Nos. 4-7 erroneously stated that doses were below EPA guidelines for protective actions.
- 6.A.4 EBS No. 10 incorrectly advised that no action need be taken in areas outside the 10-mile EPZ.
- 6.A.5 EBS No. 16 advised that no action need be taken in areas outside the 10-mile EPZ even though certain doses had been found to be above EPA guidelines and the same EBS contained a dairy animal PAR for those areas.
 - 11.A and 11.B consolidated with 6.A.4 and 6.A.5 (Delay in issuing ingestion pathway PARs when aware of "hot spots" and increased radiation risk, failure to warn persons outside the 10-mile EPZ).
- 6.A.6 EBS Nos. 4 and 5 incorrectly advised of the location of Rocky point schoolchildren who were enroute for monitoring and possible decontamination.
- 6.B.1-6.B.10 Important information was not disseminated in a timely fashion.
- 6.B.1 Incorrect advice was disseminated by EBS regarding a release of radiation into the air.
- 6.B.2 PAR directing persons in evacuated zones to go to reception centers was untimely and confusing. Includes 12.D (Untimely broadcast of information to report to reception centers).

- 6.B.3 PARS were not issued to those choosing to remain in evacuated areas. Includes 11.D and 12.C (No announcements regarding ingestion pathway precautions to those choosing not to evacuate; untimely broadcast of PARs for persons remaining in evacuation zones).
- 6.B.4 EBS announcement of the PAR for dairy animals was untimely. Information released at the ENC conflicted with EBS messages. Includes 11.E (Delayed EBS announcement to place dairy animals on stored feed).
- 6.B.5 Broadcast of EBS message regarding evacuation of children residing in EPZ from schools outside the EPZ was delayed.
- 6.B.6 EBS information regarding pickup and evacuation of children attending schools outside the EPZ but residing inside the EPZ was confusing.
- 6.B.7 EBS announcement of traffic impediments was delayed. Includes 6.B.10 and 12.E (Delay in advice regarding road impediments which could lead to delays in evacuation).
- 6.B.8 Announcement regarding extension of ingestion PARs for dairy animals was delayed.
- 6.B.9 EBS information regarding contaminated milk and vegetables was delayed and inaccurate.
- 6.C.1 Road impediment information was placed at the end of EBS messages.
- 6.C.2 New information placed into EBS messages was not in context and thus confusing (first example only).
- 6.D.2 There was no EBS announcement of altered LIRR service for means of evacuation.
- 6.D.7 EBS gave inconsistent advice to the same group.
- 6.D.8 EBS gave inconsistent messages juxtaposed against one another leading the listener to believe that the people “in charge” did not know what was happening.
- 6.D.12 EBS gave inconsistent information regarding ingestion PARs.
- 6.D.13 EBS gave confusing information regarding ingestion PARs.
- 7.E EBS messages for the news media at the ENC were not timely posted.

- 7.F The untimeliness of EBS messages would create confusion for the media and the listening and viewing public.
- 18.B Loss of radio contact between LILCO and field workers delayed receipt of and response to messages.
- 18.E Heavy radio traffic resulted in a potential for delay of priority messages.
- 18.G RECS (dedicated) telephone system did not function correctly at times.
- 20.A Personnel lacked sufficient training to interface in a timely manner with state and local government officials.
- 20.C Training programs ineffective in instructing bus drivers, ambulette crews, route spotters, and traffic guides to follow the plan.
- 20.D Personnel were ineffectively trained in communicating and acquiring data and information or recognizing the need for information, resulting in an inability to communicate emergency information in a clear and timely manner. Includes 20.F (Personnel not effectively trained to deal with the media to provide timely nonconflicting information).
- 20.G Training was deficient regarding use of KI.

ORDER

In consideration of the foregoing, it is hereby ORDERED:

1. The contentions enumerated above are admitted for litigation in this proceeding; and

2. Pursuant to 10 C.F.R. §§2.718(i) and (m), the rulings contained in this Memorandum and Order are certified to the Atomic Safety and Licensing Appeal Board.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Frederick J. Shon
ADMINISTRATIVE JUDGE**

**Dr. Oscar H. Paris
ADMINISTRATIVE JUDGE**

**John H Frye, III, Chairman
ADMINISTRATIVE JUDGE**

**Bethesda, Maryland
January 3, 1989**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Helen H. Hoyt, Chair
Glenn O. Bright
James H. Carpenter

In the Matter of

Docket No. 50-224-OLA
(ASLBP No. 87-574-07-OLA)

UNIVERSITY OF CALIFORNIA,
BERKELEY
(Research Reactor)

January 5, 1989

ORDER
(Dismissing the Proceeding)

This Board has before it the joint pleading filed on November 25, 1988, by Intervenor City of Berkeley and the University of California, Berkeley, Licensee, petitioning for dismissal of the petition to intervene and request for hearing. In addition, on December 7, 1988, the Board received the NRC Staff Response for Support of Joint Motion for Dismissal of Hearing Procedures.

The Board has considered the joint motion and the Staff response. Accordingly, the Board grants the request and dismisses this proceeding.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Helen F. Hoyt, Chair
ADMINISTRATIVE JUDGE**

**Glenn O. Bright
ADMINISTRATIVE JUDGE**

**James H. Carpenter
ADMINISTRATIVE JUDGE**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ivan W. Smith, Chairman
Dr. Richard F. Cole
Dr. Jerry R. Kline

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)

January 30, 1989

MEMORANDUM AND ORDER
(Review of Quebec Earthquake)

On December 5, 1988, Elizabeth Dolly Weinhold ("Petitioner") filed a petition seeking review in several forms of the effect on the current license application of the so-called "Quebec" earthquake which occurred on November 25, 1988.¹ The Applicants and NRC Staff have filed responses in opposition to the petition.² No other parties have responded. On January 4, 1989, the

¹ The submission was titled "Petition for Nuclear Regulatory Commission Review and Evaluation of the 6.4 Magnitude Quebec, Canada Earthquake for the Express Purpose of Comparative Analysis with the Safe Shutdown Earthquake (SSE) of the Seabrook Units and the Evacuation Planning Report."

² Applicants' Answer, dated December 19, 1988; NRC Staff Response, dated December 30, 1988. The NRC Staff had also filed a preliminary assessment, dated December 15, 1988.

Petitioner filed a "Rebuttal" to the Applicants' Answer; and on January 11, 1989, the NRC Staff filed a response to the "Rebuttal."³

For reasons set forth below, we find that the petition fails in a number of ways to conform to NRC regulatory requirements and, additionally, sets forth no information that would warrant our undertaking the additional safety reviews that appear to be sought. Accordingly, we are denying the petition.

1. Background

As both the Applicants and Staff observe, the petition is not a model of clarity. What it apparently seeks is for this Licensing Board to (1) review and evaluate the Quebec earthquake with a view toward upgrading the Safe Shutdown Earthquake (SSE) for this facility to at least the level of the Quebec event, and (2) accept for litigation five contentions seeking to revise certain aspects of the emergency plan to take into account damage from an earthquake greater than the current Seabrook SSE. The petition, however, fails to define precisely the contours of the review that is sought; nor does it accommodate the procedural requirements of the various forms of review that may be sought. Nonetheless, we have attempted to discern whether any of the types of analyses apparently sought by the Petitioner should be made available, consistent with NRC procedures, given the information provided.

The Petitioner is not a party to the Seabrook operating license proceeding, although she has made a limited appearance statement on seismic matters.⁴ She was a party to the Seabrook construction permit proceeding, raising seismic issues concerning the SSE for the Seabrook facility. Because the Petitioner has not yet become a party to this proceeding, at a time well after the initial period specified for doing so, her proposed participation in the operating license proceeding must be judged under the procedures governing late-filed intervention petitions set forth in 10 C.F.R. § 2.714(a) and must survive a balancing of the five factors set forth therein.⁵ Although her petition itself includes no information or argument addressed to the factors governing late-filed intervention petitions, her "Rebuttal" does discuss one of the factors.

³ As the Staff points out, under NRC Rules, Petitioner has no automatic right to file a "Rebuttal" (*cf.* 10 C.F.R. § 2.730(c)). She also has not moved for leave to do so. Nonetheless, the Staff offers no objection to our considering this "Rebuttal," and we have considered it, as well as the Staff's response thereto, in reaching our determination on the petition.

⁴ This statement was made before the Licensing Board for the onsite proceeding (Tr. 229-32, September 29, 1986). Ms. Weinhold appeared as one of a panel of witnesses before this Board, on another topic (Tr. 8602-77, January 12, 1988).

⁵ (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.

The Applicants have analyzed the petition in terms of (1) a motion to reopen the record, (2) a motion for late-filed intervention, and (3) a request for relief under 10 C.F.R. § 2.206. The Staff has analyzed it in terms of the first two of these options.

The section of the rules governing motions to reopen the record (10 C.F.R. § 2.734) is among those cited by the petition, and Petitioner's Rebuttal explicitly affirms that the Petitioner is seeking to reopen the record on seismic matters. Nonetheless, there conceptually is some difficulty in applying these procedures to the petition inasmuch as no seismic issues have ever been considered in the operating license proceeding and, accordingly, there is no record on this question to reopen.⁶ We have considered the petition in terms of the reopening procedures only to the extent necessary to note that the affidavits required by 10 C.F.R. § 2.734(b) have not been furnished. Because of the generally inadequate factual support undergirding the petition, we would deny the petition as not meeting the reopening criteria if it were necessary to determine whether those criteria were satisfied.

We also do not view the petition, either through its terms or its apparent intent, as a request for a show-cause order pursuant to § 2.206 seeking to modify "the outstanding operating license."⁷ In any event, we have no jurisdiction to entertain requests for show-cause orders pursuant to § 2.206 and thus will not further consider the petition as seeking such an order.

In short, we regard the petition as a request for late-filed intervention, seeking to litigate several new contentions, and we will consider it in that context.

2. Standards

Late-filed intervention requests not only must satisfy the lateness criteria set forth in 10 C.F.R. § 2.714(a).⁸ They must also meet the general requirements for intervention, including a showing that the petitioner has standing to participate and has submitted at least one litigable contention. 10 C.F.R. § 2.714(a), (b). As for standing, the Petitioner states only that she is from Hampton, New Hampshire, and was an intervenor in the construction permit proceeding. Although this statement does not describe standing with the required particularity, no party has raised any question concerning standing. We will assume that the

⁶ The construction permit and operating license phases of an application are considered separate proceedings. Subject to application of *res judicata* or collateral estoppel factors (see pp. 56-59, *infra*), similar types of safety issues may be considered in each proceeding. Seismic issues were considered in the construction permit proceeding, but we have no jurisdiction to reopen that separate proceeding. 10 C.F.R. § 2.717(a); *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), ALAB-381, 5 NRC 582, 591 (1977).

⁷ Applicants' Answer, dated December 19, 1988, at 4, 9.

⁸ See note 5, *supra*.

Petitioner possesses the requisite standing, based on the location of Hampton as within 50 miles of the reactor.

As for proposed contentions, we perceive two separate categories. The first, set forth as five separate contentions, attempts to litigate the effect of an earthquake similar to the Quebec earthquake on the emergency plan for the facility. The other more general contention seems to claim that the current SSE for the facility is inadequate based on the recent Quebec earthquake.

3. *Emergency Planning Contentions*

To the extent the petition seeks to introduce five new contentions concerning the effect of an earthquake such as the Quebec earthquake on emergency planning for the facility, we agree with both the Applicants and Staff that these proposed contentions are all of a type that may not be considered in a proceeding of this sort. The five contentions are each premised upon a severe reactor accident at Seabrook being accompanied by an earthquake of the magnitude of the Quebec earthquake. The Commission has held that this scenario need not be considered in the context of emergency planning, and its ruling in this regard has been upheld by the Court of Appeals for the Ninth Circuit. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-84-12, 20 NRC 249 (1984), *aff'd sub nom. San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1305-09 (D.C. Cir. 1984), *aff'd en banc*, 789 F.2d 26 (D.C. Cir. 1986). *See also Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-81-33, 14 NRC 1091 (1981). Given these rulings, it is clear that we could not entertain the five proposed emergency planning contentions, even were all other requirements governing a late-filed intervention to be satisfied.

4. *Seismic Review*

The remaining matter sought to be litigated by the petition consists of a reevaluation of the Seabrook SSE, to determine whether it is sufficient to take into account the recent Quebec earthquake. The petition asserts that the Quebec earthquake is a magnitude 6.4, whereas the Seabrook SSE is only a magnitude 6.0. The Applicants, however, claim that the 6.4 magnitude stems from early newspaper accounts based on preliminary assessments and that the Quebec earthquake has been rated as 6.0 magnitude by the Geological Survey of Canada and 5.9 magnitude by the U.S. Geological Survey.⁹

⁹ Applicants' Answer at 2 n.2.

To make the Quebec earthquake applicable to the Seabrook site, the petition seeks to have us find that it is included within the same tectonic province as that within which the Seabrook site is located. The petition fails, however, even to indicate the location of the epicenter of the earthquake. (The several responses are of no assistance in this regard.) For purposes of our discussion here, we shall assume that the earthquake occurred about 90 miles north of Quebec City (approximately 400 miles from the Seabrook site).¹⁰

The petition also seeks to have reconsidered testimony presented by Inter-venors' witness, Dr. Michael Chinnery, at the construction permit stage but not relied upon by either the Licensing Board or the Appeal Board, concerning the maximum size earthquake that could occur at Seabrook. The petition apparently claims that the occurrence of the asserted 6.4 magnitude Quebec earthquake together with several smaller earthquakes validates the theories propounded by Dr. Chinnery.

The Applicants and Staff oppose our accepting this portion of the petition on a variety of grounds. We will deal with them *seriatim*.

a. Jurisdiction

First, although asserted with respect to a reopening of the record (which, as we have shown, is not here applicable), the Staff asserts that we lack jurisdiction to entertain a claim of this sort. The Staff, without citation to any authority, defines our jurisdiction to extend only to "proceedings relating to Applicants' off-site radiological emergency response plan."¹¹ (It claims that the onsite Licensing Board for this proceeding similarly lacks jurisdiction to entertain a claim of this sort, on the ground that its authority is limited to resolving certain specific issues remanded to it by the Appeal Board.) The Applicants make a similar assertion about our jurisdiction, also without citation.

In our view, we possess adequate jurisdiction to consider the seismic question, were it otherwise properly presented. As is reflected in the recent Notice that reconstituted the membership of this Board, this Licensing Board is the successor to the original Board for this proceeding and possesses jurisdiction to consider all issues within the scope of this proceeding, other than those specifically assigned to another Board.¹² The onsite Board was spun off in 1985 to resolve specified issues, and its jurisdiction is limited to those issues. That emergency planning issues are all that are currently pending before us is a fortuitous circumstance

¹⁰ See issuance of the NRC Office of Nuclear Regulatory Research, "Items of Interest, Week Ending December 2, 1988," attached hereto as an appendix.

¹¹ NRC Staff Response, dated December 30, 1988, at 2-3; see also NRC Staff Response to Rebuttal, dated January 11, 1989, at 3.

¹² Notice of Reconstitution of Board, dated January 10, 1989, 54 Fed. Reg. 2009 (Jan. 18, 1989).

and does not serve to limit our jurisdiction to those issues — particularly where, as here, the seismic issue in question was never before raised or considered in the operating license proceeding. Accordingly, we have jurisdiction to entertain any new late-filed contentions that are otherwise properly within the scope of this operating license proceeding and are not among those assigned to the onsite Board.

b. *Res Judicata*

Second, the Applicants assert that the seismic review sought by the Petitioner is *res judicata*, based on questions that were raised by the Intervenor (including the Petitioner) and resolved during the construction permit proceeding. This claim is applied by the Applicants to the Petitioner's alleged assertion that the Seabrook site is in the same tectonic province as Quebec, and upon the validity of the so-called "Chinnery" theory of ascertaining the upper bounds of earthquake magnitude. Both of these questions are necessary elements of the petition and, according to the Applicants, were decided adversely to the Petitioner during the construction permit proceedings.¹³ For the reasons that follow, we conclude that the Applicants' claim is meritorious and that Petitioner's contention that the Seabrook SSE should be reevaluated is barred as *res judicata*.

The doctrine of *res judicata* has long been held to be applicable in NRC licensing proceedings. *Alabama Power Co.* (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 AEC 210, remanded on other grounds, CLI-74-12, 7 AEC 203 (1974). The doctrine must be applied "with a sensitive regard for any supported assertion of changed circumstances or the possible existence of some special public interest factors" *Id.*, ALAB-182, 7 AEC at 216. In that connection, however, we could not reject the proposed contention on *res judicata* grounds without affording the Petitioner an opportunity to be heard on the question. *Farley*, CLI-74-12, *supra*, 7 AEC at 204.¹⁴ The Petitioner has had that opportunity in this instance.

For *res judicata* to preclude litigation of an issue, the individual or entity against whom estoppel is asserted must have been a party, or in privity with a party, to the earlier litigation (here, the construction permit proceeding); the issue to be precluded must be the same as that involved in the prior proceeding; the issue must have been actually raised, litigated, and adjudged; and the issue must

¹³ See ALAB-422, 6 NRC 33, 54-64 (1977); ALAB-667, 15 NRC 421, 441 (1982).

¹⁴ Licensing boards must provide an opportunity to respond to "any prospective intervenor whose contention is attacked by another party on *res judicata* or collateral estoppel grounds, prior to deciding the matter." Although the Applicants cited this opinion as subsequent history of the Appeal Board decision on which they relied, they neglected to advise us of the necessity of obtaining the Petitioner's views before deciding the question on *res judicata* grounds. In this instance, the Petitioner has addressed this question in her "Rebuttal" and, accordingly, the pleading requirements essential for us to consider the Applicants' claim of *res judicata* have been fulfilled.

have been material and relevant to the disposition of the first action. The doctrine must be applied with a sensitive regard for any supported assertion of changed circumstances. *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 536-37 (1986). Here, unless it appears that the changed circumstances cited by the Petitioner — i.e., the Quebec earthquake and several smaller earthquakes — undercut the findings at the construction permit stage, all elements of *res judicata* appear to be satisfied.

In determining the admissibility of the proposed seismic contention, and before determining whether *res judicata* is applicable, we must accept the petition's classification (supported by a basis)¹⁵ of the earthquake as having a 6.4 magnitude. *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980). If that classification were correct, the earthquake would be of greater magnitude than the Seabrook SSE. This showing of changed circumstances, however, would be relevant to this proceeding only if such an earthquake would produce ground acceleration at the Seabrook site greater than the Seabrook SSE. Whether that is the case depends upon whether the Quebec earthquake is located in the same tectonic province as Seabrook. 10 C.F.R. Part 100, Appendix A, V(a).

At the construction permit stage, the tectonic province in which the Seabrook site was found to be located is not the same as the one in which the Quebec earthquake apparently occurred. The petition, however, seeks to demonstrate that the previous determination was incorrect and that one tectonic province governs both areas; i.e., that the province in which the Seabrook site is located is the "southerly extension of the Quebec, Canada, Seismic Tectonic Province." Petition at 6.

The Petitioner advances two theories to support this proposition. First, she attaches an earthquake epicenter map covering earthquakes that occurred from October 1975 through September 1986. This map is said to demonstrate (i) that seismicity appears to be evenly distributed throughout southern New Hampshire and eastern Maine; (ii) that the southern New Hampshire–eastern Maine seismic zone runs parallel to the Quebec seismic province; and (iii) an even distribution of major and minor seismicity has been instrumentally recorded during the period throughout the entire northeastern U.S. regions from Ottawa, Canada, due South, through the states of New York, New Jersey, and "due East," encompassing all of the New England States and extending through the St. Lawrence River Regions of Canada.

¹⁵The basis would be the "reports in local newspapers" on which the petition states it is based (Petition at 2; see also Applicants' Response at 2 n.2; Petitioner's Rebuttal at 2-3). We assume, because we have not been advised otherwise, that the reports themselves made no attempt to connect the earthquake to the Seabrook facility. We also note, although we are not premising our ruling on, precedent to the effect that "hearsay based on a newspaper article does not constitute the kind of evidence that can support a reopening motion." *Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), CLI-86-1, 23 NRC 1, 6 n.2 (1986).

Our own examination of the attached map leads us to believe that these observations are mutually inconsistent; and that, rather than an even seismicity, there are several distinct belts of seismicity in the area covered. That map scarcely supports the theory advanced by the Petitioner. Nor does the theory appear to be based on anything more than pure speculation by the Petitioner; no scientific expert is cited as a basis for the claim. Indeed, Ms. Weinhold has conceded that she has no expertise in this field (Tr. 229, onsite proceeding). We conclude that the Petitioner's arguments on this point are not sufficient to undercut the application of *res judicata* to the determination of tectonic province.

Second, the Petitioner references an earthquake of 4.0 magnitude at Berlin, New Hampshire, on October 20, 1988, and an earthquake of 3.8 magnitude at Sumner, Maine, on November 15, 1988, and describes them as potential "pre-shocks" of the Quebec earthquake. Because of their location vis-a-vis the Seabrook site, the Petitioner asserts that, if they were "pre-shocks" of the Quebec earthquake, they would serve to expand the tectonic province in which the Quebec earthquake occurred to include the Seabrook site. She calls upon "the scientific community" to determine whether these two small earthquakes are indeed "pre-shocks" of the Quebec earthquake.

No scientific basis has been cited to support this theory. As noted, Ms. Weinhold admits that she herself is not a scientific expert in this field. We ourselves are aware of no scientific basis for this claim. Indeed, Ms. Weinhold appears to be using this claim to generate research support for her pre-shock theory, a process comparable to discovery which is impermissible under NRC rules to assist in the framing of contentions. *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-107, 6 AEC 188, 192, *re-consideration denied*, ALAB-110, 6 AEC 247, *aff'd*, CLI-73-12, 6 AEC 241 (1973). Given these considerations, we find no basis supporting the Petitioner's pre-shock theory and no foundation for using that theory to demonstrate changed circumstances sufficient to modify the previous conclusions with respect to the Seabrook tectonic province and thereby undercut the Applicants' claim of *res judicata*.

The Applicants would also apply *res judicata* to the Petitioner's claim that the Quebec earthquake and the seismicity map discussed above revalidate Dr. Chinnery's theory that an Intensity XII earthquake is a probable occurrence throughout the entire Northeastern United States Provinces. The Appeal Board concluded "that Dr. Chinnery's methodology has not been shown to be a credible means of predicting the intensity of seismic motion at a particular site." ALAB-667, *supra*, 15 NRC at 441. Ms. Weinhold has not provided a technical explanation of how the new information on which she is relying would even affect Dr. Chinnery's testimony, much less validate it. For lack of any basis for this claim, we do not accept it as defeating a claim of *res judicata* with respect to the Appeal Board's evaluation of Dr. Chinnery's testimony.

In sum, we find that two of the vital elements in Ms. Weinhold's petition are *res judicata* and that none of the information provided in the petition (or Rebuttal) serves to demonstrate changed circumstances that would undercut the applicability of that doctrine. Insofar as it seeks a reexamination of the Seabrook SSE, the petition is barred by the doctrine of *res judicata*.

c. *Timeliness*

Finally, both the Applicants and Staff claim that, even were litigable issues presented, the Petitioner has not carried her burden of demonstrating that the lateness factors favor admission of the proposed contentions. Given our rulings on the lack of merit of each of the proposed contentions, we need not even reach this claim. Nonetheless, to provide a record of our views on all the issues raised, we will record our agreement with the Applicants and Staff in this regard.

The petition itself makes no attempt whatsoever to address the requisite factors. The "Rebuttal" deals in some fashion with factor (v) (delay), but, as the Staff points out, a petitioner who fails to discuss the five factors in its original petition has no right to a second opportunity to do so later. *Boston Edison Co. (Pilgrim Nuclear Power Station)*, ALAB-816, 22 NRC 461, 468 (1985).

Moreover, even were we to assume that factors (i), (ii), and (iv) weigh in favor of the Petitioner, factors (iii) and (v) do not and, in this situation, would be controlling. Most important, the Petitioner has made no showing that she could adequately assist in developing the record on complex questions such as she is attempting to raise. Indeed, her attempt to provide a basis for modifying the tectonic province is, as we have observed, founded upon sheer speculation. Moreover, she admits to lack of expertise but provides no basis for our concluding that she could or would obtain technical assistance in pursuing her contentions. As for delay, her observation that there will be little delay if the Applicants' assertion of the magnitude of the Quebec earthquake is correct ignores both the reasonable time needed to resolve legitimate differences of opinion or, alternatively, suggests a lack of basis for her claim that the Quebec earthquake is of magnitude 6.4. Although the delay engendered by the process of litigation would not be controlling were significant safety information warranting resolution by the Board presented, this is not the case here.

In short, we do not believe that our denying the instant petition will have any adverse effect on the public health and safety. In that connection, the NRC Staff, of course, routinely keeps track of developing information on earthquakes and, where warranted, may take enforcement action to make new information applicable to existing licensees.

For the reasons stated, it is, this 30th day of January 1989, ORDERED:

1. The Petition for Nuclear Regulatory Commission Review and Evaluation of the November 25, 1988 Quebec, Canada Earthquake, dated December 5, 1988, is hereby *denied*.

2. This Memorandum and Order may be appealed by the Petitioner to the Atomic Safety and Licensing Appeal Board, as provided by 10 C.F.R. § 2.714a. A notice of appeal with accompanying supporting brief must be filed within ten (10) days after service of this Memorandum and Order. Any other party may file a brief in support of or in opposition to the appeal within ten (10) days after service of the appeal.

Judges Jerry Harbour and Gustave A. Linenberger were members of the Board at the time the petition was filed and contributed to this decision. They agree with the result. Judge Jerry R. Kline did not participate in this decision.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Richard F. Cole
ADMINISTRATIVE JUDGE

Ivan W. Smith, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland
January 30, 1989

APPENDIX

OFFICE OF NUCLEAR REGULATORY RESEARCH Items of Interest Week Ending December 2, 1988

Earthquake in Eastern Canada

A magnitude 6 earthquake occurred at 6:46 pm EST, Friday, November 25, 1988, about 90 miles north of Quebec City, Canada, which is an area of little or no historic seismicity. The epicenter is located at 48.14N and 71.22W, with a depth of 17 km. This location is 100 km north of the historically very active La Malbaie area on the St. Lawrence River.

A magnitude 4.5 foreshock occurred on Wednesday, November 23, and a 4.1 aftershock occurred on Saturday, November 26. There have been no aftershocks greater than magnitude 2 since Sunday, November 27.

The main shock was strongly felt at the Canadian Gentilly nuclear power plant approximately 215 km miles [sic] from the epicenter, but there was no seismic instrument to record the event as they are not required for Canadian plants. The only U.S. nuclear power plant that instrumentally detected the earthquake was Nine Mile Point Unit 1, about 675 km distance, where a seismic annunciator sounded for 2 seconds. The strong motion instruments were not triggered.

Seismologists and geologists of the Geophysics Division of the Geological Survey of Canada, with which the NRC-RES has a cooperative seismic agreement, have deployed portable instruments in the epicentral area to monitor aftershocks. They also are searching for evidence of ground surface deformation caused by the earthquakes, which may be difficult to find with the 12" snow cover. Columbia University seismologists, an RES contractor personnel, are assisting the Canadians with additional portable equipment. They also operate an array of strong motion instruments in conjunction with the National Center for Earthquake Engineering. This array recorded a maximum acceleration of 0.6g approximately 210 km from the epicenter.

The earthquake was widely felt within the U.S., from Maine to Michigan with reliable reports of it being felt in the Washington, D.C. area.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Sheldon J. Wolfe, Chairman
Emmeth A. Luebke
Jerry Harbour

In the Matter of

Docket Nos. 50-443-OL-1
50-444-OL-1
(ASLBP No. 88-583-01-OL)
(Onsite EP Exercise)

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

January 30, 1989

The Licensing Board denies certain Intervenors' motion to admit exercise contention, or, in the alternative, to reopen the record.

LICENSING BOARDS: JURISDICTION

A licensing board possesses the inherent right (indeed, the duty) to determine in the first instance the bounds of its jurisdiction. *Duke Power Co. (Perkins Nuclear Station, Units 1, 2, and 3)*, ALAB-591, 11 NRC 741, 742 (1980).

RULES OF PRACTICE: NONTIMELY SUBMISSION OF CONTENTIONS

Pursuant to 10 C.F.R. §2.714(a)(1) and (b), any contention that is not filed within 15 days prior to the holding of a special prehearing conference or that is

not filed within 15 days prior to the holding of the first prehearing conference (if a special prehearing conference has not been held), is deemed to be late filed, and any request to file a nontimely contention may be granted based upon the balancing of the five factors.

ATOMIC ENERGY ACT: RIGHT TO A HEARING

Section 189a of the Atomic Energy Act does not provide members of the public with an unqualified right to a hearing, but rather the Act permits the establishment of reasonable threshold requirements for the admission of contentions, and the five-factor test in 10 C.F.R. § 2.714 represents a permissible exercise of that authority. *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1045-47 (1983). In *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (1984), the Court of Appeals neither held nor implied that the Act either prohibits the establishment of reasonable threshold requirements, such as the five-factor test, for the admission of contentions, or precludes the application of standards to reopen a closed record under 10 C.F.R. § 2.734.

RULES OF PRACTICE: NONTIMELY SUBMISSION OF CONTENTIONS

Good cause can be shown for failing to propose a contention in a timely manner if intervenors submit the contention promptly after receiving the pertinent document, and all that is required is that they state the reasons (i.e., the basis) for the contention by referring to that document, and set forth assertions and conclusions drawn therefrom. *See Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 548-49 (1980).

RULES OF PRACTICE: NONTIMELY SUBMISSION OF CONTENTIONS

Once the institutional unavailability of a licensing-related document is removed, intervenors must promptly formulate their contentions. *See Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041 (1983).

RULES OF PRACTICE: NONTIMELY SUBMISSION OF CONTENTIONS

Absent good cause for late filing, a compelling showing must be made on the other four factors in § 2.714(a)(1). *Mississippi Power & Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-704, 16 NRC 1725, 1730 (1982). However, favorable findings on some or even all of the other factors in the rule need not in a given case outweigh the effect of inexcusable tardiness. *Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 275 (1975).

RULES OF PRACTICE: NONTIMELY SUBMISSION OF CONTENTIONS

The second and fourth factors in § 2.714(a)(1) are accorded less weight than the three other factors. With respect to the third factor, a petitioner should set out with as much particularity as possible the precise issues it plans to cover, identify its prospective witnesses, and summarize their proposed testimony. *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), CLI-86-8, 23 NRC 241, 245-46 (1986).

RULES OF PRACTICE: MOTION TO REOPEN THE RECORD

Section 2.734 is a part of the adjudicatory process provided for under § 189(a)(1) of the Atomic Energy Act. In contrast, a 10 C.F.R. § 2.206 procedure can hardly be equated with the ability to litigate issues in an adjudicatory setting, accompanied by a right of appeal to the Appeal Board and an entitlement to petition for Commission review if dissatisfied with the appellate result. *Washington Public Power Supply System* (WPPSS Nuclear Project No. 3), ALAB-747, 18 NRC 1167, 1176 (1983).

RULES OF PRACTICE: MOTION TO REOPEN THE RECORD

A mere threshold showing is insufficient because it is well settled that a proponent of a motion to reopen has a heavy burden. 51 Fed. Reg. 19,535 (1986); *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), ALAB-462, 7 NRC 320, 328 (1978).

RULES OF PRACTICE: MOTION TO REOPEN THE RECORD

Even though a matter is timely raised and involves significant safety considerations, no reopening of the evidentiary hearing will be required if the affidavits

submitted in response to the motion demonstrate that there is no genuine unresolved issue of fact, i.e., if the undisputed facts establish that the apparently significant safety issue does not exist, has been resolved, or for some other reason will have no effect upon the outcome of the proceeding. The questions whether the matters sought to be raised present significant safety issues and whether they present triable issues of fact are intertwined and will be so treated. *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-138, 6 AEC 520, 523-24 (1973).

LICENSING BOARDS: REVIEW OF NRC STAFF'S ACTIONS

Barren allegations that the NRC Staff has acted in bad faith will be ignored. The presumption of regularity supports the official acts of public officers, and, in the absence of clear evidence to the contrary, we presume that they have properly discharged their official duties. *United States v. Chemical Foundation, Inc.*, 272 U.S. 1, 14-15 (1926).

RULES OF PRACTICE: MOTION TO REOPEN THE RECORD

Only facts raising a significant safety issue, not conjecture or speculation, can support a reopening motion. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-775, 19 NRC 1361, 1367 n.18 (1984).

EMERGENCY PLANNING: EXERCISE INSPECTION REPORTS

It is normal NRC procedure, when an exercise inspection report identifies "open items," for the Staff to conduct a followup inspection to determine whether those open items should be closed in a subsequent inspection report.

MEMORANDUM AND ORDER
(Denying Motion to Admit Exercise Contention or to
Reopen Record)

Memorandum

I. BACKGROUND

On September 16, 1988, certain intervenors filed a motion to admit exercise contention or, in the alternative, to reopen the record.¹ An affidavit of Mr. Robert Pollard (hereafter Pollard Aff. 1) was attached to the motion. Applicants filed a response opposing the motion on September 28, 1988. Affidavits of Messrs. Gary Kline, James MacDonald, and Gregg Sessler were attached to the response. On October 3, the Staff filed its response. On October 7, the Intervenor submitted a motion for leave to reply to the responses of the Applicants and the Staff. On October 12, the Staff and Applicants filed opposing responses.²

II. DISCUSSION

A. Jurisdiction

Intervenor urge that this onsite Board has jurisdiction to consider and to admit this new contention which alleges that serious defects and inadequacies exist in the Applicants' current onsite emergency response staff which result from an inadequate training program, and that said contention arises out of the June 27-29, 1988 exercise conducted at the Seabrook Nuclear Power Station, which included testing of Applicants' own *onsite* Seabrook Station Emergency Plan.³ According to Intervenor, since this new contention is involved with the authorization to issue a low-power license, we have jurisdiction. Apparently, Intervenor request that we either admit the contention after holding that the record has not been closed or, in the alternative, if we find that the record has

¹ These intervenors are the Massachusetts Attorney General, the New England Coalition Against Nuclear Pollution, the Seacoast Anti-Pollution League, and the Town of Hampton, New Hampshire.

² We grant Intervenor's motion for leave to reply of October 7. Much that is discussed in their reply could have been filed in their original motion of September 16. However, as of October 7, our Memorandum and Order of October 12 (unpublished) had not been issued, which in footnote 2 stated that our patience was at an end and that thereafter we would deny any request to file a reply brief where it was clear that the matters therein should have been presented in the original motion.

³ The June 1988 full-participation exercise, which simulated certain full-power operating conditions, also tested the *offsite* plans of the State of New Hampshire and the Applicants' plan for Massachusetts communities within the Seabrook EPZ.

been closed, we should reopen the record and admit the contention. Applicants argue that we are without jurisdiction because first, the issue concededly was not raised before this Board when it was exercising plenary jurisdiction over the proceeding,⁴ and because, second, our jurisdiction is now limited to two remanded issues⁵ — i.e., the coaxial cable issue⁶ and the public notification issue, both of which we were considering pursuant to summary disposition procedures. The Staff does not question our jurisdiction.

We possess the inherent right (indeed, the duty) to determine in the first instance the bounds of our jurisdiction.⁷ We conclude that we have jurisdiction because the Commission's decision of December 21, 1988, CLI-88-10, 28 NRC 573, reflected that, before a low-power license may be issued, this Board must have resolved the instant motion to litigate additional onsite emergency planning issues and any litigation before it on *such* additional onsite issues.

B. Late Filing

At pages 4 through 7 of their motion, Intervenor argue that the onsite exercise contention was not late filed.⁸ The short answer is that, pursuant to

⁴In our Partial Initial Decision, LBP-87-10, 25 NRC 177, 216 (1987), with respect to certain onsite safety and emergency planning contentions, we had found that there was reasonable assurance that Seabrook Station, Unit 1, could be operated up to 5% of rated power without endangering the public health and safety, and that the state of onsite emergency preparedness provided reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

⁵In support of the second argument, Applicants cite *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), ALAB-526, 9 NRC 122, 124 (1979), and *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289-90 n.6 (1979).

⁶Since the filing of Applicants' response, the Board has issued a Memorandum and Order that granted Applicants' motion for summary disposition and dismissed the coaxial cable contention. LBP-88-31, 28 NRC 652 (1988), *aff'd*, ALAB-909, 29 NRC 1 (1989). To date we have not issued a ruling upon Applicants' motion for summary disposition of the public notification issue.

⁷*Duke Power Co.* (Perkins Nuclear Station, Units 1, 2, and 3), ALAB-591, 11 NRC 741, 742 (1980).

⁸First, Intervenor apparently contend that, since the offsite Licensing Board had ruled (in a Memorandum and Order of August 19, 1988) that the deadline for exercise contentions was September 21, 1988, they relied upon or were somehow misled by the offsite Board and only decided to file the instant onsite contention a few days early because of increasing concern about the possibility of precipitous action resulting in low-power operation. (See Intervenor's Motion at 4 n.4.) As discussed in the text above, pursuant to 10 C.F.R. § 2.714, any contention not filed within a certain 15-day period is deemed to be late filed. (Even if we were to consider this argument as one being advanced under § 2.714(a)(1) to show good cause for failure to file in a timely manner after the June 1988 exercise, Intervenor have failed to make a good argument because, earlier in their motion, at 3 n.2, they state that the offsite Board had indicated in an Order of July 29, 1988, that its jurisdiction was limited to purely offsite emergency planning issues and did not extend to onsite emergency planning issues even if they had offsite planning consequences. Thus, even if this argument were to be advanced under § 2.714(a)(1), there is no good cause shown why Intervenor did not file the instant motion in a timely manner after July 29, 1988, instead of waiting until September 16 to do so.)

As their second argument, Intervenor apparently contend that any emergency planning exercise contention may not be deemed to be untimely filed and must be deemed to be timely filed because 10 C.F.R. Part 50, the Atomic Energy Act, and case law accord the Intervenor the right to fully litigate the onsite planning aspects of that exercise prior to low-power operation. However, obviously 10 C.F.R. § 50.47 emergency planning contentions, in order to be deemed to have been timely filed, must meet the 15-day requirement of § 2.714. Moreover, in *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1045-47 (1983), the Commission
(Continued)

10 C.F.R. § 2.714(a)(1) and (b), any contention that is not filed within 15 days prior to the holding of a special prehearing conference or that is not filed within 15 days prior to the holding of the first prehearing conference (if a special prehearing conference has not been held), is deemed to be late filed, and any request to file a "nontimely" contention may be granted based upon the balancing of five factors. As note 4 indicates and as the Commission has ruled, the record in this case is closed.⁹ However, for the purpose of our discussion, since we would have to evaluate the five factors in Part II.D, *infra*, we assume that the record has not been closed with respect to the instant motion and with respect to the matters raised therein, and we proceed to discuss whether a balancing of the five factors in § 2.714(a)(1) weighs against admitting the late-filed contention which was filed on September 16, 1988.

C. Re the Motion to Admit the Contention

The five factors in § 2.714(a)(1) are:

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

With respect to the first factor, the Intervenor's argue that, even if the onsite exercise contention is deemed to be late filed, it was not until after receipt on July 15 of NRC Staff's Inspection Report No. 50-443/88-09 dated July 6 (hereafter Report 88-09) that they were made aware of an exercise weakness and the five examples identified thereunder but that, in and of itself, the inspection

has ruled that § 189a of the Atomic Energy Act does not provide members of the public with an unqualified right to a hearing, that rather the Act permits the establishment of reasonable threshold requirements for the admission of contentions, and that the five-factor test in 10 C.F.R. § 2.714 represents a permissible exercise of that authority. Finally, in *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), a case frequently cited by the Intervenor's, the Court of Appeals neither held nor implied that the Act either prohibits the establishment of reasonable threshold requirements, such as the five-factor test, for the admission of contentions, or precludes the application of standards to reopen a closed record under 10 C.F.R. § 2.734. See further discussion in note 18, *infra*. As the Appeal Board noted in a *Catawba* decision, *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 78 (1985), the decision of the Court of Appeals focused upon a Commission rule to the effect that licensing boards need not consider the results of emergency preparedness exercises in a licensing hearing before authorizing the issuance of a full-power license and held that the rule violated § 189a(1) of the Atomic Energy Act of 1954, as amended, in that it denied a right to a hearing on a material factor relied upon by the Commission in making its licensing decisions.

⁹ CLI-88-7, 28 NRC 271, 273 (1988).

report made little sense.¹⁰ They urge that, had they filed a contention shortly after receipt of the Report on July 15, "it would have been attacked as lacking basis and specificity and failing to allege a fundamental flaw in the onsite plan." (Reply at 17.) Intervenors maintain that it was not until after they received in the week of August 15 and had the opportunity to review the Applicants' eight-volume exercise scenario documentation (the 1988 FEMA/NRC Graded Exercise) that they were provided with, *inter alia*, the objectives and the scenario sections for Applicants' Seabrook Station emergency exercise, which furnished the factual context for a proper technical understanding of Applicants' staff's actions and responses. (Motion at 9-10; Reply at 17.) We have read the "objectives" sections (§§ 2.1-0 through 2.2-14), and the "scenario" sections (§§ 5.0-1 through 5.0-4 and 6.1-1 through 6.3.4-29) of the Graded Exercise. We disagree that it was necessary that Intervenors had to have in hand and review the objectives and the scenario in the Graded Exercise before they could be in a position to properly and fully prepare a contention addressing the weakness and the five examples thereof. We conclude that Intervenors have failed to show good cause for failing to propose the instant contention in a timely manner after July 15, 1988, and instead delayed their filing until September 16. Promptly after receiving the Inspection Report on July 15, all that was required of the Intervenors was that they state their reasons (i.e., the basis) for their contention that serious defects and inadequacies existed in the Applicants' onsite emergency response staff and that these weaknesses reflected an inadequate staff training program. That responsibility would have been sufficiently discharged by their references to Report 88-09, and by their assertion that the NRC Staff had observed and concluded that Applicants' onsite emergency staff had displayed questionable engineering judgment and/or did not recognize or address technical concerns, and thus that Applicants' staff's actions or inactions represented a serious and unacceptable increased level of risk to the public under conditions

¹⁰The Inspection Report reads in pertinent part:

3.1 *Exercise Weaknesses*

The NRC identified the following exercise weaknesses which need to be evaluated and corrected by the licensee. The licensee conducted an adequate self critique of the exercise that also identified these areas.

1. The Technical Support Center (TSC) and Emergency Operations Facility (EOF) staff displayed questionable engineering judgment and/or did not recognize or address technical concerns (50-443/88-08-01). For example:
 - Neither the EOF or TSC staff questioned a release of greater than 7000 curies per second with only clad damage and no core uncoverly;
 - Efforts continued to restore the Emergency Feedwater Pump after a large-break LOCA;
 - A questionable fix for the Containment Building Spray system;
 - A lack of effort to locate and isolate the release path; and
 - No effort was noted to blowdown Steam Generators to lessen the heat load in containment.

[Three other exercise weaknesses were also identified but are not in issue.]

(Exhibit A attached to Intervenors' Motion of September 16, 1988.)

of low-power operation, and evidenced an inadequate staff training program.¹¹ Once the institutional unavailability of a licensing-related document is removed, intervenors must promptly formulate their contentions.¹² We weigh this factor against the Intervenor in failing to show good cause for their failure for a 2-month period to file a motion for leave to submit out-of-time this onsite contention. Absent good cause for late filing, a compelling showing must be made on the other four factors.¹³ However, favorable findings on some or even all of the other factors in the rule need not in a given case outweigh the effect of inexcusable tardiness.¹⁴

The Applicants and the Staff concede that the second and fourth factors weigh in favor of the Intervenor, and we agree. However, these two factors are accorded less weight than the three other factors.¹⁵

With respect to the third factor, when a petitioner addresses this criterion, it should set out with as much particularity as possible the precise issues it plans to cover, identify its prospective witnesses, and summarize their proposed testimony.¹⁶ Although Intervenor knew better, having been long-time litigants in both the onsite and offsite proceedings, they failed to furnish the required information in the original motion. (See p. 68, ¶ (iii).) In their reply, which in our discretion we have permitted to be filed, they do identify their prospective witness as being the individual whose affidavit was attached to the original motion. In their reply, however, other than urging that in the original motion they had summarized proposed testimony and had attached the affidavit that was referenced in the proposed contention, they did not make any effort to comply with the requirements of this factor. Generalities, rather than precise issues, were presented, and we will not do Intervenor's homework for them by reading the affidavit and then summarizing the proposed testimony. Absent such a summary, we don't know with any degree of certainty that which will be the substance and extent of the proposed testimony. We weigh this factor against the Intervenor.

With respect to the fifth factor, Intervenor admits that the admission of the contention would broaden the issues. We need not go further in light of the disjunctive wording in the fifth factor. In any event, as reflected in note 6, *supra*, the only matter now pending before us pursuant to summary disposition

¹¹ See *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 548-49 (1980).

¹² See *Catawba*, CLI-83-19, *supra*.

¹³ *Mississippi Power & Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-704, 16 NRC 1725, 1730 (1982).

¹⁴ *Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 275 (1975).

¹⁵ *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), CLI-86-8, 23 NRC 241, 245 (1986).

¹⁶ *Id.* at 246.

procedures is the public notification issue. The public notification matter is now a full-power issue as to which we have jurisdiction. (See Notice of Clarification of October 12, 1988.) Obviously the admission of this late-filed contention and subsequent discovery would delay our proceeding. We weigh this factor against the Intervenor.

Overall, the Intervenor failed to demonstrate that they prevailed on the five-factor test. Much less did they make the compelling showing on factors two through five that was required to overcome their failure to demonstrate good cause, under the first factor, for their failure to file on time. Thus, we deny Intervenor's motion to admit the instant contention.

D. Re the Motion to Reopen the Record¹⁷

After reviewing the submissions of the parties identified in Part I, *supra*, and being made aware that the Staff had prepared a second Inspection Report (hereafter Report 88-10, which had been issued by the Staff on October 6, 1988, and which in part had been attached to Applicants' response of October 12), we concluded that additional briefing and affidavits were necessary with respect to that part of Intervenor's motion seeking to reopen the record and, in the Order of October 25, 1988 (unpublished), we directed that this be done. Applicants were specifically directed to show wherein Report 88-10 wholly confirmed the position taken in their original response and affidavits of September 28 and confirmed the lack of any significant safety issue. We stated that we would consider these additional submissions to determine whether a significant safety issue had been raised and whether a materially different result would be or would have been likely had the newly proffered evidence been considered initially. On November 8, Applicants submitted a response. On November 9, Intervenor submitted a memorandum to which was attached an affidavit by the same individual who had executed the affidavit attached to the Intervenor's original motion (hereafter Pollard Aff. 2). On November 28, the Staff filed a response to which was attached the joint affidavit of two of its employees, Messrs. Craig

¹⁷ Section 2.734 provides in pertinent part:

(a) A motion to reopen a closed record to consider additional evidence will not be granted unless the following criteria are satisfied:

(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.

* * *

(d) A motion to reopen which relates to a contention not previously in controversy among the parties must also satisfy the requirements for nontimely contentions in § 2.714(a)(1)(i-v).

Conklin and David Ruscitto.¹⁸ On December 7, the Intervenor filed a motion for leave to respond to the Staff's response of November 28. On December 12, the Staff responded. Absent Staff's objection, we grant Intervenor's motion for leave.

Since we assumed, *supra*, that the record has not been closed and denied Intervenor's motion to admit the contention, we now proceed to consider whether the alternative motion to reopen the closed record addresses a significant safety or environmental issue.

Since we conclude in Part II.C, *supra*, that a balancing of the five factors in § 2.714(a)(1)(i-v) weighs against admitting the contention, obviously the motion to reopen to consider a contention not previously in controversy does not satisfy the requirement of ¶ (d) of § 2.734. Further, criterion (1) of § 2.734(a) has not been satisfied, since Intervenor does not allege and demonstrate that the proposed contention involves an exceptionally grave issue.

We now proceed to discuss criterion (2) to determine whether the motion to reopen addresses a significant safety or environmental issue in that the NRC Staff's Report 88-09 of July 6, 1988, reported that five examples reflected that Applicants' emergency exercise staff displayed questionable engineering judgment and/or did not recognize or address technical concerns. (*See* note 10, *supra*.) We will also address criterion (3). We deem that affidavits submitted by the parties were given by competent individuals with knowledge of the facts alleged and/or by experts in the disciplines appropriate to the issues raised.

However, before discussing the five examples, we must address several matters. First, at pages 3 and 4 of their memorandum submitted on November 9, 1988, Intervenor argues that, in light of the Order of October 25, 1988, it appears that this Board improperly will resolve sharply disputed facts by means

¹⁸ In light of the Board's Order of October 25, 1988, for the first time in its response of November 28, 1988, the NRC Staff discussed whether the Intervenor's alternative motion to reopen raised a significant safety or environmental issue. Previously, in its response dated October 3, 1988, in footnote 1, the NRC Staff had not discussed whether the Intervenor's alternative motion to reopen met the standards set forth in 10 C.F.R. § 2.734 because it agreed with Intervenor that the June 1988 exercise was "material" to the determination whether there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. In its response of November 28, 1988 at 2 and 3, the Staff cited *Union of Concerned Scientists, supra*, 735 F.2d at 1443-44, in support of its position. (However, in that response, it did proceed to discuss whether a significant safety or environmental issue had been raised in the alternative motion.) The Staff's position is without merit. The UCS decision vacated an amended regulation (10 C.F.R. § 50.47(a)(2)) to the extent that said regulation eliminated the emergency exercise as a prerequisite to authorization of a license and affirmed that a 10 C.F.R. § 2.206 request to initiate license amendment proceedings was not a § 189(a)(1) proceeding under the Atomic Energy Act of 1954, as amended. That decision is not apposite. First, since the issuance of the UCS decision, § 50.47(a)(2) has been revised to delete the last sentence which had provided that emergency preparedness exercises were not required for any initial licensing decision. 50 Fed. Reg. 19,323 (1985). Second, said decision did not preclude application of § 2.734 standards since those standards were not issued until May 30, 1986, and were not effective until June 30, 1986 (51 Fed. Reg. 19,535). Finally, § 2.734 is a part of the adjudicatory process provided for under § 189(a)(1). In contrast a § 2.206 procedure can hardly be equated with the ability to litigate issues in an adjudicatory setting, accompanied by a right of appeal to the appeal board and an entitlement to petition for Commission review if dissatisfied with the appellate result. *Washington Public Power Supply System (WPPSS Nuclear Project No. 3)*, ALAB-747, 18 NRC 1167, 1176 (1983).

of evaluating conflicting affidavits and render an inappropriate "on the merits" adjudication rather than, pursuant to § 2.734, determine whether a threshold showing has been made that the evidence, if assumed to be true, presents a significant safety issue. Intervenor err. A mere threshold showing is insufficient because it is well settled that the proponent of a motion to reopen the record has a heavy burden.¹⁹ Further, as evidenced, *infra*, we do not resolve disputed genuine issues of material fact raised in conflicting affidavits and do not decide the merits of the contention set forth in the motion. Rather we have taken a hard look at all of the submissions to determine whether or not significant safety issues have been raised and whether or not unresolved genuine issues of material fact have been presented. Even though a matter is timely raised and involves significant safety considerations, no reopening of the evidentiary hearing will be required if the affidavits submitted in response to the motion demonstrate that there is no genuine unresolved issue of fact, i.e., if the undisputed facts establish that the apparently significant safety issue does not exist, has been resolved, or for some other reason will have no effect upon the outcome of the proceeding. As is evidenced, *infra*, the questions whether the matters sought to be raised present significant safety issues and whether they present triable issues of fact are intertwined and are so treated. Our review and analysis follow the guidelines set forth in the case cited by the Intervenor at page 4 of their memorandum of November 9, 1988.²⁰

Second, Intervenor suggests that the NRC inspectors, in issuing Report 88-10, acted in bad faith and contrary to their obligations in an effort to minimize the impact of the conclusions in the first report on the instant litigation (Memorandum of November 9 at 3, 7). They argue that, instead of sending *any* of the original team of inspectors that actually witnessed the exercise back to Seabrook, NRC officials replaced the inspectors that had criticized the Applicants' performance, and would have us infer that these officials had acted in bad faith. (Memorandum of November 9 at 6; Response of December 7 at 2.) We ignore these barren allegations and others of this ilk. The presumption of regularity supports the official acts of public officers, and, in the absence of clear evidence to the contrary, we presume that they have properly discharged their official duties.²¹ Moreover, two of the members of the NRC inspection team, who had observed the exercise conducted on June 27-29, 1988, and documented their observations in Report 88-09, attest that they also performed the followup inspection resulting in Report 88-10. (Staff's Joint Aff., A.4, A.6, A.17.)

¹⁹ 51 Fed. Reg. 19,535 (1986); *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), ALAB-462, 7 NRC 320, 338 (1978).

²⁰ *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-138, 6 AEC 520, 523-24 (1973).

²¹ *United States v. Chemical Foundation, Inc.*, 272 U.S. 1, 14-15 (1926).

We are equally unpersuaded by Intervenor's speculations that the affidavits of Applicants' employees are not credible because these employees were not independent observers and were motivated by self-interest. (Memorandum of November 9 at 5.) Only facts raising a significant safety issue, not conjecture or speculation, can support a reopening motion.²²

Finally, as stated in Part II.A, *supra*, the purpose of the exercise was to test, *inter alia*, Applicants' onsite Seabrook Station Emergency Plan, and note 10, *supra*, reflects that Report 88-09 identified the one exercise weakness (and the five examples thereof) which is the subject of the instant motion. It is undisputed that this one weakness (and the five examples thereof) was considered to be an "open item," which meant that an inspection followup was required, and it is undisputed that items opened in a NRC inspection report must be closed in a subsequent inspection report if corrected or resolved. (Staff's Joint Aff., A.16, A.18.) It is also undisputed that Report 88-10 concluded that Applicants' TSC/EOF staff "possesses adequate capabilities to protect public health and safety" and that this "open item is considered closed." (Attachment to Applicants' Response of October 12, 1988.) Drawing down from these undisputed facts, we conclude that the procedures followed in this case were not unique — i.e., it is normal NRC procedure, when an exercise inspection report identifies "open items," for the Staff to conduct a followup inspection to determine whether those opened items should be closed in a subsequent inspection report.

1. The First Example

With respect to the first example, the Intervenor asserted that this failure of both the Applicants' Technical Support Center (TSC) and Emergency Operations Facility (EOF) staffs to question a release of greater than 7000 curies per second (Ci/sec) with clad damage and no core uncover indicated a seriously deficient knowledge of the relationship between the magnitude and rate of a radioactive release and the amount of core damage. Without a sound knowledge of the magnitude of releases under varying degrees of core damage, they asserted that Applicants' personnel may not recognize that their analysis, based partly on conflicting information, is incorrect, causing them to take incorrect actions or to fail to take corrective actions. (Pollard Aff. 1, ¶¶ 19-20, at 12-13.)

In response, Applicants' employee, who was the Emergency Operations Facility Coordinator during the June 1988 exercise, attested as follows: A review was made of this matter with both controllers and exercise participants. The lack of correlation between the 7000-Ci/sec release condition and core

²² *Pacific Gas and Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2)*, ALAB-775, 19 NRC 1361, 1367 n.18 (1984).

cooling indications was questioned and discussed by TSC emergency response personnel during the exercise. They accepted the information given by the controllers as being correct and proceeded accordingly. This complied with specific instructions or guidelines requiring the exercise participants to use information as supplied by an exercise controller. Applicants' personnel did as they were directed, but realized that it was necessary to introduce artificially high radioactive releases in order to fully exercise offsite responders. The implementation of other emergency procedures was not affected by this lack of correlation. This included all sampling and analyses required for the assessment of the magnitude of core damage. Accordingly, Applicants concluded that the above actions did not reflect questionable engineering judgment or an inability to recognize or address technical concerns, that the observation in Report 88-09 was inaccurate, and thus that Intervenor's motion did not establish the existence of a significant safety or environmental issue. (MacDonald Aff., ¶¶ 4-7, at 2-4; Response at 12.)

In Report 88-10 at 10, issued on October 6, 1988, and closing this item raised in Report 88-09, the NRC Staff stated that:

The inspector reviewed the player and controller logs for selected TSC, EOF and engineering support center (ESC) staff. These logs revealed that several staff members did question and/or comment on the mismatch between the reactor coolant activity and the release rate. Subsequent discussions with the TSC and EOF controllers and players also indicated that they were aware of this mismatch. In actuality, the ESC staff made very accurate core damage assessments based upon the data supplied by the TSC. The EOF dose assessment staff made accurate dose projections based upon the release rate, as well as correlation of field data to the release rate. A review of previous drill comments, as well as the player instruction for this exercise, indicated that this level of activity is recognized to be an unrealistic number, which is required to provide the offsite dose rates necessary to exercise the entire emergency planning zone. The technical staffs had repeatedly identified and questioned these mismatches in previous drills and were told by the controllers that this high release rate was necessary to test the offsite plans, and that they should not challenge the data.

Although NRC review of the specific scenario used for the exercise was acceptable, the above-described problem indicates that the licensee should place more effort in developing exercise scenarios where core damage and release rates are consistent.

Additional comments and information regarding the first example were submitted in the parties' responses to the Board Order of October 25, 1988. In a response of November 8, Applicants set forth the contents of Report 88-10 to the extent that the report addressed each of the five examples, and italicized those portions that they asserted particularly were in full support of positions taken in their response and affidavits of September 28.

Intervenor's principal assertion on this first example in their memorandum of November 9 was that the NRC inspection team that observed the exercise

presumably had access to the logs questioning the release rate, but reached an initial conclusion different from that presented in Report 88-10, and that the NRC Staff gave no explanation whatsoever for the difference between the two reports. In agreeing with the second paragraph of Report 88-10 on this example (*see supra*), Intervenors also questioned the validity of the exercise results to determine whether Applicants' staff met the exercise objective, since the instant exercise scenario postulated conditions that were mutually exclusive on technical grounds. (Memorandum at 11; Pollard Aff. 2, ¶¶ 27-30, at 9-10.) However, Intervenors ignored the Staff's qualification of its recommendation in Report 88-10 to the effect that the scenario used for the instant exercise was acceptable. They also ignored the other substantive statements in Report 88-10, in particular, that the unrealistic level of radioactivity was required to provide the offsite dose rates necessary to exercise the entire emergency planning zone.²³

The NRC Staff's response of November 28 reflected the following: It should be first understood that a release rate of greater than 7000 Ci/sec was necessary to test the adequacy of dose projections and protective action recommendations for offsite response, and that a release of this magnitude is not possible given the conditions of the exercise scenario, i.e., clad damage with no core uncover. Based on the information available to the NRC Staff when Report 88-09 was written, the first example was designated as a "weakness," because the NRC's observation team of inspectors expected the TSC/EOF staff to discuss and question the high radioactivity readings which would not be possible under conditions of the exercise scenario. The NRC inspectors did not discuss these matters, and Applicants did not offer information on this example at the exit meeting, and therefore the Staff marked it as a weakness. The Staff did observe at the exit meeting that the TSC/EOF staff had made prompt and correct dose projections and assessments and made appropriate protective action recommendations based upon the given 7000-Ci/sec release rate. (Staff's Joint Aff., A.9.) In the later followup postexercise conferences, Messrs. Conklin and Ruscitto, who were the same NRC inspectors who had observed the initial exercise, attested that exercise logs not previously made available or discussed by Applicants, showed that several TSC/EOF staff members indeed had questioned the mismatch between the reactor core condition, reactor coolant radioactivity, and the release rate. (Staff's Joint Aff., A.17, A.21; Report 88-10 at 10.) The NRC Staff also observed from previous exercise records that the radioactivity release rate used during the June 1988 exercise had been recognized as an

²³ We disregard Intervenors' assertion regarding the validity of using mutually exclusive technical conditions in the June 1988 exercise because that assertion is beyond the scope of the basis for the contention. That basis challenged the ability of Applicants' TSC and EOF personnel to analyze station conditions and parameter trends and to develop potential solutions for placing the reactor in a safe, stable condition. (Exhibit 1 to Motion of September 16.) It challenged neither the validity of the scenario used in that exercise nor the NRC Staff's use of the scenario in its determination of whether Applicants had met the stated objective.

unrealistic number by Applicants' TSC/EOF staff, but that they had been instructed by the rules of the exercise not to challenge these data. (Report 88-10, ¶ 4.e(5), at 10.) Staff also attested that had the above information been available at the time of the exercise (or at the exit meeting), it would not have designated this as a weakness in Report 88-09. (Staff's Joint Aff., A.21.)

Since it is clear that, but for the fact that certain information had not been available to the NRC Staff prior to the issuance of Report 88-09, the first example would not have been identified in that report as being an exercise weakness, we conclude that the motion to reopen does not address a significant safety or environmental issue or present a triable issue of fact. In light of our conclusion that the motion to reopen does not address a significant safety or environmental issue or raise a triable factual issue with respect to this example, we also conclude that a materially different result would not be or would not have been likely had the newly proffered evidence been considered initially.

2. The Second Example

With respect to the second example, Intervenor noted that the accident scenario called for a halt in the controlled shutdown when the second EFW pump failed, because continued shutdown of the plant would require the need to operate the emergency feedwater system. They opined that under these circumstances, trying to repair the EFW pump was a correct action. However, Intervenor claimed that Applicants' staff should have recognized that further efforts to repair the EFW system after the large-break LOCA were of little value. They claimed that such actions indicated a seriously deficient level of competence. They also averred that some of the Applicants' onsite staff occupied themselves with activities of little value in a postulated large-break LOCA. However, Intervenor concedes that in the instant exercise, the Applicant's efforts to restore the EFW pump did not complicate the accident or exacerbate the consequences, but asserted that under other scenarios an inadequately trained staff could complicate the accident and exacerbate the consequences. (Pollard Aff. 1, ¶¶ 11-12, at 7-9.)

The Applicants responded in their submission of September 28 that, upon the occurrence of the LOCA in the exercise scenario, the activities of the TSC were reprioritized to respond to activities directly involving the LOCA, and that the continuing efforts to restore an inoperable EFW pump afterwards did not affect the response by TSC to the higher-priority activities involved with the LOCA. While TSC personnel recognized that the EFW system might not be needed to mitigate the consequences of a large-break LOCA, one reason given for continuing the efforts to repair the EFW pump was that the efforts should continue in order to ensure a backup heat removal method if it were needed, even if an immediate need was not perceived. Another was to demonstrate the technical assessment capability of the TSC team members. Applicants'

affiant attested that it was clear that if it appeared that these actions could affect accident-mitigating capabilities or actions, the EFW pump activities would have been terminated. (Kline Aff., ¶¶ 4-9, at 3-5.)

In Report 88-10 at 8, issued on October 6, 1988, and closing this item raised in Report 88-09, the NRC Staff stated that:

The licensee correctly stated that the EFW pump would be required to operate to support steam generator cooldown in the recovery phase and continued repair efforts were prudent. The inspector agrees and determined that the stated activity did not detract from the overall recovery effort, nor did it diminish other high priority recovery action in progress or planned, and that TSC judgments were made with long-term recovery in mind.

The Intervenor, in their November 9 memorandum, asserted that the EFW pump repair would be of little, if any, use in either the short term or the longer term following a large-break LOCA and that, contrary to the claim in NRC Report 88-10, steam generator cooldown is not required during long-term recovery from a large-break LOCA.²⁴ However, Mr. Pollard admitted that efforts to restore the EFW pumps would be required in the very long term, i.e., during the months prior to resuming operation. Intervenor further asserted that neither NRC Report 88-10 nor Mr. Kline's affidavit explained or mitigated the NRC Staff's earlier conclusion in Report 88-09 that the continued efforts to restore the EFW pump were an example of questionable engineering judgment and/or the failure to recognize and address technological concerns. (Memorandum at 8; Pollard Aff. 2, ¶¶ 5-10, at 2-4.) Intervenor apparently proceeded to change their position in regard to whether continued efforts to repair the EFW pump detracted from other accident-mitigating activities during the exercise, asserting for the first time a link between the EFW repair efforts and the insufficiency of efforts to locate and isolate the release path (Pollard Aff. 2, ¶ 9, at 4). However, absent any showing of linkage between these two activities, we regard this claim as mere speculation.

The NRC Staff, in its response of November 28, stated that its original concern in regard to this second item in Report 88-09 was that efforts were being continued in an area that would probably be of little value in the near term, and not that other higher-priority items were overlooked as a result of this effort. The NRC Staff's affiant (Mr. Ruscitto) attested that he performed the followup inspection leading to closure of this example in Report 88-10. He also indicated that he was present during the earlier inspection and affirmed that he was familiar with the concern of the inspector who identified this example

²⁴ Intervenor argued in this regard that "[t]he steam generators would slowly cool down on their own by heat loss through the insulation." (Pollard Aff. 2, ¶ 8, at 4), which apparently conflicts with their arguments in respect to the fifth example on the asserted importance of, and necessity for, steam generator blowdown following a large-break LOCA.

(continuing EFW pump repair activities) in Report 88-09. (Response at 10; Joint Aff., A.10, A.22, at 6, 12.)

Clearly Intervenor's arguments that the TSC staff's efforts were "an example of questionable engineering judgment and/or the failure to recognize and address technical concerns" are bottomed upon the NRC Staff's first Report, 88-09, and upon their opinion that the second Report, 88-10, should be ignored as not being credible. We find no reason to doubt the credibility of the Applicants' or the NRC Staff's attestations and affirmations. Moreover, since Intervenor concedes that the efforts to restore the EFW pump did not complicate or exacerbate the consequences, we conclude that Intervenor has failed to show that this specific effort evidences poor training or poor level of competence on the part of Seabrook Station personnel participating in the exercise. Indeed, we view Applicants' personnel's efforts to repair the EFW pump in order to ensure a backup heat removal method even if not immediately needed as evidencing that said personnel were well trained and competent. Thus, no significant safety or environmental issue has been raised by this example, and no issue of triable fact has been raised.

In light of our conclusion that the motion to reopen neither addresses a significant safety or environmental issue nor presents a triable issue of fact with respect to the continuing efforts to repair the EFW pump during the exercise, we also conclude that a materially different result would not be or would not have been likely had the newly proffered evidence been considered initially.

3. *The Third Example*

Intervenor, relying on Report 88-09, asserted that the action taken by the Applicants' onsite emergency staff to restore the Containment Building Spray (CBS) system gave rise to questions about the engineering judgment used. In the Intervenor's view, although the action was appropriate, it resulted in a "questionable fix," and, thus, was one action indicating a failure of the TSC staff to meet an objective of the exercise — viz., to demonstrate an "ability to analyze station conditions, parameter trends and develop potential solutions for placing the unit in a safe, stable condition." (Pollard Aff. 1, ¶¶ 14-15, at 10-11.)

In their submittal of September 28, Applicants responded that the "questionable fix" was in fact a contingency plan developed in case the normal flowpath of the CBS system could not be reestablished and that, contrary to the allegation, it was technically sound. They further attested that, if needed, the fix would not have been implemented without review by the NRC, a review not carried out because the normal CBS flowpath was reestablished. The TSC staff, along with other support groups, continued efforts, as a first priority, to restore or repair the normal CBS flowpath while developing the contingency plan for an alternate flowpath. The alternate flowpath concept was to use components

and systems not necessarily associated with the normal CBS flowpath to restore the containment spray function. Because the repair efforts for one of the CBS pump's electrical system were finally successful, and containment spray was initiated via the normal flowpath, the contingency plan never proceeded to the review/implementation stage. (Brief at 13; Sessler Aff., ¶¶ 4-11, at 3-6.)

In Report 88-10 at 9, issued on October 6, 1988, and closing this item raised in Report 88-09, the NRC Staff stated that:

The inspector met with the Technical Support Manager and a Technical Support Engineer and discussed the rationale behind the corrective action taken to rig an alternative water source for the CBS system. Although the capability of the proposed modification to the system to reduce containment pressure was never proven due to the eventual repair of a CBS pump, the inspector determined, based on this additional information, that the engineering judgment and methodology involved in the proposed system and operating procedure changes were acceptable. The licensee actions were appropriate since this fix was considered to be a "last resort" measure after all prudent and subsequent extraordinary measures had failed to provide containment spray by other means due to additional scenario controller intervention.

Additionally, the licensee had previously determined that the composition of the present TSC engineering staff, while adequate, could be enhanced by providing an augmented staff roster. *NHY has committed to implement this initiative.*

In their response to our Order of October 25, 1988, Intervenor asserted that neither Mr. Sessler nor "either of the two inspection teams" provided sufficient detail of the contingency plan to assess its adequacy, and that the two inspection reports are irreparably inconsistent in that the second report accepted the flowpath plan because it was a last resort, yet the "first inspection team," knowing it was a last resort, still rejected it. Intervenor further argue that the questionable engineering judgment of the TSC and EOF staff was not cured by relying on the NRC to prevent, in the end, the Applicants' inappropriate measures from being employed. (Brief at 9; Pollard Aff. 2, ¶¶ 11-14, at 4-5.)

In its response to our October 25 Order, the NRC Staff stated that, during the inspection, its inspector (Mr. Ruscitto) questioned the effectiveness of the proposed "fix" to provide any substantial pressure reduction in the containment building, because the discharge of the safety injection pump recirculation line would be rerouted to the containment spray nozzles.²⁵ Mr. Ruscitto also stated with respect to the isolation of the release path (*see* Fourth Example, *infra*) that Mr. Pollard's second affidavit implies that restoration of a CBS pump would not have stopped the release; but depending upon the location of the leak, the leak could be stopped by reducing containment pressure to atmospheric (the purpose of the CBS spray system). He further attested that it makes good engineering

²⁵ As stated in the Staff's Brief (at 10), the recirculation flow from one safety injection pump is about 40 gallons per minute (gpm), which is insignificant compared to the normal CBS spray pump flow of over 3000 gpm.

sense to repair those items most easily repaired and that in a real situation, repair of the CBS pump, if feasible (which it was), is the highest priority. (Brief at 10-11; Joint Aff., A.11, A.22, A.23, A.24, at 6-7, 12-13.)

Intervenors' argument that the two inspection reports are "irreparably inconsistent" will not lie. Both were prepared by the same inspector, Mr. Ruscitto, who provided his reasoning behind both. (Staff's Joint Aff., A.17, A.22, A.23, at 9, 12-13.) Based on the additional, postexercise information regarding the Applicants' contingency efforts, the inspector concluded in the second inspection report (88-10, *see supra*) that the engineering judgment and methodology involved in the proposed system and operating procedure changes were acceptable. As to the asserted inadequacy of the "fix," Staff's affiant attested that his concern during the exercise was, indeed, with the effectiveness of the rerouted safety injection pump recirculation flow to provide significant containment building cooling, if needed. However, Applicants' priority efforts to repair one of the CBS spray pumps, although not specified in the scenario, made good engineering sense and were successful, demonstrating their ability to analyze station conditions and to develop a potential solution for placing the unit in a safe, stable condition. The contingency plan was never required, or evaluated during the exercise. The issue of the contingency plan's implementation simply never arose during the exercise because of the successful and superior engineering solution that was realized. Thus, it cannot be said that Applicants were relying upon the NRC to prevent any inappropriate measures of the contingency plan from being employed. Neither have Intervenors demonstrated that the contingency planning effort, which they agree was an appropriate one, detracted from the CBS pump repair efforts, or from attainment of other exercise objectives.

For the reasons given above with respect to this example, we conclude that the motion to reopen does not address a significant safety or environmental issue, or present a triable issue of fact, and thus we also conclude that a materially different result would not be or would not have been likely had the newly proffered evidence been considered initially.

4. The Fourth Example

With respect to the fourth example, Intervenors termed the failure to expend any effort to locate and isolate the release path a significant and fundamental deficiency in the state of onsite emergency preparedness. They further asserted that, with respect to the issuance of a low-power license, the capacity of the onsite staff to prevent any radioactive release that would require offsite emergency measures is a critical aspect of an onsite radiological emergency plan. (Pollard Aff. 1, ¶¶ 17-18, at 11-12.)

In their submission of September 28, the Applicants stated that they did make an effort to locate and isolate the sources of the radiation leakage. The

source of the leak was initially located in the containment enclosure ventilation area. This included several subdivisions such as the electrical penetration area, the enclosure building annulus, the mechanical penetration area, the equipment vaults, and the charging pump cubicles. Efforts were continued to further localize the leak to one of these areas. Radiation monitoring and sampling data were used. Survey teams were dispatched to the areas that were accessible after the LOCA event. High radiation levels were encountered outside the door to the electrical penetration area, and a decision was made to postpone entry into these areas until radiation levels were reduced to acceptable levels. (Kline Aff., §§ 11-14, at 5-6.)

In Report 88-10 at 9, issued on October 6, 1988, and closing this item raised in Report 88-09, the NRC Staff stated that:

This apparent lack of effort was the result of licensee decisions not to pursue entry into the containment enclosure due to high radiation levels. Discussion with the licensee confirmed that indirect measures, such as remote temperature, pressure and sump level indications, were taken in a timely fashion to provide an alternate assessment of potential leakage paths. The inspector was unaware of these activities during the drill. The licensee decision to postpone entry into the containment enclosure was intentional, based upon other recovery efforts associated with depressuring the containment. Restoration of a CBS [Containment Building Spray] pump was imminent, and activation of this system would have stopped the release. CBS restoration was subsequently, and repeatedly, delayed by controller intervention so that the operators were prevented from effecting repairs. The licensee decisions in this regard were appropriate.

In their submission of November 9, 1988, Intervenors asserted that it was an overstatement for Applicants to claim that the release path was isolated to the containment enclosure ventilation area because this area included many subdivisions. Intervenors also claimed that locating and isolating the release path should have received a higher priority than attempting to restore the CBS pump and that the Applicants should have applied a greater effort. They also asserted that no explanation was offered as to why the original NRC inspection team did not notice the efforts claimed by the Applicants' team to locate and isolate the release path. (Pollard Aff. 2, §§ 16-21, at 6-7.)

In its response of November 28, the NRC Staff reaffirmed the reasons and postinspection events that led to its closing out this example in its Report 88-10. That is, it learned that the emergency response team had in fact used measures in a timely manner, such as indications of remote temperature, pressure, and sump levels to determine a source for the potential leak paths. Moreover, while restoration of the CBS pump was imminent and its activation could have stopped the release, the exercise controller repeatedly delayed this repair work by Applicants' team in that the scenario did not allow for such repair. Staff's affiant attested that, in his belief, repair of the CBS pump in a real situation would be the highest priority. During the exercise, the Staff had been unaware

of these activities. If the Staff had known what it learned in the postexercise conference, this example would not have been marked as an open item and as reflecting questionable engineering judgment. (Staff Response at 11; Joint Aff. A.12, A.24.) As a result of the additional information made available during the postexercise conference, the NRC Staff concluded that Applicants' decisions were appropriate and closed out this example as an open item in Report 88-10.

Since it is clear that, but for the fact that certain information had not been available to the NRC Staff prior to the issuance of Report 88-09, this fourth example would not have been identified in that report as being an exercise weakness, we conclude that the motion to reopen does not address a significant safety or environmental issue, or present a triable issue of fact. In light of our conclusion that the motion to reopen does not address a significant safety or environmental issue or raise a triable factual issue with respect to this example, we also conclude that a materially different result would not be or would not have been likely had the newly proffered evidence been considered initially.

5. *The Fifth Example*

With respect to the fifth example, Intervenors asserted that failure to blow down the steam generators to lessen the heat load in containment indicates inadequate onsite staff training in that the operators do not have a sufficient level of knowledge of the potential solutions available to mitigate the onsite and offsite radiological consequences of an accident. In explanation, Intervenors stated that, following a large-break LOCA, a goal of the emergency response is to rapidly reduce containment temperature and pressure in order to reduce the amount of any radiological release. Since one source of heat in the containment is the heat stored in the (secondary side of) steam generators, blowing down the steam generators would reduce the heat load.²⁶ (Pollard Aff. 1, ¶ 13, at 9-10.)

Applicants responded in their submission of September 28 that control room operators and the TSC team recognized that the procedures called for a controlled depressurization of the steam generators, but that this step was temporarily postponed to assess its onsite radiological consequences, i.e., whether the action would lead to introduction of radioactivity to areas of the plant as yet unaffected. Applicants asserted that postponement to obtain analyses of secondary water samples would not delay further actions under the Emergency Operating Procedures because the plant operators could continue on to the next step. Applicants further attested that prior to completion of this assessment, Day 1 of the exercise ended. Subsequent to the exercise, Applicants assessed the effect that depressurization would have on the containment heat load and

²⁶ See note 24, *supra*.

concluded that the rate of heat transfer between the insulated steam generators and the containment atmosphere was insignificant when compared to the energy released to containment from the postulated accident. Applicants' postexercise review of the reason given by Westinghouse for depressurization of the steam generators showed that it was not to reduce containment heat load, but to permit further cooldown and depressurization of the (primary) Reactor Coolant System (RCS). But, since the particular accident sequence of the exercise simulation was a large-break LOCA, the RCS would already have been depressurized. Applicants concluded that steam generator secondary-side depressurization would have had no practical effect in reducing containment temperature and pressure; hence there would have been no real potential for reducing any radiological releases. Applicants accordingly averred that the Intervenor's claims that blowdown would have contributed to the goals of rapid reduction in containment temperature and pressure and to reducing radioactive release are either wrong or speculative. Applicants also concluded that the observations of the NRC Inspector were a result of the unavailability of information during the exercise. Based on the responses as summarized above, Applicants' affiant claimed that there is no issue with respect to postponement of steam generator depressurization during the exercise, much less a significant safety issue. (Sessler Aff., ¶¶ 12-21, at 6-10; *see also* Brief at 13-14.)

In Report 88-10 at 9-10, issued on October 6, 1988, and closing this item raised in Report 88-09, the NRC Staff stated that:

This comment implied that S/G [steam generator] blowdown was appropriate. The actual concern was that a step in the emergency procedure required the S/G to be depressurized. This step was not performed because the TSC staff was unsure of the integrity of the S/G tubes because no sample was available due to blowdown system isolation. This TSC staff concern was expressed to the inspector when he questioned them during the exercise. The NRC position in this area is that improved guidance to the operator may be warranted and should be evaluated, however the decision not to vent or blowdown the S/Gs without sampling appears to have been reasonable and appropriate.

In their response to our October 25, 1988 Order requesting additional information pertinent to consideration of the alternative Motion to Reopen, Intervenor's asserted that the explanations of the Applicants and Staff (in Report 88-10) fail for technical reasons. According to Intervenor's, the only way to have radioactive material in the steam generators justifying postponing blowdown would be a significant leak in the steam generator tubes. From this, they reasoned that, in a large-break LOCA, this leakage path would cause leakage flow from the steam generator through the break in the tubes and out the large break to the containment, and if Applicants were concerned about the integrity of the tubes, blowdown would have been all the more important because it would have mitigated the hot secondary water leakage through the tubes, out the large

break, and into the containment. (Brief at 11, *citing* Pollard Aff. 2, ¶¶ 25-26, at 8-9.) Mr. Pollard also concluded that although tube leaks could raise concerns about the radiological consequences of steam generator blowdown during some accidents, tube leaks do not raise such concerns during a large-break LOCA. (Pollard Aff. 2, ¶ 25, at 9.)

The NRC Staff's response to our October 25 Order amplified Staff findings and rationales reflected in its Reports 88-09 and 88-10. In regard to failure to blow down the steam generators, the Staff's Inspector (Mr. Ruscitto) affirmed that his concern during the exercise was that he was unable to reach a conclusion as to the propriety of skipping the step calling for steam generator depressurization (not blowdown). The Inspector asserted that although the decisions made by the EOF and TSC staffs were understandable and adequate (in light of the postexercise information), he reaffirmed the Staff's position set forth in Inspection Report 88-10 that Applicants should clarify their procedures to provide better guidance as to when procedural step 15 may be omitted. (Joint Aff., Q&A 13, 25, at 7, 13-14; Brief at 11-12.)

We conclude, for the reasons stated by the Applicants, that even if the Intervenor's technical analysis is generally correct, postponement, during the exercise, of this procedural step in the emergency operating procedures neither indicates a lack of adequate training by the TSC or EOF staff, nor indicates that they lack a sufficient level of knowledge of the potential solutions available to mitigate the onsite and offsite consequences of an accident. It is uncontested that the station personnel were familiar with and followed the emergency operating procedures and the onsite emergency response plan. It is clear from the descriptions of their actions in the inspection reports and in the affidavits of both the Applicants and the NRC Staff that they were analyzing simulated station conditions and developing potential solutions, within the context of the exercise, to put the plant in a safe, stable condition. Indeed, the action to obtain a sample of secondary-side water prior to steam generator depressurization, even if questionable, reflects their analysis of station conditions and concern for their future ability to enter areas necessary to mitigate accident conditions and radioactive releases. Intervenor's do not assert that, in the absence of significant secondary-to-primary leakage, postponement of steam generator depressurization would have any practical effect on the containment heat load. Their chief assertion is that station personnel postponed a step in the emergency operating procedures for the wrong reason, but they have not convinced us that, in the context of the exercise, Applicants' reasoning was faulty or that postponement detracted from other emergency operations. We agree that the NRC Staff's corrective action proposed in Report 88-10 is appropriate, i.e., that, after Applicants' evaluation, the emergency operating procedures be revised, if necessary, to provide guidance as to when the procedural step calling for depressurization of the steam generators can be omitted. Thus we find that

Intervenors have failed to demonstrate that there is a genuine issue of triable fact.

Even if it is Applicants' ultimate decision that steam generator depressurization should be called for in the case of *all* large-break LOCAs, our conclusion would not be changed. This is because an important purpose of any exercise is to correct observed shortcomings to improve station emergency plans and operating procedures. There is nothing to suggest that the NRC Staff's corrective action would be a major undertaking, and the only additional training that we can envision would be that required to familiarize station operating personnel with the new operating procedures, if any.

Therefore, postponement of steam generator depressurization during the exercise does not indicate a failure by the TSC or EOF staffs to meet the exercise objective, viz., to "[d]emonstrate the ability to analyze station conditions, parameter trends, and develop potential solutions for placing the unit in a safe, stable condition." Neither does it "indicate a fundamental lack of understanding of the behavior of the Seabrook Station during a large-break LOCA."

For the reasons given above with respect to this example, we find that the motion to reopen neither addresses a significant safety or environmental issue nor raises a factual triable issue, and thus we also conclude that a materially different result would not be or would not have been likely had the newly proffered evidence been considered initially.

Order

In light of the foregoing discussion,

1. Intervenors' motion for leave to reply submitted on October 7, 1988, and their motion for leave to respond submitted on December 7, 1988 are granted.
2. Intervenors' motion to admit exercise contention or, in the alternative, to reopen the record, filed on September 16, 1988, is denied.
3. The Director of Nuclear Reactor Regulation is authorized to issue a low-power testing license which shall be conditioned to allow Seabrook Unit 1 to operate at power levels not in excess of 5% and shall permit no more than 0.75 effective full-power hours of such operation without additional Commission approval. However, pursuant to the Commission's Decision, CLI-88-10, 28 NRC 573 (1988), in order to accommodate any party that might wish to seek a stay, the low-power license may not issue until 10 days after notice by Staff to the Commission that the decommissioning funding terms of CLI-88-10 have been satisfied or after issuance of this Licensing Board's decision disposing of

the motion to admit exercise contention or, in the alternative, to reopen the record, whichever event shall later occur.

It is so ORDERED.

**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 30th day of January 1989.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. 50-322-OL-3
(Emergency Planning)

LONG ISLAND LIGHTING
COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

February 2, 1989

The Commission determines that Intervenor's motion regarding an aspect of applicant's emergency plan constitutes a motion to reopen a portion of the record that has been closed and, therefore, must be judged against the appropriate standards in 10 C.F.R. § 2.734(a)(1). The Commission finds that Intervenor has failed to comply with its requirements for even considering a motion to reopen and, accordingly, denies the motion.

RULES OF PRACTICE: REOPENING OF RECORD

In order to prevail on a request to reopen the record, the movant must demonstrate that (1) its motion is timely, i.e., that the issue it now seeks to raise could not have been raised earlier; (2) the motion addresses a significant safety or environmental issue; and (3) a materially different result would be or would have been likely had the newly proffered evidence been considered. 10 C.F.R. § 2.734(a)(1)-(3). *See, e.g., Georgia Power Co. (Vogtle Electric Generating Plant, Units 1 and 2), ALAB-872, 26 NRC 127, 149-50 (1987).*

RULES OF PRACTICE: REOPENING OF RECORD

The Commission's regulations require that a motion to reopen the record must be accompanied by one or more affidavits which set forth the factual and/or technical basis for the movant's claim that the three criteria in 10 C.F.R. § 2.734(a)(1)-(3) have been satisfied. 10 C.F.R. § 2.734(b).

RULES OF PRACTICE: REOPENING OF RECORD (SPECIFICITY)

The new material in support of a motion to reopen the record must be set forth with a degree of particularity in excess of the basis and specificity requirements contained in 10 C.F.R. § 2.714(b) for admissible contentions. Such supporting information must be more than mere allegations; it must be tantamount to evidence. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-775, 19 NRC 1361, 1366 (1984), *aff'd sub nom. San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287 (D.C. Cir. 1984), *aff'd on reh'g en banc*, 789 F.2d 26 (1986), *cert. denied*, 479 U.S. 923 (1986).

RULES OF PRACTICE: REOPENING OF RECORD

If a motion to reopen is to succeed, it must be based on evidence through affidavit(s) as required in 10 C.F.R. § 2.734(b). It is not enough merely to express a willingness to provide unspecified, additional information at some unknown date in the future. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-7, 21 NRC 1104, 1106 (1985), *quoting Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-753, 18 NRC 1321, 1324 (1983).

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTION

In denying an intervenor's motion to admit a new contention alleging an applicant's noncompliance with 10 C.F.R. § 50.47(b)(12), which requires provision for emergency medical services for contaminated injured individuals in the event of an accident, which is considered by the Commission as a motion to reopen a portion of the record that is closed, the Commission is not addressing the merits of the proposed contention or the applicant's noncompliance with 10 C.F.R. § 50.47(b)(12). See *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), LBP-81-24, 14 NRC 175, 181 (1981).

MEMORANDUM AND ORDER

I. INTRODUCTION

This matter is before the Commission on a pleading filed by the Intervenor regarding emergency medical services and described as a "Motion to Admit New Contention." After due consideration, the Commission finds that the pleading in reality constitutes a motion to reopen a portion of the record that has been closed. Judged against the appropriate standard in 10 C.F.R. § 2.734, the Commission finds that the pleading does not meet the standards required for that motion. Accordingly, the motion is denied. This action is taken without prejudice to the Commission's pending consideration of whether Intervenor's conduct in respects other than the filing of this pleading warrants sanctions. See Commission's Order in this Docket, November 9, 1988 (unpublished).

II. PROCEDURAL BACKGROUND

On February 25, 1987, Intervenor New York State, Suffolk County, and the Town of Southampton filed a "Motion . . . to Admit New Contention" with the Commission. The proposed contention alleged LILCO's noncompliance with 10 C.F.R. § 50.47(b)(12), which requires provision for emergency medical services for contaminated injured individuals in the event of an accident at a nuclear facility — in this case, Shoreham. The Intervenor argued that their submission met the five factors that must be balanced in order to admit a late-filed contention. See 10 C.F.R. § 2.714(a)(1).

LILCO responded that the motion was premature at that time because LILCO had not yet responded to the generic criteria contained in FEMA Guidance Memorandum MS-1, Medical Services ("MS-1"), dated November 13, 1986. LILCO argued that its response was not due until September 2, 1987. Thus, LILCO concluded that there could be no violation of that guideline until after that date because compliance was not required until that date.

Furthermore, LILCO argued that the Intervenor were attempting to reopen a closed record instead of filing a new contention and that even if the Commission were to judge the motion under the latter standard, it would still be insufficient. Compare § 2.734 with § 2.714(a)(1). First, LILCO argued that the Licensing Board had already rejected an identical contention and had closed the evidentiary record on this issue. Specifically, LILCO pointed out that on February 25, 1985, the Intervenor submitted a late-filed contention on the arrangements for medical services for contaminated individuals which was essentially identical

to the contention before us now.¹ The Licensing Board rejected that contention and subsequently closed the evidentiary record in the proceeding involving the Shoreham Emergency Plan. See LBP-85-12, 21 NRC 644, 651 (1985). While the Licensing Board found a number of defects in the plan and declined to authorize issuance of the requested license, none of the defects involved the subject of this proposed contention — medical services for contaminated injured individuals. LBP-85-31, 22 NRC 410, 429-31 (1985).

LILCO then argued that the Appeal Board affirmed the Licensing Board's decision not to admit the late-filed contention on this issue, citing ALAB-832, 23 NRC 135, 143 (1986), and the Commission itself declined to take review of this issue. Therefore, according to LILCO, the record on this issue was closed at that point and the Intervenor must meet the standards applicable to reopening a record — standards that the Intervenor did not address.

Second, LILCO argued that even if the Commission viewed the motion as an attempt to submit a late-filed contention, the Intervenor had failed to meet the five factors addressed in § 2.714(a)(1). The NRC Staff supported LILCO's arguments.

The Commission took the matter under advisement, awaiting LILCO's response to MS-1 which is now on record. LILCO has now filed a supplemental pleading entitled "Renewed Opposition to Intervenor's Proposed Contention . . ." which (1) argues that its purported compliance with MS-1 (as submitted in an attached affidavit) moots the Intervenor's proposed contention, and (2) reasserts that the proposed contention does not address the applicable standard, i.e., the standard for reopening the record. LILCO's "Renewed Opposition" does not argue that the tendered contention does not meet the standard for a late-filed contention. We are not clear whether this omission represents an abandonment of that argument or if it is simply an oversight on LILCO's part.

The Intervenor has responded by arguing that LILCO's "Renewed Opposition" seeks a summary disposition on the merits prior to the admission of the contention. The Intervenor contends that under prior Commission decisions, a reviewing body cannot decide the merits of a contention while determining whether the proposed contention is admissible. Moreover, they argue that LILCO's response does not comply with Commission requirements for a motion for summary disposition. Additionally, they argue, LILCO has failed to shoulder the burden of demonstrating the absence of any genuine issue of material fact in this potential dispute — a key element in any attempt at summary disposition. Finally, the Intervenor argues that the pleading does meet the standard for a late-filed contention. The Intervenor does not respond to LILCO's

¹The Intervenor apparently submitted that contention in response to the decision in *GUARD v. NRC*, 753 F.2d 1144 (D.C. Cir. 1985), in which the Court vacated the Commission's prior interpretation of § 50.47(b)(12).

argument that the Commission should view their original motion as an attempt to reopen the record.

The Staff's response takes the position that the motion should be considered as a motion to reopen the record and argues that the motion does not meet those standards. The Staff also fails to address the late-filed contention standards raised by the Intervenor.

III. ANALYSIS

The initial issue before us is whether the Intervenor's motion must be judged against the standard for a motion to reopen a closed record found in § 2.734 or the standard for submitting an untimely contention in an open record found in § 2.714(a)(1). We find that the evidentiary record was indeed closed on the Shoreham Emergency Plan as of August 29, 1984. LBP-85-12, *supra*, 21 NRC at 651. All additional emergency planning litigation has been in response to appellate decisions and superseding developments. In the instant pleading, Intervenor seeks to raise an additional issue and introduce additional factual material, i.e., MS-1 and LILCO's alleged noncompliance, into the record. Clearly, therefore, this effort constitutes a motion to reopen the record, not just to submit a newly proposed contention.

In order to prevail on a request to reopen the record, the movant must demonstrate that (1) its motion is timely, i.e., that the issue it now seeks to raise could not have been raised earlier; (2) the motion addresses a significant safety or environmental issue; and (3) a materially different result would be or would have been likely had the newly proffered evidence been considered. 10 C.F.R. § 2.734(a)(1)-(3). *See, e.g., Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), ALAB-872, 26 NRC 127, 149-50 (1987). Furthermore, "[t]he motion must be accompanied by one or more affidavits which set forth the factual and/or technical basis for the movant's claim" that the three criteria noted above have been satisfied. 10 C.F.R. § 2.734(b). This supporting material "must be set forth with a degree of particularity in excess of the basis and specificity requirements contained in 10 C.F.R. § 2.714(b) for admissible contentions. Such supporting information must be more than mere allegations; it must be tantamount to evidence." *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-775, 19 NRC 1361, 1366 (1984), *aff'd sub nom. San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287 (D.C. Cir. 1984), *aff'd on reh'g en banc*, 789 F.2d 26 (1986), *cert. denied*, 479 U.S. 923 (1986).

In this case, Intervenor has failed to base their request upon *any* evidence, however slight. The Intervenor's submission contains no affidavits at all, much less an affidavit as required in § 2.734(b) describing (1) the Intervenor's

satisfaction of the three factors enumerated in §2.734(a), and (2) the technical basis for the Intervenor's proposed contention. Although the Intervenor's original motion indicates that additional information would be forthcoming, i.e., "factual evidence and expert opinion will prove . . ." (Intervenor's Motion at 11), they have not submitted such information, even when faced with the second round of briefing initiated by LILCO's "Renewed Opposition" — and after LILCO's and the Staff's initial responses should have placed them on notice of this defect. "It is not enough merely to express a willingness to provide unspecified, additional information . . . at some unknown date in the future." *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-7, 21 NRC 1104, 1106 (1985), quoting *Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-753, 18 NRC 1321, 1324 (1983).

In sum, the Intervenor's have failed to comply with the Commission's requirements for even considering a motion of this nature. Therefore, we must deny the motion to reopen the record.²

It is so ORDERED.

For the Commission³

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 2d day of February 1989.

²By denying the motion to reopen the record, we have not addressed the merits of the proposed contention or LILCO's compliance with §50.47(b)(12). See *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), LBP-81-24, 14 NRC 175, 181 (1981). If the Intervenor's believe that serious deficiencies exist in the area of emergency medical services, they should apprise the Staff of those deficiencies for its consideration as part of the Staff's review of uncontested issues.

³Commissioner Curtiss did not participate in this Order.

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 8, 1989

The Appeal Board forwards to the Commission for decision the intervenors' motion for directed certification of a Licensing Board order establishing a hearing schedule for the remaining issues pending in the offsite emergency planning phase of this operating license proceeding.

**RULES OF PRACTICE: INTERLOCUTORY REVIEW
(SCHEDULING ORDER)**

The Appeal Board ordinarily will review a scheduling order on a motion for directed certification for the limited purpose of determining whether the schedule set forth therein deprives a party of procedural due process. *See* ALAB-889, 27 NRC 265, 269 (1988); ALAB-864, 25 NRC 417, 420-21 (1987); ALAB-858, 25 NRC 17, 20-21 (1987).

APPEARANCE

Allan R. Fierce, Boston, Massachusetts, for the intervenors, Attorney General of Massachusetts, *et al.*

MEMORANDUM AND ORDER

On February 3, 1989, three of the intervenors¹ filed a motion for directed certification of the January 24, 1989 memorandum and order of the Licensing Board establishing a hearing schedule for the remaining issues pending in the offsite emergency planning phase of this operating license proceeding.² The gravamen of the motion is that the order violates procedural due process in that it establishes a schedule that is so compressed as to deny them a fair chance both (1) to prepare and present their case on the issues now ripe for Licensing Board adjudication; and (2) to brief all of the assertedly serious material errors contained in that Board's December 30, 1988 partial initial decision on the New Hampshire emergency response plan.³

On the same date, but presumably without knowledge of the intervenors' motion, the Commission issued a memorandum *sua sponte* in which it took note of the January 24 scheduling order. In that memorandum, the Commission went on to say:

Litigation of emergency planning issues, particularly where state and local governments are not participating in planning efforts, can be a lengthy process. We are pleased, therefore, that the [Licensing] Board is taking steps to bring this proceeding to a close within a reasonable timeframe, taking into account the rights of the parties. The Commission wishes to commend you and your colleagues for these efforts.

Extrapolating from the Board's schedule, it would appear to us that September 30, 1989 would be a realistic target schedule for a final initial decision to be issued in this matter.⁴

As we have previously observed in this proceeding, we will review a scheduling order on a motion for directed certification for the limited purpose of determining whether the schedule set forth therein deprives a party of procedural

¹The Attorney General of Massachusetts, the Seacoast Anti-Pollution League, and the New England Coalition on Nuclear Pollution.

²See 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).

³See LBP-88-32, 28 NRC 667.

⁴The Commission added that it desired to be notified promptly should it become apparent to the Licensing Board that the September 30 date cannot be met.

due process.⁵ In normal circumstances, then, we would have had no hesitancy in undertaking to examine, immediately following the receipt of responses from the other parties, the substance of the intervenors' claim that the scheduling order at bar has such an effect. The Commission's February 3 memorandum constrains us, however, to adopt a different course.

The Commission's endorsement in this fashion, and on its own initiative, of a Licensing Board scheduling order is unusual if not unprecedented. Given the nature of the February 3 memorandum, we are unable to ascertain whether the Commission's intention was to strip us of any review authority over the January 24 scheduling order. It does appear, however, quite incongruous for us to pass upon whether that order comports with due process in circumstances where the Commission has already expressed its opinion that the Licensing Board should be "commend[ed]" for a "reasonable" action that took "into account the rights of the parties."

Without awaiting responses, we therefore *forward* the pending directed certification motion to the Commission for whatever disposition it deems warranted in the circumstances. Needless to say, notwithstanding its February 3 memorandum, the Commission remains free to return the motion to us for consideration on the merits.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

⁵ See ALAB-839, 27 NRC 265, 269 (1988); ALAB-864, 25 NRC 417, 420-21 (1987); ALAB-858, 25 NRC 17, 20-21 (1987).



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulles, Chairman
Oscar H. Paris
Frederick J. Shon

In the Matter of

Docket Nos. 50-603-CP/OL
50-604-CP
(ASLBP Nos. 88-570-01-CP/OL
88-571-01-CP)

ALL CHEMICAL ISOTOPE
ENRICHMENT, INC.
(AllChemIE Facility-1 CPDF; Facility-2,
Oliver Springs)

February 1, 1989

Although the Applicant does not intend to use the subject centrifuge machines for enriching uranium, because the machines are capable of doing so, they are defined as a "production facility" and must be licensed by the Nuclear Regulatory Commission as provided by §§ 11v and 101 of the Atomic Energy Act of 1954, as amended.

Where chemical hazards related to the production of stable isotopes are unrelated to materials licensed under the Atomic Energy Act and the hazards will be subject to regulation by other agencies, the issues considered of importance in licensing by the Nuclear Regulatory Commission are those associated with ensuring adequate protection of the common defense and security.

The exact nature of the precautions the licensee will take to provide physical protection, material control, and accounting for special nuclear material will be withheld from public disclosure in a licensing proceeding, pursuant to 10 C.F.R. § 2.790(d)(1).

APPEARANCES

Stephen A. Irving, Esq., Oak Ridge, Tennessee, for the Applicant.

Bernard M. Bordenick, Esq., Office of the General Counsel, U.S. Nuclear
Regulatory Commission, for the Staff.

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INITIAL DECISION

I. SCOPE OF DECISION

In Docket No. 50-603-CP/OL, we determine that the construction permit for which application was made should be issued to All Chemical Isotope Enrichment Company, Inc. (AlChemIE or Applicant).

The construction permit sought is to allow AlChemIE to modify an existing U.S. Department of Energy (DOE) facility for operation as a stable isotope enrichment production plant. The facility, the Centrifuge Plant Demonstration Facility is located on the federally owned Oak Ridge Gaseous Diffusion Plant site in Oak Ridge, Tennessee. Classified centrifuge machines, to be acquired from DOE, will be employed to enrich the stable isotopes that are to be used for medical, industrial, environmental, and energy conservation purposes. Because the equipment is capable of enriching uranium, although that is not the Applicant's intended purpose, the plant is defined as a "production facility" and requires licensing by the U.S. Nuclear Regulatory Commission (NRC or Commission).

Applicant seeks authority to operate the facility for a period of 40 years.

In Docket No. 50-604-CP, we find that the construction permit sought should be granted to AlChemIE.

The construction permit applied for is to authorize Applicant to construct an additional facility at Oliver Springs, Tennessee, for use as a stable isotope enrichment production plant. The classified centrifuge machines for production of the stable isotopes will also be acquired from DOE. The machines, capable of enriching uranium, will be used for the same purpose as those at the Oak Ridge facility. The plant site in Oliver Springs, Tennessee, is nearby to Oak Ridge, Tennessee.

All of the applications are unopposed.

II. INTRODUCTION

A. Procedural Background

By applications filed November 17, 1987, with the Commission, AlChemIE seeks a permit to construct and a license to operate the AlChemIE Facility-1 CPDF (Facility 1) and a permit to construct the AlChemIE Facility-2 Oliver Springs (Facility 2). The NRC published a Notice of Opportunity for Hearing in the *Federal Register* (53 Fed. Reg. 15,315-19) on April 28, 1987, for each of the docketed applications. Licensing Boards, composed of identical members, were appointed on May 3, 1988, to preside in the respective proceedings.

(For simplicity in terminology, the Licensing Boards will be referred to in the singular.) The Licensing Board handled the proceedings on a consolidated record.

The only public response to the Notices of Opportunity for Hearing, was from the State of Tennessee. The State on behalf of the Tennessee Department of Health and Environment, through the Office of the Attorney General, filed a request to participate in the proceedings as an interested state pursuant to 10 C.F.R. §2.715(c). The State of Tennessee withdrew its request to participate on November 9, 1988, after having had its interest satisfied by action of the parties.

On July 21, 1988, a Special Prehearing Conference was held at Knoxville, Tennessee, and on July 27, 1988, a Special Prehearing Conference Order was issued summarizing the results of the conference. The key issues in the proceedings were identified. The Licensing Board found that there were no litigable issues involving the request for an operating license in Docket No. 50-603-CP/OL, no party having intervened.

Applicant requested expeditious handling of the applications because of its desire to meet a contractual date made with the DOE for transferring the technology and to get the business venture under way. In advance of the hearing, the Licensing Board reviewed Applicant's and Staff's evidence that was to be placed in the record of the unopposed proceedings. We submitted written inquiries to the parties when additional information and further review were needed on matters at issue. The inquiries and responses of the parties were reflected in the exhibits entered into evidence in the proceedings. Telephone conferences were held with the parties to expedite the prehearing and hearing process.

The applications went to hearing on January 4, 1989, at Knoxville, Tennessee, following notice in the *Federal Register*. 53 Fed. Reg. 45,176-77, 49,617. Although notification was given that limited appearance statements could be made at the January 4 session, none was offered. Applicant and NRC Staff presented evidence on the issues by way of live witnesses and affidavits. Attached to this Initial Decision and made a part hereof are the following attachments: Attachment 1, Applicant's Witness List; Attachment 2, Staff's Witness List; Attachment 3, Applicant's Exhibit List; and Attachment 4, Staff's Exhibit List.

Specific evidence of safeguard and security matters, considered to be proprietary under 10 C.F.R. § 2.790(d)(1), was submitted by affidavit at the hearing. The exhibits were received in evidence but are not included in the public record. They are kept in a nonpublic docket that is maintained by the Office of Nuclear Material Safety and Safeguards.

During the course of the January 4 hearing, the Licensing Board requested that the Applicant produce additional financial information and that NRC Staff

broaden its review of Applicant's financial qualifications. The hearing was then continued to January 17, 1989, at Bethesda, Maryland.

At the January 17 hearing, Applicant produced additional information as to its finances, and NRC extended its review of Applicant's financial qualifications. The record was then closed.

This is not a contested proceeding within the meaning of 10 C.F.R. § 2.4(n) as there is no controversy between the Staff and the Applicant concerning issuance of the construction permits or concerning their terms or conditions and there is no intervenor in the proceedings.

Applicant and NRC Staff were requested to submit proposed findings of fact and conclusions of law in the form of a proposed initial decision by January 23, 1989. The parties filed a joint document in response to the request.

B. The Facilities and Equipment

AlChemIE Facility 1 was previously used as a centrifuge plant demonstration facility by the DOE, at which tests were conducted with the machines in enriching uranium and some stable isotopes. Applicant will lease the facility located on the federal reservation at Oak Ridge, Tennessee, and purchase the 120 centrifuge machines, which are classified.

As a result of the DOE tests, the centrifuge machines and associated piping are slightly contaminated with uranium. The uranium is fixed tightly to the machines and piping and is not available for dispersal.

AlChemIE Facility 1 has already been totally constructed and operated. Only minor building and equipment modifications are necessary for AlChemIE to commence operations. It is estimated that the earliest date for completion of the modification of the Oak Ridge facility would be in February and the latest in May 1989.

AlChemIE Facility 2 will be a new plant. The plant will be a steel frame structure with aluminum siding and metal interior walls. The facility will be located on a 20-acre industrial park site being developed by the City of Oliver Springs within its corporate limits. Approximately 120 gas centrifuge machines will be at the location at startup, and the plant will have a capacity estimated at 600 machines. The site is within 7 miles of Facility 1.

The machines that AlChemIE intends to use at Oliver Springs have been constructed and tested by DOE. They were originally intended for use by the DOE at its Gas Centrifuge Enrichment Plant site at Piketon, Ohio. AlChemIE will transport the machines from Piketon to the Oliver Springs facility.

AlChemIE expects it will take between 30 and 36 months to complete the Oliver Springs site. It would start construction in March 1989.

C. Regulatory Requirements

Because of the unusual nature of the subject facilities, they do not readily fall within the Commission's regulatory scheme and its regulations.

The enriching of stable isotopes per se is not within the Commission's regulatory authority. However, any equipment or device capable of enriching uranium is defined as a "production facility" and must be licensed by the NRC as provided in §§ 11v and 101 of the Atomic Energy Act of 1954, as amended. Because the centrifuge machines AIChemIE will obtain from DOE for use at both facilities are capable of enriching uranium, their possession and use must be licensed by the Commission. The NRC regulations that govern the licensing of production facilities are found in 10 C.F.R. Part 50.

The Commission is authorized by the Atomic Energy Act of 1954, as amended, to regulate the commercial use of radioactive materials. The Commission may also exercise jurisdiction over hazardous materials intimately associated with radioactive materials under its jurisdiction.

The Staff concluded prior to noticing the applications of opportunity for hearing that although some of the machines are slightly contaminated with uranium, the safety implications of the quantities are negligible and would be adequately controlled by routine licenses granted under Parts 40 and 70. It decided that in this case the chemical hazards related to the production of stable isotopes are unrelated to materials licensed under the Atomic Energy Act and that such hazards would be subject to regulation by other agencies, such as the Environmental Protection Agency under the Resources Conservation and Recovery Act and the Toxic Substances Control Act.

The Staff advised the Commission in making its recommendations on noticing the applications in the *Federal Register* of opportunity for hearing that the Commission should not exercise any authority it may have over chemical hazards that may arise from operation of the machines to produce nonradioactive materials; that the only licensing issues of importance in connection with such a license are those associated with ensuring adequate protection of common defense and security (safeguard issues); and that Notices of Opportunity for Hearing should be issued that are specifically tailored to ensure that the review is limited to issues relating to common defense and security and to National Environmental Policy Act findings. *Federal Register* Notice of Opportunity for Hearing on AIChemIE Applications, SECY-88-88, Appendix A to Staff Exhs. 2A and 2B.

The Commission Notices of Opportunity for Hearing published in the *Federal Register* followed Staff's recommendations. 53 Fed. Reg. 15,317-19.

The issues set forth in the Notice for the construction permit application for the Oak Ridge facility, in Docket No. 50-603-CP/OL, were stated to be:

1. Whether, in accordance with the provisions of 10 C.F.R. § 50.34, the Applicant has described the proposed design of the facility including, but not limited to, the principal architectural and engineering criteria for the design, and has identified the major features or components incorporated therein to ensure adequate protection of the common defense and security;
2. Whether the Applicant is technically and financially qualified to modify the existing facility in such a way as to ensure adequate protection of the common defense and security;
3. Whether the issuance of a construction permit authorizing the modification of the facility will be inimical to the common defense and security; and
4. Whether, in accordance with the requirements of 10 C.F.R. Part 51, the construction permit should be issued as proposed.

The construction permit issues in Docket No. 50-604-CP as set forth in the Notice are identical to those stated above for Docket No. 50-603-CP/OL, except the latter involves the modification of an existing facility and the former the construction of a proposed facility.

The Licensing Board was directed in the Notices of Opportunity for Hearing that should the construction permit applications be unopposed, as has occurred, it will determine the following without conducting a *de novo* evaluation of the applications: (1) Whether the applications and the record of the proceedings contain sufficient information and whether the Commission staff's review of the applications has been adequate to support the proposed findings to be made by the Director of the Division of Industrial and Medical Nuclear Safety on issues 1-3, above, and to support insofar as the Commission's requirements under the Act are concerned, the issuance of the construction permits proposed by the Director; and (2) whether the NEPA reviews the Commission's staff conducted have been adequate.

The Notice of Opportunity for Hearing, in Docket No. 50-603-CP/OL, for Facility 1 also provided that upon completion of the modification of the facility in Oak Ridge, Tennessee, in compliance with the terms and conditions of the construction permit and the application, as amended, and in the absence of good cause to the contrary, the Commission will issue to the Applicant, without additional prior notice, a class 103 facility license authorizing operation of the facility.

No petition to intervene as a party was filed as to the application for an operating license. Nothing has come to the attention of the Licensing Board that would constitute good cause for not issuing the operating license.

As stated previously, the proposed facilities for which construction permits are sought do not readily fit within the Commission's regulations. Applicant

and Staff drew up a list of nonapplicable sections of 10 C.F.R. Part 50.¹ In most instances the sections only apply to nuclear reactors. We agree with the parties that the cited sections do not apply to the plants proposed. Staff Exhs. 2A and 2B at 4.

In three instances, Staff concluded that while certain sections of Part 50 applied generally to the proposed facilities, as a practical matter they do not require any action in response from Applicant. Staff states that 10 C.F.R. § 50.34(a)(8) requires no action because it involves matters relating to research and development and that no research and development is part of Applicant's proposal; that Applicant has provided technical specifications in the area of safeguards, which under the narrow scope of the proceeding are the only technical specifications that need be provided under 10 C.F.R. § 50.36; and that whereas 10 C.F.R. § 50.42(a) requires that the proposed activities serve a useful purpose proportionate to the quantities of special nuclear material or source material to be utilized, there is no such material available for a useful purpose and therefore the proposed activities need not serve a useful proportionate purpose. Staff Exhs. 2A and 2B at 5, 6. We find Staff's position to be meritorious and agree with its conclusions.

The Commission, through the Director, Division of Industrial and Medical Nuclear Safety, Office of Nuclear Materials Safety and Safeguards, on December 20, 1988, granted to Applicant an exemption from the requirements of 10 C.F.R. §§ 50.34(a)(10), 50.34(b)(6)(ii), and Appendix E to Part 50, which address the subject of emergency planning for production and/or utilization facilities. In granting the exemptions the Commission found that since the only radioactive material under consideration is the uranium firmly fixed to the centrifuge machines, there is no potential radiological hazard for which emergency planning is necessary.²

In making the following findings of fact, in accordance with the Commission instructions contained in the Notices of Opportunity for Hearing, the Licensing Board reviewed and considered the entire record and all proposed findings of fact and conclusions of law submitted jointly by the parties. Findings of fact and conclusions of law not incorporated directly or inferentially herein are rejected as being unsupported by the evidence of record, or as unnecessary to the rendering of the Initial Decision.

¹ Sections 50.10(e); 50.21; 50.33(g) and (i); 50.33a through (d); 50.34(a)(3), (4), (5), (7), and (11); 50.34(b)(1), (2), (4), (5), (6)(ii), (iii), (iv), (vii), (8), (9); 50.34(f), (g); 50.34a; 50.36a; 50.41; 50.43; 50.44; 50.46; 50.47; 50.48; 50.49; 50.54(a), (i), (i-1), (j), (k), (l), (m), (o), (q), (r), (s), (t), (u), (w), (y), (z), (bb); 50.55(e)(1), (f); 50.55a; 50.57(c); 50.60; 50.61; 50.62; 50.64; 50.70(b)(2); 50.71(e); 50.72; and 50.73.

² Following the close of the hearing on January 19, 1989, the Commission on its own initiative, exempted Applicant from the financial protection and indemnity requirements of 10 C.F.R. Part 140. The Commission determined that the exemptions will not present an undue risk to the public health and safety and are consistent with the common defense and security.

III. FINDINGS OF FACT

A. Safety Analysis

1. The Applicant submitted Applicant's Exhibit 1, which contains safety analysis reports for both Facility 1 and Facility 2. The Staff's review of these documents led to Staff's Exhibits 2A and 2B, Safety Evaluation Reports related to the applications for construction permits for Facilities 1 and 2, respectively.

2. From a safety standpoint, the Commission has jurisdiction over these facilities only to the extent they present radiological hazards resulting from isotopes that fall under the Commission's regulatory purview. In its review, the Staff concluded that the only such radioactive materials that could be involved in the construction or operation of the two facilities were the slight residues of uranium contamination in the form of UO_2F_2 clinging to the interior surfaces of the machines. The Staff notes that the DOE has already established that this material does not carry over either in product or tails in tests that involved the separation of stable isotopes. Staff Exhs. 2A and 2B at 5, 8, C-2. The Staff also notes that AICHEMIE will sample and analyze both products and tails during operation to ensure that no uranium carries over. *Id.* at 8.

3. Nor does any accident seem likely to release appreciable quantities of uranium. The Applicant has analyzed likely accidents from both plants. Appl. Exh. 1, Tab 50-603 at 6-1 ff., Tab 50-604 at 7-1 ff. The Staff's review affirms this. Staff Exhs. 2A and 2B at 8.

4. The Staff also reviewed the potential for the enrichment of naturally occurring radioisotopes other than uranium (although the Commission does not, in fact, regulate these) and found that their enrichment "presents no radiological hazard, either to the workers in the plant or to the public." *Id.* at 11-12.

5. The Commission would be concerned, of course, if the process here involved presented the potential for inadvertent criticality. The Applicant's Safety Analysis assures us that it does not, for the quantity of uranium as fixed contamination in any machine is less than that which can be made critical under any conditions of geometry or moderation. Appl. Exh. 1, Tab 50-603 at 6-1, Tab 50-604 at 7-4.³

6. The Applicant has described and the Staff has reviewed the provisions for disposal of radiologically contaminated and classified wastes. Appl. Exh. 1, Tab 50-603 at 5-1, Tab 50-604 at 6-1; Staff Exhs. 2A and 2B at 12. The major portion of these wastes will consist of failed rotors (devices of classified design presently contaminated by uranium). The Staff concluded that the Applicant's

³With respect to the general radiological hazard that this plant might present to its surroundings, we note that the Applicant requested (on August 17, 1988) and the Commission granted (on December 20, 1988) an exemption from 10 C.F.R. §§ 50.34(a)(10), 50.34(b)(6)(v), and Appendix E to Part 50. These are regulations governing the provisions a licensee must make for the protection of the public in the event of a radiological emergency.

plan to dispose of these items through DOE is appropriate. Staff Exhs. 2A and 2B at 12; Appendix D. The Board expressed its concern that there might be some question regarding the method of disposal if contaminated classified equipment were contaminated with anything other than uranium, since Applicant's general intent was to return classified waste to DOE, and DOE had by letter declined to accept waste containing hazardous material other than uranium. Board Letter of November 16, 1988, *citing* DOE Letter, Appendix D to Staff Exhs. 2A and 2B. The Staff, in its reply (Staff Exh. 6 at 2), noted that such wastes could be commercially decontaminated by properly cleared personnel (although perhaps at some extra expense) and further noted that the Applicant's plan at present was to store such wastes until they could be declassified. The Applicant's witness, Chief Executive Officer Smelser, testified that the plan was indeed to store, declassify, and then decontaminate such waste. Tr. 214-18.

7. Finally, the Staff has addressed decommissioning and concluded that the contaminated machinery can be disposed of adequately at end of life. Staff Exhs. 2A and 2B at 13.

8. We have reviewed the evidence introduced in this case and we conclude that the information supplied by the Applicant is sufficient to enable the Staff to reach sound conclusions concerning those aspects of the facilities' safety that are within the purview of the Commission's authority. We further agree that the conclusions drawn by the Staff from the material so supplied are sound ones: The construction of Facilities 1 and 2 can be carried out without undue hazard to the health and safety of the public.

9. The Licensing Board finds that the Applicant has provided sufficient information relative to the safety of the facilities and that the Staff's review of that information is adequate.

B. Advisory Committee on Reactor Safeguards

10. In accordance with § 182b of the Atomic Energy Act of 1954, as amended, and 10 C.F.R. § 50.58, the applications were referred by the Staff to the Advisory Committee on Reactor Safeguards (ACRS) for review and report. The ACRS reviewed the application and on October 6, 1988, considered the application at its 342d meeting. Following the meeting, the ACRS issued a letter report to the Chairman of the NRC in which the ACRS stated its support for the issuance of the license, subject to the implementation of the planned safeguard and security controls. The letter recited that the NRC Staff has expressed satisfaction with Applicant's proposed safeguard program, and the ACRS has no reason to disagree. (Appendix E to Staff Exhs. 2A and 2B).

C. Safeguards Provisions

11. Clearly there are two aspects of the safeguarding of special nuclear material that might be impacted by the licenses at bar. First, some of the material previously separated by DOE might fall into the wrong hands. Second, the machines might be surreptitiously used to separate fissile isotopes. Measures to protect against these possibilities have been addressed in Applicant's Proprietary Exhibit 1 (Appl. Exh. P-1) and in Staff's Proprietary Exhibits 1 through 4 (Staff Exhs. P-1 through P-4).

12. The exact nature of the precautions taken to provide physical protection, material control, and accounting for special nuclear material has been withheld from public disclosure in this proceeding pursuant to 10 C.F.R. § 2.790(d)(1). We note, however, that the only special nuclear material that the Applicant will be licensed to possess will be the fixed contamination and the internal surfaces of the contaminated machines. Staff Exhs. 2A and 2B at 14. Further, receipt on site of any fissile material at any concentration will be prohibited by the conditions of the license. *Id.*

13. Precautions have been proposed by the Applicant and reviewed by the Staff to preclude access to the separation machines by unauthorized personnel and to preclude the bringing on site or shipment off site of any unauthorized special nuclear material. Appl. Exh. P-1; Staff Exhs. P-1 through P-4. The Board has examined those documents and generated a series of inquiries regarding them. Those inquiries have been answered to our satisfaction. Staff Exh. P-2. We have also inquired into and received adequate assurance concerning the precautions to be taken while shipping classified safeguards-related equipment from the point of origin to site. *Id.*

14. The Applicant is technically qualified to perform the safeguards functions required by the plan, and, indeed, many of those functions can be performed without specialized training. Staff Exhs. 2A and 2B at 14. It will be a condition of licensing that all necessary safeguards and security structures be in place, that all safeguards and security functions be understood, that staffing be adequate, and that all appropriate training be complete before equipment capable of enriching uranium is installed. *Id.* The activities proposed to be conducted under the licenses will be within the jurisdiction of the United States. All of the directors and principal officers of the Applicant are U.S. citizens. AlChemIE is not owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government. Appl. Exh. 1.

15. The Licensing Board finds that the Applicant has provided sufficient information relative to the proposed safeguards provisions for these facilities and that the Staff's review has been adequate to ensure the protection of the common defense and security.

D. Protection of Classified Information

16. The Applicant has submitted information regarding the protection of classified information in its Security Plan for both facilities. Appl. Exh. P-1. The Staff has reviewed that plan. Staff Exhs. P-1, P-3. The nature of the centrifuge machines is such that certain information concerning them must be controlled in accordance with Chapter 12 of the Atomic Energy Act of 1954, as amended, and with Executive Orders 10,865 and 12,356. Procedures for obtaining approval for facilities that licensees use for protecting classified information are set forth in 10 C.F.R. Part 95, "Security Facility Approval and Safeguarding of National Security Information and Restricted Data."

17. The Licensing Board considers the details of the methods and procedures used by the Applicant to comply with the requirements of Part 95 to be proprietary, and we will accordingly not discuss them in these findings. Nevertheless, we have reviewed the relevant information and we agree with the Staff's conclusion that proper compliance can be attained.

E. Financial Qualifications

18. The Applicant submitted financial data covering its current and proposed activities. Letter of September 12, 1988, from Smelser to Thompson, Appl. Exh. 3. Staff's review of Applicant's financial qualifications was issued on December 29, 1988, as nonproprietary Supplements to the Safety Evaluation Reports. Attachments to Staff Exh. 8.

19. Chief Executive Officer Smelser testified as to Applicant's finances on January 4, 1988. Tr. 188 *et seq.* Based on the testimony and Staff's written review, the Licensing Board requested Applicant to submit additional and more specific evidence on the issue of Applicant's financial qualifications and for Staff to further review Applicant's qualifications, more in accordance with 10 C.F.R. § 50.33(f) and Appendix C to Part 50. Tr. 260 *et seq.*

20. Additional written testimony was filed by Applicant on January 9, 1989, and by Staff on January 13, 1989. Appl. Exh. 4; Staff Exh. 10. Applicant and Staff witnesses presented testimony on Applicant's financial qualifications at the continued hearing on January 17, 1989. Tr. 289 *et seq.* The information presented at the continued hearing was current and precise. It was made clear that Staff's standard of review for these applications was the standard applicable to newly formed entities under Appendix C, § II, to Part 50 of 10 C.F.R.

21. The information submitted by Applicant and the review conducted by Staff established the following:

- a. AlChemIE is a newly formed, investor-owned entity, organized for the primary purpose of engaging in the licensed activities. It has no corporate affiliates or parent companies. AlChemIE was initially

funded through a combination of stock sales and loans. Attachments to Staff Exh. 8.

- b. Applicant's most recent balance sheet, December 31, 1988, shows it has assets of \$127,718,827, liabilities of \$51,225,695, and a stockholders' equity of \$76,493,122. The stockholders' equity includes equipment equity in the amount of \$74,900,000. Appl. Exh. 4, Tab "December 31, 1988 Balance Sheet."
- c. A pro forma cash flow statement for 5 years shows total cash from all sources of \$181,450,000. Sources include: isotope sales, \$153,000,000; fixed-asset sales, \$28,000,000; and bank loans \$450,000. The 5-year cumulative gain on operations is reported to be \$112,365,991. *Id.*, Tab "5 year Proforma (projected)."
- d. The cost of modifications at Facility 1 is placed at \$376,000. Funds are expected to be obtained from the sale of surplus equipment and/or borrowed from banks. *Id.*, Tab "Construction Cost Facilities 1 and 2."
- e. The estimated cost of construction of Facility 2 will be \$32,875,000. Sources of the construction funds would be: a grant from the State of Tennessee, \$459,000; an urban development action loan, \$2,000,000; sales of surplus equipment, \$11,500,000; and profit from isotope sales, \$24,479,144. Bank funding would be obtained if required. *Id.*
- f. AlChemIE estimates that the initial capital costs for the safeguards systems at each of the facilities will be less than \$100,000. Monthly operating costs for the systems are estimated to be approximately \$44,000 for Facility 1 and \$19,000 for Facility 2. Applicant has obtained a standby letter of credit from a bank in the amount of \$517,050 to provide additional assurance that decontamination and disposal of the centrifuge equipment will be accomplished. Attachments to Staff Exh. 8 at 3.

22. Staff's review was based on the premise that (1) if the classified information related to the centrifuge machines is protected, and (2) if the machines are adequately prevented from enriching uranium, then the common defense and security will be protected. The review consisted of evaluating the financial information provided by the Applicant to demonstrate how items (1) and (2) will be satisfactorily achieved. Staff reviewed AlChemIE's financial qualifications to fulfill NRC safeguards requirement including physical security requirements and measures for the protection of classified information. Applicant provided the information upon which the review was based including the identification of sources upon which AlChemIE relies for the necessary funding. *Id.* at 2.

23. Staff concluded in its review that Applicant demonstrated that it possesses or has reasonable assurance of obtaining the funds required for the modifications to Facility 1 and that it is financially qualified to make the modifications.

Funding would come from saleable surplus equipment (appraised at \$28 million) and from bank financing, if needed. Staff Exh. 10.

24. It further concluded that: (1) AlChemIE has demonstrated reasonable assurance of obtaining the funds needed to decontaminate and dispose of the centrifuge equipment as required; and (2) Applicant also has demonstrated that it possesses or has reasonable assurance of obtaining the funds necessary to fulfill NRC safeguards requirements including physical security requirements and measures for the protection of classified information and that AlChemIE is financially qualified to construct the proposed facilities in such a way as to ensure adequate protection of the common defense and security. Attachments to Staff Exh. 8 at 4 and Staff Exh. 10.

25. As to Facility 2, Staff, in its review, found that Applicant's financial ability to construct the plant is based to a significant degree on the success of isotope production at Facility 1, profitable sales of the isotopes, and additional sales of substantial amounts of surplus unclassified equipment. Staff concluded that if the events do occur as planned, then the Applicant has a reasonable financing plan for Facility 2 construction costs and would be financially qualified to construct the facility under 10 C.F.R. § 50.33(f) and Appendix C to Part 50. Staff Exh. 10.

26. Moreover, as to the lesser amounts of funding needed for Facility 2 to fulfill safeguard requirements including physical security requirements and measures for the protection of classified information as well as for the decontamination of centrifuge equipment, Staff found Applicant's financing assumptions to be reasonable. It concluded that AlChemIE possesses or has reasonable assurance of obtaining the necessary funding for these costs. As a result, AlChemIE is financially qualified to construct the facilities in such a way as to ensure adequate protection of the common defense and security. Attachments to Staff Exh. 8 at 4 and Staff Exh. 10.

27. The Staff applied a correct standard for determining whether AlChemIE's financial qualifications enable Applicant to fulfill NRC safeguard requirements, in modifying and constructing the respective facilities, so as to ensure adequate protection of the common defense and security.

28. It is readily apparent that because of the small amount of funding required, Applicant is financially qualified to modify Facility 1 in its entirety as proposed, including those areas involving safeguards.

29. Staff, in its review, conditionally forecast Applicant's financial ability to construct Facility 2 in its entirety (\$32,875,000) because a major part of the sum is dependent upon profits from Facility 1 which is yet to operate. It did conclude that the Applicant demonstrated that it was financially able, because of its ability to acquire the much lesser funding necessary to fulfill NRC safeguards requirements for Facility 2 and, therefore, was financially qualified to construct the proposed facility so as to ensure adequate protection of the common defense

and security. *Id.*, Tr. 320-23. The Staff's conclusions are reasonably based and we concur in its finding.

30. Based upon the foregoing, the Licensing Board concludes that the applications and the record of the proceeding contain sufficient information and that the Commission's Staff review of the applications has been adequate to support the finding that the Applicant is financially qualified to modify and construct the respective facilities in such a way as to ensure adequate protection of the common defense and security.

F. Environmental Review

31. The Staff issued on September 8, 1988, an "Environmental Assessment Related to the Construction and Operation of the AlChemIE Facility 1 CPDF" and an "Environmental Assessment Related to Construction of the AlChemIE Facility 2 Oliver Springs." Staff Exhs. 1A and 1B. Underlying the Staff's Environmental Assessments was AlChemIE's Environmental Report for each of the facilities. Appl. Exh. 2.

32. On October 3, 1988, the NRC Staff published in the *Federal Register* a "Notice of Issuance of Environmental Assessment Related to the Construction and Operation of the AlChemIE Facility-1 CPDF and Finding of No Significant Impact, Docket No. 50-603, All Chemical Isotope Enrichment, Inc." (53 Fed. Reg. 38,806) and "Notice of Issuance of Environmental Assessment Related to the Construction of the AlChemIE Facility-2 Oliver Springs and Finding of No Significant Impact, Docket No. 50-604 All Chemical Isotope Enrichment, Inc." (53 Fed. Reg. 38,805). Included in Staff Exhs. 1A and 1B.

33. Our findings also take into account the Board's request for additional information, dated October 18, 1988, and the Staff's response thereto (Staff Exhs. 3 and 5), and the Board's Inquiries of November 16, 1988, and the Staff's Response thereto. Staff Exh. 6. We consider these responses to be amendments to the Staff's Environmental Assessments and Findings of No Significant Impact.

Facility 1

34. As has been noted, *supra*, Facility 1 was previously used by the DOE as a Centrifuge Plant Demonstration Facility (hence, CPDF), and is located at the site of the Oak Ridge Gaseous Diffusion Plant. Thus the facility is already constructed and has been operated. In addition to tests conducted with uranium, the machines have also been used to enrich some stable isotopes. As a result of these DOE tests, the centrifuge machines and associated piping have been slightly contaminated with uranium. Because the tests were to demonstrate enrichment, some of the uranium contamination is enriched in the uranium-235

isotope. Some modification of the building and its machinery will be necessary for AlChemIE's operations, but the construction period is expected to be very short. Staff Exh. 1A at 2.

Environmental Impacts at Facility 1

35. The Staff's Environmental Assessment states that the local environment is a well-characterized industrialized area with an established buffer zone. The industrialized area has utilities and waste management services to support the facility's needs for steam, sanitary water, and electric power. *Id.*

36. The exterior of the CPDF facility will be modified only slightly to meet AlChemIE's requirements. Existing centrifuge equipment will be used to process various chemical compounds, some of which are considered toxic or hazardous. *Id.*

37. *Air Emissions Permit.* AlChemIE has filed for an air emissions permit with the Tennessee Department of Health and Environment (TDHE). While the feed material and processing rate information have not been completely defined, the Staff used available information to perform an analysis which indicates that material releases due to normal operations are expected to be environmentally acceptable. *Id.*

38. *Feed Materials.* In Table 2.1 of its Environmental Assessment of Facility 1, the Staff lists a total of forty feeds that AlChemIE is planning or considering for processing in Facility 1. Of the forty feeds listed, twenty-six have toxic or hazardous properties either of the material or of its reaction products. The Staff states that AlChemIE has indicated that it will use material safety data sheets and other data supplied by the manufacturers of the feed chemicals to develop handling, operating, and safety procedures, which are normal industrial precautions to protect workers and the environment when handling the material. *Id.* at 9-10.

39. *Wastewater.* AlChemIE wastewater (primarily sanitary water) will be discharged through the existing Oak Ridge Gaseous Diffusion Plant wastewater treatment plant which is currently covered by a National Pollutions Discharge Elimination System (NPDES) permit. The NPDES limits will not have to be modified to accommodate AlChemIE's wastewater. AlChemIE's nonhazardous and hazardous/toxic solid and liquid wastes will be transferred to appropriate existing DOE, municipal, and commercial waste management operations which already have the necessary permits. *Id.* at 3. The sanitary wastewater is not expected to contain any radiological or toxic materials. *Id.* at 28.

40. *Accidental Releases.* The Staff's analysis of potential accidental releases of material from the process indicates that the offsite concentration of toxic materials will be less than the time-weighted average threshold limit values (TWA-TLV) which have been established by the American Conference of

Governmental Industrial Hygienists (ACGIH). Exposure of the population to toxic material emissions in concentrations below these limits will not result in any adverse health and safety effects. *Id.*

41. In the All Chemical Isotope Enrichment, Inc. Facility 1 — CPDF Environmental Report (Appl. Exh. 2), AlChemIE states that it considered the worst-case accident scenario to be the rupture of a 150-kilogram feed cylinder of a mercury feedstock compound on the loading dock of that facility. AlChemIE went on to state that the safety and environmental impacts of such an accident could be mitigated by requiring that protective clothing and a respirator be worn by personnel and by having an enclosed loading dock which could prevent mercury release to the environment. Appl. Exh. 2 at 5-11. At the hearing, William A. Pfeifer from AlChemIE testified that the loading docks at both Facility 1 and at Facility 2 would be enclosed on all sides and equipped with an overhead door which could swing down to enclose the entire dock and thus eliminate the release of material to the environment. Tr. 183-84.

42. *Routine Gaseous Discharges.* Very small gaseous discharges can be expected from both the building ventilation system as well as from the evacuation and purge systems for the cascade. Staff believes that the extent of these emissions will be small because the cascades operate under vacuum and because DOE's experience with such facilities had demonstrated that the releases are small. In addition, AlChemIE will install systems to treat discharges from the evacuation and purge systems for all cascades except those processing xenon and krypton. Cold trapping, chemical trapping, or mechanical trapping will be used depending on the physical and chemical characteristics of the material involved. Staff's Environmental Assessment for Facility 1, Staff Exh. 1A at 13.

43. *Oils, Solvents, and Solid Wastes.* Oils, solvents, and solid wastes generated as a result of operations and maintenance activities will be packaged on site and shipped to offsite waste treatment disposal facilities. Solid wastes such as failed centrifuges may be contaminated with toxic or hazardous material as well as the residual uranium they contain. If they are contaminated with toxic or hazardous material, they will be decontaminated and sent to DOE for classified burial. The toxic or hazardous material removed from them will be packaged and shipped to a licensed waste contractor. *Id.* at 13-14.

44. *Land Use Around Facility 1.* The CPDF is located in the ORGDF within the 15,000-hectare DOE Oak Ridge Reservation (ORR). The ORGDF site is already dedicated to industrial uses. Lands surrounding the ORR are farmland with low-density housing. The proposed AlChemIE facility is approximately 3 kilometers from the north and west boundaries of the ORR. Immediately beyond the north boundary are a few rural homesites, and more rural homesites are located across the Clinch River to the west of the ORR. *Id.* at 16.

45. *Geology.* The site lies in the Valley and Ridge Physiographic province of East Tennessee, which is characterized by alternating ridges and valleys

aligned southwest to northeast. The proposed AlChemIE site lies in a valley underlain by shales and limestones of the Conasauga and Chickamauga formations, while the ridges to the northwest and southeast are underlain by the Knox group and Rome formations, which are more resistant to erosion. *Id.*

46. *Historical Resources.* No historic structure or sites are located near the proposed AlChemIE facility. Only four of twenty-three historic sites in the five-county area surrounding the site are within 10 kilometers of the facility. Archaeological surveys have identified remnant cemeteries and prehistoric sites, but none are located near the proposed facility. *Id.* at 18.

47. *Demography and Socioeconomics.* The five counties (Anderson, Knox, Loudon, Morgan, and Roane) had a combined population in 1980 of 480,622. Knoxville, 40 kilometers to the east, and Oak Ridge, 10 kilometers to the northeast, had 1980 populations of 183,139 and 27,662, respectively.

48. DOE and its contractors are dominant in the local economy. DOE accounts for 77% of the local employment in Oak Ridge and owns 63% of the land area within city limits. DOE also owns 10% of the land in Roane County where the proposed facility is located. Government ownership of such a high percentage of the local land substantially reduces the size of the potential tax bases for Anderson and Roane Counties. *Id.*

49. *Ecology.* There have been numerous studies and assessments of the ecology of the ORR, which are referenced in Staff's Environmental Assessment. Two threatened or endangered species that occur near the facility are the black snakeroot (*Cimicifuga rubifolia*), a Tennessee threatened species, and the federally endangered pink mucket pearly mussel (*Lampsilis orbiculata*). The black snakeroot occurs within 3000 meters of the site in mesic calcareous soils where minimal disturbance has occurred. The mussel *Lampsilis orbiculata* was reported in the Clinch River in 1982, but no other record of its occurrence has been reported in the area. It requires clear, silt-free water. There are about thirty endemic mollusks that have been reported above the Tennessee Valley Authority impoundments of the Clinch River, but none have been recently recorded below the reservoir. *Id.* at 18-19. As we have mentioned, *supra*, the CPDF has already been constructed, and the modifications to be made to the building by AlChemIE are minor. There there will no significant impact on the environment, including the endangered and threatened species mentioned above.

50. *Hydrology.* The major surface drainage in the valley where the ORGDP is located is Poplar Creek, a tributary of the Clinch River. Poplar Creek flows into Clinch River about 2 kilometers east of the AlChemIE's proposed facility. A water pumping and filtration facility located on the Clinch River immediately adjacent to the ORGDP supplies water to the ORGDP and the Clinch River Industrial Park. Discharges from AlChemIE's facility would enter Poplar Creek at outfall K-1203, and runoff from around the facility would also flow into Poplar Creek. The surface waters of the watershed are moderately hard,

with total dissolved solids (primarily calcium-magnesium/bicarbonate) usually ranging between 100 and 250 milligrams per liter. According to a 1986 environmental study of the ORR and surrounding areas, ambient concentrations of lead, zinc, and mercury exceeded Tennessee Stream Standards at sampling locations within Poplar Creek upstream from ORGDP and downstream in the Clinch River. The source of these chemical species is unknown. Zinc and lead are potential products of the AlChemIE Facility, but no release of these species to the environment is expected. *Id.* at 19.

51. In the vicinity of the ORGDP, groundwater occurs primarily in the Knox and Chickamauga aquifers. Groundwater levels are highest in January and February and decrease to minimum levels in October and November. Depth to the water table is generally 10 meters or less except in areas of high relief. Permeability is quite high near the surface where dissolution has enlarged the fractures in the dolomites and limestones, but data indicate that permeabilities decrease with depth so that groundwater movement is restricted to the upper, more weathered bedrock. No industrial or public drinking water are withdrawn from local groundwater sources by ORGDP or other institutions. Residential and single-family wells are common in rural areas south of the Clinch River. *Id.* at 19-20.

52. *Meteorology.* The meteorology of the Oak Ridge area is largely influenced by its topography. Prevailing winds follow the topographic trend of the ridges, with daytime up-valley winds coming from the southwest and nighttime down-valley winds coming from the northeast. Wind dispersion, expressed as X/Q values calculated from 1987 ORGDP data and EPA-approved dispersion models, showed the maximum annual X/Q values predicted for the SSW to WSW direction at 1 to 1.2 kilometers and in the NE to ENE direction, at distances of 0.5 to 0.6 kilometer. *Id.* at 20.

Facility 2

53. AlChemIE proposes to construct Facility 2 in the proposed Andy Justice Industrial Park in Oliver Springs, Tennessee, and to install centrifuge machines previously used by DOE. Staff Exh. 1B at 2-3. The facility will be housed in a steel-framed building with aluminum siding. The centrifuge equipment will be obtained from DOE's Ohio facility. Some of these machines are contaminated with uranium. The centrifuges will be used to process various chemical compounds, some of which are considered toxic or hazardous. U.S. NRC Environmental Assessment Related to the Construction of the AlChemIE Facility 2 Oliver Springs, Staff Exh. 1B at 2.

Environmental Impacts at Facility 2

54. The local environment at Oliver Springs is moderately well characterized as a result of the environmental studies of the nearby Oak Ridge Reservation. The subject area at Oliver Springs is being developed as an industrial park with utilities and waste management services to support the major facility needs. *Id.*

55. *Air Emissions Permit.* AIChemIE will file for an air emissions permit for Facility 2 with the TDHE. As was the case with respect to Facility 1, the feed material and processing rate is not completely defined, as a result of which the Staff used available information to perform a conservative analysis which indicates that material releases due to normal operations are expected to be environmentally acceptable. *Id.*

56. *Feed Materials.* The potential feed materials that AIChemIE is planning or considering for processing in Facility 2 are identical with those for Facility 1, discussed *supra*. That discussion need not be repeated here.

57. *Waste Water.* AIChemIE wastewater (primarily sanitary water) will be discharged through the existing Oliver Springs wastewater treatment plant. The discharge limits will not have to be modified to accommodate the AIChemIE wastewater. AIChemIE's nonhazardous and hazardous/toxic solid and liquid wastes will be transferred to appropriate existing DOE, municipal, and commercial waste management operations which already have the necessary permits. *Id.* The sanitary wastewater from Facility 2 is not expected to contain any radiological or toxic materials. *Id.* at 30.

58. *Accidental Releases.* Staff's analysis of potential accidental releases of material from the process indicates that the offsite concentration of toxic materials will be less than the TWA-TLVs which have been established by the ACGIH. Exposure of the population to toxic material emissions in concentrations below these limits will not result in any effects. The NRC also assessed the potential consequences of using the contaminated equipment and concluded that even under the unexpected conditions where the uranium would be released to the environment, the consequences would be minimal with a 50-year whole-body equivalent dose commitment to an individual of less than 1.2E-5 millirem. *Id.* at 2-3.

59. *Process Off-Gas Systems.* Each centrifuge cascade will have four process off-gas systems. These are the evacuation and purge systems for (1) the cascade, (2) the feed system, (3) the product withdrawal system, and (4) the tails withdrawal system. The cascade evacuation and purge systems establish and maintain a low pressure in the centrifuge casing. The feed evacuation and purge system is used to remove air from the lines between the feed cylinder and the centrifuge before the feed is introduced into the case. Thus this system is used prior to startup of the cascade. The product and tails withdrawal evacuation

and purge system is used to initially evacuate the case and the withdrawal piping. The purge system may remain operational during cascade operation to remove any noncondensables that collect in the product or tail cylinders. *Id.* at 8.

60. The discharges from all four of these evacuation and purge systems will be connected to a common discharge header for each cascade. For all the cascades except those processing xenon and krypton, the gases in the header will be treated to remove the process material. AIChemIE plans to use cold trapping, chemical trapping, or mechanical trapping depending on the physical and chemical properties of the various process materials. *Id.*

61. Staff performed what it considered to be a bounding analysis of the consequences of normal releases to the atmosphere. It selected dimethylcadmium for the analysis because this material has the highest ratio of expected annual production to the ACGIH's established TWA-TLV. The maximum annual production of dimethylcadmium was estimated to be less than $5E+4$ grams per year. Staff assumed (it said conservatively) that the AIChemIE facility would release one part in a thousand to the atmosphere. Thus the maximum amount of dimethylcadmium would be 50 grams (this corresponds to 40 grams of cadmium). To make the analysis more conservative, it was assumed that this material was processed over a 3-month period. From these assumptions, Staff calculated an average release rate of about $5E-6$ grams per second. Using the maximum X/Q of $3.8E-8$ seconds per cubic meter, Staff calculated that the maximum cadmium concentration in the air at ground level would be $2E-13$ grams per cubic meter, which is many orders of magnitude below the ACGIH TWA-TLV for cadmium of 0.05 milligram per cubic meter. On the basis of this analysis, Staff concluded that normal atmospheric emissions for the AIChemIE facility are expected to be of no environmental consequence. *Id.* at 25-26.

62. *Oils, Solvents, and Solid Wastes.* As is the case with Facility 1, oils, solvents, and solid wastes will be generated at Facility 2. These materials will be handled and disposed of at Facility 2 in the same manner as discussed, *supra*, for Facility 1. That discussion need not be repeated here. *Id.* at 13-14.

63. *Land Use Around Facility 2.* The proposed facility will be constructed at the 247-hectare Andy Justice Industrial Park located within the Oliver Springs city limits. The lands surrounding the facility are rural farmland or rangeland with associated low-density housing. The nearest house is approximately 0.5 kilometer to the northeast. Approximately 2 kilometers to the southeast are residential areas of Oak Ridge. The commercial center of Oliver Springs is approximately 1.5 kilometers north. Highway 61, the major four-lane access to Oliver Springs, runs southeast from downtown Oliver Springs and passes within 0.5 kilometer of the proposed facility. Both sides of this highway within the Oliver Springs city limits are commercially developed. Facility 2 will occupy about 8 hectares of land at the industrial park. *Id.* at 16.

64. *Geology.* The geology of the site for Facility 2 is similar to that for Facility 1 except for the fact that the site lies in a valley underlain by shales and limestones of only the Conasauga Formation. Other aspects of the geology have been discussed, *supra*, for Facility 1 and need not be repeated here. *Id.* at 18.

65. *Historical Resources.* Of the twenty-three historic sites in the five-county area surrounding the site, only one is within 10 kilometers of the facility. *Id.*

66. *Demography and Socioeconomics.* The demography of the area surrounding proposed Facility 2 is similar to that described for Facility 1, except that Facility 2 is to be located within the city limits of Oliver Springs. The 1980 population of Oliver Springs was 3600. The area immediately surrounding the proposed facility is rural farmland and rangeland with low population density. *Id.*

67. *Ecology.* The facility at Oliver Springs will consist of buildings and paved or concrete areas within a fenced compound. The region immediately surrounding the proposed facility is primarily pastureland with fence-row vegetation. The woodland communities in neighboring areas are typical of the second-growth forests of East Tennessee, with Virginia pine (*Pinus virginiana*) being the dominant tree species. The site, which is still being used to pasture cattle, is not an appropriate habitat for any threatened or endangered plant species. On the other hand, the site could be an appropriate habitat for the Bachman's sparrow (*Aimophila aestivalis*), which is on Tennessee's endangered species list, and for the Grasshopper sparrow (*Ammodramus savannarum*), which is on Tennessee's threatened species list, although these species have not been seen in the area. Use of the site by AlChemIE will impact only an insignificant fraction of similar habitat in Tennessee and therefore will not significantly impact the status of these species. *Id.* at 19; Staff Exh. 5 at 2 and Enclosure.

68. *Hydrology.* Poplar Creek is less than 500 feet south of the proposed facility, and runoff from Facility 2 would go into Poplar Creek. Sanitary discharges from the facility, however, would be treated in the Oliver Springs sewage treatment facility. Staff Exh. 1B at 19.

69. The groundwater situation under the Oliver Springs facility is similar to that described, *supra*, under the CPDF facility, and therefore need not be repeated here. *Id.* at 20.

70. *Meteorology.* No meteorology data are available for Oliver Springs, but Staff states that the data from the ORGDP, which have been discussed above for Facility 1, are applicable to the Oliver Springs site because of the general topographical similarity of the two sites. Staff expects, however, that the Oliver Springs site will be less dominated by wind flow from the ENE. Nevertheless, it believes that the *X/Q* values calculated from the ORGDP data can be used for the Oliver Springs site. *Id.* at 20-22.

71. *Impacts of Construction.* The proposed Facility 2 will occupy 8 hectares of the 247-hectare Andy Justice Industrial Park. The building will occupy about 0.2 hectare of area, and the rest of the developed area is estimated to involve less than 0.8 hectare. The balance of the AlChemIE site would be maintained and landscaped appropriately. Standard construction methods will be used to control fugitive dust and water runoff from the site during construction. *Id.* at 24.

Conclusion

72. The Board finds on the bases of the Staff's Environmental Assessments, AlChemIE's environmental reports, and their updates in the record, that the Staff made an adequate and comprehensive review and evaluation of the environmental impact resulting from construction and operation of the proposed facilities. The review and evaluation supports Staff's finding that the proposed activities will result in no significant impact on the human environment and that an environmental impact statement need not be prepared. The National Environmental Policy Act of 1969 (NEPA) review conducted by Staff is adequate.

IV. CONCLUSIONS OF LAW

Based upon our review of the entire record and upon the foregoing findings of fact, the Licensing Board makes the following determination on the issues in the proceedings:

A. Facility 1 (CPDF)

The Licensing Board concludes that the application and the record of the proceeding contain sufficient information and the review of the application by the Staff has been adequate to support the affirmative findings proposed to be made by the Director of the Division of Industrial and Medical Nuclear Safety on Items 1, 2, and 4 and a negative finding on Item 3, below.

1. Whether, in accordance with the provisions of 10 C.F.R. § 50.34, the Applicant has described the proposed design of the facility including, but not limited to the principal architectural and engineering criteria for the design, and has identified the major features or components incorporated therein to ensure adequate protection of the common defense and security.

2. Whether the Applicant is technically and financially qualified to modify the existing facility in such a way as to ensure adequate protection of the common defense and security;

3. Whether the issuance of a construction permit authorizing the modification of the facility will be inimical to the common defense and security;

4. Whether, in accordance with the requirements of 10 C.F.R. Part 51, the construction permit and operating license should be issued as proposed.

B. Facility 2 (Oliver Springs)

The Licensing Board concludes that the application and the record of the proceeding contain sufficient information and the review of the application by the Staff has been adequate to support the affirmative findings proposed to be made by the Director of the Division of Industrial and Medical Nuclear Safety on Items 1, 2, and 4 and a negative finding on Item 3, below.

1. Whether, in accordance with the provisions of 10 C.F.R. § 50.34, the Applicant has described the proposed design of the facility including, but not limited to, the principal architectural and engineering criteria for the design, and has identified the major features or components incorporated therein to ensure adequate protection of the common defense and security;

2. Whether the Applicant is technically and financially qualified to construct the facility in such a way as to ensure adequate protection of the common defense and security;

3. Whether the issuance of a construction permit authorizing the construction of the facility will be inimical to the common defense and security;

4. Whether, in accordance with the requirements of 10 C.F.R. Part 51, the construction permit should be issued as proposed.

C. The Licensing Board concludes that the applications and the record of these proceedings contain sufficient information and the review of the applications by the Staff has been adequate to support, insofar as the Commission's licensing requirements under the Atomic Energy Act of 1954, as amended, are concerned, the issuance of the construction permits for Facility 1 (CPDF) and Facility 2 (Oliver Springs), as proposed by the Director of the Division of Industrial and Medical Nuclear Safety.

D. The Staff is authorized to issue the construction permits in a form consistent with this Initial Decision.

E. The application proceeding, Docket No. 50-603-CP/OL, never became a contested proceeding with respect to issues relating to the operating license. Upon completion of the modification of the facility in Oak Ridge, Tennessee, in compliance with the terms and conditions of the construction permit and the application, as amended, and in the absence of good cause to the contrary, the Commission should issue to the Applicant, without additional prior notice, a class 103 facility license authorizing operation of the facility.

V. ORDER

In accordance with 10 C.F.R. §§ 2.760, 2.762, 2.764, 2.785, and 2.786, this Initial Decision shall become effective immediately and will constitute, with respect to the matters resolved herein, the final decision of the Commission forty-five (45) days after issuance hereof, subject to review pursuant to the above-cited Rules of Practice.

Any party may take an appeal from this 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, the appeal of any other party. A responding party shall file a single responsive brief regardless of the number of appellant briefs filed.

THE ATOMIC SAFETY AND LICENSING BOARD

Morton B. Margulies, Chairman
ADMINISTRATIVE LAW JUDGE

Oscar H. Paris
ADMINISTRATIVE JUDGE

Frederick J. Shon
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 1st day of February 1989.

ATTACHMENT 1

APPLICANT'S WITNESS LIST

| Witness | | Exhibit Sponsored |
|------------------------|-----------------------|--|
| Dwight C. Flynn | By affidavit | 2 |
| Ann Hansen | By affidavit | 1 |
| Monte Carroll McDonald | By affidavit | 3 (Ecological Survey) |
| William A. Pfeifer | By affidavit and live | 3 (Technical Security), P-1 (Public), and P-1 |
| Randolph J. Robinette | By affidavit | P-1 (Public) and P-1 |
| John H. Smelser | By affidavit and live | 3 (Financial) and 4 |

ATTACHMENT 2

STAFF WITNESS LIST

| Witness | | Exhibit Sponsored |
|-------------------|--------------|----------------------|
| Wayne G. Burnside | By affidavit | 4, P-1, and P-2 |
| A. Thomas Clark | | 1A, 1B, 2A, and 2B |
| James C. Petersen | | 8, 10, and P-5 |
| Carl B. Sawyer | | P-2, P-3, and P-4 |
| Jerry J. Swift | | 3, 5, 6, 7, 8, and 9 |

ATTACHMENT 3

APPLICANT'S EXHIBIT LIST

| Exhibit No. | Title |
|----------------|--|
| Nonproprietary | |
| 1 | Safety Analysis Reports |
| 2 | Environmental Reports |
| 3 | AlChemIE Correspondence to NRC |
| 4 | Supplementary Financial Information |
| P-1 (Public) | Affidavit on Safeguards and Security |
| Proprietary | |
| P-1 | Information on Safeguards and Security |

ATTACHMENT 4

STAFF EXHIBIT LIST

| Exhibit No. | Title |
|--------------------|--|
| Nonproprietary | |
| 1A | U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, Environmental Assessment Related to the Construction and Operation of the AlChemIE Facility-1 CPDF, Docket No. 50-603, All Chemical Isotope Enrichment, Inc. September 1988. |
| 1 | U.S. Nuclear Regulatory Commission Notice of Issuance of Environmental Assessment Related to Construction and Operation of the AlChemIE Facility-1 CPDF and Finding of No Significant Impact, Docket No. 50-603, All Chemical Isotope Enrichment, Inc. |
| 1B | U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, Environmental Assessment Related to the Construction and Operation of the AlChemIE Facility-1 Oliver Springs, Docket No. 50-604, All Chemical Isotope Enrichment, Inc. September 1988. |
| 1 | U.S. Nuclear Regulatory Commission, Notice of Issuance of Environmental Assessment Related to the Construction of the AlChemIE Facility-2 Oliver Springs and Finding of No Significant Impact, Docket No. 50-604, All Chemical Isotope Enrichment, Inc. |
| 2A | Safety Evaluation Report Related to the Construction, Modification, and Licensing of the AlChemIE Facility-1 CPDF All Chemical Isotope Enrichment, Inc., Oak Ridge, Tennessee, Docket No. 50-603, U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, October 1988. |
| 2B | Safety Evaluation Report Related to the Application for Construction Permit, AlChemIE Facility-2 Oliver Springs All Chemical Isotope Enrichment, Inc., Oliver Springs, Tennessee, Docket No. 50-604, U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, October 1988. |
| 3 | NRC Staff Testimony of Jerry J. Swift Addressing Atomic Safety and Licensing Board Inquiries of October 18, 1988. |

- 4 Affidavit of Wayne G. Burnside;
- 5 NRC Staff Supplemental Testimony of Dr. Jerry J. Swift
Addressing Atomic Safety and Licensing Board Inquiries of
October 18, 1988.
- 6 NRC Staff Testimony of Dr. Jerry J. Swift Addressing Atomic
Safety and Licensing Board Inquiry of November 16, 1988.
- 7 NRC Staff Testimony of Dr. Jerry J. Swift Addressing Re-
sponses of All Chemical Isotope Enrichment, Inc., to Atomic
Safety and Licensing Board Inquiry of November 23, 1988.
- 8 NRC Staff Testimony of James C. Petersen and Jerry J. Swift
Addressing Atomic Safety and Licensing Board Inquiry of
December 21, 1988.
- 9 Part B of Supplement No. 1 to the Safety Evaluation Report
Related to the Construction, Modification, and Licensing of the
AlChemIE Facility-1 CPDF, All Chemical Isotope Enrichment,
Inc., Oak Ridge, Tennessee, Docket No. 50-603, U.S. Nuclear
Regulatory Commission, Office of Nuclear Material Safety
and Safeguards, December 1988. Docket No. 50-604.
- 10 NRC Staff Supplemental Testimony of James C. Petersen on
Financial Qualifications.

Proprietary

- P-1 Staff Review and Analysis, AlChemIE's Security Plan.
- P-2 NRC Staff Testimony of Wayne G. Burnside and Carl B.
Sawyer Addressing Atomic Safety and Licensing Board In-
quiries of November 16, 1988.
- P-3 NRC Staff Review of Safeguards Licensing for AlChemIE
Facility-1 CPDF, Office of Nuclear Material Safety and Safe-
guards, U.S. Nuclear Regulatory Commission, Washington,
D.C.
- P-4 NRC Staff Review of Safeguards Licensing for AlChemIE
Facility-2 Oliver Springs, Office of Nuclear Material Safety
and Safeguards, U.S. Nuclear Regulatory Commission, Wash-
ington, D.C.
- P-5 Part A of Supplement No. 1 to the Safety Evaluation Report
(Proprietary Version).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. James H. Carpenter
Gustave A. Linsenberger, Jr.

In the Matter of.

Docket No. 50-271-OLA
(ASLBP No. 87-547-02-LA)

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

February 2, 1989

The Licensing Board, on the basis of a recent court opinion as well as a further explanation of an earlier ruling, grants reconsideration of its exclusion in LBP-88-26 (28 NRC 440 (1988)) of a contention raising questions as to the risk of a particular severe accident (a self-sustaining zirconium fire in the spent fuel pool). The Board also amends an existing contention to include the severe-accident considerations as an additional basis. The Board refers its ruling to the Appeal Board and postpones its effectiveness until after the Appeal Board acts on the referral.

RULES OF PRACTICE: MOTION FOR RECONSIDERATION

Parties are not expected to respond to motions for reconsideration absent an invitation from the Licensing Board to do so.

NEPA: BEYOND-DESIGN-BASIS ACCIDENTS

Although the National Environmental Policy Act does not in itself mandate the consideration of the risks of a beyond-design-basis accident, the Commission's Severe Accident Policy Statement, 50 Fed. Reg. 32,138, 32,144 (1985), permits examination of the risk of such accidents in a spent fuel pool expansion proceeding.

POLICY STATEMENT ON SEVERE REACTOR ACCIDENTS: REVIEW OF BEYOND-DESIGN-BASIS ACCIDENTS

The Commission's Severe Accident Policy Statement permits examination of the risk of such accidents, using the methodology spelled out in the Commission's NEPA Policy Statement, 40 Fed. Reg. 40,101 (1980).

RULES OF PRACTICE: REFERRAL OF RULING TO APPEAL BOARD

Referral of a ruling to the Appeal Board, pursuant to 10 C.F.R. § 2.730(f), is appropriate where review of that ruling is necessary to prevent detriment to the public interest and unusual delay in the proceeding.

MEMORANDUM AND ORDER (Motion for Reconsideration of Severe-Accident Ruling)

This proceeding involves the proposed expansion in capacity, through reracking, of the spent fuel pool of the Vermont Yankee Nuclear Power Station, a boiling water reactor located in Vernon, Vermont. Pending before us — for the third time — is a proposed contention sponsored jointly by the New England Coalition on Nuclear Pollution (NECNP), an intervenor, and the Commonwealth of Massachusetts (Massachusetts), participating as an interested State (hereinafter jointly referred to as Intervenor), seeking to litigate the increased risk of a particular severe accident allegedly resulting from the proposed capacity expansion. The Vermont Yankee Nuclear Power Corporation (Applicant) and the NRC Staff each oppose admitting the contention. For reasons set forth below, we are granting the Intervenor's motion, admitting the severe-accident contention (as well as amending the basis of another contention to include severe-accident considerations), referring our ruling to the Appeal Board, and postponing the effectiveness of our ruling until the Appeal Board takes action on our referral.

A. Background

We were first faced with the proposed contention at the outset of the proceeding. In our Prehearing Conference Order dated May 26, 1987, LBP-87-17, 25 NRC 838, we admitted a contention (then numbered as Contention 2) claiming that the proposed expansion would produce increased risk of a particular severe accident (a self-sustaining zirconium fuel cladding fire) such that an Environmental Impact Statement (EIS) should be issued by the Staff prior to final NRC action on the proposed license amendment. This contention had been rewritten by us to combine a portion of NECNP's proposed Contention 5 and the environmental allegations included in Massachusetts' proposed Contention I.¹

On appeal, the Appeal Board reversed our admission of the severe-accident contention. ALAB-869, 26 NRC 13, *reconsideration denied*, ALAB-876, 26 NRC 277 (1987). It did so essentially on the ground that beyond-design-basis accident contentions of the type in question were not litigable, both as a matter of law and of Commission policy, in a proceeding of this type.

We were again confronted with essentially the same contention when, following issuance of the Staff's Environmental Assessment (EA), the Intervenors proposed to litigate Environmental Contention 1, which challenged the treatment of the cladding fire accident in the EA and called upon the Staff to issue an EIS. This contention added that the self-sustaining zirconium fire in the fuel pool could result from an accident within the design basis.

We found this proposed contention to be essentially similar to the one previously accepted by us but rejected by the Appeal Board, and we rejected this new contention on the ground that we were bound by the "law of the case," as set forth in ALAB-869 and ALAB-876. LBP-88-26, 28 NRC 440, 443-45 (1988). (To the extent that the fire was alleged to result from a within-design-basis accident, we determined that no adequate basis had been provided to demonstrate how such a fire could arise, and we rejected that portion of the contention for lack of an adequate basis.) In a separate opinion, Chairman Bechhoefer, although emphasizing that the "law of the case" required our rejection of Environmental Contention 1, stressed that the Appeal Board seemed to have rejected the contention without explicitly addressing our rationale for accepting it. *Id.* at 451-54.

Shortly thereafter, on November 30, 1988, the Circuit Court of Appeals for the Ninth Circuit issued an opinion that reversed the Appeal Board's (and another Licensing Board's) rejection of a severe-accident contention in a different licensing proceeding that involved the proposed expansion in capacity of the

¹The portion of Massachusetts' Contention I which alleged that, because of the risk of the severe accident in question, the proposed license amendment "is insistent with the protection of . . . the environment."

spent fuel pool of the Diablo Canyon Nuclear Power Plant. *Sierra Club v. NRC*, Cir. No. 87-7481 (9th Cir., Nov. 30, 1988). Based solely on that opinion, NECNP and Massachusetts, on December 30, 1988, filed a motion seeking reconsideration of our ruling that rejected Environmental Contention 1 on the basis of the "law of the case."² Alternatively, the motion sought "certification" of the question to the Appeal Board. The Applicant and Staff, in response to our invitation,³ filed responses, each opposing the entire motion.⁴

B. Discussion of Reconsideration Motion

The Applicant and Staff each oppose the admission of the proposed contention on a variety of grounds. We will discuss them *seriatim*.

1. The Staff (although not the Applicant) first argues that the current proposed contention is not "substantially identical" (as claimed by Intervenor) to the contention considered by the Ninth Circuit in *Sierra Club*. The Staff claims that the basis for the contention discussed by the Court of Appeals was primarily the so-called "Brookhaven Report" (NUREG/CR-4982), whereas the basis for the contention rejected by the Appeal Board in this case "made no reference to the Brookhaven Report" but instead relied on the alleged vulnerability (based on an NRC draft report, NUREG-1150) of the Mark I containment utilized at Vermont Yankee.⁵

It is true that the initial severe-accident contention which we admitted — as well as the current version which is before us — relied to a significant extent on the alleged vulnerability of the Mark I containment. It is also true that the bases of NECNP Contention 5 and Massachusetts Contention I, as originally submitted, did not refer to the Brookhaven Report. Those contentions each were filed on March 30, 1987. The draft version of the Brookhaven Report was served by the Staff on the Board and parties as a Board Notification dated March 27, 1987. Assuming service by mail, under the NRC Rules of Practice, the parties would not be deemed to have received that notification until April 1, 1987 (10 C.F.R. § 2.710), a day after the contentions were required to be, and were, filed.

² Joint Motion of New England Coalition on Nuclear Pollution and the Commonwealth of Massachusetts for Reconsideration or, in the Alternative, to Certify the Question to the Appeal Board, dated December 30, 1988 ("Motion").

³ Order dated January 5, 1989. Parties are not expected to respond to motions for reconsideration absent an invitation from the Board to do so.

⁴ Response to Joint Motion of [NECNP] and the Commonwealth of Massachusetts for Reconsideration or, in the Alternative, to Certify the Question to the Appeal Board," dated January 13, 1989 ("Applicant's Response"); NRC Staff Response in Opposition to Joint Motion of New England Coalition on Nuclear Pollution and Commonwealth of Massachusetts, dated January 23, 1989 ("NRC Staff Response").

⁵ NRC Staff Response at 10-11.

Following responses to the contentions by the Applicant and Staff, dated April 9 and 13, 1987, respectively, NECNP, on April 16, 1987, filed a response to those responses, for our consideration at the prehearing conference on April 21-22, 1987. That response explicitly mentioned the draft Brookhaven Report as "additional factual support" for its severe-accident contention.⁶ And in accepting Contention 2, we explicitly referred to the draft Brookhaven Report as "additional support" and as one of the bases for the severe-accident contention.⁷

The contention that is currently before us is essentially the same as former Contention 2, except for including a reference to the Staff's subsequently issued EA and as substituting the final Brookhaven Report (issued in July 1987) for the draft report as one basis. With respect to the relief it seeks, the contention still asserts that an EIS is necessary but alternatively seeks revision of the discussion of severe accidents in the EA. That alternative relief is not inconsistent with the relief that Massachusetts stated it was seeking as early as the initial prehearing conference.⁸ Therefore, the contention that is before us is essentially the same as former Contention 2.

As one of its alternative arguments, the Staff asserts that the contention before us was late-filed and should be rejected as not complying with the criteria for such contentions.⁹ As indicated above, the contention is essentially similar to that submitted at the outset of the proceeding and, hence, should not be regarded as late-filed. To the extent the subsequent minor changes in the contention call for a balancing of the relevant factors, we balance the factors in 10 C.F.R. § 2.714(a) as favoring modification of the contention (as originally submitted) to include the final Brookhaven Report as a basis and as seeking revision of the EA as an alternative to an EIS. Those changes were submitted in a timely fashion; the draft Brookhaven Report was provided as a basis only 15 days after its presumptive receipt by NECNP, the specific reference to the EA was supplied in a timely filing of contentions based upon the EA, and the final Brookhaven Report was substituted for the draft report at the first opportunity for submitting new contentions following the Appeal Board's reversal of our acceptance of Contention 2.

All other factors also favor these changes — with the potential delay in the proceeding being offset by the Staff's "no significant hazards" determination on reracking which has permitted installation of new racks (although not permitting

⁶ NECNP Response at 3 n.1. The basis of the NECNP severe-accident environmental contention (Contention 5) which we accepted in LBP-87-17, incorporated by reference the basis for NECNP Contention 1, a safety-based severe-accident contention which we rejected. The NECNP response which referenced the draft Brookhaven Report as additional support for the severe-accident contention was directed to the safety contention but, through incorporation by reference, was also applicable to the environmental contention.

⁷ LBP-87-17, *supra*, 25 NRC at 846 n.18, 854.

⁸ *Id.* at 852; Tr. 126.

⁹ NRC Staff Response at 14-15.

utilization beyond the currently authorized 2000 assemblies) prior to the final conclusion of this proceeding. Most important, both NECNP and Massachusetts have rendered significant assistance in developing an adequate record on other contentions, and we have no reason to expect that they would not do so here.

In its present form, which is what we are now considering, the contention does indeed appear to be “substantially identical” to that dealt with by the Ninth Circuit. The Staff concedes at least that they are “somewhat similar.”¹⁰ We add only that the contention before us is more deserving of admission than was that in Diablo Canyon, inasmuch as we consider the proposed contention (as the successor to former Contention 2) to be timely filed in contrast to the “late-filed” contention filed in Diablo Canyon, and the contention here is more specific (in terms of the described accident scenario) than was that in Diablo Canyon.¹¹

2. The Applicant and NRC Staff each challenge, on technical grounds, the applicability of the *Sierra Club* decision to this proceeding. As they observe, the Vermont Yankee reactor is not located within the confines of the Ninth Circuit. Moreover, the only case before the Ninth Circuit was the *Diablo Canyon* ruling by the Appeal Board (ALAB-880). Further, the “law of the case” in this proceeding — specifically, the holding in ALAB-869 and ALAB-876 — was not directly modified by the *Sierra Club* ruling.

Although these observations are accurate, we do not subscribe to the view of the Applicant and Staff that they prevent our acceptance of the proffered contention. In the first place, the Commission has not indicated a policy of “nonacquiescence” with that decision. The Commission is seeking reconsideration only of the small portion of that decision interpreting the Commission’s rules on late-filed contentions¹² — a matter that we do not deem to be applicable to the present contention and, in any event, an interpretation amounting to dictum in the *Sierra Club* decision which we are not using in our consideration of the severe-accident contention before us.

For reasons set forth below, we believe that the *Sierra Club* decision seriously undercuts the rationale of the Appeal Board in ALAB-869 and ALAB-876 and, in addition, is consistent with our ruling in LBP-87-17. In particular, *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-880, 26 NRC 449 (1987), which was reversed by *Sierra Club*, had relied in substantial part on ALAB-869 and ALAB-876. ALAB-880, 26 NRC at 460-62. Moreover, the rulings in ALAB-869 and ALAB-876 did not directly focus

¹⁰ *Id.* at 10.

¹¹ As the Intervenor observes (Motion at 6, 8), the *Diablo Canyon* Licensing Board, in rejecting the proposed severe-accident contention, expressed a similar view, to the effect that the contention before it was weaker than the one previously accepted by us but rejected by the Appeal Board. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-87-24, 26 NRC 159, 167 (1987).

¹² *Sierra Club v. NRC*, No. 87-7481, 9th Cir., Respondents’ Motion for Rehearing Regarding One Aspect of This Court’s Opinion, dated January 5, 1989.

on our rationale for accepting the severe-accident contention under the authority of the Commission's then recently issued Severe Accident Policy Statement.¹³ For these reasons, we believe that reconsideration of ALAB-869 and ALAB-876 is warranted. We are thus accepting the current contention (as set forth in the Motion) but, because ALAB-869 and ALAB-876 still technically constitute the "law of this case," we are referring this ruling, *inter alia*, to the Appeal Board and postponing its effectiveness until after the Appeal Board has taken some final action on our referral.

3. The Applicant and Staff next assert that the *Sierra Club* decision is inconsistent with decisions of other circuits, as well as with prior Commission decisions, and thus should be narrowly applied, at most to reactors in the Ninth Circuit. In particular, the Applicant and Staff each cite *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287 (D.C. Cir. 1984), *aff'd en banc* (on other grounds), 789 F.2d 26, *cert. denied*, ___ U.S. ___, 93 L. Ed. 2d 302 (1986), to the effect that the National Environmental Policy Act (NEPA) does not require NRC consideration of severe, beyond-design-basis accidents. The Appeal Board had relied on this decision to a substantial extent in its rulings in ALAB-869 and ALAB-876. The Appeal Board had added that, to the extent that NRC ever considers severe accidents of the type in question, it does so as a matter of discretion pursuant to NRC's 1980 NEPA Policy Statement,¹⁴ which does not apply to license amendment proceedings of the type involved here. ALAB-869, *supra*, 26 NRC at 31. The Appeal Board decided ALAB-869 and ALAB-876 on the basis of its apparent belief that we had founded our earlier ruling on use of this NEPA Policy Statement.

As is made clear by Chairman Bechhoefer's separate statement in LBP-88-26, *supra*, 28 NRC at 451-54, the Appeal Board did not in fact address the rationale of our ruling in LBP-87-17. In LBP-87-17, we accepted Contention 2 on the basis of the Commission's 1985 Severe Accident Policy Statement. In pertinent part, we believe that Policy Statement was intended to govern "hearing proceedings that might arise for an operating reactor," such as is involved here and explicitly permits examination of the risks of severe accidents. 50 Fed. Reg. at 32,144. It incorporates the NEPA Policy Statement by reference only in order to define the *methodology* by which risk is to be considered, but it does not incorporate the jurisdictional limitations of the earlier NEPA statement. Indeed, the 1985 Severe Accident Policy Statement expands the applicability of the examination of risks of severe accidents to proceedings such as this one. Our reference in LBP-87-17 to the 1980 NEPA Policy Statement¹⁵ was only

¹³ Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants, 50 Fed. Reg. 32,138 (Aug. 8, 1985).

¹⁴ Interim Policy Statement on "Nuclear Plant Accident Considerations Under the National Environmental Policy Act of 1969," 45 Fed. Reg. 40,101 (June 13, 1980).

¹⁵ LBP-88-17, *supra*, 25 NRC at 855.

to define the method under which we would consider the particular accident in question.

The 1985 Severe Accident Policy Statement also makes clear that mitigative actions to prevent severe accidents are not to be examined, only the environmental risks of these accidents. That is the reason why LBP-87-17 admitted a contention dealing with the risk of the postulated severe accident but declined to admit contentions seeking to explore mitigative measures to prevent or alleviate the effect of such accidents — i.e., the health and safety aspects of those accidents.

With the above explanation in mind, it is clear why the *San Luis Obispo Mothers for Peace* decision, which is relied on by the Applicant and Staff at this time and was relied on by the Appeal Board in ALAB-869 and ALAB-876, is not relevant to our decision on the contention in question. *San Luis Obispo Mothers for Peace* held only that *NEPA itself* does not require the examination of accidents the occurrence of which is remote and speculative; it thus upheld the exclusion through the 1980 NEPA Policy Statement of any discussion of severe accidents from environmental impact statements that predated that Policy Statement.

Here, as in LBP-87-17, we are relying on an entirely different Policy Statement to support our admission of the severe-accident contention. Moreover, Intervenor's contention, like that in *Sierra Club*, does not accept the remote and speculative characterization of the accident in question but, rather, raises questions (supported by appropriate bases) about the risk of the accident. Furthermore, the contention seeks either the issuance of an EIS or, alternatively, revision of the EA. The contention is thus consistent with the intent of the Severe Accident Policy Statement, and the assertedly contrary ruling in *San Luis Obispo Mothers for Peace* becomes irrelevant. In that connection, we note that the Applicant and Staff spend much time in their briefs attempting to convince us that *San Luis Obispo Mothers for Peace* and the 1980 NEPA Policy Statement are governing, without even mentioning the subsequent Severe Accident Policy Statement or Chairman Bechhoefer's explanation (more than 3 months ago) of LBP-87-17 as being premised on the Severe Accident Policy Statement.

5. In LBP-88-26, when we rejected the severe-accident contention (Environmental Contention 1) on the basis of the "law of the case," we also rejected the severe-accident bases proffered for Environmental Contentions 2 and 3 on the ground that ALAB-869 and ALAB-876 precluded our considering such accidents in any form. LBP-88-26, *supra*, 28 NRC at 446, 450 n.16. Intervenor, in seeking reconsideration of our severe-accident ruling in LBP-88-26, appear to be referring to the entirety of our ruling on that subject.

Our change of position with respect to Environmental Contention 1 causes us to reconsider our exclusion of the severe-accident basis from Environmental Contention 3 (consideration of alternatives) but not from Environmental Con-

tion 2 (occupational exposure). With respect to Contention 2, the postulated severe accident would perform occur too infrequently (whatever its ultimate risk) to be considered within expected occupational exposures. On the other hand, with respect to Environmental Contention 3, the risk of the particular accident, if found to be sufficient to require preparation of an EIS or modification of the EA, would likely have an impact on the consideration of alternatives. (If an EIS were required, the entire discussion of alternatives would have to be reconsidered.) The additional basis for Environmental Contention 3, which we are accepting, would be litigated simultaneously with Environmental Contention 1 and would not be a ground for delaying litigation of the remainder of Environmental Contention 3.

C. Certification

As an alternative to a ruling admitting proposed Environmental Contention 1, the Intervenor seeks certification of a question on admissibility to the Appeal Board, in the event we were to decide that the ultimate determination rests with the Appeal Board. They suggest that we issue a ruling and then certify it pursuant to 10 C.F.R. § 2.718(i).

Both the Applicant and Staff argue that we should not certify the question of the applicability of the *Sierra Club* decision and its effect on ALAB-869 and ALAB-876. They do so essentially on the ground that, in their view, ALAB-869 and ALAB-876 were correctly decided and were not affected by the *Sierra Club* decision. They claim that the Appeal Board would be bound to follow ALAB-869 and ALAB-876 and that certification would thus serve no useful purpose.

As should be apparent, however, we believe that, because the Appeal Board did not extensively discuss our reliance on the Severe Accident Policy Statement (no party having briefed it, insofar as we are aware), it did not address the full ramifications of our decision. Although we are still technically bound by ALAB-869 and ALAB-876, we believe that the Appeal Board should be afforded the opportunity of reconsidering those decisions on the basis of both our further explanation of LBP-87-17 and the recent ruling of the Ninth Circuit.

Although issuing a ruling and certifying a question is a possible way of achieving that result, we believe that the better course is for us formally to rule and to refer our ruling to the Appeal Board pursuant to 10 C.F.R. § 2.730(f). In our view, resolution of the alleged zirconium-fire contention in this proceeding is legally required and should be accomplished as soon as possible in case issuance of an EIS or revision of the EA should turn out to be necessary prior to a final decision on the amendment before us. In short, prompt review by the Appeal Board (and, potentially, by the Commission) is necessary to prevent detriment to the public interest and unusual delay in the proceeding.

D. Effectiveness of This Ruling

Because the ultimate decision on this contention must be made by the Appeal Board (or Commission), we are postponing the effective date of our ruling until the Appeal Board takes final action on our referral (either by agreeing with the result we reached or rejecting our referral). If the Appeal Board should elect to certify a question or refer its ruling to the Commission, it can make its own decision on effectiveness of our decision.

E. Discovery

In LBP-87-17, we provided approximately 60 days' discovery on Contention 2. LBP-87-17, *supra*, 25 NRC at 862. The Intervenors propounded interrogatories on that contention but, insofar as we are aware, they were not answered. We thus will authorize another 60 days' discovery, beginning from the date of service of an Appeal Board (or Commission) decision which makes our determination effective, covering both the new Environmental Contention 1 and the additional basis for Environmental Contention 3. Such discovery will include the receipt of answers to interrogatories, the asking and answering of second-round discovery, and the completion of document discovery.

For the reasons stated, it is, this 2d day of February 1989, ORDERED:

1. Our ruling on Environmental Contention 1 in LBP-88-26 is hereby *reconsidered*. Environmental Contention 1 is hereby *admitted* as an issue in controversy in this proceeding. The basis for Environmental Contention 3 is also *modified* to include the severe-accident basis proffered by the Intervenors.

2. This ruling is *referred* to the Appeal Board pursuant to 10 C.F.R. § 2.730(f). (Filings relevant to this referral are identified in the Appendix to this Memorandum and Order.)

3. This ruling shall become effective upon final disposition of the referral by the Appeal Board, or as otherwise provided by the Appeal Board or Commission.

4. Discovery as set forth in Part E of this ruling is hereby *authorized*.

THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Dr. James H. Carpenter
ADMINISTRATIVE JUDGE

Gustave A. Linenberger, Jr.
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 2d day of February 1989.

Attachment: Appendix (not published).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chair
Glenn O. Bright
Dr. Oscar H. Paris

In the Matter of

Docket No. 50-320-OLA
(ASLBP No. 87-554-3-OLA)
(Disposal of Accident-
Generated Water)

GENERAL PUBLIC UTILITIES
NUCLEAR CORPORATION, *et al.*
(Three Mile Island Nuclear
Station, Unit 2)

February 2, 1989

The Board approves Applicants' proposal to evaporate the accident-generated water (AGW) resulting from the Three Mile Island accident. As a result of the evaporation process, solid radioactive materials would be drawn off and shipped for burial. The liquid wastes, whose primary radioactive component is tritium, would be evaporated.

The Board found that implementation of Applicants' proposal would have extremely small radiation exposure consequences, both to workers and the general public.

As Intervenors pointed out, there would be some dose saving through radioactive decay if the AGW were stored on site for 30 years. However, the total dose that might be saved by storing the wastes on site, permitting decay prior to evaporation, would be no more than 36.4 person-rem, but the cost of the storage alternative was estimated to exceed \$800,000. Thus, the dose saving was considered inadequate to require that much expenditure.

RULES OF PRACTICE: BURDEN OF PROOF (NEPA ISSUES)

Applicants' proposal to evaporate AGW shall be approved by the Licensing Board unless it finds that another alternative is obviously superior. It is Intervenor's burden to propose the other alternative. The burden of proof remains on the Applicants, who must show by a preponderance of the evidence that the other alternative is not obviously superior.

RULES OF PRACTICE: EFFECT OF HEARING IN NEPA CONTEXT

It is the licensing board's obligation to consider all the facts in the record and to determine whether alternatives to Applicants' proposal are obviously superior. At the hearing stage, it is no longer relevant whether the Preliminary Environmental Impact Statement was deficient. The hearing record is part of the agency record on which an environmental decision is reached.

10 C.F.R. PART 50, APPENDIX I, § II.D (\$1000 PER PERSON-REM)

The agency's \$1000 per person-rem standard for reducing radioactive effluent is applicable to a proposed license amendment regarding the evaporation of AGW that is contaminated by radioactivity. When the total radiation exposure is no more than 36.4 person-rem, it is not appropriate to require Applicants to spend \$800,000 to further reduce the radiation exposure consequences of its proposed action.

TECHNICAL ISSUES DISCUSSED

- Radiation releases from tritium evaporation;
- Tritium, health effects of;
- Maximally exposed offsite person;
- Dose to the total exposed population;
- Evaporation of radiation-contaminated water;
- Occupational exposures;
- Accident risks, shipment and burial;
- Dose modeling;
- MIDAS code;
- Radiation, low-level (health effects);
- Radiation, genetic risk;
- Cost estimates, alternative proposals;
- Radiation consequences, alternatives compared;

Tritium, measurement of;
Microorganisms, effect of evaporation system.

APPEARANCES

For General Public Utilities Nuclear Corporation, *et al.* (Applicants¹): Thomas A. Baxter, Ernest L. Blake, Jr., David R. Lewis, Maurice A. Ross, all of Shaw, Pittman, Potts & Trowbridge.

For the Staff of the Nuclear Regulatory Commission (Staff²): Stephen H. Lewis, Colleen P. Woodhead.

For Three Mile Island Alert and Susquehanna Valley Alliance (Intervenors³): Frances Skolnick.

FINAL INITIAL DECISION

The issue before us is almost a decade old.⁴ It originated during the famous Three Mile Island (Unit 2) accident in 1979. As a result of the accident, the reactor building basement was covered with about 260,000 gallons of accident-generated water (AGW). Staff's Preliminary Environmental Impact Statement, NUREG-0683, June 1987, Staff Exhibit 1, Supp. 2 at 2.1, § 2.1 and Table 2.1. Since the accident, additional water has accumulated. *Ibid.*; *see, e.g., id.* at 2.3, Table 2.2. Water not present at the time of the accident but which has been used for cleanup following the accident is classified as AGW because it has become radioactively contaminated. The final volume of AGW at the end of defueling is expected to be approximately 2.3 million gallons. *Id.* at 2.3 (Table 2.2, footnote (c)).

Several alternative methods for disposing of the AGW have been considered. *See, e.g., id.* at v-vii, including Table S.1. After considering the summary disposition papers before us, we concluded that the principal remaining genuine issues of fact, for which there would be a hearing, were whether the AGW should be evaporated (and the solidified evaporator bottoms properly buried), as proposed by General Public Utilities, or whether it should be stored in tanks

¹In prior opinions, referred to as Licensee or GPUN.

²In prior opinions, referred to as NRC Staff.

³In prior opinions, referred to as Joint Intervenors.

⁴We used language very similar to the beginning of this opinion in the beginning of our prior opinion, Rulings on Motions for Summary Disposition, LBP-88-23, 28 NRC 178 (1988).

on site (the "no-action alternative"), perhaps for 30 years, to allow most of the tritium to decay.⁵

We note that Applicant and Staff filings concerning summary disposition disagreed about the cost of these two alternatives and that the record did not contain detailed information on the cost of onsite storage for 30 years. We were not sure, at the time of our summary disposition decision, why more consideration was not given to the no-action alternative, but a possibility we considered was that the Staff failed to give it adequate consideration because it believed that Commission policy prohibited it. We also noted the following genuine issues of fact in the record: (1) the amount of tritium now present in each of the separately stored portions of the AGW, and (2) the seriousness of the health effects of the release of tritium through evaporation.

I. INTERVENORS' PROCEDURAL POSITION

These issues we have just discussed, previously set forth in our Summary Disposition decision, were the issues we heard and that we must decide.⁶ However, the Intervenors, represented by a nonlawyer,⁷ adopted a static theory of their case (*see* Intervenors' Conclusions of Law, particularly ¶¶ 2, 3, and 3 [the second paragraph numbered 3]), in which they apparently did not accept our framing of the issues and subissues and continued to argue that they should prevail because the Staff's Preliminary Environmental Impact Statement, NUREG-0683, June 1987, Staff Exhibit 1, was deficient.

Our ruling, which we set forth as clearly as we could, apparently was not understood by the Intervenors.⁸ However, it is based on sound principles of law that recognize the nature of the hearing process, in which all the parties have an opportunity to introduce evidence that bears on the determinations made in the

⁵ Applicants and Staff now agree that tritium is the radioisotope of critical concern in assessing the radiological impacts of the proposed evaporation since it will remove radioactive solids, such as strontium-90, from the AGW until those solids will be reduced to 1/1000 of their original level; but the process will not affect the quantity of tritium. *See* LBP-88-23, *supra*, 28 NRC at 191.

⁶ We stated the same principle in our Order, in the following language:

The primary issue to be heard is whether the no-action alternative is obviously superior to the forced evaporation proposal because the latter method will release all of the tritium in the AGW to the atmosphere without any [further] prior period of natural radioactive decay.

Related subissues to be heard are: whether the tritium content of the AGW has been accurately determined; whether tritium is of more critical concern with respect to our determination than strontium-90; and whether the risk to the public health from tritium released by forced evaporation is greater than Licensee and Staff have acknowledged.

Id. at 233.

⁷ Frances Skolnick worked diligently for Intervenors and we appreciate her efforts to inform this Board.

⁸ During the hearing, we advised them further (Tr. 584, 590-92, relating to how costs were a part of the pending issue, and Tr. 608, describing Intervenors' problem and stating that they have to demonstrate the existence of a better alternative; *see also* Tr. 581-82, where the Board explained the difference between the burden of going forward and the burden of proof). However, *see* Intervenors' statement, Tr. 1680-81.

preliminary environmental impact statement. After having heard that evidence, it is logical that we should weigh it directly in making our decision, which is itself a public process of weighing environmental issues. LBP-88-23, *supra*, 28 NRC at 183-84, citing the following NEPA cases that we also stated we would apply to the analogous issues arising under Commission regulations requiring releases to be As Low as Reasonably Achievable (ALARA): *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 522 (1977), *aff'd sub nom. New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 95 (1st Cir. 1978), *citing Monroe County Conservation Society, Inc. v. Volpe*, 472 F.2d 693, 697-98 (2d Cir. 1972).

Perhaps some of the Intervenor's apparent difficulty in accepting our rulings and legal interpretations may have arisen out of confusion about the different stages of agency consideration of the AGW issues.

First, there was the preliminary environmental impact statement. Then, Intervenor's were permitted to intervene by stating contentions together with "the bases for each contention . . . with reasonable specificity." *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 1), ALAB-868, 25 NRC 912, 930 (1987). Memorandum and Order (Memorializing Special Prehearing Conference; Ruling on Contentions Scheduling), unpublished, January 5, 1988, at 3. By filing contentions, considered under the liberal standards appropriate for this stage of the case, Intervenor's indicated the issues that concerned them and they gained a ticket of admission to the case, entitling them to access to the discovery process.

At the close of the discovery process, Intervenor's faced a motion for summary disposition. At that point, they filed affidavits. As we have already discussed, this Board found that they had raised genuine issues of fact that they could take to hearing; and the Board also applied the law to this case and defined the genuine issues of fact for hearing.

The evidentiary record now is far more complete than it was at either the contention admission stage or the summary disposition stage. And it is this Board's obligation, acting for the Commission, to reach a determination based on the entire record of this case.

II. CONCLUSION

After considering all the facts of record, in light of the applicable law, we conclude that the Applicants' request for an amendment to its license should be granted. By a preponderance of the evidence, they have demonstrated that their alternative is environmentally acceptable, because of the acceptable level of occupational exposure and the very low level of atmospheric release, and we

conclude that the Intervenor's no-action alternative is not obviously superior to the evaporation proposal.

We are convinced that implementation of Applicants' proposal will have extremely small radiation exposure consequences, both to workers and the general public. Furthermore, using extremely conservative assumptions, we conclude that the maximum savings in radiation dose that could be attributed to the no-action alternative would be 36.4 person-rem, comprised predominantly of occupational exposure — with some exposure of the public. Applying the cost-benefit standard of 10 C.F.R. Part 50, Appendix I, §II.D, it would be appropriate to require Applicants to spend at most \$36,400 (\$1000 per person-rem) to avoid this dose consequence, but the no-action alternative (including disposal of the waste after 30 years) would cost \$800,000 more. Consequently, Applicants correctly conclude that their proposal is entitled to our approval and that Intervenor's no-action alternative is not obviously superior.

Of particular concern to us has been the proposed radiation exposure of the general public, which is comprised of people who will not have consented to this exposure.

Applicants and the Staff independently determined the radiological consequences to the public from the controlled, atmospheric release of the evaporated AGW by estimating the dose to both the maximally exposed hypothetical off-site person and to the total exposed population. Intervenor did not submit any calculations of their own and did not seriously challenge the estimates of the magnitude of release made by the other parties.

The dose to the maximally exposed hypothetical offsite person is a conservative assessment of the exposure to a member of the public, as required by Appendix I to 10 C.F.R. Part 50, using Regulatory Guide 1.109 dose methodology. It is very unlikely that any actual person will receive a dose as great as that of the maximally exposed hypothetical individual, who is assumed to be a person in the maximum inhalation location who consumes meat, vegetables, and milk from each of the other maximum dose pathway locations.

The MIDAS code, whose use by Applicants was accepted by the Staff and not specifically challenged by Intervenor, calculates the estimated doses to the maximally exposed hypothetical offsite person for the duration of the evaporation process (taking into account, as well, the extent of processing/reprocessing of the AGW). The dose to the bone is estimated to be 0.4 millirem, while the total-body dose is estimated to be 1.3 millirems (1.2 millirems of which is from tritium).

These are not annual doses but rather estimates for the duration of the evaporation process, and they are still well below the annual guideline of 15 millirems given in Appendix I to 10 C.F.R. Part 50, for exposure from airborne releases. Baker, Tr. 638.

In addition to considering the maximally exposed individual, we can consider the estimated dose to the total exposed population; that dose is a more representative assessment of the radiological consequences resulting from evaporation of the AGW. Baker, Tr. 637. MIDAS was again utilized to estimate the dose to the population. In addition to estimating the inhalation and ingestion doses to the 2.2 million people within a 50-mile radius of TMI-2, the code also estimates the ingestion dose to an additional 13 million people assumed to be fed agricultural produce exported from within the 50-mile radius. The total exposure to the population from evaporation of the AGW is estimated to be 2.4 person-rem to the bone, and 12 person-rem to the total body.

For simplicity in calculating an average, Applicants applied the total population dose (to 15.2 million) to the 2.2 million people living within 50 miles. This highly conservative assumption yields an upper-bound average exposure to a member of the 50-mile population of 0.001 millirem to the bone and 0.005 millirem to the total body. Since the evaporation process will take more than 1 year, the annual population doses are less than these values. Baker, Tr. 638.

The Staff independently estimated the offsite doses expected from Applicants' evaporation proposal. The Staff predicted that the maximally exposed hypothetical offsite person would receive 0.8 millirem to the bone, and a total-body dose of 0.7 millirem. The Staff estimates a dose to the offsite population of 0.2 person-rem to the bone, and 3 person-rem to the total body. Munson, Tr. 742, 747. Considering that different models and assumptions were used (e.g., GPUN's conservative consideration of population ingestion doses beyond 50 miles), the Board considers the dose estimates of Applicants and the Staff to be in general agreement — both agree that the doses would be very low.

The Board finds that the insignificance of these doses is evident. Compared to the 0.01-millirem Applicant-estimated annual bone dose from strontium and the 1.2-millirem total tritium dose that Applicants estimate the maximally exposed individual might receive from the evaporation of the AGW, the average individual in the TMI area will receive 300 millirems per year from natural radiation (about 70 millirems from direct radiation from the soil and cosmic rays, 30 millirems from internal natural radioactivity and weapons fallout, and 200 millirems whole-body equivalent from radon daughters) each year. The maximum individual organ dose to the bone therefore is less than 0.003% of the naturally occurring whole-body radiation the average member of the population would receive during the 50-year integration period. The whole-body dose from tritium is about 0.01% of the natural whole-body dose. Baker, Tr. 639.

As another illustration, the worst-case dose to the maximally exposed individual is on the order of a single day of natural background radiation, and is received over a 1- to 2-year period. Munson, Tr. 743.

III. EXPECTED RADIATION RELEASES

Whether the AGW is disposed of through evaporation or through the no-action alternative, followed by a method such as evaporation, some radiation will be released to the environment. With respect to either alternative, the amount that will be released is the planned release plus the expected release due to an unplanned mishap.

In this portion of our Decision we will estimate and compare both the expected and unplanned releases from the evaporation alternative and from the no-action alternative.

A. Evaporation Proposal Releases

1. *Description of Applicants' Proposal*

On July 31, 1986, GPUN filed with the NRC a report on the disposal of the processed AGW, evaluating three disposal options on the basis of relative technical feasibility, regulatory compliance, environmental effects, costs, waste generated, and time required to accomplish. Based on its evaluation, GPUN asked the NRC to approve a proposal for forced evaporation followed by vaporization and atmospheric release of the product distillate.

The GPUN proposal also includes the separation and final treatment of the solids removed and collected during the evaporation process and the preparation of the resulting waste product for shipment to and burial at a commercial low-level waste facility.

2. *Implementation*

GPUN has entered into a contract with Pacific Nuclear Systems, Inc., to supply the disposal system. In February 1988, GPUN authorized the vendor to proceed to final design and fabrication of the disposal system for the specific TMI-2 application. A detailed description of the systems and evolutions that will accomplish the controlled disposal of the AGW is contained in GPUN's Technical Evaluation Report for Processed Water Disposal System. Buchanan, Tr. 456-57. That report is in evidence as Applicants' Exhibit 1. Tr. 470.

The processed water disposal program consists of: (a) a dual-evaporator system designed to evaporate the processed water at a rate of 5 gallons per minute (gpm); (b) an electric-powered vaporizer designed to raise the evaporator distillate temperature to 240°F and to release the resultant steam to the atmosphere via a flash tank and exhaust stack; (c) a waste concentrator designed to produce the final compact waste form; and (d) a packaging section

designed to prepare the resultant waste for shipment consistent with commercial low-level waste disposal regulations. Buchanan, Tr. 457.

All AGW will be processed through the evaporator prior to release to the environment via vaporization. The designed flexibility of the disposal system permits the evaporator assembly to be decoupled from the vaporizer assembly. In this configuration, the evaporator operates independently of the vaporizer and processes the water in a batch-cycle method of operation. The distillate from the evaporator is pumped to a separate staging tank, and the feed to the vaporizer is supplied from an independent staging tank. Conversely, if the vaporizer is coupled to the evaporator during operations, the water is processed in a continuous-flow operation. The distillate from the evaporator is fed directly to the vaporizer for atmospheric discharge. Buchanan, Tr. 458.

Average activity levels have been projected for the total 2.3 million gallons of AGW assuming further preprocessing of approximately 31% of the inventory. See Buchanan, Tr. 465, cols. 1 and 2. These data appear in PEIS Supplement No. 2, Table 2.2, and are identified as "Base Case" water. These activity levels formed the basis for the Staff's analysis of the environmental effects of evaporator discharges. The activity releases occurring from evaporator discharges of Base Case water result in releases that are a small fraction of the releases permitted by existing regulatory requirements for the operation of a nuclear power plant. Buchanan, Tr. 458-59.

3. *Operating Limits*

Since the PEIS analysis assumed processing Base Case water with a vaporizer discharge to the atmosphere containing 0.1% of the radioactive particulates from the influent, the PEIS values for Base Case will be used as the system operating limit. Thus, when operating the processed water disposal system in the coupled mode (evaporator and vaporizer in continuous operation), the volume of water being processed will be isolated from all sources of contamination. Its radionuclide content will be verified to be within the Base Case limits so that quarterly average concentrations of all water processed in this mode will be no greater than the concentrations listed at Tr. 465, col. 2.

When processing water through the vaporizer in the decoupled mode (independent of the evaporator), the quarterly average vaporizer influent concentrations will be no greater than 0.1% of the values in Tr. 465, col. 2. These limits equate to an atmospheric release rate for particulate radionuclides of $8.23E^{-5}$ microcuries per second if processing water containing the maximum limits at a rate of 5 gpm. Buchanan, Tr. 459.

Joint Intervenors' Material Statement of Fact 4(xiii) under Contention 3 asserted that the NRC's dose calculations are inadequate because the water entering the evaporator in batch cycle will deviate from the concentrations listed

in Table 2.2 of PEIS Supplement No. 2. See LBP-88-23, *supra*, 28 NRC at 199. For the reasons just discussed, the system operating limit will be the same for all methods of operation, and the batch-cycle operation of the evaporator will not affect the resulting dose calculations. Buchanan, Tr. 459.

4. Accident Risks

Both Applicants and the Staff testified regarding the potential risks associated with the evaporation proposal. Applicants noted that the evaporation process is estimated to last from 15 to 24 months. During that time, the AGW will be stored in an approximately 500,000-gallon tank prior to being vaporized. Applicants estimated the probability of an uncontrolled release from the staging tank as 0.17% over a 24-month period, with a resulting dose of 2.50 millirems from the liquid pathway and 1.79 millirems from the airborne pathway to the critical organ — the bone. Weaver, Tr. 475. We consider Applicants' estimates of the percentage risk and resulting dose to be highly conservative.

5. Occupational Risks — Shipment and Burial

The transportation of evaporator bottoms to a disposal site involves radiological and nonradiological risks. Radiological risks include occupational dose to drivers and handlers of AGW and bottoms, plus dose to members of the general population. The general population dose consists of routine dose exposure to bystanders and other vehicular passengers in addition to accident dose due to transportation mishaps. Weaver, Tr. 475.

Applicants estimated conservatively that disposal of evaporator bottoms will require eight to twelve truck shipments to the burial site. The average activity of each shipment is expected to be less than 0.5 curie total activity. Applicants assumed the shipments would travel along the least-risk route from TMI to Hanford, Washington, which is the proposed burial site.

Applicants estimated that the incident-free population dose from twelve shipments would be 10.4 person-rem, and the estimated dose to the driver per shipment would be 95 millirems. Weaver, Tr. 475-76.

Applicants testified that the expected number of traffic accidents and fatalities for these shipments would be 0.049 and 0.002, respectively.

6. Accidental Risks — Shipment and Burial

Taking into account the severity and probability of an accident, the population density along the least-risk route, and the resulting release fraction of ra-

dionuclides produces 0.003 person-rem expected from these shipments. Weaver, Tr. 476.

In addition, the further preprocessing of AGW prior to evaporation will produce approximately forty liners which will require twenty to forty shipments for disposal and represent a disposal volume of 6200 cubic feet. Applicants testified that the expected number of traffic accidents and fatalities resulting from disposal of these liners would be 0.093 and 0.0038, respectively, and the expected dose to each driver would average approximately 15 millirems per accident. Applicants estimated the incident-free dose to the general population from these shipments as 4.8 person-rem, and taking into account the severity and probability of an accident, the estimated accident dose as 0.56 person-rem. *Id.*

The Staff assumed that the maximum accident for Applicants' proposal involved the rupture of an 11,000-gallon storage tank of AGW. From this accident scenario, the Staff estimated a dose of 0.015 millirem to the bone and 0.002 millirem to the total body for the maximally exposed individual, and a population dose of 0.7 person-rem to the bone and 0.015 person-rem to the total body. Munson, Tr. 748.

In addition, the Staff estimated that Applicants' proposal would require a total of sixty-eight waste disposal shipments. The Staff estimated that the sixty-eight shipments would result in 0.6 accident, 0.5 injury, and 0.03 fatality. Munson, Tr. 749.

The Intervenors did not challenge the Applicants' or the Staff's risk analysis of Applicants' proposal. Both analyses demonstrate that Applicants' proposal does not present significant accident risks.

7. Occupational Radiation Exposure — On Site

Applicants conservatively estimated the occupational dose attributable to evaporation of AGW and the packaging of the evaporator bottoms as 23 person-rem. This maximum dose was based on 9.6 person-rem from approximately 16,000 person-hours for the evaporation process in a radiation field of 0.6 millirem per hour (mrem/hr), 8.7 person-rem from approximately 3500 person-hours for the packaging of the evaporator bottoms in a radiation field of 2.5 mrem/hr, and 2 to 5 person-rem from the preprocessing of water. Tarpinian, Tr. 443-44.

8. Offsite Doses to the General Population

Applicants and the Staff both presented testimony estimating the radiological doses to the public from GPUN's evaporation proposal and from the Intervenors'

alternative. While the Intervenor's witnesses implied some criticisms of these modeling efforts, which we address below, they did not offer their own estimates of offsite doses or indicate in any quantitative way the extent of any perceived error in the estimates of Applicants and Staff. The Board will discuss the modeling issues first, and then consider the dose estimates.

a. Dose Modeling

The primary environmental dose assessment computer code used by GPUN Environmental Controls is the Meteorological Information and Dose Assessment System (MIDAS). The MIDAS Code uses atmospheric dispersion calculations based on the Pasquill-Gifford method presented in NRC Regulatory Guide 1.111 to derive the average airborne concentration, deposition rate from a plume, and the ground concentration of each radionuclide in each sector as a function of time.

The dose due to direct exposure to radioactive material in the plume and deposited on the ground is determined by MIDAS directly from these functions, using published conversion factors such as those in NRC Regulatory Guide 1.109. Baker, Tr. 628. MIDAS also accounts for the transfer of radionuclides through the environment using transfer coefficients from Regulatory Guide 1.109. It estimates the concentration of radionuclides in each trophic level to arrive at estimates of the quantity of each radionuclide ingested or inhaled by members of the public.

When the ingestion and inhalation quantities have been calculated, dose conversion factors (DCFs) are applied. The primary sources of these factors are Regulatory Guide 1.109 and NUREG-0172, which in turn are based on International Commission on Radiological Protection (ICRP) publications, including ICRP Publication 2, ICRP Publication 10, and ICRP Publication 23. Cooper, Tr. 632-34. The DCFs take into account both the effective half-life of radionuclides in the body as well as the quality factor of the radiation from each radionuclide. The dose calculated by MIDAS in the manner described above is a 50-year dose commitment. Cooper, Tr. 635.

Although the relevance of assertions in their testimony was poorly articulated, Intervenor's witnesses raised a few points that could have bearing on dose modeling. Dr. Huver referred to studies by Koranda and Martin and by Kirchmann, and his description of the findings of these studies suggested that tritium might bioaccumulate in plants and animals. Huver, Tr. 1664-65. Both Dr. Huver's and Dr. Morgan's testimony also suggested that a greater Quality Factor for tritium beta radiation should be acknowledged. Huver, Tr. 1655, 1658-59, 1665-65A; Morgan at 2-3. These notions were convincingly dispelled by the testimony of Applicants' witnesses, Dr. Auxier and Dr. Fabrikant, and are discussed in the subsequent portion of our opinion dealing with health effects.

Based on their testimony, we accept the Applicants' use of a DCF of 1.7 for tritium as a conservative value.

b. Dose Estimates

Applicants and the Staff independently determined the radiological consequences to the public from the controlled, atmospheric release of the evaporated AGW by estimating the dose to both the maximally exposed hypothetical offsite person and to the total exposed population. The dose to the maximally exposed hypothetical offsite person is a conservative (overestimated) assessment of the exposure to a member of the public, as required by Appendix I to 10 C.F.R. Part 50, using Regulatory Guide 1.109 dose methodology. The maximally exposed hypothetical individual, who is a concept that does not exist in flesh and blood, is assumed to be a person in the maximum inhalation location who consumes meat, vegetables, and milk from each of the other maximum dose pathway locations. The estimated dose to the total exposed population is a more representative assessment of the radiological consequences resulting from evaporation of the AGW. Baker, Tr. 637.

The MIDAS code was used by Applicants to calculate the estimated doses to the maximally exposed hypothetical offsite person for the duration of the evaporation process (taking into account, as well, the extent of processing/reprocessing of the AGW). The total dose to the bone is estimated to be 0.4 millirem, while the total-body dose is estimated to be 1.3 millirems (1.2 millirems of which is from tritium). (If the strontium-90 concentration in the AGW were not reduced by evaporation, the strontium would dominate dose calculations. With a decontamination factor of 1000 achieved by the evaporator, however, tritium is the radionuclide that contributes the most to calculated doses — 1.2 of the 1.3-millirem total-body dose to the maximally exposed individual from immediate evaporation. Baker, Tr. 643.)

These doses, which are not annual doses but rather estimates for the duration of the evaporation process, still are well below the annual guideline of 15 millirems given in Appendix I to 10 C.F.R. Part 50, for exposure from airborne releases. Baker, Tr. 638.

MIDAS was again utilized to estimate the dose to the population. In addition to estimating the inhalation and ingestion doses to the 2.2 million people within a 50-mile radius of TMI-2, the code also estimates the ingestion dose to an additional 13 million people assumed to be fed agricultural produce exported from within the 50-mile radius.

The total exposure to the population from evaporation of the AGW is estimated to be 2.4 person-rem to the bone, and 12 person-rem to the total body. For simplicity, in calculating an average, Applicants applied the total population dose (to 15.2 million) to the 2.2 million people living within 50 miles. This

yields a conservative (i.e., upper-bound) average exposure to a member of the 50-mile population of 0.001 millirem to the bone and 0.005 millirem to the total body. Since the evaporation process will take more than 1 year, the annual population doses are less than these values. *Id.*

Independent Staff Estimate. The Staff independently estimated the offsite doses expected from Applicants' evaporation proposal. The Staff predicted that the maximally exposed hypothetical offsite person would receive 0.8 millirem to the bone, and a total-body dose of 0.7 millirem. The Staff estimates a dose to the offsite population of 0.2 person-rem to the bone, and 3 person-rem to the total body. Munson, Tr. 742, 747. Considering that different models and assumptions were used (e.g., GPUN's conservative consideration of population ingestion doses beyond 50 miles), the Board considers that the dose estimates of Applicants and the Staff are in general agreement that the doses would be very low.

In the interest of conservatism, we adopt the higher of the two estimates in each instance. Hence, we consider that the maximally exposed hypothetical offsite individual will receive 0.8 millirem to the bone and 1.3 millirems to the total body. The total dose to the offsite population is found to be 2.4 person-rem to the bone and 12 person-rem to the total body. We note that the Applicants' estimate of offsite dose is over twenty times larger than the Staff's estimate for exposure to the bone and over four times larger for total body.

c. Significance of Doses

The Board finds that these doses are insignificant when compared to radiation doses that people receive every day as the result of natural phenomena. In addition, for reasons we will discuss below, we conclude that the health consequences of this additional exposure are expected to be negligible or nonexistent.

Compared to the less-than-0.02-millirem Board-estimated annual bone dose from strontium (0.8 millirem divided by the number of years of life expectancy) and the 1.2-millirem total tritium dose that Applicants estimate the maximally exposed individual might receive from the evaporation of the AGW, the average individual in the TMI area will receive 300 millirems per year from natural radiation (about 70 millirems from direct radiation from the soil and cosmic rays, 30 millirems from internal natural radioactivity and weapons fallout, and 200-millirem whole-body equivalent from radon daughters) each year. The maximum individual organ dose to the bone therefore is less than 0.006% of the naturally occurring whole-body radiation the average member of the population would receive during the 50-year integration period. The whole-body dose from tritium is about 0.01% of the natural whole-body dose. *See* Tr. 639 (Baker — adjusted by the Board for its higher estimate of bone dose).

As another illustration, the worst-case dose to the maximally exposed individual is on the order of a single day of natural background radiation and is received over a 1- to 2-year period. Munson, Tr. 743. The additional dose to the maximally exposed individual from evaporation is far below the normal environmental dose variability, and the additional dose to the average offsite individual is thousands of times smaller. Baker, Tr. 640.

Another way of considering these same data is that the dose to the hypothetical individual from evaporation of the AGW would be less than 10% of an additional dose a person would receive from living in a brick building each year, and is comparable to the whole-body dose an average individual in the general population receives from watching color television each year. The dose to the average individual is many hundreds of times less and thus de minimis. Fabrikant, Tr. 1225.

The National Council on Radiation Protection and Measurements (NCRP) does not even calculate population doses when individual doses are this low because the NCRP considers them insignificant. Munson, Tr. 743.

B. Description of the “No-Action Alternative”

Since the Intervenors resisted specifying the alternative that they considered to be obviously superior to Applicants’ proposal (Tr. 561, 581-90), it is necessary for us to review part of the history of this case to determine which alternative Intervenors were entitled to have the Board evaluate. We then will also briefly discuss some other alternatives the Intervenors mentioned and that we briefly inquired into pursuant to our broad powers to require the preparation of an adequate record.

As admitted, Contention 2 states as follows:

The EIS fails to comply with the requirements of the National Environmental Policy Act (42 USCS 4332, n.29). The NRC failed to conduct conclusive risk/benefit analysis of the “No Action Alternative.”

LBP-88-23, *supra*, 28 NRC at 185. This contention embodies what we have identified as the principal issue at the hearing — whether from a cost-benefit standpoint, the alternative is obviously superior to Applicants’ proposal. As drafted, Contention 2 would appear to refer to alternative 3.5.1, “Liquid Storage in Tanks,” evaluated by the Staff in PEIS Supplement No. 2, and which the Staff also refers to as the “no action alternative.” See Staff Exh. 1 at 3.32. This alternative involves pretreatment of the AGW to Base Case levels (as does Applicants’ proposal), *id.* at 3.2 (Table 3.1), existing and newly constructed storage tanks at TMI, *id.* at 3.32, and indefinite storage. *Id.*

At the special prehearing conference, Intervenors clarified Contention 2 by explaining that "the no action alternative supposes that eventually the water will be disposed of." Tr. 65; Memorandum and Order of January 5, 1988, *supra*, at 20.

1. Procedural Setting

It should be noted that the NRC hearing process provides great latitude in discovery and it gives the Applicants for the license amendment the burden of proof. However, an obligation of the Intervenors is to state their allegations with sufficient specificity that the Applicants are put on notice of the issue on which they have the burden.

The notice requirement is a natural outgrowth of fundamental notions of fairness applied to the party with the burden of proof. As the Atomic Safety and Licensing Appeal Board has observed:

The applicant is entitled to a fair chance to defend. It is therefore entitled to be told at the outset, with clarity and precision, what arguments are being advanced and what relief is being asked So is the Board below. It should not be necessary to speculate about what a pleading is supposed to mean.

Kansas Gas and Electric Co. (Wolf Creek Generating Station, Unit 1), ALAB-279, 1 NRC 559, 576 (1975); *see also Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 1), ALAB-868, 25 NRC 912, 930 (1987). Moreover, the Licensing Board is entitled to adequate notice of an Intervenor's specific contentions to enable it to guard against obstructionism of its processes. As noted by the Supreme Court in upholding the Commission's requirements for a threshold showing of materiality:

[I]t is still incumbent upon Intervenors who wish to participate to structure their participation so that it is meaningful, so that it alerts the agency to the Intervenors' position and contentions Indeed, administrative proceedings should not be a game or forum to engage in unjustified obstructionism by making cryptic and obscure reference to matters that "ought to be" considered. . . .

Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 553-54 (1978) (emphasis added).

Similarly, "an intervenor is not free to change the focus of its admitted contention, at will, as the litigation progresses." *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 n.11 (1988).

2. *Intervenors' Discovery Responses*

During discovery, Applicants asked Intervenors the estimated size of storage tanks encompassed in the no-action alternative. The Intervenors responded: "Those most convenient to the Licensee which comply with all regulations and give adequate protection to the workers and the public." SVA/TMIA's Responses to Licensee's Interrogatories and Request for Documents, Feb. 15, 1988, at 13, Interrogatory 2-2(c).

Applicants asked the Intervenors the location on the TMI site where storage tanks would be placed. The Intervenors responded: "That location which is least hazardous to employees and most accessible to radiation monitoring." *Id.* at 14, Interrogatory 2-2(d).

The Staff asked the Intervenors for what length of time they claimed the water should remain on site. The Intervenors responded: "It is expected that the water may remain on-site at least until Unit 1 is decommissioned and for as long as Unit 2 remains in Post Defueling Monitored Storage." SVA/TMIA's Response to NRC's Interrogatories, Feb. 22, 1988, at 4, Interrogatory 5.

The Intervenors also were asked what the ultimate disposal method would be for their alternative. They responded: "That method which entails the least health impact on the surrounding population." SVA/TMIA's Responses to Licensee's Interrogatories and Request for Documents, Feb. 15, 1988, at 14, Interrogatory 2.2(f).

3. *The Board's Conclusions About the Intervenors' Contention*

Based upon the Contention 2 reference to the PEIS "no-action alternative," Intervenors' statement at the special prehearing conference, and Intervenors' responses to discovery requests, Applicants addressed at the summary disposition stage a Contention 2 alternative that consisted of:

- a. pretreatment of the AGW to Base Case levels of Table 2.2 in PEIS Supplement No. 2;
- b. storage of the AGW in existing and newly constructed tanks;
- c. a storage period of 30 years;
- d. ultimate disposal, but by undefined means.

Licensee's Motion for Summary Disposition on Alternatives (Contentions 1, 2, 3, and 8), May 16, 1988.

In response to Applicants' motion for summary disposition on Contention 2, the Intervenors did not contest Applicants' characterization of the Intervenors' alternative. In fact, the Intervenors explicitly accepted the 30-year storage period and the use of tanks for storage. SVA/TMIA's Response to Licensee's Motion for Summary Disposition on Contentions 1, 2, 3, 4, 5d, 6, and 8, June 20, 1988, at 8.

Further, the Intervenor's witnesses subsequently endorsed in their direct testimony the 30-year storage period and the use of tanks. Piccioni, Tr. 127; Morgan at 3-4 ("Third Set of Comments Relative to Treatment and Disposal of 2,100,000 Gal. of Contaminated Water at TMI-2," by Karl Z. Morgan, September 30, 1988. It appears that Dr. Morgan's five pages of direct testimony were not moved into evidence by the Intervenor's. See Tr. 1525-26. The direct testimony is not in the transcript of the November 15, 1988 evidentiary session. Since the Board and the other parties also apparently assumed the testimony was received into evidence, we formally admit the document as Intervenor's Exhibit No. 1 and cite it hereafter as "Morgan.")

Although the parties should be on notice at the contention-filing stage of what issues are to be litigated, at the outset of the evidentiary hearing the Board requested that the Intervenor's explicitly define their alternative so that the Applicants and the Staff would be on notice, without making their own assumptions, as to what the Intervenor's considered to be "obviously superior" to the Applicants' proposal. (At the summary disposition stage of this proceeding, the Board held that NRC precedent requires us to accept the Applicants' proposal unless an alternative is "obviously superior." See LBP-88-23, *supra*, 28 NRC at 183-84.

The Intervenor's did not add to the previous understanding of the Board and the other parties. Intervenor's defined their alternative as involving pretreatment of the AGW followed by monitored storage in proper tankage for an indefinite period of time prior to final disposition. Tr. 106.

On the third day of hearing, the Board once again requested that the Intervenor's define their alternative or alternatives. Tr. 577. The Intervenor's balked at the notion that they had to set a target for the hearing and argued that they did not consider their alternative a "tight pattern" from which they could not deviate. Tr. 586. However, after a recess to confer and consider the question, the Intervenor's stated that they wanted the AGW: (1) pretreated to the level of "achievable case" water in Table 2.2 of PEIS Supplement No. 2, (2) stored in existing locations in the plant for an indefinite period of time not less than 30 years, and (3) subject to continuous research. Tr. 581-90.

4. Intervenor's First Witness

When the Intervenor's first witness, Dr. Richard Piccioni, appeared for cross-examination, it became evident that Intervenor's did not have a single alternative in mind. Although there was no motion to strike portions of his testimony, the Board would have granted such a motion to the extent that a new alternative was being suggested. Furthermore, we now rule that the thrust of Dr. Piccioni's testimony was irrelevant to the admitted contention.

Dr. Piccioni testified that the AGW should be pretreated until the radioactive content of AGW equals the levels listed in the "achievable" column in Table 2.2 of PEIS Supplement No. 2, rather than to Base Case levels. Piccioni, Tr. 159. Further, Dr. Piccioni testified that he envisioned the storage of the AGW in as many as 209 tanks of 11,000-gallon size on the TMI site. Piccioni, Tr. 120, 145.

The Board rules that Dr. Piccioni's testimony is irrelevant. However, we do not consider it likely that, in so ruling, we are eliminating an alternative that strongly recommends itself or that could possibly be "obviously superior," considering radiation releases and costs.

We strongly suspect that a field of 209 such tanks would be very costly to construct and maintain, if there is space available. In addition, immediately processing to Base Case would reduce the level of radioactivity in the stored water, but at some cost (including use of the evaporator) and in immediate worker exposure, similar to that occurring in Applicants' proposal. The principal gain from this proposal is the reduction in exposure should there be a mishap and spill in a single tank; however, the Board does not rely on the level of radiation from a spill in reaching its conclusions in this case.

5. Existing Storage Locations

During the Intervenor's cross-examination of Applicants' witnesses, Intervenor's again deviated from the previously understood definition of their alternative. This time, the Intervenor's had two revelations. First, the Intervenor's announced that they were "looking at a variety of alternatives." Tr. 561. Second, among the variety of alternatives, the Intervenor's were proposing that the AGW be pretreated and returned to its existing storage locations (presumably including the Reactor Building basement, system piping, sumps, and pools). This was the first time the Intervenor's revealed their "pretreatment and leave it where it is" alternative, which differs from the testimony of the Intervenor's own witnesses, who addressed the storage of water in tanks. Piccioni, Tr. 127; Morgan at 3-4.

The Board recognized the inherent unfairness to the other parties presented by Intervenor's moving definition of the Contention 2 alternative. However, our initial impression was that this alternative might have some advantages, so we asked a few questions of our own — in the interest of an adequate record — before deciding to abandon this line of inquiry, which is irrelevant under a strict interpretation of the admitted contention.

After the testimony of Applicants, witness Buchanan on occupational doses, costs, interferences with cleanup completion, accident risks, surveillance and maintenance difficulties, and other impediments to this new alternative, the Board was satisfied that the possibility of simply pretreating the AGW and

putting it back in its existing locations was not obviously superior to the Applicants' proposal. Tr. 946. Therefore, the Board declined to expand the proceeding to consider this option further and it discontinued its inquiry. Tr. 947.

C. Radiation Consequences of the No-Action Alternative

Applicants and the Staff both attempted to estimate the offsite dose consequences of Intervenor's alternative. Both assumed that the AGW would be evaporated after a 30-year storage period for additional radiological decay. See Baker, Tr. 642; Munson, Tr. 741, 747. During the 30-year storage period, the tritium would decay to roughly 17 to 19% of its current value, and the strontium-90 would decrease by a factor of about two. Baker, Tr. 642-43; Munson, Tr. 741, 745.

Because the models used by Applicants and the Staff both utilize current land-use and population-distribution data, the prediction of doses 30 years hence requires assumptions. The witnesses both assumed that offsite parameters remain exactly the same as they were in 1988. Baker, Tr. 642; Munson, Tr. 742-43, 746. In fact, the projected dose reductions may not even occur. Changes in land use and population distribution could actually result in dose projections 30 years from now that are higher than current estimates. In other words, the effects of decay could easily be offset by other factors.

Using the Board's conservative (high) estimates of doses from the evaporation alternative, as presented above on page 151, we find that:

- As a result of the further storage period the whole-body dose to the maximally exposed individual would be reduced from 1.3 millirems from all radionuclides (1.2 millirems of which is from tritium) to about 0.3 millirem, a reduction to about one-fourth.
- The maximally exposed hypothetical offsite person would receive a bone dose of 0.4 millirem over the individual's life (instead of 0.8 millirem), which represents an average annual dose of less than 0.01 millirem (instead of less than 0.02 millirem from evaporation now). Baker, Tr. 639 (adjusted to the Board's bone dose estimate).
- After 30 years the average exposure to the bone to a member of the population would be one-half of the currently projected 0.002 millirem, and the whole-body dose would be one-fourth of the currently projected 0.01 millirem. Baker, Tr. 643 (adjusted by the Board). We also agree with Applicants' witness, Baker, that

these dose levels are so low that they are within the range of uncertainty of state-of-the-art dose assessment methodology and radiological monitoring.

Baker, Tr. 644.

We note that Staff projections are slightly higher, but at the level of dose we are considering we do not consider the projections to be substantively different. Staff states that, after the 30-year storage period, evaporation would result in doses to the maximally exposed hypothetical offsite person of 0.4 millirem to the bone and 0.1 millirem to the total body. The Staff's population dose estimates are 0.09 person-rem to the bone and 0.6 person-rem to the total body. Munson, Tr. 742, 747.

The Board finds that the doses from evaporation now are already so small that any savings achieved from the Intervenor's proposed storage period are unimportant.

IV. HEALTH EFFECTS

In discussing the radiation consequences of the Applicants' proposal and comparing them to those of Intervenor's alternative, we have considered the magnitude of the expected releases and have compared them to naturally occurring radiation. In this portion of our Decision, we will examine evidence concerning the health effects of radiation releases of the expected magnitude. This evidence was submitted with respect to issues that survived the summary disposition stage of the proceeding. In a subsequent portion of this opinion, we set forth the contentions that were litigated and the issues that arose under each contention.

Before we begin the formal consideration of the issues, however, let us consider an issue raised in the limited appearance session by Ms. Mary Stamos Osborn. Ms. Osborn showed a series of color slides, which she used to illustrate what she believes to be the mutating effects of radiation on plant life. The presentation was very graphic and emotionally powerful and the Board has considered its substance.

We understand Ms. Osborn's presentation in the context of the evolving discipline of radiation ecology. See Vincent Schultz and F. Ward Whicker, *Ecological Aspects of the Nuclear Age: Selected Readings in Radiation Ecology*, Argonne National Laboratory, TID-25978, 1972 (not in the record but appropriate because it is being used to consider nonrecord material). In this respect, we note that:

All living organisms, always, from the time of their origin on earth until now, have been irradiated. And in the future, everywhere, they will continue to be irradiated. Some of the radiation, from the sun, is necessary for continued life; some of it is unnecessary; and some is harmful. It is extremely difficult to sort out the various effects and to decide what is factual and of significance

Id. at 12 (Ralph Buchsbaum, "Species Response to Radiation; Radioecology").

We consider Ms. Osborn's views important because of the depth of commitment she attaches to them and because other members of the public obviously support her. The difficulty we have in interpreting Ms. Osborn's slides and commentary is the lack of information about radiation dose levels, both for background and TMI-related radiation, and the absence of information about other possible explanations for the observed phenomena that do not involve radiation as the cause.

For example, NUREG-0738, "Investigations of Reported Plant and Animal Health Effects in the Three Mile Island Area" (1980), at 26-28, found that citizen observations about changes in wildlife and vegetation were attributable to such factors as increased human population, changes in farming methods, prolonged severe winters, chemical pesticides in use throughout the eastern United States, fire blight (a bacterial disease), red-spider or pear-slug feeding, leaf spot disease and the trampling of animals. See also Robert Ford Smith, "The Vegetation Structure of a Puerto Rican Rain Forest Before and After Short-Term Gamma Irradiation, in Howard T. Odum and Robert F. Pigeon, *A Tropical Rain Forest: A Study of Irradiation and Ecology at El Verde, Puerto Rico*, U.S. Atomic Energy Commission, 1970 (finding extensive damage to plant life from exposure to a 10,000-curie source, with plant damage found 40 meters from the source, where the dose was 2000 rads. Damage was manifested at times of leaf fall and leaf development and in malformed new leaves. There were no mutation effects reported).

The Board is aware that many citizens will reject our reasons for discounting the pictures of plant mutations, just as they also will reject our reasons for granting the license that has been requested. However, as judges, it is not our role to be popular. Our role is to listen, to consider, to decide, and to explain.

A. Effects of Tritium on Human Beings

Intervenors have argued, pursuant to a surviving portion of their Contention 5d, that tritium is disproportionately damaging to human beings, thus increasing the risk from the evaporation of tritium as part of Applicants' proposal. Intervenors have not, however, related their arguments concerning tritium to the overall risk they believe will be incurred by the public. Hence, it is up to the Board to relate Intervenors' argument that tritium is "more" damaging to the risk that will be experienced in this case.

We note that Intervenors' arguments about tritium rest largely on the testimony of Dr. Charles W. Huver, Tr. 1652-68 (curriculum vitae at 1669-75), who did not appear before us. We find Dr. Huver's testimony to be logical and well-presented and credible. We also find that Dr. Joseph Fabricant and Dr. John A. Auxier, Tr. 1132-1417 (curriculum vitae at 1250-89, 1237-49) appeared before us for cross-examination and analyzed in detail the same sources

analyzed by Dr. Huver (Tr. 1138-1236, 1291-1300), answering questions about the relevant literature in detail and without notes. We are convinced that the testimony of Dr. Fabricant and Dr. Auxier is also highly credible and we find it more directly relevant to the issue before us — how to estimate in an appropriate way the population effects of the Applicants' proposal to evaporate tritium.

We note that the Staff's testimony by James A. Martin, Jr., and Dr. Schlomo Yaniv was also highly impressive, particularly Dr. Yaniv's ability to cite the literature in detail and without notes. Tr. 809-902 (curriculum vitae at 824-831). The Staff's testimony also was helpful because of its focus on the issues before us. In particular, we note that Dr. Huver's conclusions about the effect of tritiated thymidine in animal experiments is of very little value here because almost all of the tritium is in the form of water. Fabrikant, Tr. 1174, *citing* NCRP Report No. 63; Martin/Yaniv, Tr. 819, *citing* NCRP Report No. 89 (Staff Exh. 3).

The Board acknowledges its indebtedness to counsel for Applicants for filing very complete findings that we have used as the basis for our own findings, making alterations and explanations whenever we felt necessary. Applicants' proposed findings were particularly good in stating the strong points of Intervenor's evidence, permitting us to accept those findings when appropriate and to fairly evaluate their impact on this case.

1. Tritium in the Environment

The movement of tritium through the environment has been well studied and is addressed in detail by NCRP Report No. 62. Tritium is an isotope of hydrogen, and its chemical properties and distribution in nature are essentially the same as hydrogen's. A tritium atom may combine with hydrogen and oxygen to form tritiated water (HTO). All water in the environment has some tritium in it. The tritium in the AGW at TMI-2 is in the form of tritiated water and would be released in that form by evaporation. The dispersal of tritiated water from the evaporation of AGW will follow the same pathways as natural water in the environment. Auxier, Tr. 1155-56.

When tritiated water is released to the environment, some of it will eventually become part of other molecules, including organic molecules in plants and animals. Tritium that becomes incorporated into such molecules is referred to as organically bound. There are several ways by which tritium can become part of an organic molecule. The simplest and most prevalent way is through the natural exchange of hydrogen ions bonded to oxygen, nitrogen, sulfur, or phosphorus. In living tissues, about 80% of organically bound hydrogen exists as exchangeable hydrogen which readily assumes equilibrium with tritium. Auxier, Tr. 1156.

The remaining 20% of organically bound hydrogen is nonexchangeable. Nonexchangeable hydrogen is primarily bound to carbon. Tritium can become

incorporated into an organic molecule as nonexchangeable hydrogen by the photosynthetic conversion by plants of carbon dioxide and HTO to form hexose, and the ingestion of plants and subsequent cellular synthesis can introduce this nonexchangeable tritium into animal and human tissues. As the organic molecules containing nonexchangeable tritium undergo biological turnover, these molecules and the tritium are degraded and eliminated as metabolic waste. Auxier, Tr. 1156.

2. Tritium Uptake in Plants and Animals

While tritiated water, like regular water, is taken up in plants and animals, the evidence shows that there is no significant concentration of tritium in either plants or animals. In transpiring plants with leaves having large surface areas, tritium levels may exceed environmental levels through preferential transpiration of nontritiated water from the surface of leaves to the atmosphere. This preferential transpiration is attributable to the difference in mass between H₂O and HTO (18 vs. 20), which reduces the vapor pressure of tritiated water to 90 to 92% of that of normal water. Under extreme conditions of low atmospheric humidity (such as in deserts), the tritium content in plants may be increased by as much as a factor of three over the specific activity of the environmental soil water. This phenomenon is insignificant in temperate climates. Auxier, Tr. 1157.

There may also be a discrimination factor under nonequilibrium conditions. When plants or animals are exposed to tritiated water, some of the tritiated water will become organically bound. Under equilibrium conditions, the percentage of tritium in organically bound pools in the tissues of the body will be equal to the percentage of tritium in freely available body water. If the amount of tritium in the environment is then reduced or eliminated, the tritium in freely available body water will be eliminated and the percentage lowered at a faster rate than tritium that is organically bound. Therefore, during the transition period, there may be a higher concentration of tritium in organically bound pools than in the body water. Eventually, however, the tritium in organically bound pools will also be eliminated, and the organically bound and freely available tritium will equalize. Auxier, Tr. 1157-58.

3. Expert Opinion About Tritium Uptake

Each of the articles cited by Dr. Huver was considered by the NCRP. NCRP Report No. 62 subsequently concluded:

No apparent enrichment or concentration effect for tritium has been found in aquatic or terrestrial food chains. In fact, dilution in larger hydrogen or organic pools is the general rule, as tritium moves to consumer populations.

* * *

There is no evidence for a significant concentration process for tritium in either plants or animals.

Auxier, Tr. 1157-58; *see also* Fabricant, Tr. 1174 (no significant transmutation effect for tritium incorporated in DNA, *citing* NCRP Report No. 63 at 101; Martin/Yaniv, Tr. 819, *citing* NCRP Report No. 89 (Staff Exh. 3: “[I]n consideration of the experimental evidence, tritium in the form of tritiated water should be considered to be twice as effective as low levels of exposure to gamma rays for genetic damage.”).

4. Individual Studies

Koranda and Martin (1969), cited by Dr. Huver at Tr. 1664-64A, rely on a study that involved the unique characteristics of the kangaroo rats at a desert weapons test site and is of little relevance. Koranda and Martin observed a ratio of organically bound tritium to body water tritium of about 1.2, but NCRP concluded that the result might simply reflect the discrimination phenomena under nonequilibrium conditions. Auxier, Tr. 1158-59. Since Koranda was one of the authors of NCRP Report No. 62 (*see* Auxier, Tr. 1409), the conclusion in that report is entitled to special weight with respect to interpreting the Koranda and Martin study.

Another Koranda and Martin paper (1973) was a study of a small plot of irrigated farmland in California. Tritiated water was applied directly to the soil, and the movement of tritium in the plants during the growing season was observed. The transfer factors observed by Koranda and Martin were smaller than those conservative (high) values used in GPUN's dose modeling (a soil-to-vegetation transfer factor [Biv] of about 0.8 for Koranda and Martin and a Biv of 4.8 for Applicants' model). Auxier, Tr. 1159-62.

Kirchmann et al. (1971) provided data on the uptake of tritium into the organically bound hydrogen pool in cows. The Kirchmann data do show higher uptake with tritium-labeled forage than with tritiated water, but the uptake from vegetation is actually consistent with the relative masses of the two components (water and milk solids). In the case of ingestion of tritium as water, from 3% to 4% of the tritium activity in the milk was found to be in the milk solids, largely in milk fat. For tritiated vegetation ingestion, from 10% to 16% of the tritium in the milk was found to be in the milk solids. Since the actual solids content of milk is on the order of 10%, the result for the vegetation ingestion is about as expected, while the result for tritium ingestion as water is lower than

could be expected from the simple ratios of the mass of the milk components. Auxier, Tr. 1163.

5. Tritium in Humans

If a human ingests tritiated water, some of the tritium can become organically bound. Tritium may enter organic compounds by exchanging with the hydrogen at any of the labile sites in the molecule. In addition, tritium may be incorporated into stable molecular configurations. Fabrikant, Tr. 1164. Hydrogen bonded to carbon, however, is usually not exchangeable except during some enzyme-mediated reactions. The only mechanism by which tritium can bond to carbon is apparently by de novo biosynthesis. Thus, tritium will generally not become incorporated into molecules as nonexchangeable hydrogen, except to a very limited extent during enzyme-mediated reactions. Fabrikant, Tr. 1165.

6. Multiple-Compartment Model Not Necessary

When warranted, a multiple-compartment model may be used to account for incorporation of the tritium into organically bound pools, and the elimination of tritium can be determined by the combined elimination rate of the three compartments (tritiated water, exchangeable organically bound tritium, and nonexchangeable organically bound tritium). However, the cells or molecules with long retention of tritium because of their biological turnover rates also are slow to incorporate tritium; and at any time only a small portion of these cells are in a biological development stage that permits them to react with the tritium in the body. Therefore, the body eliminates most of the tritium before these pools can respond to its presence. Accordingly, for practical purposes, the tritium in organically bound compartments usually may be neglected. Inclusion of these compartments complicates calculations and results in a minor change to the committed dose equivalent to body tissues. In essence, biological elimination of all but a small portion from the body of an average man occurs at a rate of 50% every 10 days. Auxier/Fabrikant, Tr. 1165-66; Cooper, Tr. 636-37.

B. Relative Biological Effectiveness (RBE) and Q

Because different types of radiation may produce different amounts of damage to exposed tissue, many studies have been undertaken to compare the extent of damage by a particular type of radiation against the degree of damage from a reference radiation (usually 200-keV x-rays). This comparison is expressed as the Relative Biological Effectiveness (RBE) of a particular type of radiation, which is an experimentally derived ratio of the dose of the reference radiation to

the dose of the investigated type of radiation that produces the same biological effect. Note, however, that an RBE for a particular type of radiation depends not only on the Linear Energy Transfer (LET) of the radiation but also on the particular biological system (e.g., different tissues) and biological end point (e.g., cell death, biochemical alteration, genetic alteration) being examined. Auxier, Tr. 1152-53; Auxier/Fabrikant, Tr. 1197-98.

Because different types of radiation can produce differing degrees of damage in exposed tissues, absorbed dose in rads is not by itself a sufficient measure for radiation protection purposes. In order to account for the overall difference in the degree of damage caused by the different types of radiation, dose is multiplied by a Quality Factor (Q), derived in part from experimental RBE values, to arrive at a dose equivalent. The Quality Factor represents the best scientific judgment based upon consideration of the studies' biological systems, effects, and experimental RBE values. Absorbed doses in rads may then be multiplied by Q to calculate dose equivalents measured in rem. Auxier, Tr. 1153.

1. Expert Opinion on Q

Based on extensive consideration of many studies and factors, including the reported RBEs, both the ICRP (ICRP Publication No. 26) and the NCRP (NCRP Report No. 91) have adopted a Q value of 1 for tritium beta radiation. Auxier, Tr. 1153; Auxier/Fabrikant, Tr. 1200; Cooper, Tr. 635. GPUN's MIDAS Code, however, conservatively uses a Q factor of 1.7. Cooper, Tr. 635-36.

2. Individual Studies

Testimony by Intervenors' witness Huver referred to several RBE studies. In only one experiment referenced by Dr. Huver (Dobson and Kwan, 1976) was an RBE in excess of 2 reported; and the RBE reported in that study was 3. Huver, Tr. 1655. In the others, reported RBEs ranged from 1 to 2. See Huver, Tr. 1658-59, 1665A.

3. Importance of Reference Radiation

Huver failed to take into account the reference radiation that was used in certain of the studies—particularly Dobson and Kwan. The reference radiation for determining the RBE should have a confirmed RBE value of 1. X-rays with an effective photon energy of 200 keV are the recommended reference radiation. Compared to x-rays, the RBE for tritium is about 1 in most experiments. However, some investigators use Co-60 as the reference radiation. The RBE for Co-60 gamma radiation relative to the standard reference x-rays has been

reported to range from 0.85 to 0.29 with decreasing dose rate. Auxier/Fabrikant, Tr. 1197.

The reference radiation used by Dobson and Kwan was Co-60 gamma radiation at very low dose rates (1 to 3.2 rads/day). NCRP Report No. 63 considered Dobson and Kwan (1976), as well as Dobson and Cooper (1974) which is also cited by Dr. Huver, and concluded that "an analysis of the dose-response curve from 3H and from gamma rays indicated that the increase in RBE of 3H in this experiment can be ascribed to a reduced effectiveness of gamma rays in the low dose region (Bond, 1978)." Fabrikant, Tr. 1294. The same is true of Furchner (1957), which Huver also referenced. Auxier/Fabrikant, Tr. 1198.

4. *High-Dose Studies*

The few other studies cited by Dr. Huver pertaining to RBEs — e.g., Worman (1954), Moskalev et al (1973) — all involved acute effects at high doses and have little relevance. See Auxier/Fabrikant, Tr. 1198; Fabrikant, Tr. 1295-96. Moreover, none of the RBEs reported in these studies would bring into doubt the Q value of 1.7 conservatively used in GPUN's MIDAS Code.

5. *Theoretical Importance of "Stopping Power"*

Both Dr. Huver and Dr. Morgan advanced the theory that tritium beta rays should have a greater Q factor because the specific ionization or stopping power of electrons increases at the end of the electrons' tracks. Huver, Tr. 1665; Morgan at 2-3. However, the converse is also true — that beta particles have less ionizing ability at the beginning of their tracks. Morgan, Tr. 1625. Further, Dr. Morgan admitted during cross-examination that one can integrate Q as a function of linear energy transfer or linear energy over the entire range of energies dissipated along the track of a beta particle to arrive at an effective quality factor, Q , and that when this calculation is done in the manner described in ICRU-40 (Staff Exh. 5), Q is approximately 2. Morgan, Tr. 1625-27. See also Auxier, Tr. 1343-44. We see no merit, therefore, to Dr. Morgan's suggestion that tritium beta particles should be likened to alpha and fast neutron particles with RBEs of 20. See Morgan at 2.

6. *Studies of Tritiated Thymidine*

Finally, Dr. Huver's testimony referred to the incorporation of tritium into DNA molecules and remarked on several studies, most of which dealt with mice exposed to tritiated thymidine. See Tr. 1654-57, 1665A-66A. Dr. Morgan's

testimony mentioned in passing that tritium in DNA can transmute to helium. Morgan at 3. Neither witness explained the significance of their observations, but we infer that they would have us find that there will be some heightened effect and greater genetic risk than with other forms of radiation.

We address this hypothesis at the outset by observing that tritiated thymidine is a DNA precursor selected in experiments specifically because it will become incorporated into DNA, and experiments do indicate that exposure of animals to tritiated thymidine results in a greater effect than exposure to similar levels of tritiated water. Fabrikant, Tr. 1174-75, 1179-80, 1188.

7. Conclusion

The AGW, however, is tritiated water, not tritiated thymidine, and the testimony of Dr. Fabrikant shows that while some tritiated water in the body could be synthesized into a DNA precursor, the relative abundance of tritium taken up into DNA would be extremely small and negligible. Fabrikant, Tr. 1175. Further, scientific studies have only been able to detect transmutation effects in certain organisms when tritium is incorporated into one of three key positions in the DNA. Fabrikant, Tr. 1173-74.

For all these reasons, the Board agrees with the NCRP that it is reasonably conservative to assume, for the purposes of practical hazards considerations, that there is no significant transmutation effect for tritium and that one may estimate hazards solely on the basis of absorbed beta dose. Fabrikant, Tr. 1174, citing NCRP Report No. 63 at 101. Similarly, we agree with the ICRP that the formation of tritiated organic compounds in the body following inhalation or ingestion of tritiated water is too small to have any effect on total dose. *Id.*, citing ICRP Publication 30, Part I, at 65-67.

We find that the testimony of Dr. Huver and Dr. Morgan is insufficient to justify a rejection of the dose modeling of Applicants and Staff. GPUN used a Q factor of 1.7 in its dose modeling; and while the Staff used a Q factor of 1 in its calculations in the PEIS, in its direct testimony the Staff doubled its previously calculated population dose to demonstrate that use of a Q factor of 2 would not affect its conclusions. Martin/Yaniv, Tr. 820. Accordingly, we find that the dose-modeling used by GPUN and the Staff is acceptable and we reject the view urged on us by Intervenors.

C. Radiation Health Effects

Although radiation doses of 9 rads or more have, to varying degrees, been empirically associated with adverse health effects, there is no empirical evidence linking lower levels of radiation to health effects. (For effects of 9+rads, see

Yaniv, Tr. 837; Morgan, Tr. 1646-48.) Indeed, linear or quadratic projections from the high-level radiation dose curves suggest that the expected effects of radiation at low doses are so sparse, in comparison to natural variations in radiation, that it may never be possible to obtain empirical evidence concerning health effects at those levels. Auxier, Tr. 1362; Yaniv, Tr. 815, 835-36. Furthermore, linear interpolations may overestimate the effects of doses of less than 20 rads by a factor of 2 to 10. Fabrikant, Tr. 1210.

We repeat that at very low doses, such as those calculated for evaporation, adverse health effects have not been observed and the probability of occurrence could be zero. Fabrikant, Tr. 1201, 1203; Auxier, Tr. 1304; Martin/Yaniv, Tr. 815.

Nevertheless, for radiation protection purposes, advisory agencies and committees such as the National Academy of Science's Committee on the Biological Effects of Ionizing Radiation ("BEIR") extrapolate from observed effects at high doses to arrive at risk estimates for low-dose exposures. Fabrikant, Tr. 1203-04; Auxier, Tr. 1304; Martin/Yaniv, Tr. 815. The only effects that could be expressed statistically at doses as low as those predicted for evaporation are cancers and genetic ill health. Yaniv, Tr. 815, 842. We address each in turn.

1. Carcinogenic Risk

Based on the risk estimates calculated by the BEIR III Committee and the recently published NIH-NCI Report (see Tr. 1211), Applicants' witness Fabrikant applied a cancer risk estimate of 1 to 2×10^{-4} per person-rem to the total population doses estimated both by the Staff (3 person-rem) and by GPUN (12 person-rem) for evaporation. By this method, Dr. Fabrikant arrived at estimates ranging from 0.0003 to 0.0024 total excess fatal cancers among the 2.2 million people living within 50 miles of TMI-2. Fabrikant, Tr. 1226.

The Staff's estimate in PEIS Supplement No. 2, based on a risk estimate of 1.35×10^{-4} per person-rem and its calculated 3 person-rem population dose, was 0.0004. Martin/Yaniv, Tr. 816, 820.

The Board adopts Dr. Fabrikant's conclusion that the upper-limit probability of even one fatal cancer among the 2.2 million people living within 50 miles of the plant as the result of the evaporation of AGW would be less than 1 chance in 400. In addition, we find that the upper-limit probability of a fatal cancer for the maximally exposed individual is less than 1 chance in 5 million using the NRC's calculated dose, and less than 1 chance in 2.5 million using GPUN's calculated dose.

Dr. Fabrikant added that while an excess value can be estimated, in fact no excess cancer will result from tritium and the other radionuclides released during the evaporation process. Fabrikant, Tr. 1226. The Staff's witnesses also perceived very little risk of any cancer incidence and would expect no health

effects. Martin/Yaniv, Tr. 815, 816, 844-45. The Board also does not expect any health effects.

a. Testimony of Dr. Morgan

Testimony by Intervenors' witness Morgan asserted that recent studies of the Hiroshima and Nagasaki survivors show cancer risk is greater by a factor of 3 than previously published values. Morgan at 2. (This issue was accepted as a litigable issue of material fact in the Board's ruling on Contention 3 as well as being included in its discussion of issues pertaining to Contention 5d. LBP-88-23, *supra*, 28 NRC at 200, 214.) In a table on page 2 of his testimony, he indicated that the absolute-model risk value from "Recent Japan Studies — 1988" was 4 to 8×10^{-4} and the relative-model risk value was 1.6 to 3.2×10^{-3} . (The absolute-risk model assumes that the dose-related excess risk per year observed during the period of epidemiologic study continues throughout the lifetime of the studied population. The relative-risk model assumes that from the end of the period of study through to the end of the lifetime of the studied population this risk increases or decreases as the normal age-specific risk varies. Morgan, Tr. 1568.)

b. Credibility of Opposing Witnesses

We reject Dr. Morgan's testimony and accept the testimony of Applicants and Staff. Our conclusion is based in part on our assessment of the credibility of these witnesses. The qualifications of Applicants' witnesses and the quality of their oral responses, for example, were superb. Dr. Fabrikant is a radiologist, a member of the NCRP, a member of the ICRP, and the only scientist to have served on all five of the BEIR committees. While serving on the BEIR III Committee, he was Chairman of the Ad Hoc Committee for Estimating the Total Cancer Risk of Low-Dose, Low-LET, Whole-Body Radiation. Fabrikant, Tr. 1143-45, 1148.

Dr. Auxier is a Certified Health Physicist, a member of the NCRP, and until recently was a consultant to the Radiation Effects Research Foundation ("RERF"), which is the organization reassessing the dosimetry from Nagasaki and Hiroshima. Auxier, Tr. 1139-41. Further, Applicants' and the Staff's witnesses were fully conversant with the subject matter of their testimony and the studies and data underlying it.

c. Lack of Credibility of Dr. Morgan

Dr. Morgan is a past president of the NCRP but presented no statement of qualifications with his testimony. His testimony generally lacks credibility because he cited a document that purported to be a British public document but was not; and he continued to present this visibly incredible document, without remorse, even after its lack of authenticity was alleged by the Applicants. He also was unable to show the source of some of the most significant portions of the testimony he presented to us.

Dr. Morgan testified that he does not hold himself out as an expert in epidemiology or biostatistics, and that he has not been a member of any of the BEIR Committees or an employee of RERF. Tr. 1564-65. Dr. Morgan also testified that he does not have access to raw epidemiologic data on radiation-associated cancer and has performed no computer analyses of such data to arrive at risk values. Tr. 1566. And Dr. Morgan was repeatedly unable to explain or support assertions in his written testimony.

We note that Dr. Morgan was an Intervenor witness who appeared without remuneration. His desire to serve the public interest, as he sees it, is admirable. However, he has been careless in the way he prepared this testimony and in having available information with which to substantiate his views.

We find that Dr. Morgan submitted a document to this Licensing Board as Appendix C to his prefiled testimony in order to show that the United Kingdom had reduced occupational radiation exposure limits in light of the new Japanese dosimetry studies. Dr. Morgan's characterization of the United Kingdom's actions was inaccurate. *See* Fabrikant, Tr. 1299. The submitted "document" consisted of four pages. The first two pages consisted of a cover page of a publication of the British National Radiological Protection Board (NRPB) numbered GS9 and entitled, "Interim Guidance on the Implications of Recent Revisions of Risk Estimates and the ICRP 1987 Como Statement," and an abstract. The last two pages were a "Summary of Main Conclusions and Recommendations."

Applicants moved to strike this Appendix asserting that the last two pages were not part of NRPB-GS9. Applicants provided a complete copy of NRPB-GS9 (a ten-page document), and Dr. Fabrikant testified that he believed that the last two pages of Appendix C to Dr. Morgan's prefiled testimony were part of a Friends of the Earth petition previously submitted to the ICRP. Fabrikant, Tr. 1299.

At the hearing, Dr. Morgan testified that the document he provided as Appendix C to his prefiled testimony had come to him that way through the mail. Tr. 1527-28, 1531. He testified that he did not know who provided the document because it came in the mail without any identification. Tr. 1528. Upon further cross-examination, however, Dr. Morgan produced what he had

used to prepare Appendix C. Dr. Morgan in fact used two separate documents: the full text in pamphlet form of NRPB-GS9 and a separate two-sided page in different type entitled "Summary of Main Conclusions and Recommendations." This latter page was paper-clipped to NRPB-GS9, but Dr. Morgan admitted he had supplied the paper clip. Tr. 1535.

Thus, we find that Dr. Morgan's prior testimony that he had simply provided Appendix C to his prefiled testimony in the same manner he had received it was false. Further, Dr. Morgan showed no concern for the authenticity and accuracy of the documents he had provided with his testimony. *See* Tr. 1528-29, 1553-54; *see also* Tr. 1531, 1552-54.

We conclude that Dr. Morgan was careless about the accuracy of his testimony.

d. Dr. Morgan's Lack of Documentation

Dr. Morgan's testimony also lacks credibility because of his inability to produce documentation or supporting explanations for his statements on risk values.

Returning to Dr. Morgan's testimony on comparative risk values, the recent Japanese studies to which Dr. Morgan is presumably referring are the work of the RERF (Radiation Effects Research Foundation, the successor to the Atomic Bomb Casualty Commission). Since 1981, the RERF has been reevaluating the dosimetry used to estimate the doses of the Nagasaki and Hiroshima survivors. The new system that is being developed is designated DS86 (for Dosimetry System of 1986).

Previous dose estimates were based on the T65D (Tentative 1965 Dosimetry) system. Auxier/Fabrikant, Tr. 1213-14; Martin/Yaniv, Tr. 817.

The first indication of the effect this reevaluation might have on risk estimates was the publication of a paper, RERF TR 9-87, by two members of the RERF, Preston and Pierce, in 1987. Martin/Yaniv, Tr. 817. Dr. Morgan's assertion that the Japanese studies will increase risk estimates by a factor of 3 is based on the ICRP's review of this paper at its 1987 annual meeting in Como, Italy. *See* Tr. 1559. Dr. Morgan, however, appears to be misinterpreting the ICRP's statement.

In the Statement by the International Commission on Radiological Protection (issued after the 1987 Como meeting), the ICRP observed that "under the new 'DS86 dosimetry' this increase in risk is reported as being by a factor of 1.4 compared with the risks that would have been estimated by the former 'T65D' dosimetry." Fabrikant, Tr. 1298; *see* Appl. Exh. 4, Tr. 1688A. The ICRP further observed, "[t]his inclusion [of a longer followup period of the population sample] and other factors cited in the paper raise the risk estimate for the exposed

population by a total factor of the order of 2." Morgan, Tr. 1559; Appl. Exh. 4 at 1688A.

Dr. Morgan interprets this statement to reflect a "further" increase by 2, or a total increase of 2.8 (2×1.4). Morgan, Tr. 1559. We find this interpretation inconsistent with the plain meaning of the words and we are not surprised, therefore, that others such as the British National Radiological Protection Board interpret the ICRP's statement as indicative of a possible increase by a total factor of 2. Morgan, Tr. 1562.

To provide a setting in which to consider Dr. Morgan's testimony, we cite Dr. Fabrikant's testimony that at the time of this meeting, the ICRP considered the information to be too sparse and preliminary to warrant any consideration for an immediate change in dose limits. Fabrikant, Tr. 1298. Dr. Fabrikant explained that Preston and Pierce was a preliminary presentation of the effects of the DS86 dosimetry on cancer risk estimates in the Japanese atomic bomb survivors, and the discussion of risk estimates in that paper was based on a number of broad assumptions to permit the authors to discuss some of the possible implications of the emerging new data. They were not based on the actual individual radiation dose revisions in Hiroshima and Nagasaki, nor on the new data of cancer mortality now available. Accordingly, Preston and Pierce's paper does not contain precisely quantified risk estimates upon which radiation protection guidance can be based. Fabrikant, Tr. 1296-97, 1358.

Applicants questioned Dr. Morgan to ascertain precisely how he derived the values listed on page 2 of his testimony and attributed to "Recent Japan Studies." Dr. Morgan replied that he had copied the numbers off of some table, but he did not have the table with him, and could not recollect the source. Tr. 1571-72, 1574, 1576.

Applicants also asked Dr. Morgan for identification of the source of the values attributed to "NRC-1981" on page 2 of Dr. Morgan's testimony. Again, Dr. Morgan could not explain where these numbers came from. It appears, however, that the numbers came from the 1987 Supplement No. 2 to the PEIS, which uses an absolute model cancer risk estimate of 135 per million person-rem (1.35×10^{-4} /person-rem) and states "[u]se of the relative risk model would produce risk values up to four times greater than used in this report." Staff Exh. 1 at 5.4 (emphasis added); Tr. 1570-71. The NRC regards this range of between zero and four as reflecting the limits of uncertainty in the risk values. Martin/Yaniv, Tr. 816, *citing* Staff Exh. 1 at 5.4 ("[t]he Staff regards the use of the 'relative risk' model values as a reasonable upper limit of the range of uncertainty").

Dr. Morgan's inability to explain the derivation of the risk estimates in his testimony renders his testimony of no probative value. *See Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-555, 10 NRC 23, 26 (1979) (expert witness may not state ultimate conclusions and

then profess an inability to provide the foundation for them); *id.* at 27 (where the conclusion rests upon an analysis, witness must make available sufficient information pertaining to the details of the analysis to permit the correctness of the conclusion to be evaluated).

We further note that Dr. Morgan's values are inconsistent with Preston and Pierce (1988) (Appl. Exh. 3), which Dr. Morgan admitted was one of the sources for his testimony. *See* Morgan, Tr. 1588-89. Dr. Morgan admitted during cross-examination that using UNSCEAR's method of extrapolating to low doses and relative model methodology, Preston and Pierce arrived at a nonleukemia risk estimate of 3.7 to 7.3×10^{-4} per person-rem. Morgan, Tr. 1620, 1622-24. Again, using UNSCEAR's method of extrapolating to low doses, Preston and Pierce arrived at a leukemia risk estimate of 0.4 to 0.8×10^{-4} per person-rem. Morgan, Tr. 1621.

Thus, the total lifetime risk for all cancers calculated by Preston and Pierce using the relative model method and UNSCEAR's method of extrapolating to low doses is approximately 4 to 8×10^{-4} per person-rem. Tr. 1621. Dr. Morgan lists this range of relative risk as the absolute model risk. We note that the range of values attributed to "Recent Japan Studies — 1988" and listed by Dr. Morgan under the heading "Relative Model" is exactly four times the range of values he has listed under the "Absolute Model" heading. We surmise that Dr. Morgan has simply applied the Staff's statement in the PEIS that the relative model produces values of up to four times greater than the absolute model. We further observe that if Dr. Morgan had listed the 4 to 8×10^{-4} per person-rem estimate under the "Relative Model" heading, as it appears he should, and had applied the Staff's statement the other way around, he would have arrived at absolute model risk estimates four times smaller — or about 1 to 2×10^{-4} per person-rem, which is exactly the range of values used by Applicants in its evaluation of doses calculated for the evaporation of AGW.

During cross-examination, Dr. Morgan expressed preference for the relative model risk values rather than the absolute. (The relative model does not apply to leukemia, and hence leukemia risk is expressed as an absolute average excess risk. Morgan, Tr. 1624.) Dr. Morgan, however, admitted testifying in a previous proceeding in August 1982 that the absolute risk model was preferable. Morgan, Tr. 1568. He attributed his change of position to a discussion he had with Dr. Stewart, Dr. Radford, and others on the day before his testimony in this proceeding. Morgan, Tr. 1567-69. Later, he attempted to explain his sudden change of position by asserting that in reality he had gradually changed his mind after publication of the Mancuso, Stewart, and Kneale study on the Hanford workers, Dr. Modan's paper on *Tinea capitis* (ringworm), and the [1981] GAO report on cancer risk (previously cited in Appendix A to Dr. Morgan's prefiled testimony). Tr. 1632-33.

The Mancuso, Stewart, and Kneale and the Modan publications, however, were available prior to 1980 (Tr. 1639), well before Dr. Morgan's August 1982 testimony. Further, Dr. Morgan's discussion of these studies relates entirely to his preference for a supralinear dose response curve and not to the use of the relative versus absolute risk model. We are left with the impression that Dr. Morgan chose to advocate the relative risk model for the first time in this proceeding. We need not speculate on when or how he came to this position.

We also find Dr. Morgan's subscription to a supralinear theory to be highly questionable. The Mancuso, Stewart, and Kneale publication on the Hanford workers and the Modan publication on the *Tinea capitis* patients are both studies with significant experimental weaknesses. The data from the Hanford workers are flawed by the fact that the Hanford workers came from the chemical industry during World War II. Fabrikant, Tr. 1388-89. The types of excess cancer found in that population are those associated with the chemical industry. Conversely, no excess leukemia, which is almost a signature of radiation-associated cancer, was observed. *Id.*

The *Tinea capitis* studies are complicated by somewhat unreliable dosimetry (which was, however, more likely to be accurate than the Hiroshima and Nagasaki data) for the *Tinea capitis* patients treated by irradiation of the scalp and — what we consider more important — by delivery of dose not only to the thyroid of these patients but to the pituitary gland as well. Fabrikant, Tr. 1385-86; Yaniv, Tr. 837-38.

Dr. Morgan's reliance on a GAO report is equally infirm. Dr. Morgan claims that the GAO found that the best fit of the curve for ankylosing spondylitis was produced by a supralinear model. Tr. 1634. Dr. Morgan admitted on cross-examination that the GAO had examined several sets of data, not just ankylosing spondylitis, and found that each set of data could be fit acceptably by more than one model. Tr. 1639-40. When asked specifically whether the GAO report found that the linear and quadratic models also fit the ankylosing spondylitis data well, Dr. Morgan responded "not at low doses." Tr. 1642. When specifically referred to a paragraph of the GAO report and asked the same question, Dr. Morgan again replied "No." Tr. 1643. The paragraph was then read aloud by the Licensing Board, which considered the meaning to be obvious:

In summary, the data for ankylosing spondylitis patients are fairly well fitted by models that grow as a square root, linearly, and quadratically at low doses. Rather than end the controversy over the hazards of low-level x-rays, they suggest why the controversy exists. Note that the above analysis does not address the issue of the total cancer risk from x-rays, only the chance of getting leukemia.

Tr. 1643.

Dr. Morgan then indicated he had replied no to Applicants' questions because in his mind fitting "fairly well" means "it doesn't fit too good." Tr. 1644. We find Dr. Morgan's responses inconsistent and we note that the paragraph quoted above refers not only to the linear and quadratic models but also to the square-root model which Dr. Morgan claims the GAO was advocating. We find Dr. Morgan's testimony on this point an example of intellectual carelessness.

e. Opposing Testimony

In contrast to Dr. Morgan's testimony, Dr. Fabrikant addressed the various dose-response curves for low-level, low-LET radiation doses examined by BEIR and other scientific organizations. Fabrikant, Tr. 1204-08. The 1980 BEIR III Committee found that the linear-quadratic relationship was the preferred model for estimating response based on the existing experimental evidence and microdosimetric theory. Fabrikant, Tr. 1206-07. Both the NCRP and ICRP hold the same view. In contrast, the supralinear model is not used by any recognized national or international radiological protection organization for risk estimation for low-dose, low-LET radiation exposure. Fabrikant, Tr. 1205. The Board rejects the supralinear model.

The Staff's witness, Dr. Yaniv, and Applicants' witnesses, Dr. Auxier and Dr. Fabrikant, further testified that the new DS86 dosimetry will not raise risks to any great extent. Yaniv, Tr. 817-18, 870; Auxier/Fabrikant, Tr. 1215; Fabrikant, Tr. 1297-98. These witnesses discussed the implications of a subsequent RERF publication. RERF TR 12-87 authored by Shimizu et al., which contains more precisely quantified data. Yaniv, Tr. 870; Fabrikant, Tr. 1297-98. Even as Dr. Morgan admitted, this report supports an increase in risk estimates of about 1.4 in terms of shielded kerma, but finds that using estimated organ-absorbed doses, the risk coefficients derived from the two dosimetries are very similar. Morgan, Tr. 1624-25; Auxier, Tr. 1353-55, 1391. (Kerma dose is the energy imparted by the radiation to air and is not directly relevant to risk coefficients. It is the organ-absorbed doses that are relevant. Yaniv, Tr. 866-67, 880-82.)

The more precisely quantified data in RERF TR 12-87 and other current epidemiological data are currently being evaluated by UNSCEAR and the present BEIR V Committee. UNSCEAR has derived a lifetime risk estimate for high-dose, high-dose-rate radiation, and if it uses its previous method for extrapolating to low doses, it will arrive at a lifetime cancer risk estimate of 2.25×10^{-4} per person-rem using the absolute model and 3.5×10^{-4} per person-rem using the relative model. The BEIR V reassessment is due to be published at the end of the year, but it too is concluding that the new Japanese dosimetry increases risk estimates only slightly and much less than a factor of 2. Fabrikant, Tr. 1297-98.

Both the Staff and Applicants added further perspective on the ramifications of the DS86 dosimetry. Dr. Fabrikant testified that even if the cancer risks

were revised upward by a factor of 2, and there is no evidence for this at this time, it would still not result in any additional ill health from evaporation of the AGW, because the doses would still be too low. Fabrikant, Tr. 1215. The Staff actually applied an increased risk estimate of 4×10^{-4} per person-rem in its testimony (an increase by a factor of 3 over that used in the PEIS), doubled its calculated population dose to reflect use of a Q factor of 2 (increasing the calculated population dose from 3 to 6 person-rem), and still only arrived at a 0.0024 population risk of cancer. Martin/Yaniv, Tr. 816. Even with this adjustment, the Staff's cancer risk estimate would be no greater than the upper bound that Dr. Fabrikant calculated using Applicants' very conservative 12-person-rem population dose. Compare Fabrikant, Tr. 1226.

2. Conclusion

In conclusion, the Board finds that Applicants and the Staff have adequately evaluated the radiation-associated cancer risk. We further find on the basis of the record before us that the new DS86 dosimetry is unlikely to have any significant effect on Applicants' and the Staff's independent evaluations.

D. Genetic Risk

During summary disposition, based on statements by Applicants and the Staff that appeared inconsistent, we questioned whether the cancer risk was greater than the genetic risk. LBP-88-23, *supra*, 28 NRC at 210, 216. Both Applicants and the Staff presented testimony on genetic risk. Intervenors, however, presented no testimony and conducted no cross-examination on this question. Accordingly, we find Applicants' and the Staff's testimony to be undisputed.

The Staff explained that the apparent discrepancy at summary disposition between Applicants and the Staff's estimates of genetic detriment was the result of the Staff's inclusion of occupational doses in their risk estimates. Munson, Tr. 753-55; Martin/Yaniv, Tr. 816. The risk of genetic disorders in the offspring of irradiated individuals is 0.3×10^{-4} genetic disorders per person-rem in the first generation. The risk in all future generations (the equilibrium value) is about 2×10^{-4} genetic disorders per person-rem. *Id.* These estimates are taken from NUREG/CR-4214, Health Effects Model for Nuclear Power Plant Accident Consequences (*see id.*) based on the BEIR III report (*see* Staff Exh. 2; Testimony of Dr. Auxier and Dr. Fabrikant, Tr. 1220).

The Staff did not multiply their calculated offsite population doses by these risk estimates in their testimony to arrive at a prediction of effect, but this calculation is simple. Three person-rem (the Staff's calculated total body dose

to the offsite population) multiplied by 2×10^{-4} total genetic disorder per person-rem equals 0.0006 predicted genetic disorder, or less than 1 chance in 1600 of a single genetic disorder occurring in all future generations as a consequence of the evaporation of the AGW. Applying this risk estimate to Applicants' population dose of 12 person-rem results in a projection of 0.0024 (2×10^{-4} total disorder per person-rem multiplied by 12 person-rem) genetic disorder, or less than 1 chance in 400 of a single genetic disorder. Dr. Fabrikant took this process one step further and calculated the possibility of a single genetic disorder, using the maximum equilibrium value (1100 cases per million live births per rem of parental exposure) reported in the BEIR III Report (rather than the geometric mean used in NUREG/CR-4214 as reflected in Staff Exh. 2). Even then, there is less than 1 chance in 200 of a single genetic disorder during all future existence. Fabrikant, Tr. 1229.

The Staff also discussed NCRP Report No. 89, which suggested that using a Q factor of 2 for tritium might be appropriate when considering genetic damage. Martin/Yaniv, Tr. 819. This has little bearing on Applicants' dose calculations, since Applicants' MIDAS Code uses a Q factor of 1.7, but the Staff doubled its previously calculated population dose (which had been calculated using the normally recommended Q factor of 1). Using a Q factor of 2 increases the Staff's calculated population dose to 6 person-rem and the total number of projected genetic disorders to 0.0012 (i.e., less than 1 chance in 800 of a single genetic disorder occurring in all future generations as a consequence of the evaporation of the AGW). In sum, no matter how one manipulates these numbers, the doses are simply too low to predict or expect any genetic detriment. Moreover, the reassessment of the Nagasaki and Hiroshima survivors suggests that the current genetic risk estimates are perhaps four times too high. Fabrikant, Tr. 1218-19.

E. Conclusion on Health Effects

Based on the record described above, we find that, contrary to Intervenor's Contention 5d, Applicants and the Staff have properly evaluated the risks of radiation-associated health effects. Applying the generally accepted risk estimates used by GPUN and the Staff to the population doses calculated for the evaporation proposal leads to the conclusion that, using estimates that are intentionally high and conservative, there is less than 1 chance in 800 of a genetic disorder and less than 1 chance in 400 of one cancer death from implementation of the evaporation proposal.

V. COSTS — INCLUDING BOARD CONCLUSIONS ABOUT TOTAL RADIATION COSTS

In this section of our opinion, we review the cost estimates provided to us, then we review the radiation estimates provided to us, and we make a preliminary balance of both kinds of estimates for the two alternatives.

A. Dollar Cost Estimates

The most accurate testimony on dollar costs was provided by Applicants, who made detailed cost estimates that stood up under cross-examination. Intervenor presented no estimates on cost and have not challenged Applicants' estimate of cost. The Staff's cost estimate, while adequate and similar to Applicants' estimate, relied on other environmental impact statements to estimate the cost of new tankage, and not on market prices, and therefore is not as acceptable as Applicants' estimate. Munson, Tr. 759-61.

Based on our acceptance of Applicants' dollar-cost findings, we find that further preprocessing of 31% of the water volume by demineralization prior to evaporation is estimated to cost \$2.1 million. This estimate is based on actual 1987 processing costs and includes all handling, loading, and processing operation costs, including the cost of the resin and liners, transportation to burial, and disposal at Hanford, Washington. Based upon vendor price quotes, the evaporation and vaporization of 2.3 million gallons of processed water and the packaging of the resulting evaporator bottoms is estimated to cost an additional \$1.7 million. The transportation and disposal of the packaged evaporator bottoms will cost an estimated \$293,700. The total cost for the evaporation proposal is estimated to be approximately \$4.1 million. Buchanan, Tr. 460; Munson, Tr. 747.

Intervenor did not estimate the cost of the no-action alternative. Hence, we accept Applicants' estimate and find that the cost of Intervenor's alternative will depend upon the assumptions made for the design criteria used for the storage facilities. The construction of two additional 500,000-gallon tanks to be co-located with and designed to the same standards as the existing PWSTs is estimated to cost \$1.3 million, excluding piping, monitoring, and pumps. Buchanan, Tr. 462; *see also* Munson, Tr. 747.

The cost of Intervenor's alternative would also include the \$2.1 million or more for AGW preprocessing, and the costs of ultimate disposal. Making the reasonable assumption that AGW disposal and preprocessing costs of the proposal and the alternative cancel each other out (involving processing to Base Case levels), one is left with the additional \$1.3 million cost for the storage portion of Intervenor's alternative (assuming that they do not need to meet the

standards of Generic Letter 81-38),⁹ whose scope and applicability were not argued before us).

Since the Board finds that Pennsylvania is likely to have a disposal site, saving the long travel distance to Washington state, we use our judgment to reduce the transportation costs for the no-action alternative by \$220,000 of the \$293,700 transportation estimate made by Applicants. Munson, Tr. 746, 748-49 (assumption of Pennsylvania repository); Buchanan, Tr. 460; Munson, Tr. 747. Hence, we find the net incremental cost of the no-action alternative, primarily for buying tankage, to be about \$1 million.

We also are faced with Intervenor's argument that there may be technological improvement during the next 30 years, bringing the cost of ultimate disposal — through evaporation or other alternatives — down. Against that, we weigh Staff's argument that the cost of disposal of low-level radioactive waste has been increasing in recent years, indicating a possible long-term trend. Munson, Tr. 748. On balance, the Board's judgment is that it is conservative to assume a 10% saving in the cost of evaporation (\$1.7 million), or \$170,000 (treated as current dollar savings). Also, we will conservatively assume that there is no long term trend in waste disposal costs because the data to which Ms. Munson refers are too short term to indicate what will happen over 30 years.

Finally, after reducing the \$1 million net incremental cost we previously calculated by \$170,000 assumed technological savings, we find that the no-action alternative will cost *at least* \$830,000 more than Applicants' proposal.

B. Total Radiation Consequences of the Two Proposals

After reviewing the testimony and bringing it together in one place, we have constructed the following table, summarizing the radiation consequences of Applicants' proposal:

⁹ At one point, Intervenor suggested the application of Generic Letter 81-38, setting standards for temporary waste storage, to this case. If we adopted that standard, we would find that the cost of the no-action alternative would be \$9.1 million, far in excess of the amount we assume for the purposes of our opinion. Buchanan, Tr. 462-63.

Total Radiation Consequences of Evaporation Proposal

| Stage of Process | Population Affected | Dose in Person-Rem (total body=TB) | | Evidentiary Source |
|------------------------------|---------------------|--|------|---|
| Evaporation and vaporization | General public | 2.4 | bone | Baker, Tr. 638 |
| | | 12 | TB | |
| | Occupational | 23 | TB | Tarpinian, Tr. 443-44 |
| Shipping bottoms | General public | 10.4 | TB | Weaver, Tr. 475-76 |
| | Drivers | 1 | TB | Weaver, Tr. 475-76 |
| Shipping liners | General public | 4.8 | TB | Weaver, Tr. 476 |
| | Drivers | 1 | TB | Weaver, Tr. 476 |
| Transit accidents | General public | 0.5 | TB | Weaver, Tr. 476 [Board conservatism] |
| TOTAL | ALL | 2.4 | bone | |
| | | 52.7 | TB | |

To simplify, let us say that the person-rem consequences of Applicants' proposal is 55.1 person-rem. We assume: (1) that the no-action alternative will have *none* of these consequences resulting from shipping, and (2) that the 30-year storage period will reduce the radioactivity of the bottoms by one-half, thus halving the consequences from evaporation and vaporization at the end of that time. Tarpinian, Tr. 444. On net, we therefore find that the no-action alternative would save at most 36.4 person-rem.

For the purpose of this calculation, we do not consider accident scenarios because they favor Applicants' proposal. The most important accident risk is total breach of a 500,000-gallon storage container, which must maintain integrity for 30 years. Since Applicants' proposal only requires a maximum of 2 years of storage in similar containers, it is clear that the accident risk is greater for the no-action alternative. Weaver, Tr. 479-80; Munson, Tr. 744. Indeed, testimony indicated a 3.75% risk of release for 30 years from a 500,000-gallon tank (Weaver, Tr. 477), with dose consequences in the first year of storage of 30.7 person-rem (bone) and 0.9 person-rem (total body). However, we shall (conservatively) ignore these possible releases during storage in comparing proposals.

The question is: How are we to weigh the 36.4 person-rem savings through the no-action alternative? Our answer is that the appropriate legal standard is the one found in Part 50, Appendix I, for interpreting the Commission's ALARA principle.

Appendix I to 10 C.F.R. Part 50 is entitled, "Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As Low As Is Reasonably Achievable' for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents." The relevant portion is § II.D, which states (in relevant part):

[T]he Applicants shall include in the radwaste system all items of reasonably demonstrated technology that, when added to the system sequentially and in order of diminishing cost-benefit return, can for a favorable cost-benefit ratio effect reductions in dose to the population reasonably expected to be within 50 miles of the reactor. As an interim measure [still in effect] and until establishment and adoption of better values (or other appropriate criteria) the values \$1000 per total body man-rem and \$1000 per man-thyroid rem (or such lesser values as may be demonstrated to be suitable in a particular case) shall be used in this cost-benefit analysis.

This standard is not, of course, directly applicable; but it provides a useful standard by analogy. Designers of new plants are required to meet this criterion. Here, we have a volume of radioactive material to dispose of. The same cost-benefit concerns seem to be applicable.

We conclude, therefore, that Applicants would have to spend as much as \$36,400 for hardware and technology needed to save 36.4 person-rem of exposure. However, the net incremental cost to Applicants of the no-action alternative would be over \$800,000. Consequently, we conclude that Applicants need not incur this extra expense and that the evaporation proposal is therefore appropriate and should be approved.

We note that there have been a variety of subissues argued fully and carefully, on our record, concerning the accuracy with which tritium and other radioactive content can be measured. In our review of those materials, we became convinced that accurate measurement is being conducted by Applicants, with Staff oversight. We are satisfied that, during the life of the project, measurement errors would at most produce a 10% increase in radiation release. Even if we thought that the release would be increased by 100%, the standards of 10 C.F.R. Part 50, Appendix I, § II.D, would be met.

We conclude that, under the operable legal standards, the Applicants' proposal is itself obviously superior. Necessarily, the no-action proposal could not be obviously superior.

VI. UNCERTAINTIES

There are a variety of miscellaneous issues we have yet to address. These include disagreements about the tritium content of the AGW and about the accuracy with which Applicants measure the radioactive content of the AGW.

In writing about these subjects, our attention was called to the question of the relevance of these subjects to the litigation before us. To our mind, the only relevance to the litigation is if these allegations about uncertainties have an impact on our basic conclusions about the alternative to adopt concerning the disposal of the AGW. To be relevant, therefore, these subjects would have to bear on the risk from the evaporation of the water or on the relative risk in person-rem from the two alternatives.

We note that Intervenor's have not made the connection between these concerns and the ultimate question before us. Nevertheless, we have decided to sift the evidence ourselves with this question before us. Again, we are indebted to Applicants for their care in addressing these issues in their findings, and we have decided to use their findings as the basis for this portion of our opinion.

A. Tritium Content of AGW

Since 1981, the total inventory of AGW has increased to a volume of approximately 2.2 million gallons due to continued additions from support systems and condensation from the reactor building air coolers during the summer months. Care has been exercised to minimize the additions of new water and to ensure that the commingling of noncontaminated water with the AGW is restricted. Even with care, the final volume of water will increase to a limit not expected to exceed 2.3 million gallons. Buchanan, Tr. 456. Approximately 31% of the 2.3-million-gallon inventory will be considered for further preprocessing in order to meet the Base Case levels of Table 2.2 in PEIS Supplement No. 2. Buchanan, Tr. 460.

Applicants estimate that the AGW contains no more than 1020 curies of tritium, which represents an average concentration of $1.2E^{-1}$ microcuries per milliliter ($\mu\text{Ci/ml}$) in the projected 2.3 million gallons of AGW. Harner, Tr. 166. The Staff, in PEIS Supplement No. 2, utilized a tritium source term of 1020 curies. Thonus, Tr. 349; Munson, Tr. 741.

Applicants' estimate was derived during the preparation of GPUN's July 1986 proposal. The most recent sample data from 25 bodies of water were used and the concentration of each body of water were then multiplied by its corresponding tank volume to yield the amount of tritium present in each tank. The total inventories of tritium in each tank were then added to obtain the total curies of tritium in the AGW. The result was a total of 1180 curies of tritium in the AGW. Correcting the data from July 1986 to October 1988 for radioactive decay, a conservative total tritium curie content of 1020 was estimated. This estimate is conservative because reductions for normal evaporative losses of 12.5 curies per calendar quarter were not included. Harner, Tr. 338.

In addition to this 1986 sampling effort, GPUN has since analyzed about 5000 routine samples of the AGW, including measurements of tritium; these measure-

ments confirm the 1986 data. In conjunction with the routine samples analyzed by the GPUN laboratory, periodic independent Quality Control analyses are also performed. The QC techniques include round-robin, blind, duplicate, replicate, spiked, and split samples. In this way, the accuracy and precision of the entire analytical process is verified frequently. In addition, a sample was analyzed independently by GPUN's chemistry department and by the U.S. Department of Energy's Radiological and Environmental Sciences Laboratory ("RESL"), Idaho Falls, Idaho, on behalf of the NRC. This analysis, as discussed further below, is consistent with the GPUN data. Harner, Tr. 167-68.

1. Empirical Evidence Challenged with Models

The Intervenor asserted in Material Statement of Fact 4(xii), under Contention 3, that the alleged changing source term of the AGW is particularly relevant to tritium. As an example, the Joint Intervenor stated that Applicants relied on data from the PEIS (1981) and EGG-PBS-6798 to get 3161 curies and 4231 curies, respectively, while TPO/TMI-043 Rev. 6 (1986) shows that the cover inventory of tritium at the time of the accident was 8794 curies.

All of the estimates on which Intervenor rely are derived from model predictions. Based on these estimates, the Intervenor challenged Applicants' ability to accurately determine the tritium source term. See LBP-88-23, *supra*, 28 NRC at 199.

2. Empirical Evidence More Reliable

Witnesses for each of the parties, however, urged the Board to rely upon sampling data, rather than model predictions, to assess the content of the AGW.

Licensee witness Hofstetter explained that there are many computational methods available in the literature which attempt to model what might occur at the time of a reactor accident having failed fuel exposed to its cooling medium or the atmosphere. Each uses a set of assumptions to define the accident. Assumptions are made defining core conditions, plant configuration, responses to the event, and duration. As would be expected, each estimate is different due to the assumptions made and computational method utilized. Hofstetter, Tr. 168.

Two of the early estimates of the tritium source term at the time of the TMI-2 accident are 8794 curies (TPO/TMI-043, Rev. 6, Data Report — Radioactive Waste Management Summary Review) and 4231 curies (EGG-PBS-6798, TMI-2 Isotopic Inventory Calculations). Both of these estimates are based on postulated conditions. Hofstetter, Tr. 169.

During cross-examination, Dr. Hofstetter specifically addressed ORIGEN-2's calculation of a tritium inventory of 8794 curies at the time of TMI-2 accident. Dr. Hofstetter noted that the accuracy of ORIGEN-2, like any code, depends upon the accuracy of the input parameters used to run the code. The applicable codes for ORIGEN-2 include radiation history, length of isotopic enrichments, various core components, length of power operation in the reactor, and mode of power operation.

Dr. Hofstetter observed that the number of input parameters is particularly important when estimating the tritium inventory because tritium is not produced in high yield. Thus, the inherent errors in the model are magnified when one is attempting to observe a relatively infrequent occurrence such as production of tritium. Hofstetter, Tr. 275.

Similarly, Staff witness Thonus expressed little confidence in the ability of a computer code to accurately estimate the tritium content of the AGW. Mr. Thonus testified that he believed the estimate of 8794 curies resulted from a gross overestimate of the amount of lithium contained in the uranium dioxide fuel. Thonus, Tr. 403. Mr. Thonus noted that the authors of the ORIGEN-2 analysis assumed the maximum allowable lithium as an impurity in the manufacturing process, when there was no evidence to support such an assumption. *Id.* Therefore, Mr. Thonus would not endorse the estimate of 8794 curies of tritium. Thonus, Tr. 402.

Finally, even Joint Intervenor's witness Morgan testified that he always gives more credence to properly conducted sampling than to theoretical estimates. Morgan at 2. Consequently, it is clear that for a radionuclide like tritium, Applicants' actual measurements should be relied upon rather than model predictions. Hofstetter, Tr. 277; Thonus, Tr. 349.

Dr. Hofstetter also addressed the tritium source term of 2910 curies (NUREG-0683, PEIS, 1981). This estimate was based on limited sample data and source volumes in September 1980. By contrast, the GPUN tritium source term of approximately 1180 curies, reported in July 1986, was based on much more sample data and source volumes from early 1986. Hofstetter, Tr. 169.

3. Use of Upper-Bound Tritium Source Term

The estimated upper-bound tritium source term of 1020 curies, presented by GPUN in July 1986, and by the Staff in Table 2.2, PEIS Supplement No. 2, is a projection to October 1, 1988, taking into account only radioactive decay. Since tritium is not produced in the fuel after the fissioning process has stopped, there has been no tritium added since March 1979. The amount of tritium present continues to decrease through radioactive decay, while some also is released to the atmosphere through normal evaporation. Therefore, the tritium source term estimate of 1020 curies, which is not corrected for evaporative losses, is

an upper-bound value based on actual laboratory analytical results and storage location volumes of virtually all of the AGW at TMI-2. Hofstetter, Tr. 169-70; Thonus, Tr. 349 ("The source term can most accurately be characterized by the series of samples and measures taken by GPUN.").

Applicants' witness Harner explained the significance of the conservatism in the Licensee's estimate of 1020 total curies of tritium in the AGW. Mr. Harner noted that GPUN monitors the air leaving the station for its tritium content. Harner, Tr. 338-39. Applicants' data show that from 1979 through 1986, except for the first two quarters of 1980 where the Licensee was doing specific processes, there has been an average release of 12.5 curies of tritium per quarter through evaporative losses. Harner, Tr. 338. This conservatism more than compensates for the theoretical possibilities put forward by the Intervenor in their arguments that the AGW could contain more than 1020 curies of tritium.

4. Program to Overcome Measurement Problems

Joint Intervenor's Material Statement of Fact 4(iv) under Contention 3 asserts in part that it is difficult to acquire an accurate assessment of the tritium concentration of water. LBP-88-23, *supra*, 28 NRC at 195. As a general matter, determining the concentration of any element on a liquid sample is an intricate process. Tritium analyses are particularly difficult because tritium emits only very-low-energy beta particles. When determining tritium concentrations in liquids, two major interferences are (1) the presence of other beta-emitting radionuclides in the sample and (2) the variations in counting efficiencies caused by chemical impurities in the sample. Both of these interferences are addressed in TMI-2 Chemistry Procedure 4212-CHM-3013.81, which was used to analyze all tritium samples taken by GPUN. Hofstetter, Tr. 170.

The presence of other radionuclides that also emit beta particles (and/or gamma rays) can give a falsely high indication of the amount of tritium present in a sample. Therefore, Chemistry Procedure 4212-CHM-3013.81 provides methods to remove the interfering radionuclides using various methods — filtration, ion exchange, or flocculation. Hofstetter, Tr. 170.

The second major interference comes from the presence of chemical impurities either in the scintillation cocktail or the water sample itself which can produce a falsely low indication of the amount of tritium present in the sample. Chemistry Procedure 4212-CHM-3013.81 provides two methods that control these chemical interferences. In one method, ascorbic acid is added to the sample to react with any organic material and minimize its effect on the detection efficiency. In the other method, a known amount of tritium is added to a second aliquot of the sample. This spiked aliquot is used to determine the exact counting efficiency for the detector in the sample matrix. Once this is known, the

tritium concentration of the unspiked sample can be determined more accurately. Hofstetter, Tr. 171.

5. *Reasons for Different Tritium Measurements*

The Intervenors contended in Material Statements of Fact 4(viii) and 4(x) under Contention 3 that the Staff invalidly assumes that the average concentrations of radionuclides as shown in Table 2.2 of PEIS Supplement No. 2 can be reasonably considered a maximum. Joint Intervenors cite as an example the average concentration of tritium in Table 2.2 as $1.3E^{-1}$ $\mu\text{Ci/ml}$, while a document obtained from GPUN during discovery reports a measured tritium concentration in the PWST-2 storage location of 2.1 $\mu\text{Ci/ml}$. This was also the only issue remaining under Contention 4(b). See LBP-88-23, *supra*, 28 NRC at 198-99, 204.

The record shows that the values for radionuclides listed in Table 2.2 of PEIS Supplement No. 2 are reasonable projections of concentrations expected to exist in the influent to the evaporator. Harner, Tr. 172; Munson, Tr. 782. Licensee compared the projections of concentrations for processed water in Table 2.2 against the RESL analyses of SDS and/or EPICOR II processed water in the PWST-2 tank. The actual analytical results for PWST-2 processed water were lower than the projections of Table 2.2 for all radionuclides except tritium. This demonstrates that the data from Table 2.2 are a reasonable estimate that can be used for dose calculations.

Since the amount of tritium is not reduced by water processing, the final concentration in each storage location after processing is the same as the tritium influent concentration. Therefore, depending on which of these locations is being processed, the tritium concentration will vary. The average tritium concentration is then a mathematical calculation and must be done in place of the capability to undertake a physical mixing of the entire AGW volume in a single, homogenous batch. Harner, Tr. 172.

Second, the tritium concentrations at issue cannot be compared directly to each other. The values are a mixture of actual sample results, as well as estimates calculated using averaged numbers, actual numbers, and other input at various points in time. The tritium value of $1.3E^{-1}$ $\mu\text{Ci/ml}$ was a mathematical projection of the average tritium concentration of *all* the AGW on October 1, 1988, and was based on 2.1 million gallons of AGW. The tritium value of $2.3E^{-1}$ $\mu\text{Ci/ml}$ was an actual analytical result obtained by GPUN for a PWST-2 sample (GPUN Sample No. 86-15668) on October 27, 1986. It was also the result obtained for a tritium analysis performed for a sample of PWST-2 (GPUN Sample No. 86-17062) on November 21, 1986. Harner, Tr. 172-73.

We find that one of the tritium values supplied to Intervenors by Applicants was an error. The tritium value of 2.1 $\mu\text{Ci/ml}$ was an error on page 43, step

7.3 of a GPUN document titled, "Technical Specification for Processed Water Disposal for GPU Nuclear Corporation Three Mile Island — Unit 2 Nuclear Power Plant." This document, produced during discovery, is a bid specification sent to vendors and provides information necessary for them to evaluate the task and return a proposal for construction. Based on Mr. Harner's testimony that he checked the lab results, we find that no sample from TMI-2 ever contained tritium as high as 2.1 $\mu\text{Ci/ml}$. The correct value for the sample in question is 2.3E^{-1} $\mu\text{Ci/ml}$. Harner, Tr. 173; Thonus, Tr. 349; Munson, Tr. 751-52. (We considered whether this error had an adverse effect and we conclude that since tritium is not removed by the proposed AGW disposal system, the error in the bid specification had no effect on the evaporator proposal design. Harner, Tr. 215.)

B. Sampling Accuracy

Joint Intervenor's Material Statement of Fact 4(vi) and (vii) under Contention 3 stated that the analyses of the PWST-2 samples by RESL for the NRC and by GPUN gave differing results for Co-60, Cs-137, and Sr-90, and that neither detected C-14, whereas an analysis by Westinghouse found C-14 at a concentration of 3.0E^{-4} , greater than the average concentration listed in Table 2.2 of PEIS Supplement No. 2 by a factor of three. See LBP-88-23, *supra*, 28 NRC at 198.

A sample of PWST-2 was obtained on February 23, 1987 (GPUN Sample No. 87-02569). A portion of the sample was transferred to the NRC for analysis by their contracted laboratory, RESL. A comparison of the GPUN data and the RESL data can be done on positive (greater than lower-level-of detection) results for individual radionuclides. One method for comparison is outlined in the NRC "Inspection and Enforcement Manual," Inspection Procedure 84725. This method is used to evaluate a licensee's analytical capability to make consistently accurate radioactivity measurements. The licensee's measurement is compared to an NRC or RESL measurement and a determination is made whether the two values are close enough to be in agreement. The "agreement" criteria are based on an empirical relationship that combines prior experience and the accuracy needs of the program. Harner, Tr. 175-76.

Applying the procedure to the RESL and GPUN data for the PWST-2 sample shows agreement for the tritium, Co-60 and Cs-137 results. The differences observed between these two sets of data for tritium, Co-60 and Cs-137 are not major and, in fact, are within the range of normal differences observed when comparing radiochemistry data from two separate laboratories in accordance with NRC standards. Harner, Tr. 176, 259-60; Thonus, Tr. 348.

The difference between the GPUN data and RESL data for Sr-90 is explainable from the procedures used by the two laboratories. In most cases, strontium-

90 analyses on liquid samples are done through the use of the 14-day method, where one separates the strontium and the yttrium from each other and then watches the yttrium, which is the daughter of strontium, grow back over time.

The more-accurate 14-day method is not practical for process control use at TMI. Harner, Tr. 176, 261. Thus, GPUN uses either a 72-hour or a rapid method to analyze for Sr-90 in liquid samples. GPUN quality control data for the liquid Sr-90 analysis has shown the 72-hour method to be more accurate than the rapid method; however, both are inherently conservative. The 72-hour analysis results average 40% higher than the actual, while the rapid method results average 100% higher than the actual concentrations, at the $1E^{-4}$ $\mu\text{Ci/ml}$ Sr-90 level, when compared to standards or the results of split samples reported by offsite laboratories using more traditional methods. Harner, Tr. 176, 261-62.

In any event, both the GPUN and the NRC results for this Sr-90 analysis are lower than the value used in the PEIS to evaluate the environmental impact of Sr-90. Thonus, Tr. 348, 370. In addition, the environmental impact analysis on the PEIS was not calculated from these single sample analytical results. The average or Base Case data were conservatively calculated from many sample results and assumptions made from knowledge of a long history of water processing through the SDS and EPICOR II systems. Harner, Tr. 177.

The C-14 concentrations at issue vary because the values are a mixture of actual sample results, averaged numbers, and estimates or projections calculated from various input. The C-14 value of $3.0E^{-4}$ $\mu\text{Ci/ml}$ is an actual sample result obtained from a PWST-2 sample (GPUN Sample No. 85-16198) analyzed by Westinghouse. The sample date is December 23, 1985. The C-14 value of $< 2.0E^{-7}$ $\mu\text{Ci/ml}$ is an actual sample result obtained from a PWST-2 sample (GPUN Sample No. 87-02569), taken in February 24, 1987, and analyzed by RESL. The C-14 value of $1.0E^{-4}$ $\mu\text{Ci/ml}$ found in Table 2.2 of NUREG-0683, Supp. 2, is a calculated estimate based on operational experience of SDS and EPICOR II Systems and on the average of four processed-water analyses performed by Westinghouse in early 1986.

A calculated projection of concentration for the total volume is not the same as an actual sample result of a single portion of water. The C-14 values listed vary, but the NRC and GPUN appropriately used the $1.0E^{-4}$ Westinghouse average concentration for dose estimates, even though RESL measured a much lower value. Hofstetter, Tr. 177-78; Thonus, Tr. 348.

1. Staff Checks on Accuracy of Measurement

In Material Statement of Fact 4(ii) under Contention 3, the Intervenor argued that the NRC's sampling of the AGW was inadequate because the NRC took a 4-liter sample from a tank that contains one-fifth of the AGW. LBP-88-23,

supra, 28 NRC at 198. The testimony during the hearing demonstrated that the NRC has analyzed a representative sample of water available for evaporation.

In February 1987, the water in the PWST-2 was sampled. The sample of PWST-2 was divided between the NRC and GPUN. Harner, Tr. 178; Thonus, Tr. 368. All of the PWST water has undergone treatment through EPICOR II or through SDS and EPICOR II. Harner, Tr. 304-06. While some variations in concentrations of radionuclides occur among batches of AGW processed through SDS and EPICOR II, the average concentrations resulting from this processing have not been significantly different. Therefore, the PWST-2 water is representative of the TMI-2 water available for evaporation, and it has been evaluated by the Staff. Harner, Tr. 178.

Moreover, the NRC did not intend to use the PWST-2 sample to provide bounding radionuclide limits on the AGW. The NRC does not have to develop its own data for environmental statements. GPUN's more extensive sampling provided the basis for the estimated influent to the processed-water disposal system. The NRC sample in question here was taken only to audit GPUN data. The results of this sample do support the information supplied by GPUN. See Thonus, Tr. 347, 356, 358.

At the hearing, the Staff also explained that as part of the NRC inspection program, NRC inspectors come on site, split samples with the Applicants, and independently confirm Applicants' laboratory analysis method. Thonus, Tr. 359. The results of the NRC inspection program are published in the NRC's inspection reports. *Id.* The Board, sua sponte, requested and reviewed these inspection reports dating back to 1981. Tr. 359-60. The Board was satisfied that the NRC had adequately audited the Licensee's laboratory analysis program. Tr. 1630.

Joint Interveners' Material Statement of Fact 4(iii) and (iv) claimed that procedures presented in ASTM Method 3370 and 4212-CHM-3013.81 at 5.0, 6.1.7, were not followed when the AGW was sampled in February 1987. See LBP-88-23, *supra*, 28 NRC at 195. Applicants' and Staff's testimony showed that the Interveners' assertion is incorrect. Harner, Tr. 179; Thonus, Tr. 348.

In February 1987, a sample was removed from the recirculation flow path of PWST-2 in accordance with TMI-2 Chemistry Procedure 4212-CHM-3011.05, Rev. 0 (5/23/84) entitled, "Sample procedure." This procedure explains how one obtains a representative sample from a plant system. The procedure does not concern analysis or testing of the water. It is used simply to obtain a bottle full of water from a well-mixed larger volume. Harner, Tr. 179. Step 2.4 of 4212-CHM-3011.05, § 2.0, References, includes "ASTM Section D 3370-82" as one of four ASTM standards followed and incorporated into 4212-CHM-3011.05. Harner, Tr. 179; Thonus, Tr. 348.

TMI-2 Chemistry Procedure 4212-CHM-3013.81, entitled "Determination of Tritium By Liquid Scintillation Counting," provides instructions on how to

determine the tritium concentration of the sample. The then-current version of this procedure was followed by GPUN when the PWST-2 sample was transported to the laboratory for analysis. Harner, Tr. 179; Thonus, Tr. 348.

The Joint Intervenors stated in Material Statement of Fact 4(iv) under Contention 3 that Chemistry Procedure 4212-CHM-3013, 81-P 5.0, 6.1.7 (10/27/87) was an updated version of Chemistry Procedure 4212-CHM-3011.05, Rev. 0 (5/23/83). See LBP-88-23, *supra*, 28 NRC at 195. The evidence shows, however, that Chemistry Procedure 4212-CHM-3013.81 is not an updated version of 4212-CHM-3011.05. They are distinct procedures that give directions for two entirely different tasks. Chemistry Procedure 4212-CHM-3011.05 explains how a liquid sample is drawn from a plant system. Chemistry Procedure 4212-CHM-3013.81 provides step-by-step instructions that must be followed to produce an accurate and reproducible determination of the tritium concentration in a given aliquot of sample. Harner, Tr. 180.

C. Microorganisms

In Material Statement of Fact 9 under Contention 3, Joint Intervenors contended that an evaluation of microorganisms in the AGW must be undertaken. LBP-88-23, *supra*, 28 NRC at 200. The completely uncontroverted testimony in the record demonstrates, and the Board finds, that the microorganisms associated with the AGW are typical environmental microbes and not primary pathogens; that in any case the vaporizer section will heat the distillate to approximately 240°F; and that any microorganisms that can survive this temperature are not pathogenic to humans. Baker, Tr. 645-46; Masnik, Tr. 349-51.

D. Conclusion

In sum, the Board finds that the tritium content of the AGW has been conservatively determined from the results of actual measurements, and that the accuracy of GPUN's sampling and analysis program has been verified independently. Contrary to the assertions remaining in Joint Intervenors' Contentions 3 and 4b, the radionuclide content of the AGW has been adequately characterized to support the environmental comparison of disposal options.

VII. CONCLUSIONS OF LAW

Although we believe that we have already presented all the findings of fact and conclusions of law required of us, we have decided to adopt Conclusions of Law, based on those provided to us by the Staff, in order to include the principal conclusions of law all in a convenient place.

1. All Issues Resolved

This is a contested proceeding on an application for an amendment to an operating license for a utilization facility. The Board has decided all of the admitted matters in controversy raised by the Intervenor within the scope of NEPA and the Commission's regulations implementing NEPA in 10 C.F.R. Part 51. See 10 C.F.R. § 51.104(a)(3). The Board has also decided the public health and safety matters raised by the Intervenor.

2. Absence of a Prehearing Conference

Since this case involves an amendment of an existing operating license and is not a construction or operating license proceeding, a prehearing conference was permissive and not mandatory. 10 C.F.R. § 2.752(a). Furthermore, telephone conferences were held prior to the evidentiary hearing and there was no prejudice, alleged or actual, to Intervenor from the absence of a prehearing conference.

3. Witnesses

All of the witnesses at the evidentiary hearing were qualified for the subjects on which they testified and we have accorded each the evidentiary weight that we found their testimony to be worth.

4. The Record

The record of decision on this application includes the PEIS, Supplement No. 2 (Staff Exh. 1), as supplemented and amended by this Initial Decision, but we admitted into evidence only those portions of the PEIS specifically referenced by witnesses as part of their testimony. See 10 C.F.R. §§ 51.102(c), 51.103(c); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 706-07 (1985), *review declined*, CLI-86-5, 23 NRC 125 (1986).

5. Health, Safety, and Common Defense

Pursuant to 10 C.F.R. §§ 50.92 and 50.57, the Board concludes, with respect to the matters in controversy, that:

- (a) there is a reasonable assurance that the activities that would be authorized by the amendment can be conducted without endangering the health and safety of the public and would be in compliance with Commission regulations; and

- (b) issuance of the amendment would not be inimical to the common defense and security or to the health and safety of the public.

6. *Consideration of Entire Record*

In reaching this Decision, the Board has considered the entire record of the proceeding. All proposed findings presented by the parties and not addressed in this Decision are considered to be without merit or unnecessary to the Decision. The Board's findings of fact are supported by reliable, probative, and substantial evidence in the record.

7. *Conclusion*

All relevant matters have been decided in favor of the Applicants and, therefore, the requested amendment should be authorized.

VIII. ORDER

For all the foregoing reasons and upon consideration of the entire record in this matter, it is, this 2d day of February 1989, ORDERED, in accordance with 10 C.F.R. §§ 2.760 and 2.762:

1. That this Initial Decision shall constitute the final action of the Commission forty-five (45) days after its date unless an appeal is taken in accordance with § 2.762 or the Commission directs that the record be certified to it for final decision.

2. Any notice of appeal from the Decision must be filed within ten (10) days after service of the Decision. A brief in support of the appeal must be filed within thirty (30) days (forty (40) days if the Staff is the appellant) after the filing of the notice of appeal. Any party not an appellant may file a brief in support of, or in opposition to, the appeal within thirty (30) days (forty (40) days in the case of the Staff) after the period has expired for the filing and service of the briefs of all appellants.

3. In accordance with the Commission Order in this proceeding, dated December 3, 1987, the parties to the proceeding shall have ten (10) days after service of this Decision to file written comments with the Commission regarding

whether the Decision should be effective during the pendency of administrative appellate review.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Peter B. Bloch, Chair
ADMINISTRATIVE JUDGE**

**Glenn O. Bright (by PBB)
ADMINISTRATIVE JUDGE**

**Dr. Oscar H. Paris
ADMINISTRATIVE JUDGE**

Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ivan W. Smith, Chairman
Dr. Richard F. Cole
Dr. Kenneth A. McCollom

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)

February 16, 1989

MEMORANDUM AND ORDER
(Ruling on Motion for Summary Disposition of
Joint Intervenor Contentions 44A and 44B)

Pursuant to 10 C.F.R. § 2.749 the Applicants move the Board for a decision in their favor on the so-called "legal delegation" issues embodied in Joint Intervenor Contentions 44A and 44B. We have before us Applicants' motion and related papers,¹ the Massachusetts Attorney General's answer in opposition

¹ Applicants' Motion for Summary Disposition of Joint Intervenor Contentions 44A and 44B, and Applicants' Memorandum in Support of Motion for Summary Disposition of Joint Intervenor Contentions 44A and 44B, dated October 7, 1988.

to the motion,² the NRC Staff's response opposing the motion,³ Applicants' response to the Attorney General's answer,⁴ and the Attorney General's reply to Applicants' response.⁵

I. BACKGROUND

The Seabrook Plan for the Massachusetts Communities (SPMC) contains measures intended to compensate for the fact that the Massachusetts Commonwealth and local governments have refused to participate in emergency planning for the Seabrook Station. *See generally* 10 C.F.R. § 50.47(c)(1). The plan provides that upon being notified by the Seabrook Station that an emergency exists at Seabrook, the state will either have adequate capabilities to respond, in which case the New Hampshire Yankee Offsite Response Organization (ORO) will stand by and monitor the state and local response (Standby Mode); the state and local governments may request ORO resources only (Mode 1), or the state will authorize the ORO to take control and implement the SPMC (Mode 2). There can be mixed modes or a full Mode 2. Under the plan, the Commonwealth will determine which mode is in fact implemented in the event of a radiological emergency at Seabrook. Plan, § 3.0.

Mode 2, by its terms, requires legal authorization or delegation from the Governor of Massachusetts or his designee prior to the implementation of seven necessary activities:

1. Activation of the Public Alert and Notification System and broadcast of the EBS messages;
2. Making recommendations for protective actions to the public;
3. Making Ingestion Pathway Protective Action Recommendations to the public;
4. Making recommendations for recovery and reentry to the public;
5. Directing traffic and blocking roadways;
6. Performing access control;
7. Removing obstructions from roadways, including towing private vehicles without owner permission.

² Answer of the Massachusetts Attorney General in Opposition to Applicants' Motion for Summary Disposition of Joint Intervenor Contentions 44A and 44B, dated November 7, 1988.

³ NRC Staff's Response to Applicants' Motion for Summary Disposition of Joint Intervenor Contentions 44A and 44B, dated November 21, 1988.

⁴ Applicants' Response to "Answer of the Massachusetts Attorney General in Opposition to Applicants' Motion for Summary Disposition of Joint Intervenor Contentions 44A and 44B," dated November 30, 1988.

⁵ Reply of the Massachusetts Attorney General to the Applicants' Response to Answer of Massachusetts Attorney General in Opposition to Applicants' Motion for Summary Disposition of JI 44A and 44B, dated December 28, 1988.

Both the Attorney General and the New England Coalition on Nuclear Pollution (NECNP) submitted contentions challenging the premise that such delegation of police powers is lawful. The contentions, MAG Contention 6 and NECNP Contention 4, were accepted as a possible rebuttal to the presumption that governments without an emergency plan would follow a utility plan in the event of a radiological emergency at Seabrook. The contentions, now the subject of the motion for summary judgment, were redesignated Joint Intervenor Contentions 44A and 44B.

Joint Intervenor Contention 44A states:

The SPMC contemplates an unlawful delegation of the police powers of the Commonwealth by state and/or local officials to an unincorporated association or organization itself formed and maintained by a division of a . . . foreign corporation not licensed to do business in the Commonwealth. Activities envisioned for this entity are *ultra vires* under the relevant states' corporation laws As a corporation not licensed to do business in Massachusetts, PSNH and its division NHY are not authorized to engage in the contemplated activities — *i.e.*, act as the delegatee of the police powers of Massachusetts. In sum, the SPMC can not be "generally follow[ed]" by the relevant governments because it contemplates an unlawful delegation of power to an apparent entity behind which operates a corporation not licensed to engage in the contemplated activities in Massachusetts Further, the activities themselves are *ultra vires* under the laws of New Hampshire and Massachusetts.⁶

Similarly, Joint Intervenor Contention 44B states:

To the extent that Mode 2 of the SPMC contemplates the substitution of Applicants for state and local governments in carrying out an emergency response, it violates the emergency planning rule and Massachusetts state law.

Basis A.2 to Contention 44A lists the seven activities set out in the SPMC requiring implementing authority from the Governor and recites twelve other activities asserted by the Attorney General as being essential to the plan and also requiring a delegation from the Governor to implement. There is a factual dispute as to whether the additional twelve activities are embraced by the plan. For example, activity No. 18 relates to riot control, an aspect of the contention not found by the Board in the SPMC. The parties have not argued the summary disposition motion in terms of each of the nineteen activities, but as we discuss and conclude below in terms of general legal authority.

⁶ Deleted material relates to the status of Public Service Company of New Hampshire as a bankrupt corporation. The Attorney General has abandoned that aspect of the contention. See Attorney General's Answer to Motion, Exh. 1, at 2.

II. DISCUSSION

A. Massachusetts Civil Defense Act

The SPMC depends upon the Massachusetts Civil Defense Act (CDA), 1950 Mass. Acts 639, for the authority that the Governor may delegate to the ORO the seven activities contemplated in the plan. Basis A.1 of Contention 44A asserts that the CDA does not provide any basis whatsoever for a delegation of police powers to a "foreign private corporation." Applicants join the issue by asserting that the CDA "expressly contemplates participation by private parties and permits the Governor to delegate the authority vested in him by the legislature." Motion at 5. The CDA grants to the Governor extremely broad powers to act in all emergencies including radiological emergencies. The Governor has been empowered by the legislature through the CDA to carry out all of the emergency functions (other than certain military functions) necessary for the purpose of protecting the public peace, health, security, and safety in an emergency. CDA, *passim*.

Section 4 of the CDA sets out the general powers and duties of the Governor in his direction of the civil defense:

The governor shall have general direction and control of the civil defense agency, and shall be responsible for carrying out the provisions of this act and may assume direct operational control over any or all parts of the civil defense functions within the commonwealth, he may at the request of the director authorize the employment of such technical, clerical, stenographic or other personnel, and may make such expenditures, within the appropriation therefor or from other funds made available to him for the purposes of civil defense or to deal with disaster or threatened disaster should it occur, as may be necessary to carry out the purposes of this act. He may co-operate with the federal government, and with other states and private agencies in all matters pertaining to the civil defense of the commonwealth and the nation, may propose a comprehensive plan and program for the civil defense of the commonwealth, and in accordance with said plan and program may institute training and public information programs and take all other preparatory steps, including the partial or full mobilization of civil defense organizations in advance of actual disaster as he may deem necessary. He may make studies and surveys to ascertain the capabilities of the commonwealth for civil defense and to plan for the most efficient emergency uses thereof, may delegate any administrative authority vested in him under this act, and may appoint, in co-operation with local authorities, metropolitan area directors.

The provisions of § 4, cited above, empowering the Governor to cooperate with "private agencies" and to delegate any "administrative authority" play a major role in the controversy before us.

Pursuant to a 1979 amendment to § 5 of the CDA, whenever the accidental release of radiation from a nuclear power plant endangers the health and safety of the people of the Commonwealth (adding to other types of disasters), the Governor may issue a proclamation setting forth a state of emergency. After such

a proclamation, the Governor, in the event of a disaster, may take possession of a broad array of land, buildings, machinery, equipment, ships, aircraft, and even entire transportation systems all for the better protection "of the commonwealth or its inhabitants as intended under this act." § 5(b). In addition, the Governor has the power and authority to cooperate with federal authorities and the governors of other states. § 6.

Upon declaring a "state of emergency," the Governor is empowered to exercise "any and all authority over persons and property, necessary or expedient for meeting said state of emergency, which the general court in the exercise of its constitutional authority may confer upon him." § 7. Among the powers specifically listed in this regard is the power to suspend

the operation of any statute, rule or regulation which affects the employment of persons within the commonwealth when and at such times as such suspension becomes necessary . . . to remove any interference, delay or obstruction in connection with the production processing or transportation of materials . . . which are necessary because of the existence of a state of emergency.

§ 7(k).

The Governor also has emergency powers respecting regulation of the manner and method of "contracting for personal or other services . . ." § 7(l).

The CDA also provides for the issuance of executive orders, general regulations, or instructions "to such person or such department or agency of the commonwealth" as needed for the Governor to "exercise any power, authority or discretion" conferred upon him by the Act, "either under an actual proclamation of a state of emergency . . . or in reasonable anticipation thereof and preparation therefor." § 8.

Finally, the CDA provides that "[a]ny provision of any general or special law or of any rule, regulation, ordinance or by-law to the extent that such provision is inconsistent with any order or regulation issued or promulgated under this act shall be inoperative while such order or last-mentioned regulation is in effect." § 8A.

Buttressing their claim that the CDA authorizes the delegation of emergency authority to private parties, Applicants cite the declaration of the Massachusetts Governor in Executive Order No. 27, June 23, 1955, making the life of the CDA indefinite:

WHEREAS, Acts of 1950, Chapter 639, Section 8, authorizes the Governor to exercise any power, authority or discretion conferred on him by any provision of said Chapter 639 which requires preparation in anticipation of a declaration of a state of emergency through such department or agency of the Commonwealth or its political subdivisions, or through such person, as he may direct, and to prescribe regulations governing the conduct of such department, agency or person in so acting; and

WHEREAS, the probable conditions in a state of emergency declared because of enemy attack, sabotage, or other hostile action, would permit effective exercise of certain emergency powers conferred upon the Governor only by the exercise of such powers through various departments or agencies of the Commonwealth or its political subdivisions or through various persons

B. The Attorney General's Arguments

The Attorney General argues overall that the Massachusetts Legislature has not delegated and may not delegate to the Governor or his designee the power to subdelegate the Commonwealth's police powers to private persons, especially to a foreign corporation (New Hampshire Yankee) seeking to act *ultra vires* in Massachusetts.

1. The Legislature and "Police Powers"

Before they provide any analysis of the provisions of the Civil Defense Act itself, the Applicants and the Attorney General skirmish, but never quite battle, over what powers the Legislature may delegate to private entities, either directly or through public officials. Attorney General's Answer at 9-13; Applicants' Response at 3-5.

However, there is no real dispute between them that:

1. The Legislature alone has the power to make laws for the health and safety of the public. It cannot delegate, abandon, or transfer its law-making powers. It can delegate details of legislative policy. Some delegated activity, although legislative in character, may be valid if pursued under a general legislative policy.
2. The Legislature could not delegate to the Governor the authority to subdelegate powers to private persons (or any entity) which powers the Legislature could not directly delegate.
3. There are broad police powers constituting the entirety of state authority (reserved to the states, U.S. Constitution, Amendment X) which include the legislative power.
4. There are also narrower police powers embodied in laws (such as those delegated by the Legislature to the Governor in the Civil Defense Act) intended to protect the public safety and welfare.
5. The Governor may not subdelegate police powers (such as those granted him in the CDA) unless the Legislature has authorized him to do so. An exception would be a subdelegation to state agents under the direction of the original delegatee — a consideration not relevant here. What is relevant here is whether the Legislature has,

with sufficient specificity, authorized a subdelegation of CDA powers to private entities, as we discuss below.

The general debate on the separation and nontransferability of the powers of the departments of the Commonwealth government, while instructive, was largely unnecessary. We accept the Civil Defense Act at face value. We assume, as we must, that it comports with the Massachusetts Constitution; that the Legislature did not improperly delegate, transfer, or abandon any of its powers; and that the Governor can do everything the Act says he can do. We look first to the Act itself for its meaning. It is an extraordinary statute, granting extraordinary powers to the Governor to ensure his ability to respond to extraordinary circumstances, the dimensions and nature of which could not be predicted by the Legislature.

2. Section 4 of the CDA

The only provision of the CDA authorizing in express terms a delegation of the Governor's power appears in § 4. There, as quoted above, the Act states that the Governor "may delegate any administrative authority vested in him under this act" Applicants lead off with the argument that a delegation of "administrative authority" in § 4 in itself is sufficient to support the delegation upon which the SPMC depends. Motion at 6.

Section 2 of the CDA creates the Massachusetts Civil Defense Agency, and § 4 provides for the Governor's control of the agency. It also provides for the appointment of local civil defense directors and generally sets out the Governor's *general* and *administrative* duties and powers. The Attorney General argues from the general tenor of § 4 that the Legislature intended to authorize a subdelegation of only a subset of powers and authority granted to the Governor, labeled "administrative authority" which subset does not include actual emergency powers. Moreover, according to the Attorney General the legislative history of the CDA indicates that the word, "administrative" was intentionally inserted before "authority" to distinguish between the powers the Governor may subdelegate and those that he must retain. Attorney General's Answer at 19-21.

The Applicants first deny, but then agree by implication, that the word "administrative" has significance. They counter the Attorney General's position with the argument that the term "administrative authority" does not constitute a diminution of the Governor's power to subdelegate. Rather, according to Applicants, "administrative authority" is used to distinguish between the authority granted to the Governor in the first place (i.e., working out details of legislative policy) compared to legislative power retained by the Legislature. Response at 7-8, *citing Opinion of the Justices*, 302 Mass. 605, 615-19 (1939), 19 N.E.2d 807, 814-15 (power to appropriate and expend money). Thus, as

Applicants finally cast their argument, “administrative” is a descriptive rather than a qualifying term. Applicants’ Response at 6-8.

Turning first to the distinction purportedly found in *Opinion of the Justices, supra*, it is true that the Justices there discuss the distinction between the “legislative power” (of appropriation) compared to the “executive or administrative power” (of expenditure). *Id.* at 814. The issue there involved a traditional debate about the separation of powers among the departments of government. According to Applicants, in enacting the CDA, the Legislature has “simply more succinctly described the authority it delegated to the Governor” compared to the authority retained by the Legislature. Applicants’ Response at 7-8. If Applicants are correct, and their argument has some merit, §4 provides for the subdelegation of all of the emergency powers granted to the Governor throughout the CDA.

In addition to the reasoning advanced by Applicants, there is another, more practical reason why the Legislature distinguished between legislative and administrative authority, if, in fact, that is what it did in §4. Section 7 provides that the Governor “in addition to any other authority vested in him by law, shall have and may exercise any and all authority over persons and property . . . which the general court [legislature] may confer upon him” This awesome power includes, under §7(k), the authority to suspend certain statutes. Other provisions of §7 authorize the alteration of legislative regulations. Certainly these powers are legislative in character even though pursued under a general legislative policy. Indeed, were it not for the conclusive presumption that the CDA does not contravene the separation of powers under the Massachusetts Constitution, we might conclude that the Legislature transferred to the Governor emergency legislative authority in the CDA. In any event, the Legislature may have intended to proscribe any subdelegation of powers legislative in character. Therefore, for reasons not advanced by Applicants, they may be correct in that “administrative authority” under §4 describes the executive authority of the Governor — as distinguished from any powers legislative in character granted to the Governor in other sections of the Act.

On the other hand, the Attorney General’s view that the delegation authorized under §4 is intended to be administrative in the management sense of the word is not without some merit. His position is that the §4 “delegation” is limited to the Director of the Civil Defense Agency and local political subdivisions. Answer at 14-17. He may be correct, because §4 is largely an organizational section, leaving it to other sections to address powers granted for actual use in a disaster.

While we tend to believe that the Applicants have the better argument, clear support for that argument does not flow from any express language of the CDA. On the other hand, even if the Attorney General’s position is the correct one,

the § 4 limitation on delegating powers does not rule out a delegation to private entities if such authority can be found in other provisions of the CDA. Under such circumstances, we turn to other provisions of the Act for guidance.

What, then, should be learned from the provisions of § 4 authorizing the Governor to “co-operate” with “private agencies?” Applicants point to this provision as part of their case that the Governor may delegate emergency activities to the ORO. Applicants’ Motion at 8.

The Attorney General argues that “co-operate” with private agencies does not mean “delegate” to them, but he does not explain what the term means. Attorney General’s Answer, n.19. While § 4 is, as we stated, largely an organizational section, it also, by its terms, sets out the general powers of the Governor.

The Attorney General makes too much of the difference between the words “co-operate” and “delegate.” They are not mutually exclusive terms; each can subsume the other. At minimum, § 4 authorizes a bilateral arrangement between private agencies and the Governor, with private agencies having some unspecified role connected with the police powers of the Commonwealth in the protection of the public safety and welfare under the CDA. The Attorney General’s argument that a private agency can have no role in exercising those powers is not in accord with the express authority the Governor has to “co-operate” with such agencies. This provision gives additional support for the Applicants’ argument that administrative authority may be delegated to private persons under § 4.

3. *Delegation, Assistance, or Command?*

Even if the “administrative authority” that may be delegated under § 4 may not be delegated to private entities, the authority to “co-operate” with them should be considered in reading other sections of the Act.

Other sections of the CDA contemplate a role for private agencies or persons in the civil defense of the Commonwealth. As noted above, § 7 grants to the Governor all authority “over persons” that the Legislature may confer upon the Governor. This is an extremely strong power to work with private agencies during a state of emergency — we cannot envision anything stronger — yet the express term “delegate” is not used. However, we believe that delegation of authority, where appropriate and to the extent necessary to accomplish the purposes of the CDA, is included within this power.

Applicants somewhat belatedly discovered § 8 of the Act which sets out the method by which the Governor may exercise the powers granted to him. Significantly, he may issue instructions to “persons” in addition to departments and agencies of the Commonwealth in exercising the powers of the Act. Executive Order 27, *supra*, at 9, tracks § 8 and explains that preparation for

civil defense and the effective exercise of emergency powers will be “through persons” and “through various persons.”

Section 5 of the Act, as we noted above, authorizes the Governor, in the event of a disaster, to take possession of land, buildings, sophisticated equipment such as ships and airplanes, and entire transportation systems. Necessarily, he will have to operate these resources with “various persons” and private agencies expert in their operation — not agents of the civil defense agencies. Yet there is no express language delegating to the involved private agencies the authority to act “for the better protection or welfare of the commonwealth or its citizens” as intended by the CDA and § 5.⁷

Applicants cite a series of Massachusetts statutes and decisions, not involving the CDA, to the effect that authority normally exercised by government may be “delegated” (according to Applicants) to private persons. Motion at 7-9. The Attorney General counters with the argument that the pertinent statutes do not authorize a delegation at all; they simply permit private persons to assist public officials in meeting their obligations. Attorney General’s Answer at 23. Applicants respond that contracting for firefighting services, for example, is more than assisting government; it is a delegation. Applicants’ Response at 13-14. We agree with Applicants that whether the service to be rendered is assistance, or a delegation, or in the case of the CDA, by direct order of the Governor, the debate is semantical. The Attorney General has not pointed to any case where a delegation of government power to private agencies is categorically ruled out under Massachusetts law, or that such delegation must be by express use of that very term.

We have discussed above the very strong powers granted to the Governor in the CDA. The Attorney General explains that the Act, originally enacted in 1950, is modeled after civil defense statutes enacted during each of the two world wars. Answer at 13-14. The plain reading of the Act demonstrates that it was designed for the protection of the Commonwealth and its inhabitants under the most life-threatening circumstances — enemy attack. *See also* Executive Order 27, *supra*, at 9. The very survival of society and government itself must be ensured. The Act was enlarged to protect against the grave threats of fire, flood, earthquake, and other natural disasters. When danger from the accidental release of radiation from a nuclear power plant was perceived to be a threat to the populace, that type of disaster was simply folded into the Act without any diminution of the power and resources available to the Governor under the Act to respond to other threats. Simply put, it is not rational to believe that, during any of these disasters — enemy attack, flood, hurricane, nuclear accident — the

⁷ We recognize, however, that when private agencies are recruited along with the appropriation of the respective resources, they would likely function in their former private positions, but under the authority of the Governor. Still, they would be agents of the Governor acting in furtherance of the government, rather than private objectives.

Governor may not and would not delegate, command, direct, or cooperate with private agencies of whatever nature in the defense of Massachusetts citizens.

4. *The Status of NHY-ORO*

The contention and the Attorney General's pleadings make much of the averment that Public Service Company of New Hampshire is a foreign corporation, not licensed in Massachusetts, thus not eligible to be the delegatee under the CDA. Applicants state that the New Hampshire Yankee Offsite Response Organization (NHY-ORO), the proposed delegatee under the SPMC, is not a foreign corporation at all; it is a nonjural unincorporated association comprised of members who, as individuals, are jural persons. Applicants' Motion at 12. Moreover, according to Applicants' unchallenged statement, even if New Hampshire Yankee were deemed the delegatee of the Governor under the SPMC, and even if the Commonwealth were to challenge in court NHY's authority to conduct SPMC-related activities in Massachusetts, NHY would have time to comply with Massachusetts law. *See Applicants' Response at 14-15.* In addition, the Attorney General recognizes that a "person" under the CDA is a private corporation or other nonpublic entity as well as natural persons. Attorney General's Answer, n.11.

For the foregoing reasons, the Board has little patience with the Attorney General's immaterial and hypertechnical quibble that the delegatee just might be a foreign corporation acting *ultra vires*. NHY is not seeking to perform *its* business in Massachusetts. The activities to be performed by the ORO in an emergency are in furtherance of the business of the *Governor*, not NHY or the ORO. *See Applicants' Response at 17.* If, in the Governor's judgment, better protective actions can be taken by delegating all or a part of the SPMC activities to the ORO or its members during a state of emergency, the Commonwealth, under the "best-efforts" assumption of the emergency planning rule, will not stand idle while its legal sages ponder the precise nature of the ORO's jural status.

5. *Who May Delegate CDA Authority?*

The Attorney General raises the question of who may delegate to the ORO the Governor's authority under the CDA, if in fact any authority can be delegated to it. For example, the CDA does not empower the local civil defense authorities to call upon private agencies during a disaster. We agree with the Applicants that the issue vanishes upon a finding that the authority under the CDA can be delegated. In any event, §4 authorizes the Governor to "assume direct operational control over . . . the civil defense functions" Therefore,

he can delegate on behalf of the Civil Defense Agency and the local civil defense officials if he chooses. In addition, even under the Attorney General's interpretation of the Governor's power to "delegate any administrative authority" under §4, the authority to implement the CDA during a disaster may be subdelegated to a designated Commonwealth official.

C. The NRC Staff's Position

In its response to the motion for summary disposition the NRC Staff states that neither the Applicants nor the Attorney General has briefed the issues sufficiently to permit a proper resolution of the motion. The Staff faults the Attorney General for failing to address the sweeping power of the Governor to act in an emergency. Staff Response at 2. Evenhandedly, the Staff complains that Applicants offer no support for assuming that the Governor may delegate his responsibility for selecting and issuing appropriate protective actions to the public. The Staff's response did not take into account the second round of arguments by the Applicants and the Attorney General, and we don't know whether the Staff would have been persuaded by the additional arguments.

The Staff supplies sound perspective to the controversy. It observes that, if the nondelegability issue is decided in Intervenors' favor, that fact would simply be another reason for applying the Commission's "realism rule." The proceeding would then turn to the nature of the governments' "best-efforts" response. Therefore the Staff proposes that, for the efficient conduct of the proceeding, the litigation continue under the realism rule. We agree with much of the Staff's reasoning, but not its recommendation to avoid deciding the legal issue.

The Staff is correct that the Attorney General did not discuss the great power delegated to the Governor under the Act — such a discussion would not have supported his litigative position. The Board was more troubled with Applicants' failure to discuss that aspect of the SPMC which would permit the ORO to make protective action recommendations directly to the public, compared to making such recommendations to the Governor.⁸

Of the seven activities of the SPMC requiring a delegation from the Governor, the authority to make protective action recommendations directly to the public would be the most likely to be a subdelegation exceeding the intent of the Legislature. It could be seen to approach an unconstitutional transfer of the Governor's power. Nevertheless, we believe that the plan is not flawed on that

⁸ The Staff also expressed concern about whether the Governor could delegate to the ORO any duties in the nature of direct riot control. Response at 4-5. As we noted at the outset, we are not aware that the SPMC provides for riot control by the ORO, and believe that it does not. There would be no need for the Governor to delegate to the ORO activities that the Commonwealth can perform better.

account. As we discussed above, the Civil Defense Act is intended to enable the Governor to respond to the most grave of disasters including enemy attack and natural disasters threatening the very existence of Massachusetts society. By its express terms the CDA grants to the Governor all authority possible for the Legislature to grant for use during a state of emergency.

Even though the Legislature could not grant to the Governor the power to transfer powers that must be retained by the Governor under the Commonwealth's Constitution, we have presumed that the CDA does not violate the Constitution. Added to that presumption is another presumption based upon the Commission's emergency planning regulations and the SPMC itself. The Governor will not delegate to the ORO the authority to make protective action recommendations directly to the public unless he knowingly elects to do so. It will be his call. He can either accept the advice of the ORO as to the appropriate protective action to be recommended; he can reject that advice and make his own recommendation; he can mix the two responses; or when it is his best judgment to do so, he can defer to the expert judgment of the ORO. If his decision is to delegate the protective action recommendation activity, it would be because that would be his best effort to protect the citizens of Massachusetts. Neither the SPMC nor the emergency planning rule anticipates that such a delegation would be made as a matter of mere convenience. Thus a delegation to the ORO would occur only when the Governor is not capable of doing otherwise. Viewed in that light, such cooperation for the protection of the public is not an excessive delegation of police power.

The Staff's recommendation that the legal authority issue be set aside in favor of the "realism rule" has practical appeal. It would not necessarily affect the outcome of the proceeding. We found in the Partial Initial Decision of December 30, 1988, LBP-88-32, 28 NRC 667, that the emergency planning rule assumes that state and local officials prefer a planned response to an *ad hoc* one. Assuming that the Seabrook Station will someday operate, state and local officials will cooperate in emergency planning as soon as that course of action is seen by them to be the best efforts to protect their citizens. *Id.* at 728-29. The possibility that a full Mode 2 response would be the "best efforts" response of the Massachusetts governments will be very short lived, if it is ever born, following any license to operate. Therefore, the Staff's proposal would not have a large effect upon the emergency planning or response for the Massachusetts communities. Nevertheless, our responsibility is to decide factual and legal issues where, as here, they are properly raised. We find that we can decide the legal issues presented, and have done so.

III. PROCEDURAL CONTEXT

A. SPMC Activities Covered by This Order

In the foregoing discussion, the Board found that the seven activities specified in the SPMC can be delegated to the ORO by the Governor or his designee. There are, however, twelve additional activities alleged by the Attorney General (Basis 2 to Contention 44A, Nos. 8 through 19) to be essential to the SPMC which also would require a delegation of Commonwealth police powers.⁹ In accepting the contention as alleged in original MAG Contention 6, the Board ruled that the legal authority issue is an "affirmative and permissible rebuttal to the 'follow-the-utility plan' presumption Mass AG recognizes that it has the burden of proceeding with the evidence in support of Contention 6." Memorandum and Order — Part I, July 22, 1988 (unpublished), at 27.

Although the twelve additional activities have components of factual allegations, they were not accompanied by any factual support, analysis, or citation to the SPMC. They have never been evaluated by the Board for admission as factual issues. The entire contention has been regarded from the beginning by the Applicants as a legal issue.

Now the Attorney General treats the twelve additional activities as factual issues that should be treated as such in a motion for summary disposition under 10 C.F.R. § 2.749. Attorney General's Answer at 2 n.2.

Applicants respond that the twelve activities constitute a "straw man" concept of the SPMC, reflecting a redraft of the plan, acceptable to the Attorney General, which redraft first postulates a plan that would require absolute governmental authority, then postulates "total abdication of governmental responsibility." Applicants' Response at 18. Some of the twelve items justify Applicants' characterization. For example, the allegation that the ORO needs, but does not have, authority to request federal assistance under the Federal Radiological Emergency Response Plan (No. 11) is an absurd notion based upon the assumption that the Commonwealth will refuse or otherwise fail to call in a federal response. The proposition that the ORO must coordinate and implement the evacuation of

⁹ (8) Command and control over the emergency response; (9) Contemporaneous planning and response to contingencies as they arise during an emergency; (10) Authority to direct and control state and local personnel engaged in emergency response; (11) Authority to request federal assistance pursuant to the FRERP; (12) Authority to communicate the views of the relevant governments to the public and to third parties; (13) Control over all offsite field monitoring, sample collection, and accident assessment; (14) Power to make actual decisions that result in protective action recommendations for the two planning zones and for reentry and recovery; (15) Authority to identify areas of danger and determine that they are areas from which the public should be excluded; (16) Authority to secure and protect private property during the period of an emergency; (17) Authority to coordinate and implement the evacuation of all governmental buildings and facilities; (18) Power to exercise control over individuals whose behavior during an emergency puts others at immediate risk of harm or impedes the implementation of protective measures; and (19) Power to control and regulate the food, milk, and water pathways within 36 hours of an emergency.

government buildings because the Commonwealth won't or can't is also absurd. FRERP, No. 17. Other named activities are too vague to be litigated.

The NRC Staff entered the controversy by treating all nineteen activities (seven in the SPMC, twelve alleged by the Attorney General) as factual issues. The Board supported the Staff's discovery into what the probable response of the Commonwealth would be with respect to all nineteen activities. The Attorney General is essentially in default on this discovery issue.¹⁰ The Board is awaiting a report from the parties before determining whether evidentiary presumptions and sanctions will be imposed. Thus the factual aspects of the contention will be addressed outside this Order.

As to the legal aspects, the Attorney General had a responsibility, both under § 2.749 and under the order admitting the contention, to come forward with support for its position that, assuming the twelve additional items were essential to the SPMC, there were special reasons why the Governor could not delegate those activities to the ORO. Having failed to distinguish or except the twelve additional allegations from the general legal issue, the Attorney General may not now be heard to argue that a special legal test should apply to them.

B. *Ultra Vires* Activities

The last sentence of Contention 44A alleges: "Further, the activities themselves are *ultra vires* under the laws of New Hampshire and Massachusetts." Applicants assumed that this rather cryptic allegation was a reference to the fact that PSNH and NHY are not Massachusetts business organizations as alleged under Basis C, and, therefore, did not treat the allegation separately. The Attorney General apparently had another concept in mind, because he faults the Applicants for failing to address this matter "unequivocally" asserted by the contentions. Attorney General's Answer at 5-6. Perhaps he meant that NHY does not have within its own corporate charter the authority to engage in radiological emergency activities. This would be a common meaning of the term, but it has no application here. The Attorney General has never articulated a basis for the statement even when called upon to do so by the motion for summary disposition. Therefore Applicants prevail over the Attorney General's default. There is no need to make the finding proposed by Applicants that the activities envisioned by the SPMC for the respective business entities are not *ultra vires* except in the sense that the term is understood to relate to the activities of a foreign corporation.

¹⁰ See Supplemental Answers of the Mass AG to NRC Staff's Third Set of Interrogatories and Requests for Production of Document, January 17, 1989, at 7-8; Tr. 15,475-95, 15,571.

IV. ORDER

The Applicants submitted with the motion for summary judgment, a "Statement of Material Facts Not in Dispute" containing five such proposals for the Board's consideration.¹¹ We have ruled above that the Applicants have prevailed on the legal issues raised by the legal authority contentions, at least with respect to the seven activities to be delegated to the ORO under the SPMC. However, the list of five "material facts" do not easily fit into legal holdings as subtle and complex as those involved in the instant motion. For example, we will not find that the "police powers" of the Commonwealth without further qualification may be delegated. FRERP, No. 1.

Nor can we find that the NHY-ORO is presently the delegatee of those police powers. *Id.*, No. 2. The ORO probably won't be such a delegatee until there is a state of emergency declared and other events have transpired. And, as we discussed above, implementing Mode 2 of the plan is a remote possibility. Moreover, the evidentiary record is still a clean slate, revealing nothing about the ORO, its staffing, its deployment, or its technical qualifications.

The finding proposed for the *ultra vires* issue needs refinement. *Id.*, No. 3. The Bankruptcy item is moot. *Id.*, No. 4. The statement that PSNH, NHY and/or the NHY-ORO do not have to qualify to do business in the Commonwealth is too broad and absolute. *Id.*, No. 5.

Therefore the Board makes its own finding that there is no genuine issue to be heard as to the following material facts:

The Governor of Massachusetts or his designee, pursuant to the provisions of the Massachusetts Civil Defense Act, may delegate to the New Hampshire Yankee Offsite Response Organization (NHY-ORO) police powers of the Commonwealth sufficient to implement the following provisions of the Seabrook Plan for the Massachusetts Communities:

1. Activation of the Public Alert and Notification System and broadcast of the EBS messages.
2. Making recommendations for protective actions to the public.
3. Making Ingestion Pathway Protective Action Recommendations to the public.
4. Making recommendations for recovery and reentry to the public.
5. Directing traffic and blocking roadways.

¹¹ (1) The police powers of the Commonwealth of Massachusetts may be lawfully delegated by state and/or local officials to PSNH, NHY, and/or the NHY-ORO. (2) NHY-ORO is the delegatee of the police powers of the Commonwealth of Massachusetts. (3) The activities envisioned for PSNH, NHY, and/or the NHY-ORO are not *ultra vires* under the Commonwealth of Massachusetts corporation laws. (4) The activities contemplated by the SPMC for PSNH, NHY, and/or the NHY-ORO are not outside of the ordinary course of business and do not, in any case, require prior approval of the Bankruptcy Court. (5) PSNH, NHY, and/or NHY-ORO do not have to qualify to do business in the Commonwealth of Massachusetts.

6. Performing access control.
7. Removing obstructions from roadways, including towing private vehicles without owner permission.

The intent of the foregoing finding is to implement the general tenor of the legal rulings made by the Board in this Order. It is not intended to be a limitation, and the rulings above may be further applied in the evidentiary hearings as may be relevant and appropriate.

It is so ordered.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Ivan W. Smith, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland
February 16, 1989

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket Nos. 50-322-OL-3
50-322-OL-5

LONG ISLAND LIGHTING
COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

March 3, 1989

On directed certification from the Appeal Board on the question of whether the conduct of the Intervenor Governments in the *Shoreham* proceeding warrants their dismissal from the proceeding, or some other sanction, the Commission concludes that the Intervenor's willful defiance of Licensing Board orders caused great harm and delay to Applicant's efforts to demonstrate the sufficiency of its emergency plan and to the integrity of the Commission's adjudicatory process. Accordingly, in view of all of the circumstances, the Commission dismisses Suffolk County, the State of New York, and the Town of Southampton as parties from all pending proceedings.

**NRC: POLICY STATEMENT ON CONDUCT OF LICENSING
PROCEEDINGS (SANCTIONS)**

In its *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452 (1981), the Commission established a graduated scale of sanctions including, in severe cases of a participant's failure to meet its obligations, dismissal from the proceeding.

NRC: POLICY STATEMENT ON CONDUCT OF LICENSING PROCEEDINGS (SANCTIONS)

In its *Statement of Policy on Conduct of Licensing Proceedings*, the Commission identified the following factors to consider in deciding what sanction to impose: "the relative importance of the unmet obligation, its potential for harm to other parties or the orderly conduct of the proceeding, whether its occurrence is an isolated incident or a part of a pattern of behavior, the importance of the safety or environmental concerns raised by the party, and all of the circumstances." 13 NRC at 454.

NRC: POLICY STATEMENT ON CONDUCT OF LICENSING PROCEEDINGS (SANCTIONS)

The Commission finds that the County's production of a detailed emergency plan dating back to 1983 and its announcement that it would no longer comply with the Board's discovery orders, both events occurring in June 1988, constitute a hearing in which one party controls the information to be disclosed and the evidence that may be produced to be so grossly unfair and biased as to amount to hardly any hearing at all.

NRC: POLICY STATEMENT ON CONDUCT OF LICENSING PROCEEDINGS (SANCTIONS)

The Governments' obstructionist tactics and refusal to comply with discovery obligations as ordered by the Board were patently unfair to the Applicant and effectively "stalled the proceeding in its tracks." *Commonwealth Edison Co.* (Byron Nuclear Power Station, Units 1 and 2), ALAB-678, 15 NRC 1400, 1417 (1982).

NRC: POLICY STATEMENT ON CONDUCT OF LICENSING PROCEEDINGS (SANCTIONS)

In determining whether sanctions should be imposed against the Intervenor Governments, the Commission notes that the record amply demonstrates that the Governments have engaged in a pattern of resistance to Board orders and authority.

NRC: POLICY STATEMENT ON CONDUCT OF LICENSING PROCEEDINGS (SANCTIONS)

Taking into account all the circumstances, the Commission fashions a sanction that will, if possible, mitigate the harm caused by the parties' failure to fulfill their obligations and that will bring about improved future compliance not just for this case but for future cases and parties as well.

RULES OF PRACTICE: INTERVENTION BY A STATE

Even though NRC regulations recognize a distinct role for state and local governments in NRC proceedings, the Commission has always held that all parties, including interested states and local governments, must strictly adhere to NRC requirements. *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760 (1977).

DECISION

I. INTRODUCTION

This matter is before the Commission pursuant to our Order of November 9, 1988, directing that the Atomic Safety and Licensing Appeal Board certify to us the appeals of Suffolk County, the State of New York, and the Town of Southampton ("Governments" or "Intervenors") from the Atomic Safety and Licensing Board's decision dismissing them from the proceeding, LBP-88-24, 28 NRC 311 (1988). Extensive litigation has already been completed on most of the controverted issues raised on the application for an operating license for the Shoreham facility. Over the years, this litigation has involved several hundred hearing days, testimony from over 200 witnesses, and over 60,000 pages of transcript. All technical health and safety issues have been resolved in favor of the Applicant.¹ Long Island Lighting Company ("LILCO") currently holds a low-power license, pursuant to 10 C.F.R. § 50.47(d), authorizing operation up to 5% of rated power. Only offsite emergency planning issues remain to be decided.²

The case that the Commission decides today presents difficult and sensitive issues of law and policy. We are called upon to decide whether the conduct of three Intervenors in this proceeding — Suffolk County, the State of New York,

¹ LBP-83-57, 18 NRC 445 (1983); LBP-84-45, 20 NRC 1343 (1984); LBP-85-18, 21 NRC 1637 (1985).

² A number of questions concerning the adequacy of emergency planning have been decided in LILCO's favor as well. LBP-85-12, 21 NRC 644 (1985).

and the Town of Southampton — warrants the imposition of sanctions, and if so, what sanction is appropriate. The ultimate sanction, dismissal from the proceeding, would mean the termination of the entire Shoreham formal hearing.

The imposition of sanctions on a party is never an action to be taken lightly. In the first place, sanctions amount to the public censure of a party's conduct, and before rendering such a judgment on any party, we should be sure that the criticism is deserved. Where the penalty results in ending an adjudicatory hearing, we must be especially circumspect, for the opportunity for public hearings on nuclear power plant licensing is a central element of the NRC's governing statute, the Atomic Energy Act of 1954. Finally, there is especially good reason not to be precipitous in dismissing a state or local government from our proceedings. Though no one argues that different parties should be held to different standards of conduct, we cannot ignore the fact that where a state or local government is a party, the dismissal question touches upon federal-state relations that should in the ordinary course be marked by mutual cooperation rather than confrontation.

But while all these factors suggest the imprudence of imposing sanctions lightly, an unwillingness ever to punish misconduct would be worse than imprudent; it would be an abdication of responsibilities owed to the parties and the public. For on the other side of the scale from the considerations mentioned above, there are also powerful reasons for levying sanctions when sanctions are deserved.

There is, first of all, the obligation to take account of the rights of any party harmed by another party's misconduct. In addition, if misconduct in Commission proceedings is to be deterred, it must be shown to be ultimately counterproductive. Last and perhaps most important, the Commission must ensure that it is not prevented, through a party's misconduct, from performing the task assigned it by Congress, that of making health and safety decisions about nuclear power plants.

In the present case, we conclude with regret that the Intervenor's conduct in this proceeding not only permits the imposition of a heavy sanction but compels it. Our judgment is based on a careful review of the decision of the Atomic Safety and Licensing Board and the filings of the parties. Oral argument has also helped to illuminate further the issues in dispute.

We emphasize that in placing sanctions on the Intervenor Governments, we are not penalizing them for having opposed the Shoreham plant, or for having refused to cooperate in developing an emergency plan for Shoreham. Our sanctions are not directed at the Intervenor's ends, which we assume to have been motivated by their view of what would be best for their citizens, but only at the means used to achieve those ends in our proceedings.

As we shall describe below, those means included the willful refusal to obey orders of the Licensing Board in the "realism remand" proceeding, and a serious

failure to meet obligations to produce witnesses and documents in the discovery process. The latter is no mere procedural trifle. Rather, it is the linchpin of the fact-finding process, for the ability of an adjudicator to arrive at the truth depends on the parties' willingness to produce relevant information and witnesses. When parties refuse to meet that obligation, they cripple the adjudicators' ability to make sound and just decisions.

It is worth focusing on the particular issue that brought the proceeding to an impasse in June 1988 and led to the imposition of sanctions. The impasse arose over the Intervenors' assertion that the Licensing Board had no legal authority to question or allow any inquiry into their claim that they would never plan for a radiological emergency, but would instead decide *ad hoc* what to do if an accident occurred. When the Licensing Board ordered the Intervenors to produce witnesses to be deposed as to what they would do in an emergency, the Intervenors declared that the Licensing Board had made it impossible for the proceeding to continue. Thus the proceeding came to an end not because Intervenors were being forced to prepare an emergency plan or take any other affirmative act, but rather because Intervenors insisted that their claimed response to an accident — unlike any other factual issue in the adjudication — was off limits for further inquiry.

The purpose of an adjudicatory process should be to find truth, and all parties to a proceeding should be contributing to that process. Of course, parties will disagree as to where the truth lies. The adversary process is premised on sound decisions emerging from the vigorous clash of opposing views of what is correct. But when parties cross the line from vigorous advocacy to willful disobedience of licensing board orders, they disable the fact-finding process and prevent the truth from being ascertained. At that point, it is the duty of an adjudicator to take whatever action is needed to protect the integrity of the process. We believe, for the reasons that follow, that the point has been reached where dismissal from the proceeding is the only appropriate sanction.

II. IMMEDIATE PROCEDURAL BACKGROUND

On September 23, 1988, the OL-3 Licensing Board in the *Shoreham* proceeding issued its Concluding Initial Decision (CID) on Emergency Planning, LBP-88-24, *supra*.³ The Board granted LILCO's motions for summary disposi-

³The Commission has used several licensing boards to resolve discrete segments of the *Shoreham* operating licensing proceeding as a case management tool. 48 Fed. Reg. 22,235 (1983); 51 Fed. Reg. 37,682 (1986). The OL-3 Board has jurisdiction over all matters related to emergency planning, except for matters relating to the prelicense emergency exercise requirement, 10 C.F.R. § 50.47(b)(14), 10 C.F.R. Part 50, Appendix E, § IV.F, which have been assigned to the OL-5 Licensing Board. See ALAB-901, 28 NRC 302, 308 (1988). The OL-3 Board established the subdoCKET "OL-6" for filing of papers related to LILCO's request for authorization to operate at 25% power.

tion on emergency broadcast system, bus driver, and hospital evacuation issues. The Board found Suffolk County, the State of New York, and the Town of Southampton ("Intervenors") in default of Board orders on discovery on the realism issue and dismissed them from the proceeding.

Just prior to the Licensing Board's decision, on September 20, 1988, the Appeal Board remanded to the Licensing Board in the OL-5 docket, which had presided over the hearings on the 1986 Shoreham emergency planning exercise, any issues raised in connection with the 1988 exercise at the Shoreham facility. ALAB-901, 28 NRC 302 (1988).

In an expedited response to an appeal by the Intervenors of the Licensing Board's CID, the Appeal Board concluded that the OL-3 Board did not have the authority to dismiss Intervenors from parts of the proceeding pending before another Board. Consequently, because issues remained to be resolved in the proceeding, no full-power license could yet be authorized. ALAB-902, 28 NRC 423 (1988). The correctness of the OL-3 Board's decision on the merits, including whether the OL-3 Board's sanction against the Intervenors was appropriate, remained before the Appeal Board.

On November 9, 1988, the Commission directed that the Intervenors' appeal of their dismissal from the proceeding be certified to it for decision. The Commission stated that it would decide "whether Governments' conduct was such as to warrant their dismissal from the entire proceeding⁴ and whether, if dismissal from the entire proceeding is not warranted, what other sanction, if any, is appropriate." Order of the Commission, November 9, 1988 (unpublished), at 2.

Following the Appeal Board's vacation of the full-power license authorization, LILCO filed a motion before the OL-3 Board for authorization of 25% power operation. The Board granted LILCO's motion, not on the merits, but because it was unopposed, as Intervenors had been dismissed from proceedings before it. LBP-88-30, 28 NRC 644 (1988). The Board also concluded that as the sanction issue was now pending before the Commission, its decision should be referred to the Commission. In ALAB-908, the Appeal Board certified to the Commission, (1) the Board's authorization of the 25% license, (2) the Intervenors' appeal of that decision and motion for stay of that decision, and (3) the Appeal Board's views on whether under 10 C.F.R. § 50.57(c) the Licensing Board could authorize the issuance of a 25% license as long as emergency planning contentions were pending before another Board. ALAB-908, 28 NRC 626 (1988).

⁴If the parties are properly dismissed from the entire proceeding, the remaining issues will be resolved by the Director of the Office of Nuclear Reactor Regulation like any other uncontested matter prior to license issuance.

In considering the questions before it, the Commission has received voluminous briefs from all of the parties and has carefully considered the record before the Licensing Board.⁵

III. DETAILED BACKGROUND

Suffolk County, the Government most directly affected by the emergency planning for Shoreham, did not oppose licensing of Shoreham and withdrew support for emergency planning only when the plant was well under construction and LILCO, for better or for worse, had committed itself deeply to the project. Following the decision by Suffolk County to withdraw its support for emergency planning at the Shoreham facility, the Commission considered a utility-only emergency plan. CLI-83-13, 17 NRC 741 (1983). After LILCO submitted its plan for NRC consideration, Suffolk County submitted a number of contentions, several of which asserted that LILCO lacked the legal authority to implement certain features of its radiological emergency plan, including the authority to control traffic and to inform the public. In August 1984, LILCO filed a Motion for Summary Disposition on the legal authority contentions, arguing, among other things, that even if LILCO lacked legal authority, the State and the County would respond in a real emergency either by implementing the plan themselves or by deputizing LILCO personnel to implement the plan. The Licensing Board denied the motion, finding, in part, that even assuming an emergency response by the State and County, there was no assurance that the response would be other than *ad hoc* and uncoordinated with LILCO's actions. LBP-85-12, 21 NRC 644 (1985), *aff'd*, ALAB-818, 22 NRC 651 (1985).

In CLI-86-13, 24 NRC 22 (1986), we directed the Licensing Board to evaluate the adequacy of the LILCO emergency plan assuming that the State and County would exercise their best efforts to respond in the event of an accident and that such response would involve the use of the LILCO plan as the best source for emergency planning information and options since it was superior to no plan at all. With these assumptions the Board was directed to develop a record regarding the adequacy of the LILCO plan assuming a best-efforts government response.

⁵The Intervenor has argued that by taking review of their appeals of the Licensing Board's decision dismissing them from the proceeding, the Commission has somehow violated the Intervenor's due process rights. Governments' Motion for Reversal of Commission Order of November 9, 1988, dated November 23, 1988. This is a frivolous argument. The Commission decision to direct certification of this matter to it for review is explicitly permitted by our Rules of Practice. 10 C.F.R. § 2.785(d). The November 9 Order created no new issues for decision. The Intervenor was afforded a hearing on the only disputed factual matters which form the basis of this decision. See Tr. 20,944 *et seq.* (July 11, 12, 14, and 19, 1988). Our decision relies exclusively on sworn testimony before the Licensing Board and matters of record in this proceeding. Moreover, the Intervenor has been given every opportunity to present their case through extensive briefs and oral argument. See unpublished Commission Orders, dated December 16, 1988, December 22, 1988, and January 24, 1989.

Following the Commission's remand, LILCO filed its second motion for summary disposition of the legal authority contentions. On September 17, 1987, the Licensing Board denied LILCO's motion. LBP-87-26, 26 NRC 201, 227 (1987). But the Board went on to state that, while Intervenor's response was sufficient to defeat the motion, "[w]e expect that in connection with the remand hearing where the Commission requires that it be established what the State and County response would be, Intervenor will be fully forthcoming so that the facts will be developed." 26 NRC at 216.

On November 3, 1987, the realism principle stated in CLI-86-13 was codified, in somewhat modified form, through amendment of 10 C.F.R. § 50.47(c)(1). 52 Fed. Reg. 42,078. The rule embodies a presumption that governments will use the utility plan as the best source of guidance to respond to an emergency in the absence of a state or local plan. The presumption may be rebutted by "for example, a good faith and timely proffer of an adequate and feasible state and/or local radiological emergency plan that would in fact be relied upon in a radiological emergency." 10 C.F.R. § 50.47(c)(1)(iii)(B). This rule was upheld by the U.S. Court of Appeals for the First Circuit after challenge by Suffolk County and others. *Massachusetts v. United States*, 856 F.2d 378 (1st Cir. 1988).

On December 18, 1987, LILCO again moved for summary disposition of the realism contentions on the basis of the assumption embodied in the new rule, 10 C.F.R. § 50.47(c)(1). The Board again denied summary disposition of the realism contentions because LILCO had not established the adequacy of its plan assuming a best-efforts government response.⁶ But the Board also held that the Intervenor's case on the merits must include positive statements of the projected behavior of the governments. "A determination to respond *ad hoc* would be acceptable only if accompanied by specification of the resources available for such a response, and the actions such a response could entail including the time factors involved." Order at 4. The Board's Order also put the parties on notice that under the regulation it was bound to determine the adequacy of the best-efforts response by state and local governments and that the parties were equally bound to supply the information necessary to make that determination if they wanted their views to be heard. *Id.* The Board expanded its rulings in a written opinion issued April 8, 1988. LBP-88-9, 27 NRC 355 (1988).

On March 10, 1988, the Board issued an order establishing the final dates for the discovery period and a hearing schedule for the remaining issues in the proceeding. The discovery period was to end April 15. On March 9, 1988, LILCO had filed interrogatories seeking information about Intervenor's testimony and witnesses. Its Second Set of Interrogatories, filed on March

⁶ Confirmatory Memorandum and Order (Ruling on LILCO's Motions for Summary Disposition of Contentions 1, 2, 4, 5, 6, 7, 8, and 10, and Board Guidance on Issues for Litigation), February 29, 1988 (unpublished). In the February 29, 1988 Order, the Board also issued guidance on further litigation of the realism contentions.

24, 1988, sought information from the Intervenor on the nature and adequacy of a County and State response to a Shoreham emergency not involving the LILCO plan. The interrogatories sought copies of all plans and procedures for responding to emergencies, radiological or nonradiological, affecting Suffolk County and plans and procedures that New York State would use in responding to radiological emergencies at other nuclear facilities with EPZs within New York State. The State and County responded to the first set of interrogatories on March 23, stating that they had not identified any witnesses. On April 5, 1988, LILCO noticed depositions for six County employees and five State employees.⁷ In response to Intervenor's request, the Board twice extended discovery, ordering Intervenor to complete depositions by April 29 and to respond to interrogatories.

In responses to LILCO's interrogatories, filed on April 20 and 22, 1988, Intervenor objected to most of the document and information requests, asserting that plans or resources for nonradiological emergencies or for other nuclear facilities were irrelevant.

On April 1, 1988, LILCO filed its *prima facie* case on the legal authority issues. On April 13, Intervenor filed an Objection to the Board's February 29 and April 8 Orders and an offer of proof of testimony.⁸ The Intervenor objected to the Board's rulings as erroneously interpreting § 50.47(c)(1) and precluding relevant testimony by the Governments' witnesses. The County's proffered testimony stated, essentially, that they could not lawfully implement or use LILCO's plan or delegate legal authority to LILCO; they would not cooperate with LILCO or use its plan because they have found it unworkable and LILCO incompetent. Moreover, it would be "unproductive to engage in make-believe by pretending how the County would act under the hypothetical circumstances of an accident at Shoreham after the plant were somehow licensed by the NRC." Testimony of P. Halpin at 8. Nor did Mr. Halpin know what resources would be available to respond to a Shoreham emergency. *Id.* In testimony on behalf of the State of New York, Dr. Axelrod stated that he could not speculate on what resources might be available in the hypothetical situation that Shoreham were licensed. Testimony at 4.

LILCO conducted depositions of several panels of State and County representatives and the two designated witnesses, County Executive Halpin and Dr. Axelrod, Chairman of the New York State Disaster Preparedness Commission, between April 19 and April 29. Intervenor terminated the depositions of

⁷ By letter to counsel for LILCO, dated April 14, 1988, and letter to the Licensing Board, dated April 15, 1988, Intervenor sought to cancel, as unnecessary, all depositions other than those for their two proffered witnesses, Dr. Axelrod and Mr. Halpin. The County did not produce the Director of Emergency Preparedness (Regan) until the July discovery abuse hearing and never did produce the County Health Commissioner (Dr. Harris).

⁸ The Intervenor chose not to file a motion for reconsideration because they believed that in view of the many filings already made on the subject of the rule, such a motion would be futile. Governments' Objection to Portions of February 29 and April 8 Orders in the Realism Remand and Offer of Proof, April 13, 1988, at 12.

Mr. Halpin and Dr. Axelrod after permitting only 2 hours of questioning and engaging in a pattern of objections and interruptions "designed to impede the discovery process."⁹ The depositions of the Assistant to the County Executive (Petrone), County Assistant Police Chief (Roberts), and the State REPG panel (Papile, Czech, and Baranski) were also peremptorily terminated. Deponents were generally unresponsive to questions concerning Intervenors' response to a radiological emergency at Shoreham, were unfamiliar with County general disaster plans with any applicability to Shoreham, or refused to "speculate" about a response to a Shoreham emergency.

LILCO filed a motion on May 2d describing Intervenors' obstructionist behavior during depositions and requesting either dismissal of the realism contentions or an order to compel discovery. At the prehearing conference on May 10, the Board ordered the depositions of Halpin and Axelrod reopened, characterizing Intervenor counsels' conduct during the depositions "to be almost a deliberate obstruction effort of the discovery process." Tr. 19,381. The Board also ruled that all emergency plans in New York State including plans of the State and subsidiary governments such as Suffolk County were relevant to the proceeding. Tr. 19,381-82.

On May 26th, the Board issued a bench ruling on Applicant's motion to compel discovery. It ordered depositions continued for witnesses identified by LILCO in its May 2d filing and again ordered responses to LILCO's interrogatories. Tr. 20,432-36. The Board declined to reconsider its previous rulings interpreting the new rule and denied as premature the motions to dismiss the realism contentions on the basis of Intervenors' evidentiary default.

On May 25, 1988, the County produced to LILCO, as part of the discovery ordered by the Board on May 10th, a document that had a dramatic impact on the course of the proceeding. The document, approximately 760 pages long, was entitled the Suffolk County Emergency Operations Plan ("SCEOP"). Counsel for LILCO served the plan on the Board and other parties on May 27th during the hearing on other remand issues. The document consisted of a Basic Plan and a series of Annexes which described responsibilities and procedures of various governmental sectors such as police, fire and rescue, and social services in the event of emergencies. After reviewing the materials briefly, the Board indicated that it viewed the sudden appearance of this information very seriously, in light of previous responses by Intervenor representatives during depositions indicating lack of knowledge of plans like this. The Board again ordered Intervenors to respond to interrogatories and to arrange depositions requested by LILCO and directed the Intervenors to file by June 1 a paper describing the SCEOP and

⁹ Memorandum and Order (On Board Ruling on Various Motions Relating to Pending Realism Issues), June 21, 1988 (unpublished), at 8. Counsel objected to about every third question to Mr. Halpin; counsel objections appear on 42 of 108 pages of Dr. Axelrod's deposition.

why it had not been provided previously. Tr. 20,549-50. After reviewing those filings, on June 3, the Board directed that any discovery, interrogatories, and depositions of persons identified by the Applicant be concluded by June 20th. Tr. 20,835-36, 20,840-41.

On June 9, 1988, the Intervenor filed a "Notice That the Board Has Precluded Continuation of the CLI-86-13 Remand." They asserted that the proceeding "cannot continue" because the Board's interpretation of the new rule in its February 29th and April 8th Orders had framed the litigation in such a way as to compel testimony "contrary to their lawful sovereign decisions and has directed wasteful discovery into irrelevant matters." Notice at 1. They stated that they have lawfully declared that they will not use LILCO's plan (thus, rebutting the presumption of the rule) or interface with LILCO; consequently, "no rationale can justify any inquiry whatsoever . . . into a point of fact that has been categorically ruled out of the realm of possibility." *Id.* at 5.

At a teleconference on June 10th, previously scheduled to deal with discovery disputes, the Board questioned Intervenor on the Notice and confirmed that the Notice meant that the Intervenor were not going to comply with Board orders on discovery. Tr. 20,852, 20,860-61. The Board stated that it would take action to impose appropriate sanctions against Intervenor. Tr. 20,862. But in any event, it was retaining jurisdiction over the discovery issues surrounding the production of the SCEOP.¹⁰

Between July 11 and 19, 1988, the Board conducted an inquiry on the production of emergency plans, whether they should have been produced earlier and the circumstances of nonproduction. The Board heard testimony from twelve witnesses. The Board found that the SCEOP had existed in essentially its present form since 1983. While the County maintained that the SCEOP was produced in 1982-1983, it had no records to establish that it was produced then or at any time prior to 1988 nor witnesses who could remember specifically that it was produced. LILCO had detailed discovery records which showed that it received about 160 pages of the SCEOP in several different submittals in 1982-1983. The Board concluded that the SCEOP should have been provided in response to discovery requests in 1982-1983; those sections added or updated after 1983¹¹ should have been provided under Intervenor's duty to amend prior discovery responses, 10 C.F.R. § 2.740; however, a number of existing sections of the SCEOP were not produced prior to 1988.

¹⁰In a teleconference on June 17, 1988, the Board confirmed that the Board had decided not to proceed further with the realism contentions, but had not yet determined the basis on which they would be disposed of. During a teleconference on June 24, in response to a request by LILCO, the Board indicated that it would consider dismissing the Intervenor from the proceeding. Tr. 20,923.

¹¹See, e.g., list of pages added or updated after 1983, LILCO's Supplement to its June 15 Brief on Discovery Sanctions in Light of Subsequent Developments, July 26, 1988, at 26 n.20.

On September 23, the Licensing Board issued its decision dismissing Intervenor from the proceeding. The Board concluded that the Intervenor's refusal to comply with Board orders was an act of willful disobedience which constituted bad faith. It found Intervenor's position, that the Board's orders coerced actions legally precluded, totally unacceptable. It noted that it had ruled that the realism contentions would not be dismissed due to Intervenor's failure to produce some evidence of an emergency plan. Neither its rulings nor the new rule 10 C.F.R. § 50.47(c)(1) could compel Intervenor to develop a particular plan. But the Applicant was entitled to explore through discovery the extent to which Intervenor had resources available and would respond in an emergency. Discovery became particularly important after the SCEOP was provided in light of previous uniform interrogatory replies that any State or County response would be speculative.

The Board viewed Intervenor's actions as the culmination of a pattern of conduct designed to prevent resolution of contentions regarding the adequacy of LILCO's emergency plan. The Intervenor created the situation that made the realism contentions important, but then refused to contribute to their resolution. They persistently relied on statements of noncooperation and policy statements that an adequate emergency plan was not possible in the face of NRC statements and federal case law that the adequacy of emergency planning is NRC's jurisdictional responsibility.

In evaluating all the circumstances surrounding Intervenor's actions, in an effort to tailor sanctions to mitigate the harm caused by their failure to comply with discovery obligations, the Board found no mitigating factors in the sequence of events leading up to its decision. No protective orders were sought, no advance warning was provided, and no subsequent offer of compliance was made beyond the unacceptable proffer of the two witnesses.¹² The Board also concluded that the failure to produce the SCEOP earlier resulted in three LILCO summary disposition motions being decided on an unnecessarily incomplete record. LBP-88-24, *supra*, 28 NRC at 374-75.

The Board rejected dismissal of contentions as an adequate sanction both because of the above actions tainting the adjudicatory process itself and because a prior finding of default and dismissal of sanctions did not deter the current conduct.¹³ Examining the actions, omissions, and consequences cited, the Board found a "sustained and willful strategy of disobedience and disrespect for the Commission's adjudicatory processes." 28 NRC at 376. Having created the situation that gave rise to the realism contentions, fair practice on the part of Intervenor was of critical importance. And although the disobedience was narrowly and selectively applied, it had a significant impact on the factual inquiry

¹²The Board also noted that Intervenor refused to permit discovery by LILCO on the EBS issue.

¹³*Long Island Lighting Co.* (Shorcham Nuclear Power Station, Unit 1), LBP-82-115, 16 NRC 1923, 1935 (1982).

into the adequacy of the LILCO plan. The Board concluded that the sanction of dismissal was the only appropriate remedy.

Judge Shon dissented from the Board's decision on sanctions. He would have dismissed the legal authority contentions but not the parties from the proceeding. While he found Intervenor's June 9 Notice objectionable, and their "steadfast reluctance" to disclose the SCEOP "clearly untenable after the issuance of CLI-86-13," he was unwilling to conclude that Intervenor had acted in bad faith. 28 NRC at 389-90.

IV. COMMISSION DECISION

A. Commission Policy on Sanctions

In our *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452 (1981), we established a graduated scale of sanctions including, in severe cases of a participant's failure to meet its obligations, dismissal from the proceeding. We identified the following factors to consider in deciding what sanction to impose:

the relative importance of the unmet obligation, its potential for harm to other parties or the orderly conduct of the proceeding, whether its occurrence is an isolated incident or a part of a pattern of behavior, the importance of the safety or environmental concerns raised by the party, and all of the circumstances.

13 NRC at 454. Sanctions were to be tailored if possible to mitigate the harm caused by the conduct and to bring about improved future compliance. We also made clear in our *Statement of Policy* that "[f]airness to all involved in NRC's adjudicatory procedures requires that every participant fulfill the obligations imposed by and in accordance with applicable law and Commission regulations." *Id.*

B. Applications of the Sanctions Policy to Shoreham

1. *The Importance of the Unmet Obligations and the Concerns Raised*

As should be clear from the background, the discovery sought from Intervenor went to the very heart of the remaining matters to be decided on Shoreham. After years of litigation, both before the Commission and in the courts, the critical issues remaining to be resolved for a final decision on LILCO's operating license application boiled down to these: Would the Governments, especially Suffolk County, generally follow the utility plan if Shoreham were to go into operation and an accident were to occur, or would the Governments respond in some manner other than in a completely *ad hoc* way which had been

dismissed previously as illogical and contrary to the safety of the citizens of Long Island; and, whatever the response anticipated, did the Governments have the resources and knowledge to implement the response in a reasonable fashion? After numerous filings and extensive argument before the Commission and its adjudicatory boards and the courts, the Intervenor finally reached the point last June when simple denials of cooperation and protestations of ignorance about what would happen if an accident were to occur would no longer hinder or delay a decision. Officials in responsible positions were to be put to the test in examination on depositions, and interrogatories had to be answered.

At this critical juncture two extraordinary events occurred. First, a detailed county emergency plan dating back to 1983 was produced. More timely production of this plan would have dramatically altered the proceeding. Not only would the Governments' protestations of lack of knowledge about how they would in fact respond in the event of an emergency at Shoreham have been severely undercut, but the development and evaluation of LILCO's own utility plan would have been materially assisted. Second, Intervenor told the Board that they would no longer comply with its orders but would instead themselves decide what witnesses and information would be produced. Needless to say, a hearing in which one party controls the information to be disclosed and the evidence that may be produced is so grossly unfair and biased as to amount to hardly any hearing at all.

2. Harm to the Other Parties and the Proceeding

Obstructionist tactics and refusal to comply with discovery obligations as ordered by the Board on May 26 and June 3, 1988, were patently unfair to the Applicant and effectively "stalled the proceeding in its tracks." *Commonwealth Edison Co.* (Byron Nuclear Power Station, Units 1 and 2), ALAB-678, 15 NRC 1400, 1417 (1982). Our decision in CLI-86-13, the statements supporting adoption of the amendments to § 50.47(c)(1) and several Licensing Board rulings made it clear that one of the critical issues in litigating the realism contentions was what the Governments *would* do in the event of a radiological emergency at Shoreham. LILCO was entitled to pursue through discovery what the response capabilities and intentions of the Governments would be in order to establish the sufficiency under § 50.47(c)(1) of an emergency response based on the LILCO offsite plan and LERO resources. Following the County's submission of the SCEOP, in the words of the Licensing Board, "[t]he importance of discovery in being able to plumb the ramifications of the County EOP with State and County officials, in light of previous uniform discovery replies that any State and County response would be 'speculative,' cannot be overestimated." LBP-88-24, *supra*, 28 NRC at 365.

The Board rejected Intervenors' argument that Board orders required them to take actions that are legally precluded or are an impossibility. We reject it also.¹⁴ The Board's orders did not compel any particular response to discovery.¹⁵ What the Board ordered was discovery to permit other parties to probe the basis of their statements and test the veracity of their statements of what they would or would not do, particularly in light of the SCEOP, in the event of a Shoreham emergency. But Intervenors refused to comply. Once a Board issues an order compelling discovery, the party to whom it is directed has no option but to comply with discovery or seek a protective order. Intervenors did neither. Instead, they refused to comply or even to continue with the proceeding. As the Appeal Board noted many years ago,

American jurisprudence has long passed the point where a party — particularly one represented by experienced counsel — may refuse to participate in a case because the presiding official ruled in a manner it did not like. There are appropriate ways of preserving objections to such rulings; going home is not one of them.

Northern Indiana Public Service Co. (Bailly Generating Station, Nuclear-1), ALAB-224, 8 AEC 244, 251 (1974).

3. *Pattern of Conduct*

We have examined the record of this proceeding to assess whether the actions of Intervenors are part of a pattern of behavior to delay or divert the proceeding. The record amply demonstrates that Suffolk County has engaged in a pattern of resistance to Board orders. During an earlier phase of the *Shoreham* proceeding, Suffolk County refused to comply with a Board order requiring public prehearing depositions on emergency planning contentions. Then as now the County contended that the Board ruling was illegal and refused to participate further in the matter. The Board dismissed their contentions as sanction for their conduct. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-82-115, 16 NRC 1923, 1935-36 (1982), *aff'd*, ALAB-788, 20 NRC 1102 (1984). In 1983, the same Licensing Board issued a decision on other emergency planning contentions that suggests that its 1982 sanctions had brought no change in Suffolk County's conduct. The Board declared: "The difficulty of our task,

¹⁴ Intervenors rest their argument on County Resolutions that the County will not expend resources to test or implement an emergency response plan for the Shoreham facility. But they cite no law that prohibits disclosure of information on possible emergency responses or on resources available to respond in the event of an emergency. In any event, such county law cannot interfere with the NRC's jurisdiction to carry out fact-finding necessary to determine matters material to licensing a power plant. See *LILCO v. Suffolk County*, 628 F. Supp. 654, 664-66 (E.D.N.Y. 1986).

¹⁵ Memorandum and Order (On Board Ruling of Various Motions Relating to Realism Issues), June 21, 1988, at 6.

trying to be objective in consideration of each of the parties' submissions, is further compounded by the County's misrepresentation of the complete record — by omission, selective citations and distortion of recorded testimony." LBP-83-57, 18 NRC 445, 579 (1983). At another point, the Licensing Board commented, "[t]he County's misreading of the record in this instance can only be viewed as being intentional . . ." 18 NRC at 515.

The County's failure to produce the Emergency Operations Plan in a timely manner is even more serious. The question of County plans to respond to emergencies, including nonnuclear ones, has been an issue in this proceeding since 1982.¹⁶ It has continued as an issue in this proceeding since that time and has been the central one since our remand in CLI-86-13. Yet the Board found that a number of existing sections of the County's SCEOP were not produced until May 1988. The County acknowledges that the Government's emergency planning information was requested in 1982 and 1983 and should have been produced then. The County maintains that it did provide its plans in response to discovery in the 1982-1983 period. But that argument only gets them so far. If they did submit the SCEOP earlier, then they had a duty to amend their responses as parts of the plan were added or updated. 10 C.F.R. § 2.740(e). Had they done so, LILCO, the Staff, and the Board would have been alerted to the fact that the underlying document was not in their possession. LILCO has consistently sought to have Intervenor's resources that could be used to respond to an emergency disclosed. Three summary disposition motions by LILCO have been rejected because no evidence was presented to show what the Governments' response in an emergency would be. The County's failure to submit the plan, or additions or updates, clearly affected the basis for the decisions on the summary disposition motions.

In April and May 1988 the County resisted providing any but their own designated witness for deposition and obstructed LILCO's questioning of witnesses during depositions. Finally, when ordered by the Board to provide witnesses for deposition following disclosure of the SCEOP, the County filed the June 9 Notice refusing to continue with discovery, or even with the proceeding itself which was being conducted at great expense to all of the parties largely at the County's own insistence.

The State of New York engaged in similar tactics during the remand proceeding. Despite the identification by the Board of the relevance of emergency plans in other areas or at other New York State nuclear facilities as one of the material issues to be heard, the State resisted providing any information on other plans in

¹⁶ Prehearing Conference Order (Phase I — Emergency Planning), July 27, 1982, at 23-24.

both depositions and responses to interrogatories.¹⁷ The State attempted unilaterally to limit deposition discovery to their designated witness.¹⁸ When directed by the Board to proceed with all noticed depositions¹⁹ counsel for the State of New York unjustifiably obstructed questioning of witnesses and the witnesses, often cued by counsel, were generally nonresponsive regarding information on the means by which the State would respond to a radiological emergency at Shoreham.²⁰ Despite repeated orders from the Board on May 10, May 26, and June 3, State witnesses were not made available for deposition. Instead, on June 9 the State along with Suffolk County, and the Town of Southampton submitted their notice to the Board that the proceeding could not continue. While the Town of Southampton had not responded separately to any interrogatories, identified any witnesses of their own, or been subject to deposition discovery, they nevertheless declared on June 9 along with the other Intervenor that the proceeding could not continue.

4. *The Governments' New Position on Appeal*

The Governments have now argued before the Commission that the June 9th Notice was merely a good-faith attempt to obtain appellate review of the Licensing Board's February 29th and April 8th decisions interpreting § 50.47(c)(1). They assert that the Board refused to rule on their offer of proof or to issue a final ruling dismissing the legal authority contentions. Thus the only way they could obtain appellate review was to refuse to comply with the discovery order.²¹ But this is nothing more than an effort at rationalization after the fact. First of all, as Intervenor acknowledged during oral argument, refusal to comply with the Board's order was not the only way Intervenor could obtain appellate review of the Board's rulings. The ordinary and proper response in the face of disagreement with a Board decision is to abide by the Board's order and seek relief on appeal. In addition, under Commission practice, interlocutory review of Licensing Board rulings may be sought through a motion for directed certification pursuant to 10 C.F.R. §§ 2.718(i) and 2.785(b)(1), where the Board ruling,

¹⁷ In discovery rulings on other emergency planning contentions, Licensing Boards had consistently ruled that information on other plants in New York was relevant. *See, e.g.*, Memorandum and Order (Ruling on Governments' Motion to Strike Portions of LILCO's Testimony on the Suitability of Reception Centers) at 8 (May 7, 1987); Memorandum and Order (Ruling on LILCO's March 18, 1987 Motion to Compel) at 4 (March 25, 1987); Memorandum Memorializing Ruling on Motion to Compel Response to LILCO's Interrogatories and to Produce Documents (March 17, 1987); Memorandum and Order (Ruling on LILCO's Motions to Compel New York State to Answer LILCO's First Set of Interrogatories and for a Protective Order) at 5-6 (December 19, 1986) (all unpublished).

¹⁸ *See* note 7, *supra*.

¹⁹ Confirmatory Memorandum and Order, dated April 12, 1988, and Confirmatory Memorandum and Order, April 18, 1988.

²⁰ *See, e.g.*, Deposition of David Axelrod, April 22, 1988, at 65-76, 93-107.

²¹ Governments' Reply Brief on Issue Identified in Commission's November 9 Order, January 3, 1989, at 13-14.

absent immediate appellate review, threatens a party with serious irreparable impact or affects the structure of the proceeding in a pervasive or unusual manner. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478 (1975); *Houston Lighting & Power Co.* (South Texas Project, Units 1 and 2), ALAB-637, 13 NRC 367 (1981). Secondly, nowhere in the text of the Notice or in the transcript of the teleconference on June 10 in which the parties discussed the Notice is there an indication that Intervenors were merely trying to obtain an expedited appeal of the Board's earlier rulings. As the Board indicated in its decision, it received no advance warning that Intervenors did not intend to comply with the discovery; no protective orders were sought.²² Rather, Intervenors waited for 2 months after issuance of the second order which they allege infringed on their "sovereign rights," until after the appearance of the Suffolk County Emergency Plan and the onset of discovery into its significance, and until the eve of litigation of the realism contentions, before taking any action that could conceivably lead to appellate review of the rulings. The Intervenors' pleadings before us cannot alter history.

Intervenors make the further argument that their defiance of the Licensing Board's discovery orders was appropriate because the Board, in a misinterpretation of the Commission's new emergency planning rule, was attempting "to compel the Governments to submit an 'adequate and feasible plan' that they would follow, or to agree to implement either the LILCO Plan or some other plan." Governments' October 27, 1988 Brief at 11 n.29. This argument fails on several counts, factual and legal. First, the Licensing Board was not seeking to compel the Governments to submit a plan. Rather, it was saying that in accordance with the rule's presumption (a presumption upheld by the First Circuit Court of Appeals), it would rule that the Governments would follow LILCO's plan in an emergency unless the Governments offered evidence that they would follow a different but adequate and feasible plan or offered other evidence of like kind.²³ What the Licensing Board was not prepared to accept was the Governments' assertion that they had no idea what they might do in an emergency, and that any attempt to pursue the issue was improper.

We do not view the Licensing Board's approach as contrary to the letter or spirit of the 1987 emergency planning rule, though we need not reach that issue today. Even if the Licensing Board's interpretation had been in error, however, there would have been no justification for the Intervenors' refusal to comply

²² LBP-88-24, *supra*, 28 NRC at 368.

²³ Confirmatory Memorandum and Order (Ruling on LILCO's Motions for Summary Disposition of Contentions 1, 2, 4, 5, 6, 7, 8, and 10, and Board Guidance on Issues for Litigation), February 29, 1988, at 2. In its written opinion expanding on these rulings the Board stated "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." LBP-88-9, 27 NRC 355, 369 (1988).

with discovery. All that was being sought in discovery was information. If the Intervenor truly had no plans to respond to a radiological emergency, all the documents and all the deposition testimony LILCO might obtain would simply have reinforced the Intervenor's position. If questions asked in depositions turned out to be pointless, because they sought information about nonexistent planning, it is difficult to see how the mere taking of depositions could have harmed the Intervenor.

In sum, there was no excuse for the Intervenor to arrogate to themselves the right to interpret the Commission's rules and to determine what discovery was or was not irrelevant. There were avenues for seeking review of decisions with which they disagreed; they chose not to use them. The Licensing Board's rulings placed them under no compulsion other than to provide truthful information. This obligation, which rests on every participant in an administrative or judicial proceeding, they were unwilling to meet.

Intervenor would also dissuade us from dismissing them from the proceeding because a pattern of misconduct has not been established for all of them, particularly the Town of Southampton. While it is true that no depositions were sought from the Town, it chose to sign the June 9th Notice declaring that the proceeding could not continue under the circumstances prescribed by the Board. We regard that prospective refusal to comply with the Board's authority to be as much an act of willful disobedience as the additional refusal by the other two parties to comply with Board-ordered discovery. Moreover, given the lack of separate contribution by the Town on the issues before the Board, we find that the participation in the June 9th Notice outweighs the other factors that might counter a decision to dismiss.

The Intervenor also asserts that dismissal is unjustified because they have committed no sanctionable conduct in other proceedings; to the contrary, they say that during 7 years of litigation, they have made significant contributions to the *Shoreham* proceeding and to the safety of the Shoreham plant.²⁴ They point, for example, to their pursuit of diesel generator safety issues, the applicability of General Design Criterion 17, 10 C.F.R. Part 50, Appendix A, to low-power operation, as well as a number of emergency planning issues, such as the failure of LILCO's 1986 exercise to comply with regulatory requirements for a full-participation exercise. It is true that the Intervenor have on occasion made a useful contribution. But this is not to say that the sum of their actions related to the Shoreham licensing controversy has necessarily been positive. For example, in 1986, a new law took effect in Suffolk County, enacted only weeks after the Federal Emergency Management Agency announced, over the objections of Suffolk County and New York State, that LILCO's emergency

²⁴ See Governments' Reply Brief on Issue Identified in Commission's November 9 Order, January 3, 1989, at 32-35.

plan would be tested in February 1986.²⁵ The February 1986 exercise, required by NRC regulations, was designed to test the adequacy of the emergency plan by simulating the responses of LILCO personnel and responsible officials. In view of the refusal of state and local officials to participate, their roles were to be played by federal and utility personnel. The new law made it a crime, punishable by a year in prison and a fine of \$1000, "for any person to conduct or participate in any test or exercise of any response to a natural or man-made emergency situation if that test or exercise includes as part thereof that the roles or governmental functions of any Suffolk County officials will be performed or simulated [without County approval]."²⁶ In short, compliance with a federal regulation had been made a local crime.

LILCO immediately sought a preliminary injunction, and on February 10, 1986, the U.S. District Court for the Eastern District of New York struck down the law as an unconstitutional interference with a preempted federal area. The court commented that "there is hardly any more effective way to interfere with an activity than to arrest the participants and subject them to criminal prosecution." *LILCO v. County of Suffolk*, 628 F. Supp. 654, 665 (E.D.N.Y. 1986). The court described the law's effect: "In sum, if the enforcement or specter of Local Law 2-86 prevents LILCO from participating in the test, then Suffolk County will have impeded the NRC's fact gathering and licensing authority under the Atomic Energy Act." *Id.* Finally, in words that are directly applicable to the issue before us today, the court declared:

States and localities are not required to develop emergency evacuation plans and a refusal to do so can be based on any reason or no reason. It is quite another matter, however, for a local government affirmatively to obstruct the information gathering process of the NRC for a reason that lies within the NRC's congressionally-mandated sphere of authority.²⁷

Whatever Intervenor's contributions to this proceeding may have been, the fact remains that on the central issues left to be resolved in this proceeding, Intervenor has refused to comply with Board-ordered discovery as detailed above. Significantly, Intervenor did not indicate in either their pleadings or oral argument that they regretted their conduct or would refrain from such conduct in the future. As the Licensing Board stated, "Intervenor created the situation that gave rise to the realism contentions, which were sufficient in themselves to

²⁵ An earlier test of the LILCO plan had been scheduled for February 1985, but was cancelled after Suffolk County, New York State, and the Town of Southampton obtained a declaratory judgment that LILCO lacked the legal authority to conduct the test, because as a private company it could not perform public functions traditionally reserved to state and local governments. *Cuomo v. LILCO*, No. 84-4615 (N.Y. Sup. Ct. Suffolk Cty. Feb. 20, 1985). The Commission subsequently decided that LILCO should be permitted to test those parts of the plan that it could legally exercise, and FEMA informed the NRC that it would be able to conduct the test. *LILCO v. County of Suffolk*, 628 F. Supp. 654 (E.D.N.Y. 1986).

²⁶ Quoted in *LILCO v. County of Suffolk*, *supra*, 628 F. Supp. at 659.

²⁷ *Id.* at 666.

block issuance of an operating license if there were further rulings adverse to LILCO. Fair practice in their resolution was of extraordinary importance in the case.” 28 NRC at 376. But Intervenor’s conduct did not comport with such fair practice. In our view, the most recent actions by Intervenor far outweigh any earlier contributions to the proceeding.

V. CONCLUSION

Taking into account all the circumstances, we must fashion a sanction that will if possible mitigate the harm caused by the parties’ failure to fulfill their obligations and that will bring about improved future compliance not just for this case but for future cases and parties as well. We also consider the views of our Licensing Board which has evaluated this case. The Licensing Board has had day-to-day contact with the parties and therefore is in an excellent position for concluding what sanction is appropriate for the actions and omissions that occurred before it.

In sum, we are driven to much the same conclusions as the Licensing Board: that the Intervenor chose to willfully disobey Board orders compelling discovery and refused to continue with the proceeding under the Board’s direction, that the County and the State unjustifiably obstructed discovery prior to the filing of the Notice, and that the County, by not submitting the complete SCEOP until May 1988, exhibited at a minimum careless disregard for its obligations to provide relevant information in response to discovery requests and to amend their responses on the County’s nonnuclear emergency planning. Under the circumstances, we conclude that the Intervenor should be dismissed from the *Shoreham* proceeding.

We find that the actions of the Intervenor before the OL-3 Licensing Board warrant their dismissal as parties from all proceedings pending before the Commission. Their refusal to comply with the Board’s orders or to continue with the proceeding in the manner prescribed by the Board strikes at the heart of the authority of the Board to conduct a duly authorized proceeding and challenges the integrity of the Commission’s adjudicatory process itself. We have considered the various options short of dismissal available to us, including a formal reprimand and warning and dismissing the Intervenor’s realism contentions. But our evaluation of the circumstances set forth above compels us to conclude that dismissal is appropriate and necessary. We would be remiss in our obligation to ensure that our licensing proceedings are managed fairly and with due regard for the rights of all the parties before us if we were to permit a party to arrogate unto itself the power to decide which of a Board’s orders it will or will not comply with.

Judge Shon in the decision below disagreed with his colleagues' conclusion that dismissal from the proceeding was the only appropriate penalty. He would have taken note of the fact that the parties subject to sanction were governments, that the Commission's rules provide for special treatment of states, and that in view of this special treatment extended by the Commission to state and local governments, particularly in regulations bearing on emergency planning, the Board should have been more reluctant to bar the Governments from the proceeding than they would be to bar private parties. We cannot (nor did the parties to this proceeding when questioned during oral argument) agree with Judge Shon that willful defiance of Board orders and Commission requirements by parties who are governments should be treated differently from misconduct committed by nongovernmental parties. While our regulations do recognize a distinct role for state and local governments in our proceedings, we have always held that all parties, including interested states and local governments, must strictly adhere to NRC requirements. *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760 (1977). If anything, we would have expected a greater respect for the orders of duly authorized adjudicatory boards from fellow governments.

We have examined the practice in federal courts to assess whether our action here is inconsistent with that of others in analogous situations. We conclude that it is not. *National Hockey League v. Metropolitan Hockey Club, Inc.*, 427 U.S. 639, 642-43 (1976) (per curiam); *Jones v. Niagara Frontier Transportation Authority*, 836 F.2d 731, 734-36 (2d Cir. 1987), *cert. denied*, ___ U.S. ___, 109 S. Ct. 74 (1988); *Chapman v. U.S. Commodity Futures Trading Commission*, 788 F.2d 408 (7th Cir. 1986).

We conclude that Intervenor willfully defied the Licensing Board's orders, thereby causing great harm and delay to the efforts of LILCO to demonstrate the sufficiency of its emergency plan under 10 C.F.R. § 50.47(c)(1) and to the integrity of the Commission's adjudicatory process. Accordingly, in view of all of the circumstances before us, we hereby dismiss Suffolk County, the State of New York and the Town of Southampton as parties from all proceedings pending before the Commission or any of our subordinate adjudicatory boards. All contested proceedings are now at an end; the proceeding on the 1988 emergency planning exercise before the OL-5 Licensing Board is terminated. As this decision constitutes the final adjudicatory decision in this matter, we also direct the following actions to ensure that no safety issues remain unexamined before issuance of an operating license for the Shoreham facility. The Director of Nuclear Reactor Regulation shall evaluate each contention that remains outstanding as a result of this Decision and explain to us in a public meeting whether, and if so, how, each has been resolved. Only after the conclusion of such a briefing, after the necessary findings of 10 C.F.R. § 50.57 have been

made, and after an affirmative Commission vote to authorize issuance, would a license for operation above 5% power be issued for the Shoreham facility.

It is so ORDERED.

For the Commission*

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 3d day of March 1989.

*Commissioner Curtiss did not participate in this Decision.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket Nos. 50-443-OL-1
50-444-OL-1
(Onsite Emergency Planning
and Safety Issues)

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

March 6, 1989

The Commission denies motions urging reconsideration of its decision in CLI-88-10, 28 NRC 573, on the basis (1) that the Commission should not have denied Intervenors' rule waiver petition on the ground that no significant safety question was presented because the parties were unaware of that criterion, and (2) that the Commission should not have resolved decommissioning funding issues on the basis of the existing record. The Commission determines that implicit in the "compelling circumstances" standard for granting rule waiver is a requirement that a rule waiver petition show that the safety matter at issue, if not "compelling," is at least "significant" and thus, absent such a showing, the Commission should be expected to deny the petition. On the decommissioning decision, the Commission determines that when CLI-88-7, 28 NRC 271, invoked both the reopening requirements and the standards for a late-filed contention, Intervenors must have been on notice that they should make an evidentiary case when they presented their contentions and that Applicants' prima facie case would prevail absent evidence to the contrary. Moreover, the Commission was under no obligation to search for "a needle in a haystack" with reference to a

figure for spent fuel costs which appeared in a massive document incorporated by reference in the Massachusetts Attorney General's motion to reopen the record.

FINANCIAL QUALIFICATIONS: PUBLIC HEALTH AND SAFETY CONCERNS

NRC: HEALTH AND SAFETY RESPONSIBILITIES

RULES OF PRACTICE: WAIVER OF RULES OR REGULATIONS

Implicit in the "compelling circumstances" standard in an agency whose mission is to ensure public health and safety is that to qualify for consideration, a rule waiver petition would need to show that the safety matter at issue, if not "compelling," was at least "significant."

FINANCIAL QUALIFICATIONS: PUBLIC HEALTH AND SAFETY CONCERNS

NRC: HEALTH AND SAFETY RESPONSIBILITIES

OPERATING LICENSE: CRITERIA (FINANCIAL QUALIFICATIONS)

RULES OF PRACTICE: WAIVER OF RULES OR REGULATIONS

The Commission's interest in financial qualifications is focused on any possible relationship to safety. Absent a showing of safety significance, the Commission should be expected to deny rule waiver petitions.

FINANCIAL QUALIFICATIONS: PUBLIC HEALTH AND SAFETY CONCERNS

OPERATING LICENSE: CRITERIA (FINANCIAL QUALIFICATIONS)

RULES OF PRACTICE: WAIVER OF RULES OR REGULATIONS

Since the parties did not present any contrary argument on safety significance in their motions for reconsideration, the Commission maintains the view that, having provided for decommissioning funding, a rule waiver is not necessary to address a significant safety problem on its merits.

RULES OF PRACTICE: EVIDENCE; FINDINGS OF FACT

Parties must clearly identify evidence on which they rely.

**RULES OF PRACTICE: EVIDENCE; FINDINGS OF FACT;
MOTION(S)**

A petitioner may not simply incorporate massive documents by reference as the basis for or as a statement of his contentions. Wholesale incorporation by reference does not serve the purposes of a pleading.

**RULES OF PRACTICE: EVIDENCE; FINDINGS OF FACT;
MOTION(S)**

Parties shall clearly identify the matters on which they intend to rely with reference to a specific point. The Commission cannot be faulted for not having searched for a needle that may be in a haystack.

**RULES OF PRACTICE: CONTENTIONS; CONTENTIONS
(CHALLENGE AFTER ACCEPTANCE); EVIDENCE; FINDING OF
FACT**

Where a contention is based on a factual underpinning in a document that has been essentially repudiated by the source of that document, the contention may be dismissed unless the intervenor offers another independent source.

**RULES OF PRACTICE: CONTENTIONS; CONTENTIONS
(CHALLENGE AFTER ACCEPTANCE); MOTION(S); MOTION
FOR RECONSIDERATION; MOTION FOR RECONSIDERATION
(RAISING MATTERS FOR THE FIRST TIME)**

A motion for reconsideration cannot open the door for a new contention, nor can a party complain when it receives essentially what it requested.

MEMORANDUM AND ORDER

I. INTRODUCTORY OVERVIEW

This Memorandum and Order responds to motions before the Commission seeking reconsideration of its December 21, 1988 decision on all then-pending

financial qualification and decommissioning cost matters in this proceeding, CLI-88-10, 28 NRC 573. In that decision the Commission did not accept Applicants' decommissioning funding plan as presented, but rather required that before low-power testing could be authorized Applicants fully fund a separate and segregated account with Applicants' Disbursing Agent in the sum of \$72.1 million and provide specified additional guarantees to reasonably assure that funds will be available to safely decommission the reactor in the event that a full-power license is not granted. In light of this unprecedented and substantial requirement and the absence of any other financial issue with significant safety implications for low-power testing, the Commission further decided in CLI-88-10 not to exercise its discretion to grant the requested rule waiver. Thus, no financial qualification review is currently available in this proceeding. On consideration of the views of the parties, the Commission continues to believe that its decision in CLI-88-10 is sound and comports fully with its responsibilities. Accordingly, reconsideration is denied.

II. BACKGROUND AND POSITIONS OF THE PARTIES

A. Background

In CLI-88-7, 28 NRC 271 (1988), the Commission recognized that the Intervenor¹ chief financial concern related to the ability to fund safe decommissioning after low-power testing in the event full-power operation was not authorized.² In this light, the Commission in CLI-88-10 established specific financial assurance requirements to provide reasonable assurance of the availability of decommissioning funding in the above circumstances hypothesized by Intervenor¹s. It is evident that by establishing these requirements the Commission provided a level of assurance of availability of funding that equals or exceeds the level of assurance generally required by the decommissioning rule. That rule, if it applied to the circumstances of this case,³ would have been satisfied were Applicants to have done no more before receiving any operating license than establish a funding plan and begin periodic payments into an external account.⁴

¹ The Attorney General of Massachusetts (MassAG), Seacoast Anti-Pollution League (SAPL), Town of Hampton (TOH), and New England Coalition on Nuclear Pollution (NECNP) are the Intervenor¹s that have moved for reconsideration. We refer to them collectively by that term in this memorandum.

² The Commission has never considered — let alone decided — that a full-power license cannot be issued for Seabrook at some time subsequent to low-power testing.

³ The Commission held in CLI-88-7, *supra*, that the decommissioning rule did *not* directly apply to the decommissioning requirements necessary in the circumstances hypothesized by Intervenor¹s — i.e., end of plant life after low-power testing.

⁴ The first required payment need not have exceeded \$3 million on an annual basis. See 10 C.F.R. §§ 50.75(c)(1)(i) and (e)(1)(ii).

B. Position of Intervenor

By motion of December 27, 1988, MassAG raises two "problems" with CLI-88-10,⁵ which SAPL and NECNP adopt by joint motion of January 5, 1989. With respect to the certified rule waiver petition, Intervenor find a violation of due process in the Commission's basing its decision on the absence of a significant safety question because the parties were allegedly unaware of that "criterion." On the decommissioning decision, MassAG complains that the Commission erred in resolving the decommissioning funding matter on the basis of the record. This complaint focused almost entirely on the alleged error in deciding on the fuel storage costs that would be likely to be involved in decommissioning Seabrook in light of allegedly conflicting evidence on the record from Applicants' own expert.⁶ SAPL, TOH, and NECNP not only embrace this argument but enlarge it with a broad claim that the procedure followed by the Commission was insufficient under § 189a of the Atomic Energy Act, as well as under constitutional requirements for due process. For support they relied on an alleged lack of notice that the Commission would decide the decommissioning questions on the existing record and without a full-fledged trial of the issues preceded by adequate discovery and time for preparation.

C. Position of Applicants and Staff

On the financial qualifications waiver, Applicants argue that Intervenor have not shown that the Commission erred in not finding safety significance in the matter. This being the case, they assert, due process does not require a hearing. Regarding complaints of violation of § 189a hearing rights, Applicants make two points: first, that the matter before the Commission was whether to suspend its rules, a matter of broad discretion; and second, that the Commission was operating in the realm of financial qualifications and reasonable assurance of funding where it has been judicially recognized that the Commission has broad discretion on financial qualifications and "cannot be 'second guess[ed]'" as to

⁵ On February 1, 1989, MassAG filed an additional document denominated "Reply of the Massachusetts Attorney General to the Responses of the Applicants and Staff to the MassAG's Motion for Reconsideration of CLI-88-10." The regulations provide no automatic right for such a reply, and leave has not been sought. To date in the interest of a complete record, the Commission has accepted all of the pleadings lodged with it by parties and amicus save one that was specifically excluded by CLI-88-10. See 28 NRC at 601. However, the parties are abusing the Commission's tolerance by failing to put in initial pleadings all the arguments then available to them. On threshold review, MassAG's reply appears in substantial measure to present such a case. The matters discussed for the most part not only could have been raised in the original motion for reconsideration, but should have been raised at the time of filing contentions in opposition to Applicants' decommissioning plan. Accordingly, we reject MassAG's "Reply" and counsel the parties to observe more carefully the procedures set forth in 10 C.F.R. Part 2 Subpart G.

⁶ MassAG noted that its motion filed on December 28 was not intended to raise all its concerns given the "potentially immediate impact of CLI-88-10." MassAG's Motion at 2 n.1. MassAG did not seek to file any supplementary basis at least until February 1, 1989.

the level of proof the reasonable assurance requires.”⁷ With respect to the cost estimate alleged to conflict with that employed by the Commission, Applicants explain that the scope of the two estimates was not substantially the same. Applicants say that its earlier cost estimate included costs that were extraneous to the Commission’s current inquiry or were otherwise included under separate headings.

The Staff sees no error in the Commission’s exercise of its discretion not to grant a waiver petition that had been certified to it. Staff essentially supports Applicants’ view of the fuel cost “discrepancy” and in addition, proffers an affidavit to show that the estimate adopted by the Commission compares favorably with the storage costs incurred in decommissioning other facilities.⁸ Finally, the Staff asserts that the Commission offered the opportunity for a hearing, but no hearing was thereafter required given the circumstances. Staff enumerates the aspects presented by Intervenors’ contentions and argues that, on some, Intervenors prevailed and on the others they lost as a matter of law or for failure to meet their burden under Commission rules so that none remained to be litigated.

III. COMMISSION DECISION

A. Intervenors feign surprise that the Commission should care whether there is any safety significance in waiving a rule and complain that they were unaware that they should present this factor in their pleadings. Their argument is unpersuasive. It has long been Commission law that a rule waiver would be granted “‘only in unusual and *compelling* circumstances.’” *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-895, 28 NRC 7, 16 (1988), quoting *Northern States Power Co.* (Monticello Nuclear Generating Plant, Unit 1), CLI-72-31, 5 AEC 25, 26 (1972) (emphasis provided). Implicit in the “compelling circumstances” standard in an agency whose mission is to ensure the public health and safety is that to qualify for consideration, a rule waiver petition would need to show that the safety matter at issue, if not “compelling,” was at least “significant.” Moreover, it has been no secret that the Commission’s interest in financial qualifications is focused on any possible relationship to safety. Therefore, absent a showing of safety significance the Commission should have been expected to deny the rule waiver petition. Intervenors appeared to have recognized this because their own

⁷ Applicants’ Answer to NECNP et al.’s Motion for Reconsideration (January 13, 1989) at 3, quoting *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 93 (1st Cir. 1978).

⁸ The Commission has decided not to accept this affidavit or any affidavit or evidence presented on reconsideration. Reconsideration will be on the basis of the record before the Commission at the time it reached its decision in CLI-88-10.

petitions to the Commission emphasized the safety importance of not allowing Seabrook to go to low power without the assurance of the availability of funds for *safe* decommissioning. In any event, the parties did not present any contrary argument on safety significance in their motions for reconsideration. Hence the Commission maintains the view that, having provided for decommissioning funding, a rule waiver was not necessary to address a significant safety problem on its merits.

B. When CLI-88-7 invoked both the reopening requirements and the standards for a late-filed contention, Intervenors must have been on notice that they should make an evidentiary case when they presented their contentions and that Applicants' prima facie case would prevail absent evidence to the contrary. In many areas Applicants and Staff presented the *only* evidence on point. In other areas — for example, the contingency factor — the Commission agreed with Intervenors' position, and Intervenors therefore are not prejudiced by the decision procedure. In still other areas — for example, scope of the decommissioning plan — CLI-88-10 resolved purely legal or policy issues for which no evidentiary hearing is required by law.

This responds to Intervenors' general claims of denial of hearing rights and due process. Intervenors' specific claim that the Commission denied them their hearing rights in establishing the amount for spent fuel storage costs is also unfounded. The claim here is that MassAG presented on the record conflicting figures, which had been prepared by Applicants, of at least \$700,000 per month for spent fuel costs, and thus the Commission failed to try a genuine issue of fact. The claim fails for several reasons. First, parties must clearly identify evidence on which they rely. MassAG tells us that he put the contradictory figures in evidence. Yet nowhere in MassAG's contention or basis on the decommissioning funding plan or in the late-filed contention, on financial qualifications, where these figures are reportedly referenced, is there a specific reference to developed figures on spent fuel storage costs. Certainly, MassAG's own expert offered no figure. Nor is there any statement that would have pointed us clearly in the direction that the MassAG would now have us follow. MassAG *now* relies on certain introductory language in papers filed with the Commission in response to CLI-88-7 that "[a]ll of the facts and assertions contained in [his] petition under 10 C.F.R. 2.758" are "incorporated by reference."⁹ It is notable that the MassAG's § 2.758 petition, as multiply supplemented and amended, is a sizable document. Commission practice is clear that a petitioner may not simply incorporate massive documents by reference as the basis for or as a statement of

⁹ See Motion of Massachusetts Attorney General James M. Shannon to Reopen the Record to Consider Evidence Concerning the Joint Applicants' Financial Qualifications to Operate the Seabrook Nuclear Power Station and to Admit the Attached Late-Filed Contentions Concerning Said Financial Qualifications, Attachment 1 (Contention 1).

his contentions. *Tennessee Valley Authority* (Browns Ferry Nuclear Plant, Units 1 and 2), LBP-76-10, 3 NRC 209, 216 (1976). Such a wholesale incorporation by reference does not serve the purposes of a pleading. See *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), LBP-85-20, 21 NRC 1732, 1741 (1985), *rev'd and remanded on other grounds*, CLI-86-8, 23 NRC 241 (1986). The Commission expects parties to bear their burden and to clearly identify the matters on which they intend to rely with reference to a specific point. The Commission cannot be faulted for not having searched for a needle that may be in a haystack.

Even were Applicants to have fairly presented contradictory figures for the same element, MassAG could not have relied on the earlier figure without independent corroborating evidence. Commission law is clear that where a contention is based on a factual underpinning in a document that has been essentially repudiated by the source of that document, the contention may be dismissed unless the intervenor offers another independent source. *Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), ALAB-872, 26 NRC 127, 136 (1987). This is all the more true where, as here, both of the allegedly inconsistent positions were available to Intervenor prior to their being required to file their contentions and evidence. At the very least, Intervenor might have attempted to explain why one particular estimate was the better one.

Finally, the figures relied on by MassAG do not squarely challenge those included in the Commission's determination. The Applicants correctly detail that the \$110,000 costs the Commission derived from Table 2 of § 3 of the Applicants' plan in Response to NRC Order CLI-88-7 were solely for costs associated with storing fuel on site after completion of decontamination and removal of the reactor vessel and associated equipment. The costs of decommissioning and decontamination, contingency, and the like were included as separate items, unlike the earlier figures, preferred by MassAG, which were prepared to answer a different question and thus had a different scope.

C. NECNP, SAPL, and TOH on reconsideration complain that the specifications of the guaranteed prefunded account demanded by the Commission are insufficient. A motion for reconsideration cannot open the door for a new contention. Only SAPL earlier addressed the institutional arrangements for funding, and SAPL conceded that "if the costs reasonably to be needed are appropriately estimated and prefunded" by Applicants, that would be sufficient. SAPL did not then state any method that must be followed to establish a prefunded account.¹⁰

¹⁰ In this context it is of interest that MassAG sought use of the rule to establish the sum to be ensured. That sum MassAG computed to be \$75.484 million, and by happenstance that sum was not significantly different from the amount required by the Commission. See MassAG James M. Shamon's Late Filed Contentions, Corrected Attachment 1 at 3, November 9, 1988. It is true that MassAG also sought to add costs related to spent fuel disposal, but were the MassAG correct that the decommissioning rule was applicable to the response to our CLI-88-7 order, spent fuel costs would have been by rule excluded.

Thus, SAPL cannot be heard now to complain that the Commission will accept a prefunded separate and segregated account so long as it is fully guaranteed by two financially healthy utility-guarantors. Such an account, although not *externally* held, is appropriate in these special circumstances and gives SAPL essentially what it requested.

IV. CONCLUSION

For the foregoing reasons, the Commission adheres to the views it expressed in CLI-88-10.¹¹

It is so ORDERED.

For the Commission¹²

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 6th day of March 1989.

¹¹ The terms of this order dispose of all pending motions before the Commission itself on the rule waiver and decommissioning issues.

¹² Commissioner Roberts was not present for the affirmation of this order; if he had been present he would have approved it.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

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 6, 1989*

The Commission determines that Intervenors had not met their burden of showing a lack of fundamental fairness in the hearing schedule that rose to the level of a violation of due process.

**RULES OF PRACTICE: ADMINISTRATIVE FAIRNESS;
COMMISSION CONSIDERATION OF PROCEDURAL MATTERS;
SCHEDULING**

The schedule at issue simply cannot be said to be so draconian as to raise an issue of constitutional due-process dimensions.

*Reservice March 9, 1989, of Commission's Memorandum and Order, dated March 6, 1989, to provide CLI designation and correct caption.

MEMORANDUM AND ORDER

By Memorandum and Order of February 8, 1989,¹ the Atomic Safety and Licensing Appeal Board (Appeal Board) forwarded to us the joint motion of the Attorney General of Massachusetts, the Seacoast Anti-Pollution League, and the New England Coalition on Nuclear Pollution (Intervenors) seeking interlocutory relief from a scheduling order of the Atomic Safety and Licensing Board that is hearing offsite emergency planning issues in this operating license proceeding.²

We considered Intervenors' motion for directed certification, along with responses of Applicants and the Staff³ to the motion, to determine whether Intervenors had met their burden of showing a lack of fundamental fairness in the schedule that rose to the level of a violation of due process. See *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-889, 27 NRC 265, 269 (1988) (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-864, 25 NRC 417, 420-21 (1987)). In arriving at our ruling we also reviewed the three rulings of the Appeal Board on previous motions for directed certification of schedules in this proceeding to ascertain where the schedule at issue here fell on the spectrum between one schedule that had been adjudged warranting grant of certification and those adjudged warranting denial. See ALAB-889 (denial), ALAB-864 (grant), and ALAB-858, 25 NRC 17 (1987) (denial).

On consideration of all the foregoing, it is clear to us that, at the least, the Staff is correct that the schedule at issue "simply cannot be said to be 'so draconian as to raise an issue of constitutional [due process] dimensions.'" Staff's Response at 11, quoting ALAB-889, 27 NRC at 269 (insertion provided). That being so, Intervenors have not met their burden. Accordingly, Intervenors' motion for directed certification is denied.

¹ ALAB-910, 29 NRC 95 (1989) (noting constraint in ruling on the subject motion in light of a February 3, 1989 Commission statement commending the Licensing Board). The Commission's February 3 statement which commended efforts toward a goal of "bring[ing] this proceeding to a close within a reasonable timeframe, taking into account the rights of the parties" was not intended as a formal, adjudicatory approval of the scheduling order at issue here. Moreover, it is not inappropriate for the Commission in its supervisory capacity to interest itself in "target" date estimates, especially in matters that are particularly resource intensive. Such dates are not requirements unless otherwise stated.

² Memorandum and Order (Setting Hearing Schedule), January 24, 1989 (unpublished).

³ The Commission found the Staff's paper particularly helpful in evaluating this matter.

Commissioner Curtiss did not participate in this order.
It is so ORDERED.

For the Commission*

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 6th day of March 1989.

*Commissioner Roberts was not present for the affirmation of this order; if he had been present he would have approved it.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Christine N. Kohl, Chairman
Alan S. Rosenthal
Howard A. Wilber

In the Matter of

Docket No. 50-322-OL-3
(Emergency Planning)

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

March 13, 1989

Following the Commission's termination of the proceeding by its dismissal of the intervenors, the Appeal Board dismisses their pending appeals from the Licensing Board's decision on certain emergency planning issues, LBP-88-24, 28 NRC 311 (1988), and, in the exercise of its *sua sponte* review authority, renders an advisory opinion on the results of its review of the record on those issues.

RULES OF PRACTICE: *SUA SPONTE* REVIEW

Under long-established, Commission-endorsed practice, in the absence of an appeal, the Appeal Board reviews "*sua sponte* 'any final disposition of a licensing proceeding that either was or had to be founded upon substantive determinations of significant safety or environmental issues.'" *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), ALAB-655, 14 NRC 799, 803 (1981) (quoting *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-571, 10 NRC 687, 692 (1979)). *See*

also *Northern States Power Co.* (Monticello Nuclear Generating Plant, Unit 1), ALAB-611, 12 NRC 301 (1980).

RULES OF PRACTICE: *SUA SPONTE* REVIEW

Although the Appeal Board usually undertakes *sua sponte* review in proceedings that have become uncontested because all of the intervenors have either withdrawn or declined to appeal, *sua sponte* review is not precluded where intervenors have been dismissed as a sanction. See, e.g., *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-691, 16 NRC 897 (1982), *review declined*, CLI-83-2, 17 NRC 69 (1983).

RULES OF PRACTICE: *SUA SPONTE* REVIEW

The purpose of Appeal Board *sua sponte* review is protection of the public interest in general (as opposed to a particular litigant's interest) by providing another independent level of review of significant health, safety, and environmental issues on which a substantial evidentiary record already exists.

RULES OF PRACTICE: *SUA SPONTE* REVIEW

The Appeal Board generally will not undertake *sua sponte* review where all the parties have agreed to a stipulated settlement of the contested issues, effectively resulting in a dismissal of the proceeding. *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-796, 21 NRC 4 (1985).

RULES OF PRACTICE: OFFICIAL NOTICE

The Commission's Rules of Practice allow the taking of official notice only 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." 10 C.F.R. § 2.743(i).

EMERGENCY PLANS: NOTIFICATION REQUIREMENTS

Absent NRC regulations or evidence to the contrary, it can be presumed that a station that undertakes to become a part of an established Emergency Broadcast System will carry out in any emergency (nuclear or otherwise) the responsibilities it has assumed.

RULES OF PRACTICE: *SUA SPONTE* REVIEW

If, in the course of *sua sponte* review, the Appeal Board concludes that corrective action adverse to a party's interest is necessary, the Board ordinarily affords that party an opportunity to address the matter. See *Offshore Power Systems* (Manufacturing License for Floating Nuclear Power Plants), ALAB-689, 16 NRC 887, 891 n.8 (1982).

TECHNICAL ISSUES DISCUSSED

Emergency Broadcast System

Role Conflict Faced by School Bus Drivers During Emergencies.

MEMORANDUM AND ORDER

In LBP-88-24, the Licensing Board ruled on three emergency planning issues before it (the adequacy of the emergency broadcast system (EBS), school bus driver role conflict, and hospital evacuation) and also dismissed the intervening Governments (Suffolk County, the State of New York, and the Town of Southampton) from the remainder of the proceeding as a sanction.¹ The Governments appealed their dismissal as well as the Board's disposition of the EBS and school bus driver issues. In ALAB-902, we concluded that the Licensing Board had exceeded its authority insofar as it purported to dismiss the Governments from a portion of the proceeding pending before another Licensing Board, and we therefore reversed LBP-88-24 to that extent.² The Commission ultimately declined to review our jurisdictional ruling, leaving it intact.³ In an unpublished order issued November 9, 1988, however, the Commission stated that it would decide the merits of the Governments' appeals from the dismissal order, but left for us to resolve in the first instance the remaining issues on appeal (i.e., EBS and school bus drivers). Earlier this month, in CLI-89-2, the Commission upheld the Licensing Board's dismissal of the Governments from all pending adjudicatory proceedings.⁴ As the Commission succinctly stated, "[a]ll contested proceedings are now at an end."⁵ Thus, we are obliged to dismiss the Governments' remaining appeals from LBP-88-24.

¹ 28 NRC 311 (1988).

² 28 NRC 423 (1988).

³ CLI-88-11, 28 NRC 603 (1988).

⁴ 29 NRC 211 (1989).

⁵ *Id.* at 232.

Under long-established, Commission-endorsed practice, however, in the absence of an appeal we “review *sua sponte* ‘any final disposition of a licensing proceeding that either was or had to be founded upon substantive determinations of significant safety or environmental issues.’”⁶ Usually we undertake such review in proceedings that have become uncontested because all of the intervenors have either withdrawn or declined to appeal — unlike here, where they have been dismissed as a sanction. We see no reason, however, why that should preclude *sua sponte* review here, given the purpose of such review: protection of the public interest in general (as opposed to a particular litigant’s interest) by providing another independent level of review of significant health, safety, and environmental issues on which a substantial evidentiary record already exists.⁷ Moreover, *sua sponte* review of the Licensing Board’s disposition of the school bus driver issue is especially appropriate, inasmuch as the Board’s ruling is a direct consequence of our own prior remand of that issue in ALAB-832, well before the circumstances existed that gave rise to the decision to dismiss the Governments.⁸ Finally, the Commission did not impose the dismissal sanction retroactively so as to reject *ab initio* previously admitted and litigated contentions. Nor did it vacate, affirm, or otherwise address the portions of LBP-88-24 still before us. Indeed, the Commission explicitly “terminated” only the portion of this licensing proceeding that involves the 1988 emergency exercise, termed the “OL-5” docket.⁹ In these circumstances, we therefore find no reason to depart from our customary practice and have reviewed *sua sponte* the Licensing Board’s disposition of the EBS, school bus driver, and hospital evacuation issues.¹⁰

We recognize, of course, that the Commission described CLI-89-2 as “the final adjudicatory decision in this matter” and instructed the Director of the Office of Nuclear Reactor Regulation (NRR) to “evaluate each contention that remains outstanding as a result of this decision and [to] explain . . . in a public

⁶ *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), ALAB-655, 14 NRC 799, 803 (1981) (quoting *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-571, 10 NRC 687, 692 (1979)). See also *Northern States Power Co.* (Monticello Nuclear Generating Plant, Unit 1), ALAB-611, 12 NRC 301 (1980).

⁷ In a similar situation, in *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-691, 16 NRC 897 (1982), review declined, CLI-83-2, 17 NRC 69 (1983), we dismissed an intervenor’s appeal after concluding that the intervenor’s conduct amounted to a waiver of its appeal rights. We nonetheless went on to conduct *sua sponte* review of the Licensing Board’s decision. Only where all the parties have agreed to a stipulated settlement of the contested issues, effectively resulting in a dismissal of the proceeding, have we declined *sua sponte* review. *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-796, 21 NRC 4 (1985).

⁸ See 23 NRC 135, 152-54 (1986), *rev’d in part on other grounds*, CLI-87-12, 26 NRC 383 (1987).

⁹ CLI-89-2, 29 NRC at 232.

¹⁰ Because the Governments’ appeal was fully briefed and argued and our consideration of it was nearing completion when the Commission issued CLI-89-2, it would deny reality to claim now that we have given no consideration whatsoever to the parties’ arguments on appeal. Thus, given the unusual posture of this proceeding, our *sua sponte* review has been aided equally by the presentations of all the participants, past and present. In keeping with the purpose and proper scope of *sua sponte* review, however, we do not address any of the procedural aspects of the Licensing Board’s decision to which the Governments objected in their now-dismissed appeals.

meeting whether, and if so, how, each has been resolved.”¹¹ The stated purpose of this public review by the Director of NRR is “to ensure that no safety issues remain unexamined before issuance of an operating license for the Shoreham facility.”¹² Because we have already devoted considerable attention to several of those outstanding safety issues, we believe our views might well aid the Director and ultimately the Commission in their evaluation of them.¹³ Publicly providing those views in the context of *sua sponte* review is, in our opinion, fully consistent with CLI-89-2 and the responsibility generally vested in us by the Commission. To that end, we offer the following essentially advisory opinion.¹⁴

I. EMERGENCY BROADCAST SYSTEM

The Commission’s regulations require that “means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone [EPZ] have been established.”¹⁵ At one time applicant Long Island Lighting Company (LILCO) contemplated that this requirement would be met in part by a network of radio stations in which a lead role would be played by WALK, located on Long Island. Subsequent to a Licensing Board determination that the WALK network provided an adequate emergency broadcast system, WALK withdrew from participation in the system. This development led the Commission to direct that the record be reopened on the EBS matter.¹⁶

After an aborted attempt to substitute a radio station network headed by WPLR-FM located in New Haven, Connecticut, LILCO ultimately informed the Licensing Board that it proposed to rely upon an already existing EBS for Nassau and Suffolk Counties.¹⁷ That EBS was established by the State of New York and approved by the Federal Communications Commission (FCC) in 1981. In the event of a natural disaster or other emergency situation warranting communication with the public in those counties, it can be activated by federal, state, or local authorities. The lead facility is WCBS, a 50,000-watt station located in New York City. Should there be an emergency necessitating resort to the system, WCBS is first contacted. It is then responsible for both (1) broadcasting any emergency informational messages provided to it, and (2)

¹¹ CLI-89-2, 29 NRC at 232.

¹² *Ibid.* See also *id.* at 216 n.4.

¹³ In this connection, we note that another outstanding issue concerns the suitability of applicant’s reception centers. In ALAB-905, 28 NRC 515 (1988), reviewed *declined* (February 17, 1989), we remanded two matters to the Licensing Board for its further consideration. See *id.* at 535 & n.75. Thus far, that Board has taken no action on the remand.

¹⁴ See, e.g., ALAB-900, 28 NRC 275, 284-85, *petition for review denied*, CLI-88-11, 28 NRC 603 (1988).

¹⁵ 10 C.F.R. § 50.47(b)(5).

¹⁶ See CLI-87-5, 25 NRC 884 (1987).

¹⁷ See LILCO’s Second Motion for Summary Disposition of the EBS Issue (June 20, 1988) [hereinafter “Second Motion”], Attachment 1.

transmitting the messages to a network of more than 30 radio stations for dissemination by those stations to their Nassau/Suffolk audiences.¹⁸

After some procedural skirmishing, the Licensing Board entertained and then granted in LBP-88-24 LILCO's motion for summary disposition on the adequacy of the WCBS-based EBS. The Board concluded that the materials offered in support of the motion demonstrated, without sufficient refutation by the Governments, that, by itself, WCBS provided full coverage to the Shoreham EPZ. The Board went on to opine that, even were this not so, such coverage would be supplied by the entire network of stations.¹⁹

The Licensing Board's determination that the signal strength of WCBS will enable that station to broadcast messages that will be heard throughout the EPZ rested upon an engineering report and affidavit prepared for LILCO by Cohen and Dippell, P.C., Consulting Engineers, Radio and Television.²⁰ That determination was reached despite the fact that the report itself indicates that the WCBS signal level does not meet throughout the Shoreham EPZ the FCC standard of 2.0 millivolts per meter (mV/m) for primary service to communities with populations in excess of 2500 persons.²¹ To the contrary, according to the report,

[a]n analysis of the field strength measurements shows WCBS provides a maximum signal level of 2.35 mV/m and a minimum signal level of 0.58 mV/m to the EPZ area. Based on the measured radial method for determining AM service, the WCBS 0.5 mV/m contour extends to a distance of 105 kilometers from the WCBS transmitter site. The distance to other contours can be determined by reference to the attached graph of field strength versus distance.

A 0.5 mV/m signal is the FCC required for primary service to rural areas and communities with population less than 2500 persons, and this WCBS contour covers the entire EPZ. However, a signal strength of 2 mV/m is required by the FCC standards to serve communities with population in excess of 2500 persons including "Census Designated Places" (CDP's). *The EPZ consists of numerous CDP's and communities in excess of 2500 persons.*²²

Significantly, the Licensing Board omitted this last sentence in its excerpt from the Cohen and Dippell report. Its rejoinder, however, was that

¹⁸ See *id.*, Attachment 4.

¹⁹ LBP-88-24, 28 NRC at 327-28, 331.

²⁰ See *Second Motion*, Attachment 6.

²¹ Two portions of the FCC regulations are pertinent to this issue. "Primary service area" is that area wherein "the groundwave is not subject to objectionable interference or objectionable fading." 47 C.F.R. § 73.14 (1987). The groundwave signal strength required to render primary service is 2.0 mV/m for communities with populations of 2500 or more, and 0.5 mV/m for communities with populations of less than 2500. 47 C.F.R. § 73.182(e).

²² *Second Motion*, Attachment 6 at 2 (emphasis added).

[i]t is immaterial to a determination of adequacy of the State EBS whether WCBS meets the FCC criteria as a provider of primary service in every portion of the EPZ. The question before us is whether or not it can adequately notify residents of the EPZ *in an emergency*. The Board declines, however, to put an absurd construction on a federal rule, and we therefore do not accept the possibility that FCC has defined broadcast signal strengths for primary service that are too weak to be received. Even though the consultant report does not give the minimum signal strength for adequate radio reception, the only reasonable interpretation of the federal criteria for primary stations cited by the consultant is that a strength in excess of 0.5 mV/m provides acceptable reception. It is uncontroverted that WCBS operates at maximum permissible power for AM stations and that it provides a signal strength of at least 0.58 mV/m throughout the EPZ. [Second] Motion, Attach. 9. The Board concludes that whether or not WCBS meets the FCC definition of a primary station within the EPZ, LILCO's consultant plainly intended to establish with the foregoing information that the signal strength of WCBS is adequate to provide emergency information to residents throughout the EPZ. No material facts to the contrary have been presented that would justify opposition to that conclusion.²³

This analysis does not carry the day. Specifically, the Licensing Board supplies no reasoned basis for brushing to one side the FCC 2.0 mV/m standard for primary service in larger communities. In this connection, we fail to understand the Board's endeavor to justify its rejection of that standard on the theory that the FCC would not have "defined broadcast signal strengths for primary service that are too weak to be received." Among other things, the Board seemingly did not focus upon the fact that the different FCC signal strength standards are a result of the need to mitigate increased interference in more populous areas.²⁴ In short, the crucial consideration is not whether a particular broadcast signal is too weak to be received; rather, it is whether the signal is strong enough to be heard over local interference.

Nor can we accept the Licensing Board's unsupported speculation that "LILCO's consultant plainly intended to establish . . . that the signal strength of WCBS is adequate to provide emergency information to residents throughout the EPZ."²⁵ We have discovered nothing in the record of this proceeding to indicate that a signal strength of less than that required for routine broadcasts is adequate for the broadcast of emergency information.²⁶

²³ LBP-88-24, 28 NRC at 327 (emphasis added).

²⁴ See *supra* note 21. See also 28 Fed. Reg. 13,572, 13,597 (1963).

²⁵ LBP-88-24, 28 NRC at 327.

²⁶ Our cursory review of the FCC's emergency broadcast system regulations, 47 C.F.R. Part 73, Subpart G, reveals no distinction in signal strength for routine and emergency broadcasts. Tacitly acknowledging the lack of record and regulatory support for the Board's view, at oral argument LILCO's counsel suggested that we take official notice of his claim that "a higher quality of signal is necessary for music and the sorts of things that radios like to broadcast all the time as opposed to simple verbal messages which are a lot easier to get across." App. Tr. 50. We decline to do so. For one thing, LILCO apparently did not call upon the Licensing Board to take such notice of that purported "fact" and, in any event, the Board did not do so. More important, the Commission's Rules of Practice allow the taking of official notice only 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." 10 C.F.R. § 2.743(i). It is doubtful at best that the asserted "fact" in question is "not subject to reasonable dispute"

(Continued)

But, as earlier noted, the Licensing Board found in the alternative that, even if WCBS did not itself provide full coverage to the Shoreham EPZ, LILCO could rely upon the requisite coverage being supplied by the full EBS network of more than 30 radio stations on Long Island.²⁷ The Board found that no evidence had been presented “that would raise a serious question as to whether an adequate warning to residents of the EPZ could be delivered through the network of stations in the State EBS.”²⁸ It also rejected the Governments’ argument that, in the absence of assertedly required letters of agreement (presumably between LILCO and the network stations), it cannot be assumed that the network stations will broadcast emergency messages. The Board concluded in this regard that NRC regulations do not require such letters of agreement “where a preexisting agreement between the State and the broadcast industry complies with NRC guidance.”²⁹ The Board also stressed that no evidence had been adduced to controvert the fact of this existing agreement.³⁰

The record supports the Licensing Board’s decision that the participants in the state-established EBS network will be both willing and able to broadcast messages throughout the EPZ in the event of a radiological emergency at Shoreham. There is no evidence to suggest that the network is technically incapable of providing emergency broadcast information to the affected areas. Indeed, in the absence of such evidence, it must be presumed that the State of New York and the FCC knew what they were doing in establishing and approving, respectively, a communications network designed to provide emergency information to the entire area of Nassau and Suffolk Counties. Nor do NRC and FEMA regulations require more than the preexisting agreement between the state and the network stations to establish a presumption of a willingness to participate. For instance, the only documentation mandated by FEMA relates to the “station’s or broadcast system’s *ability* to participate in the public notification process.”³¹ FEMA goes on to note that “[p]articipation in a ‘Local Emergency Broadcast System Operational Area Plan’ [e.g., the EBS for Nassau and Suffolk Counties] is considered satisfactory.”³² In this regard, it is noteworthy that, in announcing in the *Federal Register* the availability of FEMA-REP-10, FEMA observed that, in response to comments on earlier guidance, it had “replaced the requirement [in that earlier guidance] for written agreements that individual broadcasting

within the meaning of Rule 201(b) of the Federal Rules of Evidence, governing the judicial notice of adjudicative facts in the United States courts. Nor does this Commission’s “knowledge . . . as an expert body” extend to the required quality of radio signals.

²⁷ LBP-88-24, 28 NRC at 327-28.

²⁸ *Id.* at 328.

²⁹ *Ibid.*

³⁰ *Id.* at 329, 331.

³¹ FEMA-REP-10, “Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants” (November 1985), at E-2 (emphasis supplied).

³² *Ibid.*

stations will participate in the EBS with a requirement for documentation indicating that they are *able* to participate in the EBS."³³ In short, FEMA obviously proceeds on the premise that a station that undertakes to become a part of an established EBS will carry out in any emergency (nuclear or otherwise) the responsibilities it has assumed. In the absence of NRC regulations or evidence to the contrary (and there is none in this record), we have no reason to conclude otherwise.³⁴

In sum, the record does not establish that, standing alone, WCBS will provide the requisite EBS coverage. Because, however, the record contains nothing to rebut the presumption that such coverage will be supplied by the entire multi-station network (a presumption arising from the state's establishment and the FCC's approval of the network), we agree with the Licensing Board's ultimate resolution of the EBS issue in LILCO's favor.

II. SCHOOL BUS DRIVER ROLE CONFLICT

Students attending schools in the Shoreham EPZ are transported in buses owned and operated by either a bus company under contract to provide such services or the school district itself. Initially, the LILCO emergency response plan relied entirely upon the availability of those resources to implement any early dismissal occasioned by a Shoreham emergency. More specifically, the plan contemplated that the buses would make the number of trips necessary to transport the students to either their homes or a reception center.

In Contention 25.C, the Governments asserted that many of the drivers would experience a conflict between the discharge of their emergency duties and the fulfillment of perceived family obligations, with the consequence that sufficient numbers of neither school buses nor drivers would be available to carry out the plan. Thereafter, the role conflict issue was litigated in the context of not merely school bus drivers but, as well, individuals with other responsibilities in the event of a Shoreham emergency.³⁵ In an April 1985 partial initial decision, the Licensing Board determined that, although some such conflict may occur, "the preponderance of the credible evidence of record establishes that this will not

³³ 50 Fed. Reg. 43,084, 43,085 (1985) (emphasis supplied).

³⁴ The fact that radio stations such as WALK withdrew from a LILCO-established EBS does not support the thesis that they will not participate in the *state*-established EBS (from which, insofar as the record reflects, they have not withdrawn).

³⁵ Broadly speaking, the issue focused upon persons who, although having a function to perform in a Shoreham emergency, are not part of the LILCO-established Local Emergency Response Organization or its support organizations such as the American Red Cross, the U.S. Department of Energy, and local ambulance companies. In addition to the school bus drivers, such unaffiliated individuals include teachers and some health care personnel.

be a significant problem at Shoreham and that a sufficient number of emergency workers will respond in a timely fashion to perform their assigned duties."³⁶

Before the Licensing Board during the 1983-84 hearing, the Governments presented the results of a survey of the school bus drivers in the Shoreham EPZ — both bus company employees and persons in the employ of a school district — that indicated that significant role conflict might occur.³⁷ But they failed in their endeavor to introduce testimony related to a survey of volunteer firemen on the same subject.³⁸ The Licensing Board concluded that the firemen survey was irrelevant, apparently accepting the NRC staff's view that this was so because the LILCO emergency response plan does not rely on firemen.³⁹

In agreement with the Governments on their appeal from the Licensing Board's resolution of the role conflict issue, we determined that the firemen survey had been erroneously excluded. As we saw it, "the results of a survey as to the potential for role conflict among firemen, if they had been part of the emergency response, would provide insight into the likely course of conduct of school bus drivers."⁴⁰ This was because,

if a trained professional emergency worker such as a fireman would put family obligations ahead of the discharge of any Shoreham emergency duties that might be assigned to him or her, it is a fair inference that an individual not in such a line of endeavor would encounter at least as great role conflict.⁴¹

In light of these considerations, we found ourselves unable, "[o]n the record now before us, . . . [to] make a finding that a sufficient number of school bus drivers can be relied upon to perform their duties if an accident occurred at Shoreham."⁴² We therefore remanded the matter to the Licensing Board for further exploration of this limited issue. Our instructions were these:

All parties will be free to adduce additional evidence on the issue; at minimum, the Licensing Board is to accept the testimony related to the survey of volunteer firemen. Upon review of the evidence presented at the reopened hearing, the Licensing Board should reconsider

³⁶ LBP-85-12, 21 NRC 644, 679 (1985).

³⁷ Cole, fol. Tr. 1216, at 2-8.

³⁸ See *id.* at 12-16.

³⁹ Tr. 792. See NRC Staff Motion to Strike Certain Prefiled Testimony of Suffolk County (November 28, 1983) at 2.

⁴⁰ ALAB-832, 23 NRC at 153 (footnote omitted).

⁴¹ *Ibid.* (footnote omitted). In this connection, we referred to our decision in *Cincinnati Gas & Electric Co.* (Wm. H. Zimmer Nuclear Power Station, Unit No. 1), ALAB-727, 17 NRC 760, 772 (1983), in which we found that surveys of volunteer life squadsmen and firemen concerning the role conflict they would encounter raised "a serious question as to whether bus drivers could be depended upon to carry out their responsibilities" in the event of an accident at that plant.

⁴² ALAB-832, 23 NRC at 154.

its prior findings and conclusions regarding the potential for role conflict among school bus drivers.⁴³

As earlier noted, the original LILCO proposal provided for a multiple-wave evacuation of school children to be accomplished by bus drivers in the employ of, or under contract to, the various school districts within the Shoreham EPZ (hereinafter, "regular" bus drivers). Following our remand, however, LILCO materially altered its proposal to call for the single-wave evacuation of the children (i.e., each bus and driver participating in the evacuation would be required to make but one trip from a designated school to a designated reception center).⁴⁴ In order to accommodate that alteration, LILCO further proposed to supplement the "regular" school bus drivers and their buses with LILCO-furnished drivers and buses.⁴⁵ Specifically, LILCO offered to supply 613 trained drivers and 208 buses.⁴⁶

LILCO arrived at these numbers through the following process. To begin with, it undertook to ascertain how many drivers and buses would be necessary to evacuate the school population. To this end, it first determined the total student population within the EPZ on the basis of telephone surveys conducted in July 1987 and April 1988 and the responses to interrogatories submitted to New York State and Suffolk County.⁴⁷ It then assumed that, on any given day, five percent of the total school population would be absent and 20 percent of the high school students in attendance would respond to an emergency by departing in either their own automobiles or those of friends.⁴⁸ On the further premise that each bus could transport 40 high school students or 60 students in lower grades,⁴⁹ LILCO arrived at the conclusion that the single-wave evacuation would necessitate a total of 509 buses and drivers.⁵⁰

To meet their normal transportation needs, the school districts reportedly use a total of 301 buses and drivers.⁵¹ That being so, LILCO reasoned that it would need to supply 208 buses and an equal number of so-called "primary" drivers so as to reach the 509 figure to effect a single-wave evacuation.⁵² Seemingly recognizing the need to have backups for both the "regular" drivers (employed by the school districts and their contractors) and the "primary" drivers (in LILCO's

⁴³ *Ibid.* (footnote omitted).

⁴⁴ See LILCO's Motion for Summary Disposition of Contention 25.C ("Role Conflict" of School Bus Drivers) (October 22, 1987) at 12-17.

⁴⁵ *Ibid.*

⁴⁶ Crocker, et al., fol. Tr. 19,431, at 52-54.

⁴⁷ Tr. 19,746.

⁴⁸ Tr. 19,753-54.

⁴⁹ Crocker, et al., fol. Tr. 19,431, at 50-51.

⁵⁰ *Id.* at 50.

⁵¹ *Id.* at 51.

⁵² *Id.* at 53.

employ), LILCO indicated its willingness to have available 405 additional drivers. Of those drivers, 301 would serve as backups for the “regular” drivers on a one-for-one basis; the remaining 104 would backup, on a one-for-two basis, the 208 “primary” drivers.⁵³

At the hearing below on the new LILCO proposal, much of the testimony focused upon the role conflict question. On its analysis of that evidence, the Licensing Board concluded in LBP-88-24 that there was insufficient doubt respecting the availability of the “regular” drivers in a Shoreham emergency to require LILCO to produce its own substitutes for those drivers.⁵⁴ In this connection, the Board pointed to historical evidence presented by LILCO that satisfied the Board that past emergencies had not resulted in role abandonment among bus drivers.⁵⁵ Moreover, according to the Board, emergency response organizations had not lost their effectiveness because of role abandonment during past emergencies.⁵⁶ With respect to the surveys of school bus drivers and firemen put forth by the Governments, the Board found them of little probative value when compared to the evidence pertaining to actual past emergency responses.⁵⁷

On the strength of its role abandonment determination, the Licensing Board relieved LILCO of its offer to supply backup drivers for the postulated 301 “regular” drivers.⁵⁸ The Board left unaltered, however, the LILCO commitment to provide 104 drivers as a backup for its own 208 “primary” drivers.⁵⁹ LILCO had assumed this latter obligation because, in the words of a principal witness on the driver availability issue, “[i]n the interest of conservatism [LILCO] customarily recruits more emergency workers than are needed, providing a 150% call-out for all of its . . . emergency worker positions.”⁶⁰ Thus, as a result of the Licensing Board’s determination that role abandonment would not occur in the ranks of the regular drivers and that there is, therefore, no need to supply backups for them, LILCO now must supply only a total of 312 drivers (208 “primary” drivers plus 104 backups).

Our examination of the record indicates that the Board’s determination rests on a very shaky foundation. There is no dispute that, in the event of an accident at Shoreham, many of the “regular” drivers will be confronted with a role conflict — i.e., they will have to choose between fulfilling promptly their assigned transportation duties or, instead, first undertaking to ensure the safety and well-

⁵³ *Ibid.*

⁵⁴ 28 NRC at 342.

⁵⁵ *Id.* at 343.

⁵⁶ *Ibid.*

⁵⁷ *Id.* at 343-44.

⁵⁸ *Id.* at 344.

⁵⁹ *Ibid.* The Board opined that the 104 backup drivers would cover any driver shortfall that might result in a single-wave evacuation. *Ibid.* In making that observation, the Board left it to the staff to make certain that a sufficient number of buses will be available to permit such an evacuation. *Id.* at 345.

⁶⁰ Crocker, et al., fol. Tr. 19,431, at 53.

being of their families. Rather, the issue involved here relates to the choice that the drivers are likely to make. On this question, the record shows that the expert witnesses were in sharp disagreement. Moreover, neither the historical evidence nor the predictive surveys included in the record allow a confident judgment respecting the *amount* of role abandonment that is likely to occur and, therefore, must be taken into account in emergency response planning. But it is manifest that, contrary to the seeming belief of the Licensing Board, *some* role abandonment is a real possibility.

We reach this conclusion with full recognition of LILCO's historical evidence on the matter. Among other things, the applicant's witnesses appearing on the role conflict issue in the 1983-84 hearing referred to the studies of several disasters that disclosed a measure of role abandonment among emergency workers.⁶¹ One such study, published in 1952, focused upon the response to three tornadoes and one shipyard fire.⁶² According to the author of that study, "[t]he great majority of persons interviewed who were involved in [role conflict] dilemmas resolved them in favor of the family, or, in some cases, to friendship groups."⁶³ A like observation resulted from studies involving emergency worker response to a 1953 flood in the Netherlands;⁶⁴ Texas tornadoes;⁶⁵ and a hurricane.⁶⁶ Still further, two general studies of disaster responses published in 1958 included the researchers' notations that "[f]or many of the husbands/fathers the role of protector structured activity during impact"⁶⁷ and "[h]elp for family members, close friends, and neighbors comes first, then, but apparently only then, other victims can be looked after."⁶⁸

Although supplying these studies, LILCO's witnesses attempted to minimize their significance. The Licensing Board was referred to yet another study, published in 1954, that was said by the witnesses to reflect that "role conflict does not result in role abandonment *if* emergency workers are provided — before an emergency — with a clear idea of what their emergency roles are."⁶⁹ Those witnesses went on to emphasize the importance of prior planning, stating that "[w]ithout planning, role conflict can, indeed, produce role abandonment."⁷⁰ Along the same line, a later study presented by the LILCO witnesses was described as establishing that individuals without emergency roles tend to their families before volunteering, while individuals with clearly defined emergency

⁶¹ Contarato, et al., fol. Tr. 831, at 52-59.

⁶² *Id.* at 52-54. See also Cole, et al., fol. Tr. 20,672, at 28.

⁶³ Contarato, et al., fol. Tr. 831, at 54 (quoting 1952 article by Lewis Killian).

⁶⁴ *Id.* at 55.

⁶⁵ *Id.* at 55-56.

⁶⁶ *Id.* at 58.

⁶⁷ *Id.* at 56-57 (quoting 1958 dissertation by Charles W. Fogelman).

⁶⁸ *Id.* at 57 (quoting 1958 book by William H. Form and Sigmund Nosow).

⁶⁹ *Id.* at 62 (emphasis in original).

⁷⁰ *Id.* at 64.

duties fulfill those duties (albeit with a considerable degree of personal stress until assured of the safety of their families).⁷¹ The same emphasis on role certainty surfaced in a still further report that addressed three specific emergencies and found that 80 to 90 percent of the emergency workers resolved their role conflict in favor of the performance of their assigned duties.⁷²

On the remand, LILCO cited all of this evidence, as well as additional studies presented at the 1983-84 hearing that did not disclose any role abandonment by emergency workers.⁷³ It then put before the Licensing Board newer studies, published in various books and articles.⁷⁴ Those studies found no full role abandonment on the part of any individual.⁷⁵ Another study involving bus drivers revealed, however, instances of late arrival for evacuation duty because concern for family had been given priority.⁷⁶ Interestingly, one of the recently published studies — in common with the older ones — sounded the theme that it is important that emergency workers have a clear perception of their emergency roles.⁷⁷

At neither the 1983-84 hearing nor the remand hearing last year did LILCO satisfactorily explain how the “regular” school bus drivers would obtain the role certainty that, according to its own witnesses, is necessary to minimize the possibility that role abandonment will occur. The fact is that, while LILCO may have offered to provide the training that one of its witnesses opined “breeds emergency role certainty,”⁷⁸ on the current record the offer has been accepted only to a small degree.⁷⁹ Moreover, because few of the “regular” school bus drivers are involved to any extent in Shoreham emergency response planning, there is considerable relevance to the acknowledgment of the LILCO witness that, in the absence of planning, role conflict can produce role abandonment.⁸⁰

Accordingly, even if all the opposing testimony on the subject were totally ignored, it would be most difficult to subscribe to the Licensing Board’s view that the record establishes that role abandonment in the ranks of the 301 “regular” drivers is not likely to occur. If the other evidence of record *is* taken into account, any conceivable lingering doubt in that regard evaporates.

Beyond their reliance on some of the studies presented, and then discounted, by the LILCO witnesses, the Governments’ witnesses asserted that one must consider the differing effect that different types of emergencies will have upon

⁷¹ *Id.* at 64-65.

⁷² *Id.* at 66-67.

⁷³ Crocker, et al., fol. Tr. 19,431, at 9.

⁷⁴ *Id.* at 9-15.

⁷⁵ *Ibid.*

⁷⁶ *Id.* at 26-31.

⁷⁷ *Id.* at 9.

⁷⁸ Cordaro, et al., fol. Tr. 831, at 67.

⁷⁹ Tr. 19,490-97, 19,693-94, 20,143.

⁸⁰ *See supra* p. 259.

role conflict.⁸¹ In this connection, the witnesses pointed to the continuing danger associated with a widespread radiological emergency.⁸² Because of that factor, they opined that, for present purposes, a Shoreham emergency should be analogized to the shipyard fire that led to considerable role abandonment, rather than to tornadoes which, once they pass through a particular area, no longer pose a significant hazard.⁸³

Going beyond the Governments' critical appraisal of the weight that should be accorded to various studies of actual disaster response cited by LILCO, one of their witnesses, Dr. Stephen Cole, discussed three surveys that he had made for the purpose of determining how particular emergency role players would resolve their role conflicts. One was the 1982 volunteer firemen survey, previously excluded by the Licensing Board but ordered to be considered on remand pursuant to ALAB-832. A second covered school bus drivers, was also conducted in 1982, and had been admitted into evidence in 1983. The third was a new volunteer firemen survey, conducted in 1988.⁸⁴

Most of the interviewees in all three surveys stated that, in the event of a radiological emergency at Shoreham, they would ensure the safety of their families before undertaking their assigned emergency duties.⁸⁵ The Licensing Board agreed with LILCO, however, that the surveys nonetheless were not instructive. In its view, "an *a priori* attempt to predict human behavior from surveys of opinion must yield before the *a posteriori* evidence of what people have in fact done."⁸⁶ The Board elaborated:

We have previously found [in the April 1985 partial initial decision] that Dr. Cole has used valid statistical and design methodology in his polls. The problem does not lie with the technique but with the fundamental concept. There is nothing inherent in the methodology that compels the conclusion that they have predictive value. The poll measures opinion at the time it is taken. It remains valid only as long as the opinions do not change. But we must pass upon a plan that is expected to remain viable for 30 years. Not only will the simple passage of time affect the real results that may occur, but the press of the situation in an accident will dominate any response. It is, in fact, precisely that effect that LILCO's witnesses tell us will change the minds of those who now say they will not help. We are inclined to agree with the LILCO witnesses who say that the polls measure opposition to Shoreham and present concern for family. That opposition is well known, but the Commission's rules do not allow such opposition to serve as a basis for a licensing decision.⁸⁷

⁸¹ Cole, et al., fol. Tr. 20,672, at 27-40.

⁸² *Id.* at 32-33.

⁸³ *Id.* at 35-37.

⁸⁴ *Id.* at 40.

⁸⁵ *Id.* at 40-55.

⁸⁶ LBP-88-24, 28 NRC at 343.

⁸⁷ *Id.* at 344.

It may well be true that prior experience is the most reliable indicator of probable future response in an emergency situation. On this score, a LILCO witness referred to a study that, on the basis of interviews seeking to elicit the likely reaction of the public to a credible prediction of an earthquake, concluded that the reaction would produce large social and economic costs for the entire community.⁸⁸ Yet, when such a prediction surfaced in the Los Angeles area, no such consequences were encountered.⁸⁹ But it does not perforce follow that Dr. Cole's surveys were appropriately dismissed as having no possible value whatever on the question whether *some* role abandonment among the "regular" school bus drivers is a sufficient possibility that Shoreham emergency response planning must take it into account. The school bus driver survey included drivers for school districts within the Shoreham EPZ.⁹⁰ Once again, most of those drivers have not been trained in emergency procedures or otherwise participated in advance emergency response planning.⁹¹ Inasmuch as LILCO's own evidence indicates that a lack of such training and participation brings about role abandonment, it is fair to assume that, should a Shoreham emergency occur, at least *some* of the bus drivers will react as predicted in their interviews.⁹²

Moreover, as we have also seen, the "*a posteriori* evidence [in the record] of what people have in fact done" sheds very little light on the probable response of school bus drivers in the event of a *radiological* emergency. In this regard, we need not pursue the matter of the extent to which school bus drivers should be analogized to police officers, firemen, or other individuals who are in occupations that, by their very nature, require responses in emergencies. For, irrespective of how that question might be resolved, there is very little experience in the United States with responses by *anyone* to radiological emergencies. Insofar as the Three Mile Island accident in 1979 is concerned, there were no reported instances of formal role abandonment but the Commonwealth of Pennsylvania noted a slightly higher than normal absentee rate among its employees and a volunteer fire department indicated that a few of its personnel left the area.⁹³

⁸⁸ Crocker, et al., fol. Tr. 19,431, at 40-41.

⁸⁹ *Id.* at 41.

⁹⁰ Cole, et al., fol. Tr. 20,672, at 41.

⁹¹ See *supra* p. 260.

⁹² In ALAB-905, we addressed a survey of Long Island residents aimed at determining the number of individuals that would report for monitoring in the event of an accident at Shoreham. 28 NRC at 527 n.42. There, we agreed with the Licensing Board that such surveys are of little value in predicting the percentage of the population that would report for monitoring because that percentage will be significantly influenced by the information provided to the public at the time of the accident. *Ibid.* Here, we use the survey of bus drivers not to predict their actions during a Shoreham emergency, but rather as evidence that a significant percentage of those drivers may not participate in training or planning *prior* to such an emergency and, thus, as LILCO itself acknowledges, are susceptible to role abandonment.

⁹³ Cordaro, et al., fol. Tr. 831, at 71-76.

In a nutshell, then, on this record some role abandonment on the part of "regular" school bus drivers must be assumed and should be accounted for in LILCO's emergency planning. The precise quantification of role abandonment, however, is quite another matter. We believe that LILCO's own 150 percent planning assumption for its "primary" drivers provides a reasonable basis for determining the number of additional school bus drivers that are needed to serve as backups for the "regular" drivers.⁹⁴ Thus, LILCO should be required to provide 151 trained drivers to backup the 301 "regular" drivers in the employ of the school districts or their contractors.⁹⁵ These "regular" drivers will therefore have the same 50 percent backup that, in "the interest of conservatism," LILCO has volunteered to provide for its own "primary" drivers in order to accomplish its new single-wave evacuation plan.⁹⁶ This brings the total number of trained "primary" and backup drivers LILCO should be required to provide to 463 — far fewer than the 613 to which LILCO was once willing to commit.⁹⁷

The remaining portions of the Governments' appeals from LBP-88-24 are *dismissed*. In the exercise of our *sua sponte* review authority, however, we have reviewed Parts I, II, and III of LBP-88-24. For the reasons stated in this advisory opinion, we would *affirm* the Licensing Board's disposition of the emergency broadcast system issues (Part I). We would *modify* the Board's disposition of the school bus driver role conflict issue (Part II) so as to add the requirement that, in the event of a radiological emergency at Shoreham warranting evacuation, LILCO supply 151 (i.e., an additional 50 percent) trained bus drivers as backups for the drivers in the employ of, or under contract to, the school districts. The Licensing Board's disposition of the hospital evacuation issue (Part III) requires no corrective action in our view and, accordingly, we would *affirm*.

⁹⁴ There was limited discussion on the record from the 1983-84 and remand hearings of the backup drivers who substitute for the "regular" school bus drivers in normal circumstances. See, e.g., Cordaro, et al., fol. Tr. 9156, Vol. II, at 59-61; Tr. 9314-16; Doremus, fol. Tr. 9491, at 8-9; Tr. 20,174; Brodsky, et al., fol. Tr. 20,259, at 14, 21; Tr. 20,341-43. The extent of the backup provisions varies significantly, however, among the bus companies or school districts. Further, there is no indication that the Licensing Board relied on this evidence for its finding that LILCO did not need to provide any backup drivers for the "regular" drivers. Without additional record evidence that a sufficient number of backup drivers would be promptly available if needed, we cannot conclude that such drivers can be relied upon to compensate for any role abandonment on the part of the "regular" drivers.

⁹⁵ If, in the course of *sua sponte* review, we conclude that corrective action adverse to a party's interest is necessary, we ordinarily afford that party an opportunity to address the matter. See *Offshore Power Systems (Manufacturing License for Floating Nuclear Power Plants)*, ALAB-689, 16 NRC 887, 891 n.8 (1982). Here, in light of the full briefing and argument prior to the Commission's decision rendering this proceeding uncontested, there is no need to solicit LILCO's views once again on the number of backup bus drivers necessary to effect a school evacuation.

⁹⁶ See *supra* p. 258.

⁹⁷ We note that although there is an obvious relationship between drivers and vehicles, our remand in ALAB-832 did not embrace *bus* availability. That matter is left to the oversight of the staff in the performance of its continuing regulatory responsibilities. See *supra* note 59.

It is so ORDERED.

FOR THE APPEAL BOARD

**Barbara A. Tompkins
Secretary to the
Appeal Board**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

**Christine N. Kohl, Chairman
Alan S. Rosenthal
Dr. W. Reed Johnson**

In the Matter of

**Docket No. 50-322-OL-5
(EP Exercise)**

**LONG ISLAND LIGHTING
COMPANY**

**(Shoreham Nuclear Power Station,
Unit 1)**

March 13, 1989

Implementing the Commission's decision terminating this proceeding (CLI-89-2, 29 NRC 211), the Appeal Board issues an order ending its consideration of the matters before it.

**RULES OF PRACTICE: STARE DECISIS EFFECT OF LICENSING
BOARD DECISIONS**

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

ORDER

In light of the Commission's March 3, 1989, decision terminating the proceeding on the 1988 emergency planning exercise before the OL-5 Licens-

ing Board (CLI-89-2, 29 NRC 211), our consideration of the intervening Governments' appeal from that Board's January 3 certified ruling on contentions (LBP-89-1, 29 NRC 5) is also terminated. Our previous memorandum and order of January 4, 1989, accepting the Board's certification in part, is therefore *vacated* and *certification is declined*. Further, the Licensing Board's January 3 memorandum and order (LBP-89-1) will have only the precedential status accorded to any unreviewed Licensing Board decision. *See Duke Power Co.* (Cherokee Nuclear Station, Units 1, 2, and 3), ALAB-482, 7 NRC 979, 981 n.4 (1978).

Still pending before us is a portion of LILCO's appeal from the OL-5 Licensing Board's February 1, 1988, decision concerning the 1986 emergency exercise (LBP-88-2, 27 NRC 85). This matter has been moot for some time, and, accordingly, the remainder of LILCO's appeal from LBP-88-2 is *dismissed*. *See ALAB-903*, 28 NRC 499, 504 (1988). Inasmuch as we previously reversed the legal standard adopted by the Licensing Board in Part I of LBP-88-2 (*see id.* at 504-08), the Board's application of that standard to particular contentions in Part II of LBP-88-2, 27 NRC at 93-212, is *vacated*.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Thomas S. Moore, Chairman
Christine N. Kohl
Howard A. Wilber

In the Matter of

Docket Nos. 50-603-CP/OL
50-604-CP

ALL CHEMICAL ISOTOPE
ENRICHMENT, INC.

(AlChemIE Facility-1 CPDF)

(AlChemIE Facility-2 Oliver Springs)

March 20, 1989

The Appeal Board conducts a sua sponte review of the Licensing Board's decision in favor of the applicant in this uncontested, combined construction permit/operating license proceeding for two facilities that will use gas centrifuge machines to enrich nonradioactive isotopes for medical, industrial, and other uses. With two minor clarifications, the Appeal Board affirms the Licensing Board's authorization of the issuance of construction permits and an operating license for the plants.

DECISION

On February 1, 1989, the Licensing Board issued an initial decision granting the applicant, All Chemical Isotope Enrichment, Inc. (AlChemIE), a construction permit and operating license in the combined docket 50-603-CP/OL and a con-

struction permit in docket 50-604-CP. LBP-89-5, 29 NRC 99.¹ No intervenors were granted party status by the Licensing Board and no appeals have been filed from the Board's initial decision. Nevertheless, as is our long-standing, Commission-approved practice, we have reviewed the Licensing Board's decision sua sponte. See, e.g., *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-491, 8 NRC 245 (1978); *Washington Public Power Supply System* (Hanford No. 2 Nuclear Power Plant), ALAB-113, 6 AEC 251 (1973).

In the combined construction permit/operating license proceeding, the applicant seeks to modify and operate the Department of Energy's existing Centrifuge Plant Demonstration Facility, located at Oak Ridge, Tennessee, to enrich nonradioactive isotopes for medical, industrial, and other uses. Although the enrichment of such stable isotopes is not ordinarily within the Commission's regulatory authority, the classified centrifuge machines that the applicant will use were originally designed, manufactured, and tested to enrich uranium, thus bringing them under the definition of a production facility within the meaning of the Atomic Energy Act, as amended, and the Commission's regulations. See 42 U.S.C. §§ 2014v, 2131; 10 C.F.R. § 50.2. In the single construction permit proceeding, the applicant seeks permission to build a second, larger facility dedicated to the same purpose as the first, and located at Oliver Springs, Tennessee, some seven miles from the former DOE Demonstration Plant. The second plant will house additional gas centrifuge machines that the applicant will obtain from DOE and that were intended for use at DOE's now-abandoned Gas Centrifuge Enrichment Plant at Piketon, Ohio. The applicant will transport the machines to its Oliver Springs site.

In accordance with the Commission's hearing notices, 53 Fed. Reg. 15,315, 15,317 (1988), the Licensing Board held a mandatory hearing on the uncontested construction permit applications. See 42 U.S.C. § 2239a(1). The Board made findings on the issues enumerated by the Commission in the hearing notices and authorized the issuance of the construction permits as well as the operating license. Specifically, the Board received evidence and made findings on the adequacy of the applicant's safety analysis, safeguards provisions, and financial qualifications, as well as the adequacy of the NRC staff's review of each of these matters and its environmental assessment. We have reviewed the Board's decision and find it to be well supported by the underlying record. We thus affirm the Board's decision, with the following two minor clarifications.²

¹ The Director of the Office of Nuclear Material Safety and Safeguards issued the authorized construction permits to AlChemIE on February 10, 1989.

² These clarifications of but two of the Board's findings on environmental issues, while not affecting the outcome, are not merely editorial in nature, as the concurring opinion suggests. Rather, we sincerely believe that the matters addressed could be of potential concern to the public and seek only to allay those concerns as best we can.

First, in connection with its discussion of a “worst case” accidental release of toxic material, the Board states that the loading docks at both facilities will be “enclosed on all sides and equipped with an overhead door which could swing down to enclose the entire dock and thus eliminate the release of material to the environment. Tr. 183-84.” LBP-89-5, 29 NRC at 115. Because the record does not indicate that the dock enclosures and door will create a *sealed* environment, these mechanisms cannot eliminate, but rather will substantially minimize, any toxic releases to the environment. In any event, as the Board noted, the staff’s analysis conservatively assumed such releases and concluded that they would be well within established guidelines. *Id.* at 114-15. *See* Staff Exhibit 1A, Environmental Assessment Related to the Construction and Operation of the AlChemIE Facility 1 CPDF (September 1988), at 23-28.

Second, the Board states that the Oliver Springs “site, which is still being used to pasture cattle, is not an appropriate habitat for any threatened or endangered plant species.” LBP-89-5, 29 NRC at 120. Inasmuch as the record on this score is somewhat confusing, the Board’s statement warrants some brief elaboration. The site and adjacent forest area potentially could provide a habitat for two plant species that the State of Tennessee considers “threatened,” i.e., the Canada lily and goldenseal. Due to the already extensive use of the area for grazing and timber harvesting, however, the site is no longer a likely habitat for either species. *See* Staff Exhibit 5, Supplementary Testimony of Dr. Jerry J. Swift at 2; *id.*, Attachment (December 5, 1988, letter from James E. Hammelman); *id.*, Attachment (November 18, 1988, Ecological Survey at 11, 13, and Appendix (August 27, 1987, letter from Roberta E. Hylton)).

LBP-89-5, 29 NRC 99, is *affirmed*.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

Mr. Moore, Concurring:

I concur in the majority’s result affirming the Licensing Board’s decision. I do not, however, join in my colleagues’ “clarifications” of the Licensing Board’s factual findings.

In initially approving the Appeal Board’s *sua sponte* review authority, the Commission intended to ensure that the agency fulfilled its responsibilities under the Atomic Energy Act and its obligations under the National Environmental

Policy Act by providing yet another level of review in those cases where there was either no appeal or no appeal of certain previously contested issues. In the uncontested proceedings at hand, I do not believe that the majority's action taking issue with the Licensing Board's choice of words in two factual findings — language that in context is abundantly clear — is an appropriate exercise of that authority. Stated otherwise, the majority's action in this instance neither corrects a substantial or significant common defense and security problem nor rectifies a serious or important environmental concern. The fact that the Commission has never acted as the majority has here in exercising its analogous sua sponte review authority over our decisions, speaks volumes as to the appropriate exercise of that review function.

In exercising our sua sponte review authority, I do not believe we sit as self-appointed editors of the Licensing Board's decision. In my opinion, the actions of the majority are needlessly destructive of our relationship with licensing boards. Accordingly, I respectfully decline to join the majority's memorandum.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chair
Emmeth A. Luebke
Dr. Jerry Harbour

In the Matter of

Docket Nos. 50-443-OL-1
50-444-OL-1
(ASLBP No. 88-858-01-OL)
(Onsite Emergency Planning
and Safety Issues)

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

March 3, 1989

After considering issues raised by a summary disposition motion, the Licensing Board admitted genuine issues of fact under three bases for an emergency planning contention. It encouraged the parties to develop agreed site visitation procedures to resolve issues under one of the bases.

SUMMARY DISPOSITION

Legal standard for summary disposition reviewed.

EMERGENCY PLANNING

Relationship among emergency planning regulations and guidance reviewed.

TECHNICAL ISSUES DISCUSSED

- Hearing damage from sirens
- Discomfort from sirens
- Siren loudness; reflection from buildings
- Measurement of elapsed time for alerting and notification (emergency planning)
- Readiness of emergency personnel — mobile siren (VANS) drivers
- Measurement of elapsed time for route transit (emergency planning)
- Siren rotation, effect on sound levels.

MEMORANDUM AND ORDER (Summary Disposition)

We shall grant in part Applicants¹ motion for summary disposition of all emergency planning contentions² related to notification and warning of people within the Commonwealth of Massachusetts.³

In this opinion, we will discuss separately each of the bases for the admitted contention and state the extent to which summary disposition shall be granted. We shall then also review each material issue of fact that Applicants allege not to be in dispute and shall determine which of those facts are not in dispute.

I. LEGAL STANDARD

A. Procedural Standard

Pursuant to 10 C.F.R. § 2.749 of the Commission's Rules of Practice, a party may move for summary disposition of all or any part of the matters involved in the proceeding. Paragraph (d) of § 2.749 provides:

The presiding officer shall render the decision sought if the filings in the proceeding, depositions, answers to interrogatories, and the admissions on file, together with the

¹ Public Service Company of New Hampshire, *et al.*, which has filed a Motion for Summary Disposition on Amended Contention on Notification System of Attorney General for the Commonwealth of Massachusetts, September 14, 1988 (Motion).

² Admitted by this Board's Memorandum and Order (Ruling on Admissibility of Mass. Amended Contention and Bases), June 2, 1988 (unpublished). In this opinion we shall refer to the Massachusetts Attorney General as Intervenor.

³ In response, the other parties filed the Answer of Massachusetts Attorney General in Opposition to Applicants' Motion for Summary Disposition of Amended Contention on Notification System, October 11, 1988 (AG Response), and NRC Staff Response to Applicants' Motion for Summary Disposition of the Massachusetts Attorney General's Amended Contention on Notification Systems, October 12, 1988 (Staff Response).

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 proponent of the motion for summary disposition must meet this burden even if the party opposing the motion fails to present evidentiary material to the contrary. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753-54 (1977). To meet this burden, the movant must eliminate any real doubt as to the existence of any genuine issue of material fact. *Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), LBP-81-48, 14 NRC 877, 883 (1981); *Perry*, ALAB-443, *supra*, 6 NRC at 753.⁴ Moreover, the record is to be reviewed in the light most favorable to the opponent of the motion. *Dairyland Power Cooperative* (La Crosse Boiling Water Reactor), LBP-82-58, 16 NRC 512, 519 (1982).

Judging against these standards, most of the Applicants' motion must be denied.

B. Substantive Law

The relevant part of the Commission's emergency planning regulation requires that

means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

10 C.F.R. § 50.47(b)(5); *see also* 10 C.F.R. § 50.34(b)(6)(v) (requiring that an applicant demonstrate in its FSAR that it complies with 10 C.F.R. Part 50, Appendix E, Emergency Planning).

Appendix E to Part 50, "Emergency Planning and Preparedness for Production and Utilization Facilities" also was published for notice and comment and adopted by the Commission. Administrative Procedure Act (5 U.S.C. §§ 552, 553; 44 Fed. Reg. 75,167, 75,171 (1979); 45 Fed. Reg. 55,402, 55,408. Appendix E provides that

The design objective of the prompt public notification system shall be to have the capability to essentially complete the initial notification of the public within the plume exposure pathway EPZ within about 15 minutes.

⁴A licensing board has said that summary disposition is only authorized "where it is quite clear what the facts are" and the moving party is entitled to judgment as a matter of law. 10 C.F.R. § 2.749(d); *Pacific Gas and Electric Co.* (Stanislaus Nuclear Project, Unit 1), LBP-77-45, 6 NRC 159, 163 (1977). Another board said that "in order to grant a motion for summary disposition, the record before [the Licensing Board] must demonstrate clearly that there is no possibility that there exists a litigable issue of fact." *Power Authority of the State of New York* (Greene County Nuclear Power Plant), LBP-79-8, 9 NRC 339, 340 (1979).

Id. at 3-3. Appendix E then states the requirements for the content of emergency plans that must be met by an applicant for a license to operate a nuclear power plant.

In addition to these regulations, which have the force of law, this proceeding is affected by a "guidance" document, NUREG-0654, Rev. 1 (1980), which provides further explanation of the planning criteria set forth in 10 C.F.R. § 50.47(b)(1) through (16). This NUREG was subject to public comment (44 Fed. Reg. 9768 (Feb. 13, 1980)) but which has a nonbinding or suggestive effect.⁵ Relevant parts of NUREG-0654 state:

Planning Standard

[M]eans to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

Id. at 43; *see also* § 50.47(b)(5).

Evaluation Criteria

Each organization shall establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public within the plume exposure pathway Emergency Planning Zone. (*See* Appendix 3.) It shall be the licensee's responsibility to demonstrate that such means exist, regardless of who implements this requirement. . . .

NUREG-0654 at 45.

APPENDIX 3

MEANS FOR PROVIDING PROMPT ALERTING AND NOTIFICATION OF . . . THE POPULATION

* * *

Commercial broadcast messages are the primary means for advising the general public of the conditions of any nuclear accident. The primary means for alerting the public to an impending notification by public authorities may be any combination of fixed, mobile or electronic tone generators which will convey the alerting signal with sufficient timing and intensity to permit completion of notification by broadcast media in a timely manner. . . .

NUREG-0654, Appendix 3 at 3-2.

⁵ *See Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), LBP-86-11, 23 NRC 294, 364-69 (1986) (NUREG-0654 requirement of alerting through 60-decibel sirens not adequate to alert "essentially 100 percent" of residents at 2 a.m.). In this case, we considered making nighttime alerting a *sua sponte* issue, pursuant to 10 C.F.R. § 2.760a, but in our discretion we have the view that the policy guidance of NUREG-0654 is adequate and that a serious safety issue does not exist.

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. . . .

. . . 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. . . .

Id. at 3-3.

Sirens

Wherever proposed as part of a system, subject to later testing by statistical sampling, the design concept and expected performance must be documented as part of plans submitted by licensees The designs of such systems must take into account the demography and topography of the areas being considered.

Id. at 3-7 to 3-8.

The basic criterion needed for the design of a siren system is the acceptable dissonant sound level as described in "Outdoor Warning Systems Guide," Report No. 4100, by Bolt, Beranek and Newman, Inc., June 1979 (FEMA publication number CPG-1-17).

As an acceptable criterion at most locations 10db above average daytime ambient background should be a target level for the design of an adequate siren system. . . .

Id. at 3-8; *see* Jonas Affidavit, Exhibit C, for FEMA CPG-1-17.

Siren systems should be designed considering the demography and topography of an area, and taking into account other alert or notification systems in place or planned. The maximum sound levels received by any member of the public should be lower than 123db, the level which may cause discomfort to individuals. . . .

NUREG-0654, Appendix 3, at 3-8.

The 10db differential above daytime ambient is meant to provide a distinguishable signal inside of average residential construction under average conditions. Where special individual cases require a higher alerting signal, it should be provided by other means than a generally distributed acoustic signal.

Id. at 3-9.

The siren signal shall be a 3 to 5 minute steady signal as described in Paragraph IV E of CPG-1-17 and capable of repetition.

Id. at 3-12.

II. DISCUSSION OF BASIS A.1

Basis A.1 is:

The VANS and the New Hampshire fixed sirens because of their locations, height, acoustic range and number, do not provide tone or message coverage for essentially 100 percent of the population in the Massachusetts plume exposure pathway EPZ at the sound pressure levels required in NUREG-0654 and FEMA-REP-10.

A. Applicants' Position

The Applicants claim that Basis A.1 is "put to rest" because their VANS system does not and need not provide informational and instructional messages and because Wyle Laboratories has determined that essentially 100 percent of the population in the Massachusetts portion of the EPZ will be covered by the tone-alert mode of the sirens. Applicants' Brief at 3-5. They also submit an affidavit of David M. Keast, who states that he was author of CPG-1-17, which was the source of the regulatory language limiting sound to no more than "123 dB, the level which may cause discomfort to individuals. Keast Affidavit at 2. He claims that the 123-dB level used in this language was selected to avoid hearing damage to individuals and that no damage would be caused by a 134-dB rotating siren at 25 feet sounded for 3 minutes at 550 Hz. *Id.* at 4; *see* Kreiter Affidavit at 4.

B. Intervenor's Position

With respect to the message mode of the siren (also called "public address mode"), the Intervenor filed a Motion to Amend Bases on September 8, 1988, which addresses the Applicants' claim that the VANS system need not provide instructional messages for the beach population. However, the motion was denied, Memorandum and Order (Granting Mass. Request to File a Reply; Denying Mass. Motion to Amend), October 12, 1988 (unpublished), and is not an issue in this case.

With respect to tone-alert coverage, Intervenor states that the Applicants' experts proceed from a faulty, crucial assumption. It assumes that it is acceptable for each VANS siren to put out 134 dBC of sound output. Applicants' calculations are based on that output. Stusnick Affidavit, ¶ 8, Attach. E at 6

and 7 of 10. They also acknowledge, based on their own calculations, that the maximum sound level received by members of the public will be 131 dBC. Motion at 4 n.3; Sutherland Affidavit, ¶ 5.

Intervenor also argues that NUREG-0654, FEMA-REP-1, Rev. 1 states that “[t]he maximum sound levels received by any member of the public should be lower than 123db, the level which may cause discomfort to individuals.” NUREG-0654, Appendix 3 at 3-8. It states that Applicants’ affidavits concerning lack of hearing loss at 131 dBC are irrelevant, as the clear wording of the regulations is addressed to discomfort. It states that Applicants have far exceeded the allowable 123-dBC level in order to squeeze additional coverage from their limited number of sirens. If the sound level is limited to the acceptable 123-dBC level, coverage falls off sharply and leaves a substantial portion of the Massachusetts EPZ unprotected by an alert-and-notification system. Bouliane Affidavit, ¶ 31, Appendices 9 and 10.

Intervenor states that there also are genuine issues of material fact concerning whether this calculation underestimates the sound level received by members of the public by not including sound reflection from buildings. *See* Affidavit of Thomas Bouliane, ¶¶ 25-30.

C. Staff’s Position

The Staff supports the motion of Applicants. However, Staff’s agreement with Applicants does not result in a change in any of our conclusions concerning the existence of a material issue of fact. What Staff’s position can do is add to the weight of evidence, but it would not negate a genuine issue arising out of an affidavit submitted by Intervenor. *See above*, pp. 272-73. Consequently, we shall not separately review Staff’s position, but we will remain aware of it in case it ought to have some effect on our determination.

D. Findings

The following genuine issues of fact exist and shall be heard:

- A.1-1. Whether sound levels in excess of 123 dBC cause enough discomfort so that the Board should not approve the use of sirens at a higher level of sound. We note that this issue of fact also involves a legal question: What standard should we apply to determine the possible relevance of discomfort? On this question, we invite simultaneous briefs from Intervenor and Applicants 5 days prior to the deadline that shall be set for the prefiling of testimony; and we invite a legal filing from the Staff simultaneously with the prefiling of testimony.

- A.1-2. If there is some level higher than 123 dBC that the Board should allow, what is that level?
- A.1-3. Whether Applicants' sirens can provide adequate coverage if used at sound levels that are not unduly uncomfortable.
- A.1-4. Whether Applicants' position on the sound level resulting from their sirens is an underestimate because of sound reflection from buildings.

The following are material facts that we find are not in dispute:

- A.1-a. The alert function is performed by using the tone mode of the siren.
- A.1-b. The Emergency Broadcast System (EBS) radio broadcasts are relied upon to provide the notification function (i.e., providing information and instructions) to the public.
- A.1-c. The siren message mode is not used for alert or notification.
- A.1-d. There is no dispute relevant to this case concerning siren message mode substantive requirements.
- A.1-e. The population density distribution for the geographical area within the Massachusetts plume exposure EPZ has been determined.
- A.1-f. Those areas where the population density exceeds 2000 persons per square mile have been identified and are depicted on Figure 2-2 of the Seabrook Station Public Alert and Notification System FEMA REP-10 Design Report.
- A.1-g. All other areas have a population density less than 2000 persons per square mile.
- A.1-h. The siren sound coverage for each VANS siren was determined by means of a computer model developed by Wyle Laboratories.
- A.1-i. Figure 2-2 of the FEMA-REP-10 Design Report depicts 60- and 70-dBC sound level contours calculated by the model and then graphically combined into the envelopes depicting the total system coverage.
- A.1-j. Ambient sound surveys were conducted in all four areas that Applicants have admitted, based on siren sound levels in excess of 123 dBC, would not be covered by a sound level of at least 60 dBC.
- A.1-k. Applicants do not rely upon New Hampshire fixed siren coverage for any of the portion of the coverage for Massachusetts.

III. BASIS A.2

Intervenor withdrew Basis A.2 based on arguments made by the Applicants. The following material facts are not in dispute:

- A.2-a. The VANS sirens do not operate continuously.
- A.2-b. The VANS sirens are not permanent, stationary facilities. Rather they are mobile equipment, moved from place to place by truck, located at different sites (even in different states) at different times.
- A.2-c. The Governor of Massachusetts and the town officials of Amesbury will obey the statutes of the Commonwealth of Massachusetts and the Constitution of the United States.
- A.2-d. The Governor of Massachusetts and the town officials of Amesbury will use their best efforts to protect the populace in response to a radiological emergency at Seabrook Station.

IV. BASIS A.3

Basis A.3 is:

The fourteen VANS locations⁶ are physically inaccessible to the VANS equipment.

A. Comparison of Parties' Positions

The Applicants ask for summary disposition on Basis A.3 based on the personal observations of a Seabrook employee, Joseph Story II. We agree with Intervenor that those observations are sufficient to allow summary disposition with respect to acoustic locations VL-02 and VL-13, but they do not dispose of factual issues remaining for VL-03, VL-06, VL-07 and VL-12.

On October 3, 1988, Nancy Mason, an investigator for Intervenor revisited VL-03, VL-06, and VL-12 and made measurements of those areas to determine their accessibility to VANS equipment. The Ford Series F-800 truck is 95 inches wide, and the outriggers extend approximately 5 feet from the truck on each side. Mason Affidavit, ¶ 3; Bouliane Affidavit, ¶ 32, Appendices 11, 12. With outriggers extended, a VANS truck parked at the side of the road at VL-12 will extend at least 6 feet into the road. *See* Mason Affidavit, ¶ 6. The Board is not sure whether this conclusion is correct or, in fact, whether that is a permissible location for the truck.

Moreover, the Applicants acknowledge that VL-06 and VL-07 are inclined where the trucks would set up. Story Affidavit, ¶¶ 11, 12. While Applicants characterize those inclines as slight or negligible, Intervenor claims that its photographs indicate otherwise. *See* Mason Affidavit, Exhs. C through H. In any event, the crane manufacturer's instructions state, "do not use this equipment

⁶There are sixteen VANS locations and six staging areas, from which the VANS are deployed. Two of the staging areas also serve as a VANS location. *See* New Hampshire Yankee, "Seabrook Station Public Alert and Notification System: FEMA-REP-10 Design Report," April 30, 1988, at 2-33 to 2-34 (Tables 2-1 and 2-2).

except on solid, level surface,” and that the “crane must be level for operation.” Bouliane Affidavit, ¶ 32, Appendix 13; *see* Johnson Affidavit, Attach. C, 2 of 2. The record does not contain information on the crane’s tolerance for being on a slight incline.

Another factual issue is raised by Intervenor’s observation that the grass and dirt surface of VL-12 is uneven, again suggesting operation inconsistent with the manufacturer’s specifications. Mason Affidavit, ¶ 6.

Finally, there was an issue concerning whether the Applicants had made appropriate provision for acoustic location accessibility during the winter. Locations VL-06, VL-07, and VL-12 are simply unpaved roadsides. Those locations might have been blocked by snow piles in the winter, making access difficult. However, this argument has been disposed of by joint stipulation, based on Applicants’ contract with a firm to remove snow from each acoustical location; and the Board accepts this stipulation.

B. Board’s Findings

The following are genuine issues of material fact:

- A.3-1. Whether the appointed destination locations, including VL-06, VL-07, and VL-12, are sufficiently level for the safe deployment of the VANS vehicles.
- A.3-2. Whether or not VANS vehicles may gain physical access to VL-03, VL-06, VL-07, and VL-12.

C. Requirement for Negotiation and Accurate Measurement

The physical characteristics of the VANS destination sites are definitely knowable. Consequently, we expect the parties to engage in good-faith efforts so that Applicants can drive vehicles into the sites with Intervenor’s consultant as an eyewitness. An agreed method also should be arrived at for measuring the degree of inclination at the site so that the Board will not need to litigate a fact that any person could obtain merely by visiting the site. Appropriate protective order agreements should be entered into so that information about the sites will not become public.

If the parties are unable to reach an agreement on a site visitation procedure, they may ask the Board for informal assistance in reaching agreement.

The following facts are not in dispute:

- A.3-a. Of the sixteen preselected VANS acoustic locations, two are located at the staging area where the VANS vehicle is parked.

- A.3-b. At acoustic location VL-02, Applicants have observed the parking lot numerous times in the spring and summer, and it has never been close to being full. In addition, part of the lot is not used for parking, and this part is large enough to accommodate the VANS vehicle.
- A.3-c. All VANS drivers will be trained to locate VL-03 (and all other acoustic locations). When Applicants set the VANS prototype up at VL-03, fully extending the boom, there were no observed stability problems.
- A.3-d. Applicants are able to, and intend to, set up on the dirt rather than on the paved pad at VL-13. Applicants have set up the VANS prototype here, fully extending the boom, with no problems.
- A.3-e. A review was conducted at each of the selected acoustic locations, which entailed actually driving a Ford Series F-800 truck with a truck-mounted telescoping crane to each acoustic location.
- A.3-f. At VL-06, Applicants easily set up the VANS prototype, fully extending the boom, with no interference by the trees and without obstructing the access road.

V. BASIS A.4

Basis A.4 is:

The VANS vehicles are inadequate for their intended use. The vehicles cannot withstand and will not operate properly with the weights, amount and nature of equipment intended to be carried by the vehicles. The weight distribution with the siren fully extended will cause the equipment to fall and/or the lifting mechanism to bend or break under heavy wind or precipitation conditions. Moreover, the telescopic crane will not reliably lift the siren to its fully extended position because of the weight of the siren and the capacity of the crane.

The Intervenor does not dispute the affidavits presented on Basis A.4, hence there are no genuine issues of material fact with respect to this basis.

All of the following facts are not contested:

- A.4-a. The crane manufacturer has informed Intervenor that high winds will not impair the operation of the VANS crane assembly.
- A.4-b. The deflection observed during Applicants' pull test is a normal structural phenomenon and did not indicate any failure of the VANS crane.
- A.4-c. The wind tunnel test cited by Intervenor is 7 years old and was performed on a drive mechanism less than one-fifth as strong as that used by Applicants.

- A.4-d. The weight of a fully loaded VANS vehicle is far below the gross vehicle weight rating for the model of truck to be used.
- A.4-e. The VANS equipment is securely attached to the VANS truck.
- A.4-f. The only relevant concerns regarding the adequacy of a vehicle carrying or transporting equipment/material are the weight of the equipment/material and the method used, if any, to secure it to the vehicle during transit.
- A.4-g. The rated lifting capacity of the crane in any position far exceeds the hypothetical load.
- A.4-h. A pull test that was performed on a National Crane Series 4 hydraulic crane showed no structural or stability deficiencies.
- A.4-i. Based on analysis and testing, the VANS lifting mechanism will support the siren package under the various design environmental loading conditions, and there is no danger of the equipment failing or the mechanism breaking.

VI. BASIS A.5

Basis A.5 is:

The time needed for driver alert, dispatch, route transit, setup and activation in accordance with NRC regulations will exceed 15 minutes for many of the VANS vehicles in optimum weather conditions. The reasons for this include the time required to get vehicles on the road (which itself includes the time required to notify the driver, have the driver proceed to the vehicle, check out the vehicle and equipment, start the vehicle and leave the staging area, along with other vehicles at the staging area), the distance to be traveled, the traffic that will be encountered, the setup time and the need for both alert signal and message capability within the 15 minute period. In poor weather, heavy traffic, and nighttime conditions the times needed to accomplish these tasks will increase.

A. Summary of Positions

The Applicants' motion with respect to Basis A.5 is supported by six affidavits. These affidavits address each of the phases of deploying the VANS vehicles and they conclude that the total time elapsed will be under 15 minutes. Intervenor, on the other hand, questions whether these time estimates are conservative, and it also questions whether Applicants have improperly failed to address "the reality that at any particular time drivers will be in different states of readiness for an alert signal." AG Response at 12 n.7.

We shall address each of the factual assertions separately in this portion of our opinion.

B. The Legal Setting

The 15-minute time requirement appears at 10 C.F.R. Part 50, Appendix E, ¶IV.D.3:

The design objective of the prompt public notification system shall be to have the capability to *essentially* complete the initial notification of the public within the plume exposure Pathway EPZ within *about* 15 minutes. [Emphasis added.] The use of this notification capability will range from immediate notification of the public (within 15 minutes of the time that State and local officials are notified that a situation exists requiring urgent action) to the more likely events where there is substantial time available for the State and local governmental officials to make a judgment whether or not to activate the public notification system. NUREG-0654 sets forth what it describes as the "minimum acceptable design objectives" for the system:

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.

NUREG-0654, Appendix 3 at 3-3.

The Commission has concluded that the 15-minute time limit is a "general objective" and that planners have timing flexibility in designing a system to notify the population located between 5 and 10 miles from the plant. *Final Rule on Emergency Planning*, CLI-80-40, 12 NRC 636, 638 (1980).

C. Alert

Applicants argue⁷ that the initial notification call from the Seabrook Control Room Communicator is received by the New Hampshire Yankee Offsite Response Emergency Operations Contact (Contact Person). Catapano Affidavit, ¶ 5. This Contact Person mobilizes the VANS by entering a simple code into a touch pad sitting on his desk where he receives the notification call. *Id.*, ¶¶ 7-12. The notification is completed and verified electronically within 10 seconds. *Id.*, ¶ 12.

Intervenor argues that the 10-second time period is pure speculation. It argues that the system has not been constructed or tested. Desmarais Deposition at 85-86, Exh. A to Jonas Affidavit. However, it is not necessary that a system be constructed. The system to be used is described in the Catapano Affidavit, ¶¶ 7-12. It includes automatic simultaneous dialing of all staging areas, with

⁷ Motion at 20.

automatic verification of receipt and decoding of the message. Provision is made for following up on any location that does not verify receipt. All this can be done within 10 seconds, according to the affidavit. And there is no contrary proof to raise a genuine issue of fact. The Intervenor relies on its own speculation, unsupported by any affidavit. So we find that there is no genuine issue of fact concerning the 10-second alert period.

D. Dispatch

We agree with Intervenor that Applicants have misinterpreted the requirement for conservative calculations with respect to dispatch time. Dispatch time tests included a maximum of 53.35 seconds. Beard Affidavit, Attach. B at 1 of 4. There were seventeen runs with a dispatch time of over 40 seconds. *Id.* We notice that *all* of the runs of over 40 seconds occurred in the first twenty-seven of the fifty runs, indicating a possible bias due to a practice effect. Hence, we conclude that these trials are consistent with a dispatch time of as great as 53 seconds. Furthermore, it is not clear whether these tests, where the operators were aware that they would be repeatedly called, are a fair prediction of what would actually happen in an event with no forewarning.

Over years of plant operation, how likely is it that each of the VANS operators will be actually available and alert (e.g., not in the restroom, not away from post on break, not believing that the situation is a false alarm) at the time an alert message is received? How long will it take if electronic activation fails and radio or telephone voice contact becomes necessary? *See* AG Response at 11-12 n. We note that the actual personnel procedures to be used have not been made available to us. It is possible that those procedures would provide such measures as advanced alerting of personnel as would assure us that our concerns about driver readiness are not realistic.

E. Route Transit

Applicants state that route transit time may be estimated at 10 minutes; they rely on 1397 test runs done in the spring and summer of 1988 and tabulated in Summary Tables 1 and 2 in the Desmarais Affidavit, ¶ 18. As we review those tables, which are not contradicted by Intervenor, they do show that it is conservative to assume spring and summer route transit times of under 10 minutes for acoustic locations 1-15 and 15 minutes for acoustic location 16 (a sparsely populated area between 10 and 11 miles from Seabrook; Desmarais Affidavit, ¶ 22).

Hence, the only issue left here is whether, in the event of snow, the average transit times will exceed 10 minutes and how frequently such a condition might

be expected to occur. We note that Applicants concede that travel times might be as great as 11.5 minutes at one acoustic location and 10.45 minutes at another in the event of snow or icy road conditions. Lieberman Affidavit at 6. However, Applicants have demonstrated that:

It is very unusual for roads to be impassable for a significant amount of time. During the preparation of the Seabrook Station Evacuation Time Study . . . the Police Chiefs of all Massachusetts towns in the 10-mile EPZ except Amesbury . . . indicated that snow plowing equipment is mobilized and deployed during the snowfall after an appropriate amount of snow has accumulated, in order to maintain passable roads. The general consensus was that snow plowing efforts are generally successful in maintaining roadway passage for all but the most extreme blizzards and icing conditions.

Lieberman Affidavit, ¶ 8. Intervenor does not contradict this evidence by citing the Johnson Affidavit, Attach. B at 11 of 12, for the proposition that continuous snow coverage of at least 1 inch lasts 30 to 45 days. The testimony is that the snow does not last that long *on the roads*, and the Johnson Affidavit does not even address that proposition.

F. Setup of Sirens

The Applicants have introduced uncontradicted evidence that the setup of sirens can be accomplished within 1 minute. We note that, to do that, it might happen that sirens would be activated while the sirens were still being raised from 25 feet to 45 feet above ground level. See Sutherland Affidavit, ¶¶ 5-6. However, we note that the activation of sirens in the 25-foot position would last less than 1 minute until a 45-foot elevation would be reached. *Id.* at 3.

G. Siren Sounding

There is no conflict concerning Applicants' assertion that sirens will be sounded for a duration of 3 minutes.

H. Message Capability

The Intervenor argues that the Applicants ignore completely the regulatory requirement of “[c]apability for providing *both* an alert signal and an informational or instructional message” within 15 minutes. NUREG-0654, Appendix 3 at 3-3 (emphasis added). “Within the plume exposure EPZ the system shall provide an alerting signal and notification by commercial broadcast (e.g., EBS). . . .” *Id.*

Applicants' conclusion that they can complete initial notification in the non-winter months in 14 minutes and 50 seconds does not permit any accommo-

dition for EBS or other instructional messages. *See Applicants' Brief at 27. (The Applicants rely on the EBS radio network for providing information and instructional messages. Desmarais Affidavit, Attach. D at 3 of 23.)* The EBS messages drafted by the Applicants in the SPMC would require a considerable amount of time to read. The initial EBS message used in the June 28-29, 1988 exercise took slightly over 2 minutes to read. Jonas Affidavit, Exh. B. Therefore, there is a genuine issue of fact concerning how much time should be added for this notification function. We note that this question is apparently not simple since it appears to us that a person must first hear a siren before tuning in for notification. Not all people will hear the siren at the same time. Not all will tune in their radios immediately. Not all will tune in at the beginning of a broadcast of the message.

I. Overall Time

There are enough questions concerning individual components of time for the Intervenor to have raised a genuine issue of fact concerning the adequacy of the time for both alerting the public and transmitting informational messages to it.

J. Genuine Issues of Fact

For reasons already stated, the following are genuine issues of fact:

- A.5-1. What is an appropriate conservative estimate of the length of time it would take for drivers to take the necessary actions before their vehicles leave their stations during conditions likely to prevail at the time of need?
- A.5-2. Given that there is snowfall of 0.5 inch or more during 5.5% of the days of the year, would a conservative estimate of travel times to VANS acoustic locations include the somewhat prolonged travel times anticipated during snow conditions? If so, what time estimates should be included?
- A.5-3. What is an appropriate conservative estimate of the length of time it would take for people within 5 miles of Seabrook to receive the informational message to be broadcast over the EBS?
- A.5-4. What is an appropriate conservative estimate of the total length of time for alerting and informing people within 5 miles of Seabrook? Is that estimate within acceptable guidelines? (If it is longer than 15 minutes, what are the factors we are to consider in deciding whether the time period is adequate?)

K. Issues of Fact That Are Not in Dispute

The following are not genuine issues of fact:

- A.5-a. Notification of the VANS is completed within 10 seconds.
- A.5-b. Applicants have established procedures by which the VANS drivers are responsible for ensuring that the vehicles are ready at all times for immediate dispatch, and no additional check is required upon notification.
- A.5-c. At the time of notification, procedures require the driver to walk to the vehicle, disconnect the external power cord to the battery charger, and drive away. Fifty tests of this process (which included having the drivers walk 100 feet to the vehicle) used an average time for this phase of less than 40 seconds.
- A.5-d. Since there are at most three VANS that would leave any staging area, they will not delay one another appreciably while leaving.
- A.5-e. The VANS transit studies, involving 1397 test runs, provide authoritative transit time data under a variety of road conditions, including clear road, heavy summer weekend traffic, rain, and darkness.
- A.5-f. The results of the VANS transit study show that for acoustic locations VL-02 through VL-15, under test conditions, the transit times are below 10 minutes.⁸
- A.5-g. Applicants have arranged for a satellite staging area within a 0.6-mile travel distance of VL-01, to be staffed during summer weekends and holidays. The short distance from the satellite staging area to VL-01 will ensure that the transit time can be accomplished in less than 10 minutes.
- A.5-h. The geographical area covered uniquely by the siren at VL-16 is between 10 and 11 miles from Seabrook Station and has a maximum population, over 3 square miles, of 401 people, or less than 0.2% of the EPZ population.
- A.5-i. The transit time to VL-16 is less than 15 minutes.
- A.5-j. The VANS trucks are equipped with dual mud and snow tires on the rear axle, which with the weight of the vehicle will provide sufficient traction to propel the vehicle over a snow- or ice-covered roadway.
- A.5-k. Winter adverse weather conditions occur on affected roads about 5% of the time in the EPZ.

⁸In our judgment, it is not necessary to use the extreme values in a sample of this size. We also would not use the mean. However, using a legal standard of reasonableness, we conclude that there is no genuine issue of fact about this statement.

- A.5-l. Estimated adverse winter transit times can be determined, using conservative assumptions, by multiplying spring average transit times by 1.33.
- A.5-m. Winter adverse weather conditions could delay a few VANS by 1.5 minutes or less.
- A.5-n. The estimated adverse winter transit time to VL-16 is less than 20 minutes.⁹
- A.5-o. Applicants' VANS system is part of a utility emergency plan designed to replace a fixed-pole siren system for which Applicants were unable to obtain proper authorizations from responsible governments.
- A.5-p. The setup time of the siren consists of the time required for the VANS operator to proceed from the vehicle cab, remove the boom strap, lower the stabilizing outriggers, and raise the siren boom to the operable position. This process was tested 50 times and found to take less than 1 minute.
- A.5-q. The tarpaulin covering the boom and siren will be designed automatically to uncover when the siren is raised and does not need to be manually removed by the operator.
- A.5-r. After remote activation, the sirens will sound for a period of 3 minutes.
- A.5-s. If the activation signal is transmitted prior to the siren being set up, the signal will be stored and the siren will automatically begin to sound once it is set up.

VII. BASIS A.6

Basis A.6 is:

Snow, icy and extreme cold weather conditions will impede extension of the sirens to their operational position, rotation and oscillation of the sirens during the tone and message modes and operation of the sirens themselves.

Intervenor abandons this basis. The following are not disputed issues of fact:

- A.6-a. The VANS crane will extend and raise the siren to its operational position in snowy, icy, and extreme cold conditions because the crane boom, crane control, and siren system components are kept under a tarpaulin-type cover which will prevent puddles and deflect precipitation to the ground.

⁹Since Intervenor did not move for summary disposition, Applicants were not required to respond to their suggestions of undisputed facts and we do not consider ourselves authorized to adopt their suggestions.

- A.6-b. The VANS operators will perform the maintenance required to keep the VANS vehicles in a state of readiness for deployment, including removing snow and ice, as outlined in the SPMC procedures.
- A.6-c. Snow and ice would not hinder crane or outrigger operation, because the VANS hydraulic system generates enough excess power to overcome any resistance due to ice and/or snow.
- A.6-d. The hydraulic control valves are covered and the hydraulic fluid has a rated operating range down to at least -22°F .
- A.6-e. The mechanism that oscillates the siren (rotates it through 360° and reverses) is designed so that weather conditions do not impede operation.
- A.6-f. The rotation mechanism is in a weatherproof housing and is effective in keeping out rain and snow regardless of operating position.
- A.6-g. The rotation mechanism will be covered by a tarpaulin while parked at the staging area.
- A.6-h. Extensive experience with the rotation mechanism has identified no failures of the weather-tightness design.
- A.6-i. The siren manufacturer has informed Intervenor that weather conditions will not impair operation of the system, and that the system is used all over the world including Alaska.

VIII. BASIS A.7

Basis A.7 is:

At a sound level of 134 dBC anyone within 100 feet of the siren during its operation will suffer severe hearing damage.

As the Applicants recognize, *see* Applicants' Brief at 29-30, Basis A.7 derives from the instruction in NUREG-0654 that "[t]he maximum sound levels received by any member of the public should be lower than 123db, the level which may cause discomfort to individuals. *Id.*, Appendix 3 at 3-8. This basis is discussed above, in our discussion of Basis A.1.

The following are not material issues of fact that are in dispute:

- A.7-a. There are no permanent structures (except for two of the staging areas themselves) at or within 100 feet of the preselected siren locations.
- A.7-b. With the siren operating at 25 feet, the maximum sound level at ear level (5 feet) is no more than 133 dBC.

- A.7-c. Exposure to the sound level produced by the VANS system will not cause permanent hearing damage or result in temporary hearing loss.
- A.7-d. The VANS sirens comply with the safety criteria intended by NUREG-0654. (But there is still a dispute about whether they comply with the discomfort criteria also intended by NUREG-0654. See Genuine Issue of Fact II.1, above.)

IX. BASIS A.8

Basis A.8 is:

Because of the large size of the intended dispersion angle (60 degrees), sound irregularities will occur within the coverage angles including gaps in sound coverage for certain areas. Moreover, the oscillation of the speaker assembly will cause gaps in coverage when the siren is used in its tone alert mode.

What Intervenor has done in its discussion of this contention is to raise an issue more properly belonging under Basis A.1. It is no longer alleging any "gaps" or even "irregularities." Instead, it is alleging that the sweep of the rotating sirens will result in peak sound along the axis of the siren and that as it rotates away from a listener the sound intensity will diminish. Thus, although the sirens will sound continuously, the listener will not receive a steady tone as suggested by NUREG-0654, Appendix 3 at 3-12: "The siren signal shall be a 3 to 5 minute steady signal as described in Paragraph IV E of CPG-1-17 and capable of repetition."

However, when we reviewed ¶IV.E of CPG-1-17 (Jonas Affidavit, Exh. B), we found the following language, which is a *suggestion* with which compliance is optional and which is apparently *not* an audibility requirement:

Different cities and towns use their outdoor warning systems in different ways. Most local governments, however, follow the Federal Emergency Management Agency (FEMA) guidance and use a certain signal to warn people of an enemy attack, and a different signal to notify them of a peacetime disaster. These warning signals are:

* * *

Attention or Alert Warning — This is a 3- to 5-minute steady signal from sirens, horns, or other devices. The signal may be used as authorized by local government officials to alert the public in peacetime emergencies. . . . [T]he action or alert signal shall mean to all persons in the United States, "Turn on radio or TV. Listen for essential emergency information."

We also note that rotating sirens are expressly authorized in ¶IV.A., *id.*:

The most powerful sirens . . . use a horn that radiates a beam of sound in a single direction. The horn is then rotated several times a minute, so that the beam sweeps through the entire area around the siren. For a stationary listener, the sound from such a siren goes up and down in loudness as the horn sweeps around.

Our investigation of the legal materials cited by the Intervenor persuades us that there is no genuine issue of material fact related to the changing levels of perceived sound from the rotation of a siren in the method that is planned. What will actually happen at Seabrook is described in New Hampshire Yankee, "Seabrook Station Public Alert and Notification System" (FEMA-REP-10 Design Report), ("Design Report"), April 30, 1988, at 2-14:

To ensure full 360° coverage by the siren, the speaker assembly is oscillated back and forth through an angle of about 360°. The horn rotates 360° in one direction, stops, rotates back to the same position, stops, and then rotates in the other direction. The cycle is repeated 2-4 times per minute.

We have no affidavit that suggests that this procedure is not adequate to alert people, as intended.

Hence, the following statements of fact are not in dispute:

- A.8-a. The rotation of a siren in the tone-alert mode to assure 360° coverage is an acceptable procedure, and changes in perceived volume to a stationary listener do not prevent the siren from producing an acceptable "steady" signal of 60 dBC in areas with population of 2000 people or less per square mile and of 70 dBC in more populous areas.
- A.8-b. Although the oscillation of the speaker assembly may cause changes in the perceived sound level to a listener due to the directionality of the signal, this oscillation will not cause gaps in coverage when the siren is used in the tone-alert mode.
- A.8-c. Sound irregularities due to sound cancellation are not at all likely to occur except for stationary, pure-tone, point sources in a laboratory environment.

X. BASIS A.9

Basis A.9 is:

Listeners in areas where there is an overlap in sound coverage from 2 or more sirens, whether both sirens are in Massachusetts or one is in Massachusetts and one is in New Hampshire, will experience severe echo conditions, rendering any voice message unintelligible.

Since the Board has denied Intervenor's Motion to Amend Bases of September 8, Basis A.9 is irrelevant. Memorandum and Order (Granting Mass. Request to File a Reply; Denying Mass. Motion to Amend), October 12, 1988, at 9, ¶¶ 2-3.

The following is not a genuine issue of fact:

A.9-a. Applicants do not use the VANS sirens for voice messages.

XI. BASIS A.10

Basis A.10 is:

The Applicants have not indicated when and under what circumstances the tone alert mode or the message mode will be used.

As Applicants and Intervenor agree, Basis A.10 no longer applies.

XII. BASIS A.11

Basis A.11 is:

Sufficient drivers and backup drivers will not be stationed at the six staging areas to ensure 24 hour availability of the system. Moreover, the system will work reliably, if at all, only when each vehicle is manned by at least two people.

The principal arguments underlying this basis may be litigated with respect to Basis A.5, as we have ruled above. The burden of proof will be on Applicants to demonstrate that a person will be on duty and alert at all times at each station so that a 10-second alert time, or some greater period of time, is realistic.

The following are not genuine issues of fact:

A.11-a. New Hampshire Yankee has a personnel plan that is designed to ensure continuous 24-hour per day coverage 7 days per week and that provides for supplemental drivers as well as backup VANS and drivers. (The likelihood that this plan may result in unplanned-for gaps in actual coverage is in dispute under Genuine Issues of Fact VI.1 and VI.2.)

A.11-b. The prototype VANS vehicle works reliably with one operator, as demonstrated during training, by numerous tests, by inspection by NRC Region I inspectors, and by demonstration to Intervenor during discovery.

A.11-c. The prototype VANS vehicle is comparable in all relevant aspects to the VANS vehicles to be used.

A.11-d. The ability of the VANS vehicles to work reliably with one operator was also demonstrated fifty times during recent dispatch and setup timing tests.

XIII. BASIS A.14

Basis A.14 is:

The Applicants have not identified the equipment to be used for remote activation of the VANS sirens and, therefore, no conclusion can be reached concerning the reliability of the equipment. Moreover, the Applicants have not indicated whether the siren signals will be pre-recorded or broadcast to the remote locations and have not provided sufficient information to conclude that in either event the equipment has adequate fidelity to ensure intelligibility.

Because this contention also addresses Applicants' use of the sirens in message mode, it has become irrelevant. Memorandum and Order (Granting Mass. Request to File a Reply; Denying Mass. Motion to Amend), October 12, 1988, at 9, ¶¶ 2-3.

XIV. BASIS B

Basis B is:

The Applicants have not identified the circumstances under which the backup airborne alerting system would be called into operation, the flight path it would take, whether tone or message mode would be used, the time necessary to complete a single operational run, or the areas the helicopter is intended to cover. This lack of information prevents this Board from making a finding that the airborne system meets NRC regulations and standards.

* * *

1. One of the circumstances which might give rise to the need for a backup system, poor weather (and in particular high wind, heavy rain, snow, icy or extreme cold conditions), is equally or more debilitating for the use of a helicopter.

* * *

3. A steady 3 to 5 minute tone alert capable of repetition cannot be accomplished with the airborne system for significant numbers of people even within the covered area because the speed necessary to provide that duration of a tone is too slow for extended operation of the aircraft.

Since Applicants do not rely on the airborne backup system to meet regulatory requirements, Intervenor has stated that it will not introduce evidence concerning this basis. The following issue of material fact is not in dispute:

- B-a. Applicants' helicopter system is a backup system and, as such, is not relied upon by Applicants in any way to meet NRC alerting and notification regulations and standards.

XV. BASIS B.4

Since Basis B.4 also deals with the airborne backup system, it is disposed of in our discussion of Basis B.3.

XVI. ORDER

For all the foregoing reasons and upon consideration of the entire record in this matter, it is this 3d day of March 1989, ORDERED, in accordance with 10 C.F.R. § 2.749:

A. Genuine Issues of Fact

The following genuine issues of fact exist and shall be heard unless resolved through negotiation and agreement:

- A.1-1. Whether sound levels in excess of 123 dBC cause enough discomfort so that the Board should not approve the use of sirens at a higher level of sound. We note that this issue of fact also involves a legal question: What standard should we apply to determine the possible relevance of discomfort? On this question, we invite simultaneous briefs from Intervenor and Applicants 5 days prior to the deadline that shall be set for the pre-filing of testimony; and we invite a legal filing from the Staff simultaneously with the pre-filing of testimony.
- A.1-2. If there is some level higher than 123 dBC that the Board should allow, what is that level?
- A.1-3. Whether Applicants' sirens can provide adequate coverage if used at sound levels that are not unduly uncomfortable.
- A.1-4. Whether Applicants' position on the sound level resulting from their sirens is an underestimate because of sound reflection from buildings.
- A.3-1. Whether the appointed destination locations, including VL-06, VL-07, and VL-12, are sufficiently level for the safe deployment of the VANS vehicles.
- A.3-2. Whether or not VANS vehicles may gain physical access to VL-03, VL-06, VL-07, and VL-12.

- A.5-1. What is an appropriate conservative estimate of the length of time it would take for drivers to take the necessary actions before their vehicles leave their stations during conditions likely to prevail at the time of need?
- A.5-2. Given that there is snowfall of 0.5 inch or more during 5.5% of the days of the year, would a conservative estimate of travel times to VANS acoustic locations include the somewhat prolonged travel times anticipated during snow conditions? If so, what time estimates should be included?
- A.5-3. What is an appropriate conservative estimate of the length of time it would take for people within 5 miles of Seabrook to receive the informational message to be broadcast over the EBS?
- A.5-4. What is an appropriate conservative estimate of the total length of time for alerting and informing people within 5 miles of Seabrook? Is that estimate within acceptable guidelines? (If it is longer than 15 minutes, what are the factors we are to consider in deciding whether the time period is adequate?)

B. Facts Not in Dispute

All issues described in the opinion as not being genuine issues of fact or not being in dispute shall be considered resolved. The lettered paragraphs setting forth such issues may be cited as findings should they in some way appear to be relevant after hearing.

C. Site Visits and Further Definition of Issues

The physical characteristics of the VANS destination sites are definitely knowable. Consequently, we expect the parties to engage in good-faith efforts so that Applicants can drive vehicles into the sites with Intervenor's consultant as an eyewitness. An agreed method also should be arrived at for accurately measuring the degree of inclination at the site so that the Board will not need to litigate a fact that any person could obtain merely by visiting the site. Appropriate protective order agreements should be entered into so that information about the sites will not become public.

There are other issues that may be able to be narrowed and focused through negotiation. We expect the parties to conduct such negotiations in good faith.

If the parties are unable to reach agreements on site visitation and measurement procedures or on issue focusing, they may ask the Board for informal assistance in reaching agreement.

We have allowed 2 weeks for good-faith negotiation.

D. Scheduling Conference

There shall be an on-the-record telephone conference at 9 a.m. on March 20 for the purpose of resolving procedural issues, scheduling the pre-filing of testimony, and scheduling a hearing. The parties shall confirm their participation prior to March 13 by telephoning Ms. Joyce McDow at 301-492-7479 and providing the names of planned participants and the appropriate telephone number to call on the day of the conference.

THE ATOMIC SAFETY AND LICENSING BOARD

**Peter B. Bloch, Chair
ADMINISTRATIVE JUDGE**

**Emmeth A. Luebke
ADMINISTRATIVE JUDGE**

**Dr. Jerry Harbour
ADMINISTRATIVE JUDGE**

Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ivan W. Smith, Chairman
Dr. Richard F. Cole
Dr. Kenneth A. McCollom

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 8, 1989

MEMORANDUM AND ORDER
(Ruling on Motions by Seacoast Anti-Pollution League
and Massachusetts Attorney General Concerning
Waiver of Commission Financial Qualification Rules)

BACKGROUND

On January 25, 1989, Seacoast Anti-Pollution League ("SAPL"), supported by the New England Coalition on Nuclear Pollution ("NECNP"), filed a motion requesting the Board to "reopen the record in this portion of the licensing proceeding" (pursuant to 10 C.F.R. § 2.734) to accept a late-filed contention (pursuant to 10 C.F.R. § 2.714) regarding the ability of the Seabrook Station's

owners to operate the nuclear facility in a safe manner if a full-power license were to be issued to the plant.¹

SAPL's contention alleges:

The Seabrook Applicants have not demonstrated that they can provide reasonable assurance that they either have or can obtain the necessary funds to safely operate the Seabrook plant, contrary to the requirements of sec. 182(a) of the Atomic Energy Act and 10 C.F.R. sec. 50.33(f)(2) and sec. 50.57(a)(4).

SAPL Motion at 8.

On February 1, 1989, the Attorney General of Massachusetts filed a separate motion (pursuant to 10 C.F.R. § 2.758) requesting a waiver of or an exception to the public utilities exemption from the Commission's requirement that a demonstration of financial qualification be made prior to the issuance of a full-power operating license.² The petition seeks a determination by the Licensing Board that the Attorney General establishes a *prima facie* showing that the financial qualification rule should be waived in this proceeding and that the issue should be certified directly to the Commission. MAG Petition at 6-7.³

Since both the SAPL motion and MAG petition involve the same subject matter, we address both in this Memorandum and Order.

SAPL'S MOTION

Contrary to NRC regulations, SAPL seeks to litigate the issue of the financial qualifications of Seabrook's owners. Sections 2.104(c)(4), 50.33(f), and 50.57(a)(4) of 10 C.F.R. clearly exclude electric utilities from the class of applicants required to demonstrate their financial qualifications to operate a nuclear facility safely at full power. SAPL's motion neither seeks a waiver of these regulations nor requests certification of the waiver issue directly to the Commission pursuant to 10 C.F.R. § 2.758. Instead, SAPL argues that the Commission waived the application of the financial qualification exclusion, as it pertains to Seabrook's full-power license, in CLI-88-10, 28 NRC 573 (1988) ("CLI-88-10"). SAPL Motion at 3.

First, SAPL states correctly that CLI-88-10 "determined that financial qualification would not be a significant safety issue for low power testing." SAPL

¹ Seacoast Anti-Pollution League's Motion to Accept Late-Filed Contention on Financial Qualification in Response to NRC Order CLI-88-10 ("SAPL Motion") (January 25, 1989).

² Massachusetts Attorney General's Petition for a Waiver of or an Exception to the Financial Qualification Rules for Full Power Operation ("MAG Petition") (February 1, 1989).

³ In his petition the Attorney General incorporates by reference a similar motion filed by his office on March 7, 1988, regarding the issuance of a low-power license. Massachusetts Attorney General James M. Shannon's Petition Under 10 C.F.R. 2.758 for a Waiver of or an Exception from the Public Utility Exemption from the Requirement of a Demonstration of Financial Qualification (March 7, 1988).

Motion at 3. “However,” SAPL continues, CLI-88-10 shows “by clear implication” that the Commission has determined that financial qualification is an important safety issue for full-power licensing. *Id.* SAPL cites the following paragraph from CLI-88-10 to support its argument:⁴

Whatever may be the legitimacy of this safety purpose for full-power operation, it stretches reason to suppose that the safety rationale would have any bearing on a limited license for low-power testing. Shortcuts in safety at full power conceivably could avoid shutdowns or derating and thereby contribute to greater plant availability and revenue from power sales. But shortcuts in low-power testing safety will not lead to generation of more revenue that would benefit the plant owners.

SAPL Motion at 2-3, *quoting* CLI-88-10, *supra*, 28 NRC at 600. SAPL proceeds to argue the merits of its late-filed contention motion and avoids any further discussion of exactly how and where the Commission waived the rule in CLI-88-10.

Our reading of the Commission’s decision in CLI-88-10 has been thorough and we have reached the following conclusions: The question of whether the financial qualification rules should be waived in the context of Seabrook’s full-power license was never presented in CLI-88-10; the Commission never discussed the waiver of the rule in the context of Seabrook’s full-power license *sua sponte*; there is no way CLI-88-10 can be read responsibly to make a finding that the financial qualification rule has been waived by implication; CLI-88-10 has no bearing, as a legal precedent, on the financial aspects of Seabrook’s full-power operation.

For the foregoing reasons, SAPL’s motion is denied.

ATTORNEY GENERAL’S PETITION

Procedural Standards Governing Waivers of NRC Rules

It is well established that a party may not directly challenge a Commission regulation in an agency adjudicatory proceeding. *See* 10 C.F.R. § 2.758(a). However, the Rules of Practice contain a limited exception to the proscription against challenging NRC regulations and provide that a party to a licensing proceeding may petition for a waiver of a regulation. *See* 10 C.F.R. § 2.758(b). The Commission has placed a heavy burden on a party seeking such a waiver or exemption:

⁴The Attorney General distances himself from SAPL on this issue. His petition states that it is “not clear” CLI-88-10 waived the financial qualification rule respecting Seabrook Station’s full-power license. MAG Petition at 1 n.1.

The sole ground for petition for waiver or exemption shall be that special circumstances with respect to the subject matter of the particular proceeding are such that application of the rule or regulation (or provision thereof) would not serve the purposes for which the rule or regulation was adopted.

Id.; see *Northern States Power Co.* (Monticello Nuclear Generating Plant, Unit 1), CLI-72-31, 5 AEC 25, 26 (1972) (waiver petitions should not be granted in absence of "unusual or compelling circumstances"). The Commission defines a "special circumstance" as "facts, not common to a large class of applicants or facilities, that were not considered either explicitly or by necessary implication in the proceeding leading to the rule sought to be waived." CLI-88-10, *supra*, 28 NRC at 597. Special circumstances must be "such that application of the rule . . . would not serve the purposes for which the rule or regulation was adopted." 10 C.F.R. § 2.758(b). "[A]t a minimum, . . . the special circumstances must be such as to undercut the rationale for the rule sought to be waived." CLI-88-10, *supra*, 28 NRC at 597. A petition for waiver or exemption must also "indicate that a waiver is necessary to address, on the merits, a significant safety problem related to the rule sought to be waived." *Id.*

The party seeking the waiver or exemption must establish a *prima facie* case in a petition that application of the subject regulation would not serve its intended purpose. See 10 C.F.R. § 2.758(c). Commission case law establishes a *prima facie* showing as one that "must be legally sufficient to establish a fact or case unless disproved." *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-653, 16 NRC 55, 72 (1981). In determining whether a party has established a *prima facie* case for the purposes of § 2.758(c), the presiding officer must consider not only the waiver petition itself, but responses, affidavits, and other information submitted. See § 2.758(c). If the petition fails to establish a *prima facie* case, it must be denied. *Id.* Conversely, if a *prima facie* case is established, the presiding officer is to refer the matter directly to the Commission. See 10 C.F.R. § 2.758(d); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-895, 28 NRC 7, 11 (1988). Only the Commission is authorized to grant the petition and waive a rule. See § 2.758(d).

To summarize, the party requesting a waiver of or exception to a Commission regulation must establish a *prima facie* showing (1) that "special circumstances" exist which (2) "undercut the rationale" of the rule sought to be waived and (3) a waiver is needed "to address a significant safety problem on the merits." See CLI-88-10, *supra*, 28 NRC at 597.

The Attorney General's Case

The Attorney General asserts numerous arguments relating to the Applicants' financial condition to establish the existence of "special circumstances" to justify a waiver of the Commission's exclusion of electric utilities from financial qualification review. See 10 C.F.R. § 2.104(c)(4), 10 C.F.R. § 50.33(f), and 10 C.F.R. § 50.57(a)(4). Two of the assertions in his pleading are factual allegations (Public Service Company of New Hampshire ("PSNH") is currently under the jurisdiction of the bankruptcy court, Massachusetts Municipal Wholesale Electric Company ("MMWEC") is currently in default of financial obligations to Seabrook), while the remaining assertions are purely conjectural allegations (PSNH will remain in bankruptcy at the issuance of a full-power license, MMWEC will remain in default of its financial obligations; PSNH may be taken over by the State of New Hampshire; Northeast Utilities has offered to buy PSNH's non-Seabrook assets leaving Seabrook to its unsecured creditors and security holders; increases in rates after full-power licensing will lead to a decreased revenue to Seabrook's owners due to lowering of ratepayer demand; the New Hampshire Public Utilities Commission will lower PSNH's non-Seabrook rate base). MAG Petition at 4-6. All of these circumstances are alleged to support the gravamen of the Attorney General's petition, that the owner of Seabrook Station will not be in a secure enough financial position to ensure safe operation of the plant at full-power operation since full-power operation is costly and the owners would have incentives to take shortcuts in safety to save money. MAG Petition at 4, ¶ 6, and at 6, ¶ 10.

We find that PSNH's current bankruptcy tends to fit within the scope of "facts, not common to a large class of applicants or facilities, that were not considered either explicitly or by necessary implication in the proceeding leading to the rule sought to be waived." CLI-88-10, *supra*, 28 NRC at 597. However, the remaining assertions in the Attorney General's pleading are merely conjectural statements that do nothing more than highlight the current uncertainty surrounding the future ownership of Seabrook Station. As we explain in detail below, we do not find that this uncertainty in itself calls into question the ability of whoever ultimately becomes the owner of the Seabrook Station to operate the plant in a safe condition. Instead, our analysis turns to the Attorney General's effort to make a *prima facie* showing that the special circumstances he pleads tend to "undercut the rationale for which the rule was enacted." 10 C.F.R. 2.758(b).

THE FINANCIAL QUALIFICATION RULE

The original rule requiring financial qualification review, promulgated in 1968, required a finding, prior to operating license issuance that the utility "possesses or has reasonable assurance of obtaining the funds necessary to cover the estimated costs of operation for the period of the license or for five years, whichever is greater"⁵

In CLI-88-10, the Commission stated that the only justification for conducting a financial qualification review is "to provide some added assurance that a licensee would not, because of financial difficulties, be under pressure to take some safety shortcuts." CLI-88-10, *supra*, 28 NRC at 600.

"At most, the Atomic Energy Commission, in drafting the rule, must have intuitively concluded that a licensee in financially straitened circumstances would be under more pressure to commit safety violations or take safety 'shortcuts' than one in good financial shape. Accordingly, the drafters of the rule sought to achieve some level of assurance, prior to licensing, that licensees would not be forced by financial circumstances to choose between shutting down or taking shortcuts while the license was in effect."

Id., quoting 49 Fed. Reg. at 35,749.

However, the Nuclear Regulatory Commission exempted electric utilities from the requirements of the financial qualification rule in 1984. See 49 Fed. Reg. 35,747 (Sept. 12, 1984). According to the Commission, the "essential rationale" for this exclusion is that:

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

CLI-88-10, *supra*, 28 NRC at 598, quoting 49 Fed. Reg. at 35,748.

The Commission made it quite clear that the scope of its concern was not the adequacy of the rate base established by the ratemaking process as a whole, but:

[The Commission's] concern is that reasonable and prudent costs of safely maintaining and operating nuclear plants will be allowed to be recovered through rates. This concern does not extend to any level of profit or rate of return beyond those operating expenses. The Commission's concern is with safe operation, not profits.

49 Fed. Reg. at 35,749.

⁵Elimination of Review of Financial Qualifications of Electric Utilities in Operating License Review and Hearings for Nuclear Power Plants, 49 Fed. Reg. 35,747, 35,747-48 (Sept. 12, 1984).

The Commission offered an example of the type of showing that must be made before an electric utility applicant would be required to demonstrate its financial qualifications if a waiver of the regulation was granted under 10 C.F.R. § 2.758:

[A]n exception . . . might be appropriate where a threshold showing is made that, in a particular case, the local public utility commission will not allow the total cost of operating the facility to be recovered through rates.

49 Fed. Reg. at 35,751.⁶

We agree with the Staff that the Attorney General has failed to make a *prima facie* showing in his petition because he has not offered any allegation that would meet the test set forth in § 2.758(b).⁷ He has made his point that there is uncertainty surrounding who will ultimately be the owner of Seabrook Station, but he has neither alleged, nor approached a *prima facie* showing, that those owners, whoever they may be, will not be allowed to recover sufficient operating expenses in the rate base to allow for safe operation of the nuclear facility.

The New Hampshire Supreme Court has upheld the right of Seabrook's owners to recover the costs of operating the facility at such time as Applicants receive a full-power operating license and provide electricity to consumers. See *Petition of Public Service Co. of New Hampshire*, 130 N.H. 265, 539 A.2d 263 (1988). Moreover, we find nothing in the Attorney General's petition to keep us from applying a Commission presumption that Seabrook's rate base will, if a full-power license is issued, include the costs of safe operation that are prudently incurred. See 49 Fed Reg. 35,747-48, citing *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 605 (1944); *Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia*, 269 U.S. 679 (1923); see *Duquesne Light Co. v. Barasch*, 109 S. Ct. 609, 102 L. Ed. 2d 646 (1989).⁸ We know of no current impediments to the application of this presumption to the matter before us. The Attorney General avoids discussion of this presumption in his petition, except in passing (MAG Petition at 5), for good reason — it simply defeats the purpose of his pleading.

While it is of little use to go further in this analysis, it should be stated again that the gravamen of the Attorney General's complaint is that the Applicants will not be in a strong enough financial position to ensure that the Seabrook

⁶It should be noted that both the Appeal Board and the Commission have stated that the example set forth immediately above is not the only way to make the showing required to warrant a waiver. See CLI-88-10, *supra*, 28 NRC at 596; *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-895, 28 NRC 7, 17 (1988).

⁷NRC Staff Response to Massachusetts Attorney General's Petition for a Waiver of or an Exception to the Financial Qualification Rules for Full Power Operation (February 21, 1989), at 8-12.

⁸Regardless of legal precedent, we find absurd the notion that any public utility commission would set rates below what is necessary for safe operation of a nuclear plant once the matter is placed before it.

plant will be operated in a safe condition once a full-power operating license issues. His reasoning is that the owners, if financially strapped, would have incentives to take shortcuts in safety. MAG Petition at 4, ¶ 6. Applicants have provided what the Board views as succinct rebuttal to this claim.⁹

Mr. Brown, the Chairman and Chief Executive Officer of New Hampshire Yankee, sets forth in his affidavit several reasons for his view that the Attorney General's safety concerns are unwarranted. Of particular importance are ¶¶ 3(d), 7, and 10(a):

The Nuclear Regulatory Commission has resident inspectors supplemented by additional inspection and audit teams who regularly review safety matters and compliance with quality and license requirements. These independent reviews would not tolerate such "shortcuts in safety" as alleged by the Massachusetts Attorney General. . . .

* * *

[I]n actuality, today's generation of U.S. nuclear power plants have been left little choice on whether or not to have an optimum maintenance program for nuclear safety related systems and components. . . . Following the issuance of a license, licensee compliance with the specific license conditions and commitments is rigorously monitored for the life of the license. After the issuance of a license, negotiations with the NRC to reduce the stringency of the initial license conditions are only infrequently attempted and even less rarely do these negotiations result in significant reductions to the standardized regulatory specifications and codes.

* * *

The relationship between the Joint Owners and NHY [is that] PSNH has one vote out of five on the Executive Committee. NHY management, not the Joint Owners' Executive Committee, makes the decisions on safety-related issues, plant operation and plant shutdown.

ORDER

For the foregoing reasons:

1. The Seacoast Anti-Pollution League's motion to reopen the record and to accept a late-filed contention pursuant to 10 C.F.R. § 2.734 and 10 C.F.R. § 2.714 is denied;

2. The Massachusetts Attorney General's petition pursuant to 10 C.F.R. § 2.758 for a waiver of those portions of 10 C.F.R. § 2.104(c)(4), 10 C.F.R. § 50.33(f), and 10 C.F.R. § 50.57(a)(4) that exclude electric utilities from the class of applicants required to demonstrate their financial qualifications to

⁹ Affidavit of Edward A. Brown, supplementing Applicants' Response to Massachusetts Attorney General's Petition for a Waiver of or an Exemption to the Financial Qualification Rules for Full Power Operation (February 13, 1989).

operate a facility safely at full power is hereby denied certification to the Commission.

**FOR THE ATOMIC SAFETY
AND LICENSING BOARD**

**Ivan W. Smith, Chairman
ADMINISTRATIVE LAW JUDGE**

**Bethesda, Maryland
March 8, 1989**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Robert M. Lazo, Chairman
Harry Foreman
Ernest E. Hill

In the Matter of

Docket No. 30-16055-SP
(ASLBP No. 87-545-01-SP)
(Suspension Order)

ADVANCED MEDICAL SYSTEMS, INC.
(One Factory Row
Geneva, Ohio 44041)

March 21, 1989

In this Memorandum and Order, the Licensing Board holds (1) that this challenge to an immediately effective suspension order is not moot despite the subsequent revocation of the suspension order and resumption of operations by the Licensee under an amended license, and (2) that an award of attorney's fees under the Equal Access to Justice Act, 5 U.S.C. § 504, is, in appropriate circumstances, within the Board's authority.

RULES OF PRACTICE: REQUEST FOR AWARD OF ATTORNEY'S FEES

While the burden of establishing a causal connection between an enforcement proceeding and parallel action by the NRC Staff in its regulatory capacity may indeed be a heavy one, the question of "prevailing party" status under the Equal Access to Justice Act (EAJA), 5 U.S.C. § 504, turns on an analysis of the applicable facts rather than narrow and strained constructions of the statutory terms in the EAJA.

RULES OF PRACTICE: REQUEST FOR AWARD OF ATTORNEY'S FEES

The Equal Access to Justice Act, 5 U.S.C. § 504, has been severely limited by subsequent legislation that precludes the NRC from using any of its appropriated funds to pay the expenses of intervenors. *See, e.g.*, § 502 of the Energy and Water Development Appropriations Act of 1981, Pub. L. No. 96-367; and § 502 of the Energy and Water Development Appropriations Act of 1989, Pub. L. No. 100-371. This restriction has been interpreted to encompass any awards under the EAJA. *See Matter of Availability of Funds for Payment of Intervenor Attorney Fees — Nuclear Regulatory Commission*, 62 Comp. Gen. 692 (1983) (B-208637); *Business & Professional People for the Public Interest v. NRC*, 793 F.2d 1366 (D.C. Cir. 1986).

RULES OF PRACTICE: REQUESTS FOR AWARD OF ATTORNEY'S FEES

A Licensing Board's authority to award attorney's fees under the Equal Access to Justice Act, 5 U.S.C. § 504, is limited only as to intervenors in NRC adjudicatory or regulatory proceedings. The EAJA continues to authorize, in appropriate circumstances, fees and expenses to licensees who, as petitioners, challenge NRC enforcement actions.

RULES OF PRACTICE: REQUESTS FOR AWARD OF ATTORNEY'S FEES

The Licensing Board has authority to entertain requests for fees and expenses under the Equal Access to Justice Act, 5 U.S.C. § 504, in enforcement proceedings where the licensee prevails on all or some of the issues joined for litigation.

RULES OF PRACTICE: DECLARATORY RELIEF

The grant of declaratory relief requires affirmative answers to two separate but related questions. First, does a genuine and live controversy exist sufficient to support a declaratory order. Second, is the issuance of declaratory relief appropriate. The former is necessary to ensure that a board has jurisdiction over the matter to be decided, without which it cannot issue any relief, declaratory or otherwise. The latter is necessary because declaratory relief is discretionary and is to be granted only to terminate a controversy or eliminate uncertainty and avoid unnecessary delay.

**RULES OF PRACTICE: LITIGABILITY OF ISSUES
(ENFORCEMENT)**

The revocation of an immediately effective suspension order does not render a challenge to the suspension order moot where there was injury that was "capable of repetition, yet evading review." *Southern Pacific Terminal Co. v. Interstate Commerce Commission*, 219 U.S. 498, 515 (1911).

**RULES OF PRACTICE: LITIGABILITY OF ISSUES
(ENFORCEMENT)**

A Licensing Board's authority flows from and thus is limited to those matters contained in the Notice of Hearing. However, a Board is not precluded from reaching and deciding all the issues necessary to resolve the particular case before it simply because their resolution might have generic implications.

MEMORANDUM AND ORDER

On December 3, 1987, the Administrator of NRC Region III revoked the immediately effective suspension order giving rise to this proceeding in light of amendments to the license held by Advanced Medical Systems, Inc. (AMS). Based on this revocation, AMS asserts that it has obtained the relief it sought in this proceeding, and seeks, in addition to other relief, an award of attorney's fees and expenses under the Equal Access to Justice Act, as amended, 5 U.S.C. § 504. In the alternative, AMS proposes seven issues for litigation before this Board. In part based on the same revocation, the NRC Staff (Staff) answers that this Board's jurisdiction is at an end as neither litigable issues nor a right to attorney's fees exist.

After careful consideration of the pleadings, the Licensing Board has concluded that AMS has raised several litigable issues which render its requests for attorney's fees and other relief premature. Accordingly, for the reasons set forth hereinbelow, this Suspension Order proceeding must continue for the consideration of additional matters.

BACKGROUND

In order to understand the current factual posture of this proceeding, it is instructive to review the events that have led to the instant AMS request.

Under authority of Byproduct Material License No. 30-19089-01, AMS is in the business of, *inter alia*, installing and servicing radiography and teletherapy

units used for medical diagnosis and treatment. Based on the results of two special inspections of AMS licensed activities by NRC Regional III Staff, the Director of the NRC Office of Inspection and Enforcement issued on October 10, 1986, an immediately effective order suspending AMS' License. An immediately effective suspension was warranted, in the Director's view, because the special inspections had revealed alleged violations of regulatory requirements evidencing a "careless disregard for license requirements."¹ As a consequence of the Order, all AMS licensed activities came to an end.

AMS filed a timely answer denying all violations described in the Order and requesting a hearing. A Notice of Hearing was issued by the Commission on November 28, 1986, 51 Fed. Reg. 43,790 (Dec. 4, 1986), and this Board was created December 2, 1986, 51 Fed. Reg. 44,850 (Dec. 12, 1986).² As set out in the Notice of Hearing, the issue before the Board is whether, on the basis of the matters set forth in the Order, the Order should be sustained.

Subsequently, at a December 23, 1986 meeting between the Licensee and the Administrator of NRC Region III, AMS informally sought relief from the suspension order.³ AMS' efforts proved unsuccessful at this stage, and approximately 2 weeks later the Regional Administrator affirmed the propriety of the suspension order.⁴ The Administrator emphasized, however, that should AMS advance acceptable proposals for action which addressed the Staff's concerns, he was prepared to lift the immediate effectiveness portion of the Order.

On January 16, 1987, AMS filed a Stay Application with the Commission which was then referred to this Board for action. On January 23, 1987, during the pendency of that Stay Application, AMS submitted to the Staff a proposal regarding the actions it was prepared to take to obtain an interim lifting of the effectiveness of the suspension order pending completion of the adjudicatory hearing. Viewing the January 23 submission as written commitments, the Regional Administrator, by letter dated February 2, 1987, permitted AMS to resume licensed activities subject to three conditions.⁵ After a 114-day

¹ Order Suspending License and Order to Show Cause (Effective Immediately), EA 86-155 (October 10, 1986) at 3.

² As originally constituted, this Board was composed of a single Administrative Law Judge. However, when the press of other proceedings rendered the original Judge unavailable, the Licensing Board was reconstituted as a three-member Board. 52 Fed. Reg. 37,383 (Oct. 6, 1987).

³ AMS had originally sought interim relief from the immediate effectiveness aspect of the suspension order from this Board. However, by letter dated November 6, 1986, the Secretary of the Commission advised AMS that under the terms of the suspension order, such requests were in the first instance properly lodged with the Administrator for NRC Region III.

⁴ See Declination to Rescind Immediate Effectiveness of October 10, 1986 Suspension Order (January 7, 1987).

⁵ Those conditions were (1) all service work was to be performed by or under the supervision of the two licensed service engineers for AMS, (2) until June 30, 1987, AMS had to provide timely notice to the NRC of *all* service requests *before* performing the work, and (3) AMS had to institute and perform audits of internal and field service activities as described in its January 23 letter.

closedown, AMS was back in business, albeit subject to restrictive conditions it felt were excessive and unwarranted by the facts.⁶ On February 10, 1987, AMS withdrew its application for a stay.

Shortly thereafter, the Staff orally sought and obtained, with the concurrence of AMS, a postponement of any prehearing conference pending completion of discussions with the U.S. Department of Justice (Justice) concerning an ongoing, parallel criminal investigation of AMS. On March 9, 1987, and at the request of the Department of Justice, the Staff sought a stay of these proceedings pending completion of the Justice investigation, including any resultant criminal prosecution. The principal basis for the motion was that the continuation of this proceeding, including its attendant discovery, created a "grave risk" that witness statements and other information may be unnecessarily and prematurely disclosed to criminal targets. In an Order issued May 4, 1987 (ALJ-87-4, 27 NRC 865), this Board declined to grant an open-ended stay. Instead, it granted a limited stay of the proceeding, to August 15, 1987, subject to the filing of an adequately supported motion for a continuance of the stay.⁷

In early September 1987, AMS filed a statement of issues to be litigated, and the Staff filed a simultaneous statement that no litigable issue remained, since the violations described in the suspension order had been resolved. Shortly thereafter and at the request of AMS, the AMS license was amended to specifically identify the AMS personnel who were licensed technicians and list the activities they were authorized to perform. Based on his position that the 1987 amendments resolved the matters giving rise to the Suspension Order and superseded the conditions imposed by his February 2 letter, on December 3, 1987, the Regional Administrator revoked the suspension order and the February 2 letter permitting conditional resumption of licensed activities.

On July 20, 1988, following the lifting of the stay, a prehearing conference was held by the Licensing Board. At the conclusion of the conference, AMS was requested to file a statement of litigable issues, and the Staff was requested to respond. AMS' instant motion resulted.

ATTORNEY'S FEES

AMS' claim to attorney's fees and expenses is based on its equating the Administrator's December 3, 1987 revocation of the suspension order with the ultimate relief sought through this proceeding. Based on this asserted similarity,

⁶ See Response of AMS to Report of NRC's Staff Regarding Jurisdictional and Board Notification Questions (October 19, 1987) at 3-6 and 8.

⁷ As a result of a series of requests for a continuance of the stay, the entire discovery process was ultimately stayed until July 12, 1988. The Justice investigation resulted in a criminal indictment which was subsequently dismissed July 11, 1988, at the request of the United States.

AMS argues that it is a "prevailing party" within the meaning of the Equal Access to Justice Act (EAJA), as amended, 5 U.S.C. § 504, and thus is entitled to an award of attorney's fees and expenses. At the outset, we reject AMS' underlying premise that "a revocation is a revocation is a revocation." Certainly the revocation of the suspension order obtained by AMS from the Regional Administrator, based upon amendments to its license, cannot smell as sweet as the relief sought from this Board, which would have been a declaration that the suspension order was *void ab initio*. We similarly reject the Staff's opposing position to the extent it argues that any relief from the suspension order obtained outside the four walls of this proceeding cannot support an award of attorney's fees.⁸ While the burden of establishing a causal connection between an enforcement proceeding and parallel action by the NRC Staff in its regulatory capacity may indeed be a heavy one, the question of "prevailing party" status turns on an analysis of the applicable facts rather than narrow and, in our view, strained constructions of the statutory terms used in the EAJA.

Because we conclude below that litigable issues still remain before us, we need not at this juncture sail across the uncharted and, if the Staff's response is any weather map, stormy waters of whether attorney's fees should be awarded in this contested enforcement proceeding. However, there exists a more fundamental question than that of attorney's fees in *this* case. Are attorney's fees under the EAJA available to a "prevailing party" in *any* Commission proceeding? In order to eliminate the uncertainty regarding this unresolved question, and to avoid any unnecessary delay should the question of attorney's fees in this case ripen, we exercise our authority under 10 C.F.R. § 2.718 to issue a declaratory judgment on the availability of such awards in NRC enforcement proceedings.⁹ See *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), CLI-77-1, 5 NRC 1, 3-5 (1977).

The EAJA authorizes the award of attorney's fees and expenses in most adversary adjudications conducted under 5 U.S.C. § 554 to an eligible prevailing party¹⁰ other than the United States "unless the adjudicative officer of the agency finds that the position of the agency was substantially justified or that special

⁸ See NRC Staff Response to AMS Statement of Issues (August 19, 1988) ("Staff Response") at 4-5.

⁹ The EAJA requires each agency to issue regulations establishing the procedures for the submission and consideration of applications for fees and expenses. 5 U.S.C. § 504(c)(1). While the Commission initially issued proposed regulations under the Act, 46 Fed. Reg. 53,189 (Oct. 28, 1981), those regulations have yet to be promulgated as a final rule. Since the promulgation of final regulations takes time, particularly in light of the probable need to seek additional public comments due to the passage of time, waiting for the possible receipt of an application for attorney's fees at the end of this proceeding would result in unnecessary delay, to the detriment of the Licensee and perhaps the public fisc. In light of this, we elect to eliminate the uncertainty by ruling on this issue, and then, due the existence of a question of first impression involving a statute, refer our decision directly to the Commission for its review.

¹⁰ Under the EAJA, not all "prevailing parties" are eligible for an award of attorney's fees and expenses. As a general rule, such awards are limited to individuals with a net worth of less than \$2,000,000; businesses, units of local government, or organizations with less than 500 employees and a net worth of less than \$7,000,000; and tax-exempt organizations or cooperative associations with less than 500 employees. 5 U.S.C. § 504(c)(1).

circumstances make an award unjust.” 5 U.S.C. § 504(a)(1). Under the terms of the Act, such awards are to be paid from the agency’s own appropriated funds. 5 U.S.C. § 504(d).

This statute of general application has been severely limited by appropriation legislation that has precluded the NRC from using any of its funds to pay the expenses of intervenors in its adjudicatory or regulatory proceedings. *See, e.g.,* § 502 of the Energy and Water Development Appropriations Act of 1981, Pub. L. No. 96-367; and § 502 of the Energy and Water Development Appropriations Act of 1989, Pub. L. No. 100-371. This restriction has been interpreted to encompass any awards under the EAJA. *See Matter of Availability of Funds for Payment of Intervenor Attorney Fees — Nuclear Regulatory Commission*, 62 Comp. Gen. 692 (1983) (B-208637); *Business & Professional People for the Public Interest v. NRC*, 793 F.2d 1366 (D.C. Cir. 1986).

The limitation on a Licensing Board’s authority to award attorney’s fees appears limited, however, only as to *intervenors* in its adjudicatory or regulatory proceedings. Thus, the EAJA continues to authorize, in appropriate circumstances, fees and expenses to licensees who, as *petitioners*, challenge NRC enforcement actions. We believe recognition of the continued application of the EAJA to this category of Commission proceedings is proper for two reasons.

First, such a reading does no violence to the statutory language giving rise to the Commission’s limited ability to make EAJA awards following administrative proceedings. In most Commission proceedings, parties other than an applicant or licensee appear as a matter of choice.¹¹ Their economic interests or proposed course of business conduct are not the subject of the proceeding and are not directly affected by its outcome. Such is not the case with respect to licensees who are the subjects of NRC enforcement actions. For them, the choice is to defend their actions or to submit to the enforcement judgment of the Staff. Absent their initiative, there is no proceeding in which to participate.

Second, the paramount purpose of the EAJA is to benefit individuals or small business entities with limited financial resources who “may be deterred from seeking review of, or defending against unreasonable governmental action because of the expense involved in securing the vindication of their rights.” House Judiciary Committee, H.R. Rep. No. 1418, 96th Cong., 2d Sess. (1980), *reprinted in* 1980 U.S. Code Cong. & Admin. News 4984. Our decision furthers that remedial purpose and simply focuses the application of the Act on that category of Commission proceedings that involve the type of parties and raise the type of issues that Congress had in mind when it enacted the EAJA.

¹¹ We note that as defined by 5 U.S.C. § 504(c)(1)(C), “adversary adjudications” do not include licensing proceedings. Logically, this exclusion extends to license amendment proceedings. Thus, as a practical matter, a major portion of the Commission’s proceedings are outside the scope of the EAJA.

Thus, we conclude that the Board has the authority to entertain requests for fees and expenses under the EAJA in enforcement proceedings where the licensee prevails on all or some of the issues joined for litigation.

EXISTENCE OF LITIGABLE ISSUES

AMS identifies seven specific issues for litigation in this proceeding in the event that it is not afforded "prevailing party" status under the EAJA. Those issues are:

1. Whether or not there was a substantial basis for the NRC to conclude that it lacked the requisite reasonable assurances that AMS would comply with Commission requests in the future;
2. Whether or not there was a substantial basis for the NRC to conclude that continued conduct of certain licensed activities by AMS could pose a threat to the health and safety of the public, to wit: the performance of installation, service, maintenance or dismantling of radiography or teletherapy units;
3. Whether or not the NRC had a substantial basis for concluding that the public health, safety and interest required that AMS' License Number 34-19089-01 should be suspended;
4. Whether or not the NRC had a substantial basis for concluding that pursuant to 10 CFR Section 2.201(c) no prior notice was required as to its actions, and pursuant to 10 CFR Section 2.202(f) that the Suspension Order of October 10, 1986 should be immediately effective;
5. Whether or not the NRC had a substantial basis for the actions it took beyond and through its January 7, 1987 Declination to Rescind Immediate Effectiveness of October 10, 1986 Suspension Order;
6. Whether or not, and to what extent, all service, installation, maintenance and dismantling of radiography or teletherapy units at issue herein must be performed by licensed individuals (including hospital personnel); and]
7. Whether or not 10 CFR Section 2.202(f), *et seq.*, is constitutional.¹²

Proposed Issues 1 through 3 challenge the basis for the suspension order that gave rise to this proceeding, and Proposed Issue 4 seeks review of the immediate effectiveness aspect of that order. Proposed Issue 5 challenges the basis for the Regional Administrator's January 7, 1987 letter affirming the October 10 suspension order. Proposed Issue 6 seeks a Board determination whether and to what extent all service, installation, maintenance, and dismantling of radiography and teletherapy units must be performed by licensed individuals. Proposed Issue

¹² Advanced Medical System, Inc.'s Statement of Issues (August 5, 1988) at 6-7. We note that elsewhere, AMS characterized this proceeding as raising, alternatively, three general issues (*id.* at 7-8), or two issues (Advanced Medical Systems Response to NRC Staff Response (September 2, 1988) ("AMS Response") at 3). We elect to structure our analysis in terms of the issues as originally propounded by AMS. In addition, our identification of the issues as propounded by AMS does not reflect a determination that the Licensee's formulation properly states the applicable standard of review.

7 would have the Board determine the constitutionality of 10 C.F.R. § 2.202(f), the regulatory basis for the immediately effective portion of the October 10 suspension order.

As the Staff correctly perceives, given the factual posture of this proceeding, AMS in essence seeks a declaratory judgment on two general issues: (1) whether the immediately effective suspension order had a sufficient regulatory and factual basis, and (2) the scope of its business activities that must be performed by or under the direct supervision of NRC-licensed personnel.¹³ Tr. 236-38, 242-43. The grant of such relief requires affirmative answers to two separate but related questions. First, does a genuine and live controversy exist between the Licensee and the Staff sufficient to support a declaratory order. Second, is the issuance of declaratory relief appropriate in this proceeding. The former is necessary to ensure that a board has jurisdiction over the matter to be decided, without which it cannot issue any relief, declaratory or otherwise. The latter is necessary because declaratory relief is discretionary and is to be granted only to terminate a controversy or eliminate uncertainty and avoid unnecessary delay.¹⁴

The Staff does not oppose the grant of declaratory relief in this proceeding as inappropriate or unwarranted.¹⁵ Rather, the Staff urges the Board to decline AMS' invitation to issue a declaratory order because, in its view, there is no live controversy sufficient to support such relief. As the Staff would have it, the Regional Administrator's act of revoking the suspension order also extinguished our jurisdiction by mooting all issues before us.

At first blush, the Staff's position is facially appealing. However, on second reading, we find it inapplicable to this case. In our view, this case falls squarely within the ambit of the well-established exception permitting review where there was injury that was "capable of repetition, yet evading review." *Southern Pacific Terminal Co. v. Interstate Commerce Commission*, 219 U.S. 498, 515 (1911).

¹³ In its September 2, 1988 filing (AMS Response at 3), AMS identified the two outstanding issues as "did [the] NRC have the right to order a shutdown [of] AMS and does [the] NRC have the right to arbitrarily and capriciously discriminate among licensees" We view the former as simply a catch-all restatement of Proposed Issues 1 through 4. As to the latter, by casting the inquiry in terms of the Staff's right to arbitrarily and capriciously discriminate, AMS poses a question that begs its own answer. However, even if properly framed, we reject this latter issue. Neither the scope of other licenses nor the propriety of the subsequent 1987 amendments to the AMS license are directly before us.

¹⁴ See *Wolf Creek*, CLI-77-1, *supra*; and *Washington Public Power Supply System* (WPPSS Nuclear Project Nos. 3 and 5), LBP-77-15, 5 NRC 643, 644-45 (1977), where the issue raised was whether certain construction activities related to construction of a nuclear power plant could be undertaken in advance of Commission authorization in a limited work authorization (LWA).

¹⁵ Our authority to grant declaratory relief is not without limit. As set out by the Commission, declaratory relief is proper where there is some connection between its issuance and the Board's duty to avoid delay. *Wolf Creek*, *supra*, 5 NRC at 5. In *Wolf Creek*, the Commission held that "[t]he applicant's motion, made to a licensing board already constituted to hear their application, has such a connection." *Id.* (emphasis added). We believe such a connection exists in this case.

[A] case is not moot when "(1) the challenged action was in its duration too short to be fully litigated prior to its cessation or expiration, and (2) there was a reasonable expectation that the *same complaining party* would be subject to the same action again.

SEC v. Sloan, 436 U.S. 103, 109 (1978) (emphasis in original), quoting *Weinstein v. Bradford*, 423 U.S. 147, 149 (1975) (*per curiam*). See also *Alton & S. Ry. v. International Ass'n of Machinists*, 463 F.2d 872, 878 (D.C. Cir. 1972) (key elements of test are likelihood of repetition and the public interest in ensuring review).

We conclude that both prongs of the test are satisfied in this case. As to the first prong, we note that the suspension order was revoked over a year ago, during a period when this proceeding was stayed at the Staff's request, and that the immediately effective aspect of that order was rescinded 10 months before that. The fact that this action was obtained through negotiations between the Licensee and the Staff is not fatal to an affirmative finding on this part of the *Weinstein* test. See *Connecticut Light & Power Co. v. Federal Energy Regulatory Commission*, 627 F.2d 467, 469-70 (D.C. Cir. 1980) (settlement of financial issues did not moot entire case challenging suspension order where significant public interest in review in light of the effect of suspension orders on regulated companies and their customers). Moreover, AMS has consistently maintained that its acceptance of the Staff's required corrective action was only interim and done in an effort to preserve what remained of its financial health. For members of the nuclear industry, an NRC license is their commercial lifeblood. Because of this, we are troubled by any rule of law that would *require* dismissal of a challenge to immediately effective license suspension orders as moot due to intervening license amendments where such amendments could be obtained from a licensee under threat of financial ruin. At least as to the facts of this case, we decline to author such a rule here.

Recently, the District Court for the District of Columbia confronted the identical issue now before this Board in a case with remarkable similarities to the facts, issues, and arguments of the parties in this proceeding. *Capital Engineering & MFG Co., Inc. v. Weinberger*, 695 F. Supp. 36 (D.D.C. 1988). The court there concluded that the lifting by the Department of the Army of an immediately effective contractor suspension order did not moot the plaintiff's challenge to the suspension because the subsequent revocation was not based on a resolution of the underlying dispute between the parties, and left the suspension as part of the plaintiff's record. In holding that declaratory relief was appropriate, the court went on to hold that

[t]o rule otherwise would be to permit the Army to evade judicial review of allegedly unfounded suspensions, yet leave the blemish of such suspensions on the targets' records, by the expediency of terminating the subject suspension before adjudication. As to this issue,

then, the court is presented with "a real and substantial controversy admitting of specific relief through a decree of a conclusive character."

Id. at 39 (citation omitted). While AMS, like any licensee, has a heavy burden to overturn Staff action in an area where its discretion is perhaps at its zenith, we nonetheless believe the reasoning of the court in *Capital Engineering* applies with equal force here.

As to the second prong of the *Weinstein* test, AMS notes that it "has been branded one of the thirteen worse licensees out of eight thousand, as disclosed by a public briefing to the Commissioners on July 13, 1988" ¹⁶ And while asserting that it was not sufficient to support a finding of a current controversy, the Staff acknowledged that "the controversy relates to the *potential* that future enforcement actions . . . could be influenced by the violations identified in the suspension order and the supporting inspection report."¹⁷ To the extent the Staff has identified AMS as a "problem" licensee and in light of the continuing dispute over the scope of licensed activities, we find a reasonable expectation that this Licensee will at some future point find itself subject to the enforcement authority of the Commission. See *SEC v. Sloan, supra*, 436 U.S. at 109-10 (action against suspension of trading of stock not moot although no current suspension because SEC considered company to be chronic violator).

Notwithstanding our conclusion that the exercise of our discretionary declaratory judgment authority is warranted in this case, not all of AMS' proposed issues are appropriate subjects for litigation. Proposed Issue 5 is, in our view, a mere echo of Proposed Issue 4 in that both challenge the immediate effectiveness of the suspension order. AMS advances, and we can divine, no factual basis upon which to distinguish the Administrator's initial decision to make the order immediately effective from his subsequent affirmance of that decision. That being the case, the propriety of both decisions is inextricably intertwined. Proposed Issue 5 is rejected as duplicative.

As to Proposed Issue 6, the Staff characterizes it as an attempt to obtain from this Board a generic determination as to the scope of licensable activities applicable to the entire regulated industry. In addition, Staff notes that Proposed Issue 7 challenges the constitutionality of immediately effective orders issued pursuant to § 2.202(f). Such issues, Staff argues, are beyond our authority, which flows from and thus is limited to those matters contained in the Notice of Hearing.

¹⁶ AMS Response at 5.

¹⁷ Staff Response at 12.

To the extent Proposed Issue 6 seeks such a generic adjudication, we agree with the Staff.¹⁸ Proposed Issue 6, as proffered, is rejected. However, this does not mean that we are precluded from reaching issues the resolution of which might have generic implications. Thus, in the context of further litigation on Proposed Issues 1-4, we believe that the Board has both the authority and responsibility to determine, to the extent necessary to resolve AMS' challenge, whether, under its preamended license, AMS' actions (1) constituted licensed activities, and (2) if so, whether all aspects of those activities had to be performed by or under the supervision of a licensed individual. Proposed Issue 7 is also rejected, not only for the reasons advanced by the Staff but also in light of 10 C.F.R. § 2.758(a), which precludes this Board from entertaining challenges of the type advanced by AMS.

For the reasons above, Proposed Issues 1 through 4 set forth by AMS constitute litigable issues. Proposed Issues 5 through 7 do not.

ORDER

For all the foregoing reasons and upon consideration of the entire record in this matter, it is, this 21st day of March 1989, ORDERED:

1. that litigable issues 1 through 4 have been raised by American Medical Systems, Inc. (AMS) in this proceeding;
2. that AMS' requests for attorney's fees and other relief are *denied* as premature;
3. that AMS Proposed Issues 5 through 7 are rejected as nonlitigable issues outside the jurisdiction of this Board;
4. that this Board has the authority to entertain requests for fees and expenses under the EAJA in enforcement proceedings where the licensee prevails on all or some of the issues joined for litigation; and
5. that this decision, to the extent it determines that awards of attorney's fees and expenses is within the authority of the Licensing Board in an enforcement

¹⁸ See Notice of Hearing, 51 Fed. Reg. 43,790 (Dec. 4, 1986); *Sequoyah Fuels Corp.* (UF₆ Production Facility), CLI-86-19, 24 NRC 508, 512 n.2 (1986); *Boston Edison Co.* (Pilgrim Nuclear Power Station), CLI-82-16, 16 NRC 44, 45 (1982), *aff'd sub nom. Bellotti v. NRC*, 725 F.2d 1380 (D.C. Cir. 1983); *Commonwealth Edison Co. of New York* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 426 (1980).

proceeding, is referred directly to the Commission for review pursuant to .10 C.F.R. § 2.730(f).

**THE ATOMIC SAFETY AND
LICENSING BOARD**

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

**Harry Foreman
ADMINISTRATIVE JUDGE**

**Ernest E. Hill
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 21st day of March 1989.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ADMINISTRATIVE LAW JUDGE:

Morton B. Margulies

In the Matter of

Docket No. 30-29319
(ASLBP No. 88-575-01-CivP)
(EA-87-145)
(Material License No. 42-26838-01)

H&G INSPECTION COMPANY, INC.

January 9, 1989

ORDER

(Approving Settlement Agreement and Terminating Proceeding)

On December 15, 1988, the parties to this enforcement proceeding, the NRC Staff and H&G Inspection Company, Inc., filed with the Administrative Law Judge (1) a Settlement Agreement resolving the imposition of a civil monetary penalty and the request for a hearing and (2) a joint motion requesting the Judge's approval of the Settlement Agreement and to terminate this proceeding.

I have reviewed the Settlement Agreement under 10 C.F.R. § 2.203 to determine whether approval of the agreement and consequent termination of this proceeding are in the public interest. Based upon the review, I am satisfied that approval of the Settlement Agreement and termination of this proceeding are in the public interest. The terms of the agreement satisfy the interests of the public and parties without the need for a hearing.

Accordingly, I approve the Settlement Agreement attached hereto and incorporated by reference into this Order. Pursuant to § 2.203 this proceeding is terminated on the basis of the attached agreement.

Morton B. Margulies
ADMINISTRATIVE LAW JUDGE

Dated at Bethesda, Maryland,
this 9th day of January 1989.

ATTACHMENT

SETTLEMENT AGREEMENT

On April 7, 1988, the Nuclear Regulatory Commission (NRC) Staff issued an Order Imposing Civil Monetary Penalty in the amount of seven thousand five hundred dollars (\$7500.00) for violation of 10 C.F.R. § 20.101(a) to H&G Inspection Company, Inc. The Licensee requested a hearing on that Order and the matter was referred to an Administrative Law Judge on May 24, 1988. A prehearing conference was held on August 30, 1988. The parties engaged in informal discovery and discussions of settlement of the proceeding. As a result of these discussions, the parties reached an agreement and so informed the Administrative Law Judge on November 30, 1988. The agreement reached by the parties is as follows:

1. In consideration of corrective actions taken by H&G Inspection Company, Inc., to avoid future radiographer overexposures in violation of 10 C.F.R. § 20.101(a), the NRC Staff agrees to reduce the amount of the monetary penalty to three thousand dollars (\$3000.00).

2. Accordingly, the NRC Staff agrees that payment of three thousand dollars (\$3000.00) by H&G Inspection Company, Inc., will constitute payment in full and compliance with Paragraph IV of the Order Imposing Civil Monetary Penalty issued on April 7, 1988, to H&G Inspection Company, Inc.

3. H&G Inspection Company, Inc., agrees to pay a civil monetary penalty in the amount of three thousand dollars (\$3000.00) within thirty days of the approval of this agreement, by check, draft, or money order, payable to the Treasurer of the United States and mailed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555.

4. Having agreed that all matters concerning the April 7, 1988 Order Imposing Civil Monetary Penalty and the adjudicatory proceeding are resolved,

the NRC Staff and H&G Inspection Company, Inc., shall jointly move the Administrative Law Judge for an Order Approving this settlement agreement and terminating this proceeding. This agreement shall become effective upon the approval of the Administrative Law Judge.

**FOR THE NUCLEAR
REGULATORY COMMISSION**

**Colleen P. Woodhead
Counsel for NRC Staff**

Dated the 6th day of December 1988

**FOR H&G INSPECTION COMPANY,
INC.**

Billie P. Garde, Esq.

Dated this 15th day of December 1988

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ADMINISTRATIVE LAW JUDGE:

Morton B. Margulies

In the Matter of

Docket No. 30-19498
(ASLBP No. 88-578-02-CivP)
(EA 87-184)
(Materials License No. 35-17186-02)

PRECISION LOGGING & PERFORATING
COMPANY

March 15, 1989

ORDER

(Approving Settlement Agreement and Terminating Proceeding)

On March 9, 1989, the parties to this civil penalty enforcement proceeding, the NRC Staff and Precision Logging and Perforating Company, filed with the Administrative Law Judge: (1) a Settlement Agreement resolving the matters of the imposition of a civil monetary penalty and the request for a hearing; (2) a Joint Motion requesting the Judge's approval of the Settlement Agreement and the entry of an order terminating this proceeding; and (3) a proposed Order.

I have reviewed the Settlement 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 this review, I am satisfied that approval of the Settlement Agreement and termination of this proceeding based therein are in the public interest. The terms of the Settlement Agreement satisfy the interests of the public and the parties without the need for a hearing.

Accordingly, I approve the Settlement Agreement attached hereto and incorporated by reference into this Order. Pursuant to 10 C.F.R. § 2.203, I hereby terminate this proceeding on the basis of the attached agreement.

Morton B. Margulies
ADMINISTRATIVE LAW JUDGE

Dated at Bethesda, Maryland,
this 15th day of March 1989.

ATTACHMENT

SETTLEMENT AGREEMENT BETWEEN THE NRC STAFF AND LICENSEE CONCERNING SETTLEMENT OF CIVIL PENALTY PROCEEDING

1. Precision Logging and Perforating Company (the Licensee) is the holder of Materials License No. 35-17186-02 issued by the Nuclear Regulatory Commission ("NRC") on December 2, 1981, and amended last in its entirety on January 21, 1988. The license authorizes the Licensee to use sealed sources for oil and gas well logging in accordance with the conditions specified therein.

2. A routine inspection of the Licensee's activities was conducted on August 18 and 19, 1987. In the NRC's view, the results of this inspection indicated that the Licensee had not conducted its activities in full compliance with NRC requirements. A written Notice of Violation and Proposed Imposition of Civil Penalty was served upon the Licensee by letter dated December 10, 1987. The Notice stated the nature of the violations, the provisions of the NRC's requirements that the NRC believed Licensee had violated, and the amount of the civil penalty proposed for the violations. The Licensee responded to the Notice of Violation and Proposed Imposition of Civil Penalty by two letters, both dated January 7, 1988. In its response, the Licensee contested Violations A and D but not the other alleged violations. In addition, the Licensee requested that the proposed civil penalty be rescinded for several stated reasons, including financial hardship. By letter dated February 16, 1988, the NRC provided the Licensee with the opportunity to submit specific financial information on the company's recent profit and loss and its net worth. The Licensee submitted this information by letter dated February 15, 1988.

3. After consideration of the Licensee's response and the statements of fact, explanation, and argument for mitigation contained therein, the Deputy Executive Director for Regional Operations in an "Order Imposing Civil Monetary Penalty" (Order) dated July 7, 1988, determined, as more fully set forth in the

Appendix to that Order, that the violations had occurred as stated, but that the civil penalty proposed in the Notice of Violation would constitute an excessive financial hardship for the Licensee, and therefore should be mitigated by 50 percent. Thereafter, in a letter dated July 22, 1988, Licensee stated it found the proposed penalty to be unacceptable and made a request for a hearing.

4. Licensee wishes to terminate this civil penalty proceeding by payment of the proposed penalty in the sum of \$500.000 without conceding its position as stated in its letters dated January 7, 1988.

5. Accordingly, the Licensee waives its right to a hearing, and without admitting or denying any of the allegations of the Notice of Violation dated December 10, 1987, except as to jurisdiction, to which it admits, and solely for the purposes of terminating this proceeding, agrees to the payment of the \$500.00 civil penalty.

6. The NRC, while affirming its position as to the alleged violations stated in the Notice dated December 10, 1987, and Order dated February 10, 1988, agrees that this proceeding should be terminated by payment of the ordered penalty by the Licensee.

7. This civil penalty proceeding will be terminated upon the payment by the Licensee of a civil penalty in the amount of \$500.00 concurrent with executing the Agreement said payment to be made by check, draft, or money order, payable to the Treasurer of the United States.

For the NRC Staff

For Licensee

Bernard M. Bordenick
Counsel for NRC Staff

Larry L. Oliver
Counsel for the Licensee

Dated: February 9, 1989

Dated: March 3, 1989

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Hugh L. Thompson, Jr., Deputy Executive Director
for Nuclear Materials Safety, Safeguards,
and Operations Support

In the Matter of

Docket No. 70-1113

GENERAL ELECTRIC COMPANY
(Wilmington, North Carolina
Facility)

March 13, 1989

The Deputy Executive Director for Nuclear Materials Safety, Safeguards, and Operations Support grants in part and denies in part a Petition filed pursuant to 10 C.F.R. § 2.206 by Vera M. English and denies action requested in a previous petition filed by Mrs. English which was deferred in an earlier Director's Decision, DD-86-11, 24 NRC 325 (1986). Specifically, the present Petition sought imposition of a civil penalty in the amount of \$40,635,000 upon General Electric Company (GE), plus \$37,500 per day for every day after April 6, 1987, that GE did not take corrective action for discrimination against Mrs. English, and imposition of a license condition upon GE requiring the Licensee to fully compensate Mrs. English for her losses endured as a result of GE's actions. In this Decision, to the extent that the Petitioner requested that the NRC take enforcement action against GE for discrimination against Mrs. English, the Petition has been granted. However, to the extent that the Petitioner requested that the NRC impose a civil penalty in the amount stated above, and to the extent that the Petitioner requested that the NRC impose a license condition upon GE requiring it to fully compensate Mrs. English, the Petition has been denied.

ENERGY REORGANIZATION ACT OF 1974: SECTION 210

Generally, when a complaint has been filed with the Department of Labor alleging discrimination by an NRC licensee, the NRC defers consideration of the matter until the Department of Labor has acted.

RULES OF PRACTICE: 2.206 PROCEEDING

As long as he does not abuse his discretion, a Director, in making a decision regarding a 10 C.F.R. § 2.206 petition, is free to rely on a variety of sources of information, including documents issued by other agencies.

NRC: ENFORCEMENT POLICY

According to the Enforcement Policy, an action by plant management above first-line supervision in violation of § 210 of the Energy Reorganization Act against an employee is classified as a Severity Level II violation.

NRC: ENFORCEMENT POLICY

The section in the Enforcement Policy that provides for escalation for prior poor performance refers to the Licensee's enforcement history in the area of concern.

NRC: ENFORCEMENT POLICY

"Prior notice" under the Enforcement Policy refers to specific notice of particular types of events or potential conditions affecting licensed operations.

ENERGY REORGANIZATION ACT OF 1974: SECTION 210

In § 210 of the Energy Reorganization Act, Congress has explicitly given to the Department of Labor the authority and responsibility to provide traditional, labor-related remedies such as compensation for individual losses, while reserving to the NRC its authority under the Atomic Energy Act to take enforcement action against its licensees for violations of NRC requirements. This statutory system has been implemented through a Memorandum of Understanding between the two agencies. The NRC does not have the authority to order individual compensation.

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

INTRODUCTION

On April 6, 1987, Anthony Z. Roisman and Mozart G. Ratner, as counsel for Vera M. English (Petitioner), filed a "Petition for Enforcement Action" pursuant

to 10 C.F.R. § 2.206. The Petitioner requests that the Nuclear Regulatory Commission (NRC) act to take appropriate action against the General Electric Company (GE or Licensee) for its deliberate retaliatory discharge of Mrs. English. The Petitioner seeks two separate and distinct NRC actions: (1) imposition of a civil penalty in the amount of \$40,635,000 upon GE, plus \$37,500 per day for every day after April 6, 1987, that GE does not take corrective action, and (2) imposition of a license condition upon GE requiring the Licensee to fully compensate Mrs. English for her economic losses in the past and future resulting from GE's alleged discrimination, for medical expenses entailed as a result of the alleged discrimination, for expenses incurred in "fighting GE," and for "physical and mental pain she has endured" as a result of GE's actions.

The Petitioner states that the April 6, 1987 Petition is neither a renewal of nor an attempt to relitigate a December 13, 1984 Petition filed by Petitioner. That petition also sought the finding of violations and assessment of civil penalties against GE for having discriminated against Mrs. English.¹ In addition, that petition raised certain other allegations of wrongdoing by the Licensee. Regarding the December 1984 Petition, the Director, Office of Inspection and Enforcement, issued a Partial Director's Decision pursuant to 10 C.F.R. § 2.206 which, among other things, stated that action with respect to the discrimination allegations raised by the Petitioner was being deferred pending further determination by the Department of Labor (DOL) pursuant to § 210 of the Energy Reorganization Act (ERA) of 1974, as amended, 42 U.S.C. § 5851, regarding the allegations. DD-86-11, 24 NRC 325, 331-32 (1986).² With regard to the other issues of wrongdoing, the Director noted that certain of these issues were being addressed within the Office of investigations (OI) and that a supplement to the Decision would be issued when that effort and the DOL proceedings were completed. *Id.*

The present petition is a new request for action to be taken by the NRC on the previously raised discrimination issues now that, in the Petitioner's view, the reason given for deferring action on the discrimination issues no longer exists.

On April 8, 1987, Petitioner submitted a correction regarding Petitioner's assessment of the costs and damages incurred as a result of the discharge of Mrs. English. By letter dated May 13, 1987, I, as the Director, Office of Nuclear Materials Safety and Safeguards (NMSS), informed the Petitioner that her petition had been referred to NMSS for action. A notice was published in the *Federal Register* indicating that the Petitioner's request was under consideration.

¹ "Motion to Institute Proceeding Pursuant to 10 C.F.R. § 2.202 for Imposition of Civil Penalties and to Vacate and Reverse Inspection Reports and to Schedule Hearings Thereon" filed on December 13, 1984, and supplemented by Letters dated February 28, March 12, April 11, and June 20, 1985.

² On September 29, 1986, the Commission declined to review this Decision. On December 22, 1986, Petitioner filed a petition for review of the Director's Decision in the U.S. Court of Appeals for the District of Columbia Circuit. This proceeding was dismissed on March 31, 1987. *English v. NRC*, No. 86-1714 (D.C. Cir., Mar. 31, 1987). Petitioner also filed five other actions in the D.C. Circuit. All of these actions were dismissed on March 31, 1987.

52 Fed. Reg. 18,764 (May 19, 1987). On June 10, 1987, the Licensee filed a response to the petition entitled "Response of General Electric Company to Vera English's Section 2.206 Petition for Enforcement Action." On June 15, 1987, the Director, NMSS, met with Mr. Roisman, at the latter's request, to discuss the status of Petitioner's request.³ At that meeting and in a subsequent letter dated July 7, 1987, Mr. Roisman noted his intention to file, on behalf of Petitioner, a reply to GE's Response. In a letter dated October 5, 1987, the Director, NMSS, advised Mr. Roisman of the Director's intention to act on the petition and the need to submit any additional input within the week if it were to be considered. On October 9, 1987, Mr. Ratner submitted a document which he indicated was the first portion of Mrs. English's reply to GE's Response. On October 14, 1987, Mr. Ratner submitted a document entitled "Reply of Vera English to General Electric's Opposition to Petition for Enforcement Action" advising that the October 9, 1987 partial reply could be disregarded. On March 21, 1988, GE filed its response to this document entitled "Response of General Electric Company to Vera English's Reply in Support of Section 2.206 Petition."

Because the petition seeks both escalated enforcement and license modification, it will be decided by me as the Deputy Executive Director responsible for those matters. For the reasons stated in this Decision, I have determined that, to the extent that the Petitioner requests that the NRC take enforcement action against GE for discriminating against Mrs. English, the petition is granted. However, to the extent that the Petitioner requests that the NRC impose a civil penalty in the amount of \$40,635,000 plus \$37,500 per day for each day after April 6, 1987, the petition is denied. Furthermore, to the extent that the Petitioner requests that the NRC impose a license condition upon GE requiring it to fully compensate Mrs. English, the petition is also denied. This Decision constitutes a final Director's Decision with respect to both the April 6, 1987 Petition and the matters raised in the December 13, 1984 Petition on which a decision was deferred.

BACKGROUND

By way of background, Petitioner was employed by GE as a laboratory technician in the Chemet Laboratory. For some time prior to and continuing into 1984, she reported safety concerns to GE management and the NRC. On March 15, 1984, she was removed from her job in the Chemet Lab, barred from further work in controlled areas, and placed on indefinite temporary assignment

³The meeting is documented in a letter to Mr. Roisman, and an enclosed memorandum to file, both from the Director, NMSS, and dated July 23, 1987. The letter and memorandum are available in the NRC Public Document Room.

in a warehouse at the Wilmington facility. The ultimate reason given for her removal by GE management was her deliberate failure to clean up contamination. Subsequently, she was advised that she would have to bid for an open position. A time limit was set and, there apparently existing no such position, she was involuntarily placed on a "lack of suitable work" status and subsequently terminated on July 30, 1984.

Petitioner initially filed her complaint with DOL under § 210 of the ERA on August 24, 1984. On October 2, 1984, following an investigation, the Administrator of the Wage and Hour Division, Employment Standards Administration, DOL, concluded that GE had discriminated against Petitioner. The Administrator's decision was appealed by both Petitioner and GE. A formal DOL hearing was held, and on August 1, 1985, a DOL Administrative Law Judge (ALJ) issued a Recommended Decision and Order finding that GE had discriminated against Petitioner, and ordering reinstatement and compensation of Petitioner.

The case was remanded to the ALJ on May 9, 1986, at the request of Petitioner, to give her an opportunity to complete the presentation of her case, because the ALJ had refused to permit her to present the testimony of several witnesses. The ALJ returned the case to the Under Secretary of Labor without any additions to the record on the merits on July 13, 1986.⁴ On review, the Under Secretary of Labor issued a Final Decision and Order on January 13, 1987, which did not address the merits of Petitioner's complaint, but found that Petitioner's complaint was untimely filed and dismissed the complaint. That decision was appealed to the U.S. Court of Appeals for the Fourth Circuit.⁵

The two issues raised by the Petitioner on appeal were: (1) whether the Under Secretary erred in finding Mrs. English's complaint for discriminatory discharge barred as untimely, and (2) whether Mrs. English had established a "continuing violation," in the form of retaliatory harassment, thus allowing her to seek relief for a series of related acts of workplace harassment that might be time-barred if considered independently. This claim was based upon her assertion that she had been subjected to a continuing course of harassment while or temporary assignment in the warehouse. On October 6, 1988, the Court issued a decision⁶ in which it affirmed the dismissal by the Under Secretary of the Petitioner's claim for retaliatory discharge as untimely. However, the Court found that Petitioner's claim of workplace harassment relating to harassment suffered while

⁴ The ALJ had ordered the parties to put additional testimony in the record by way of deposition. Petitioner's counsel objected to that procedure and to limitations the ALJ placed on the scope of the witnesses' testimony. After failing to obtain clarification of the Under Secretary's remand order, Petitioner's counsel refused to participate in depositions.

⁵ Petitioner filed an action in District Court for the Eastern District of North Carolina for wrongful termination. The Court dismissed this action on February 10, 1988. *English v. General Electric Co.*, 683 F. Supp. 1006 (E.D.N.C. 1988). This action has been appealed.

⁶ *English v. Whitfield*, 858 F.2d 957 (4th Cir. 1988).

on temporary assignment in the warehouse may constitute a continuing violation for statute-of-limitations purposes, and remanded that claim for first-instance consideration by the Secretary. As the court upheld the Under Secretary's decision that the complaint for retaliatory discharge was untimely, it did not address the merits of Petitioner's claim that this discharge was discriminatory. The Secretary remanded, by order dated February 13, 1989, the harassment claim to an ALJ.

Petitioner first raised the issue of discrimination before the NRC in her Petition of December 13, 1984, as supplemented by letters dated February 28, March 12, April 11, and June 20, 1985. In his decision regarding that Petition, DD-86-11, the Director, Office of Inspection and Enforcement, noted that he did not reach the discrimination issues because the matter was still pending before DOL. The Director explained that generally, when a complaint has been filed with DOL alleging discrimination by an NRC licensee, the NRC defers consideration of alleged discrimination until DOL has acted. This policy avoids duplication of effort and needless expense of resources by deferring NRC actions until DOL has fully considered the issues. Further, the Director noted that deferral of NRC consideration of any potential discrimination issues at the GE Wilmington facility was appropriate in light of the extensive inspection activities that had been conducted at the facility with acceptable results. DD-86-11, *supra*, 24 NRC at 331-32.

DISCUSSION

In her present petition, Petitioner lists three bases for her request that the NRC act to impose the "maximum civil penalty upon GE allowed by law," and to impose as a license condition a requirement that GE compensate Mrs. English for alleged discrimination. Petitioner argues first that the reason given in DD-86-11 for deferring action pending the alleged discrimination, i.e., pendency of the matter before DOL, is no longer valid. Second, Petitioner argues that a recommended decision by a DOL ALJ finding that GE had discriminated against Mrs. English is dispositive of the matter, and GE has not paid any fine for its conduct, nor has Mrs. English been compensated. Third, Petitioner argues that the effectiveness of the NRC's program to protect and encourage workers to report safety violations will be severely hampered by any further delay, in that there will be a "chilling effect" upon other workers who may wish to raise safety concerns. In this regard, Petitioner argues that the consequence of further delay on the part of the NRC will be to leave the impression not only on GE and its employees but on other licensees and all workers in the nuclear industry that employees who suffer retaliation for reporting safety violations cannot rely on

the NRC to redress this wrong, and, as a result, safety problems will be less likely to be discovered and corrected.

In reaching a decision regarding this matter, I realize that I must do so without benefit of a final decision on the merits of the case by the agency recognized as the expert in employee-employer relations. I am aware of the hundreds of pages of documentary evidence and many hours of testimony that have taken place regarding this case. Making an independent NRC determination regarding the alleged discrimination against Mrs. English would involve an enormous expenditure of NRC agency resources. The obvious redundancy in having two government agencies review the same set of facts to draw a conclusion regarding the same issue is unacceptable.⁷

Under the Administrative Procedure Act, the initial decision of an Administrative Law Judge has no binding effect on either the agency or on the parties to the proceeding. *See* 5 U.S.C. § 557(b). However, as long as he does not abuse his discretion, a Director, in making a decision regarding a 10 C.F.R. 2.206 petition, is free to rely on a variety of sources of information, including documents issued by other agencies. *See Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), CLI-78-7, 7 NRC 429, 432-33 (1978). In the present case, the Staff has reviewed the DOL ALJ's Recommended Decision and Order. The decision is well reasoned and was based upon the ALJ's evaluation of the credibility of the witnesses who testified at the hearing, an analysis of the entire record, arguments of the parties (both oral and written), applicable regulations, statutes, and case law precedent.⁸ I therefore adopt the findings of the DOL ALJ that GE discriminated against Petitioner by removing her from the Chemet Lab and discharging her from employment with GE and that this discrimination was motivated by Petitioner's initiation of and participation in the NRC proceedings investigating GE's facility, specifically, the Chemet Laboratory.⁹ In light of this

⁷ It was this very avoidance of duplication of effort and needless expense of resources that prompted the Director, Office of Inspection and Enforcement, to defer NRC consideration of any potential discrimination issues in his Decision regarding Mrs. English's December 13, 1984 Petition. *See* DD-86-11, *supra*, 24 NRC at 332.

⁸ The ALJ's credibility determination in this case is especially significant because of the contradictory evidence in the transcript of the hearing.

⁹ A pertinent issue that was raised before the ALJ and in subsequent filings by the Petitioner and the Licensee was whether Mrs. English lost her protection under § 210(g) of the ERA because she deliberately caused a violation by willfully failing to clean up contamination. Mrs. English claimed that she left the contamination in order to bring it to the attention of the GE management. In this regard, we emphasize that it is clearly unacceptable for an employee to cause a safety problem in order to raise an issue. However, the ALJ determined that Mrs. English did not deliberately cause a violation under the circumstances of this case. ALJ Decision and Order at 11. We also note that the District Court for the Eastern District of North Carolina considered the issue of § 210(g) in a different context (i.e., regarding whether Congress intended by subsection (9) to preempt state actions for wrongful discharge and other discrimination with respect to whistleblowers). *English v. General Electric Co.*, *supra*, 683 F. Supp. at 1013-14. However, the court made no finding specifically with regard to whether Mrs. English had lost her protection. For the reasons stated above, the NRC declines to make an independent determination on this issue.

decision of the DOL ALJ, I have determined that a violation of 10 C.F.R. § 70.7 has been established and that enforcement action should be taken at this time.¹⁰

Proposed Imposition of a Civil Penalty

Petitioner states that "the maximum fine permitted by the statute" should be imposed upon GE for its discrimination against Mrs. English. The sum that Petitioner requests be imposed is \$40,635,000, plus \$37,500 for each day after April 6, 1987, that GE does not take corrective action.

In deciding the appropriate enforcement sanction to propose in this case, the guidance in the Commission's General Statement of Policy and Procedure for Enforcement Actions, which was applicable at the time of the violation and which is set out in 10 C.F.R. Part 2, Appendix C, 49 Fed. Reg. 8583 (March 8, 1984) (hereinafter referred to as Enforcement Policy), has been considered by the Staff. In this case, the decisions impacting Mrs. English were made by persons above first-line supervision, but the NRC has no information suggesting involvement by senior corporate management. Therefore, the Staff has determined this violation to be a Severity Level II. The base civil monetary penalty for a Severity Level II violation involving a facility such as the Licensee's, at the time the discrimination occurred, is \$20,000. The escalation and mitigation factors in the Enforcement Policy were considered. As part of this assessment process, the Petitioner's views on the amount of the penalty were considered. Based on the Staff's review, no adjustment has been deemed appropriate.

The Petitioner's logic in arriving at the sum that she requests be imposed, and the Staff's assessment of the Petitioner's arguments, are set forth below.

1. The Petitioner claims that from March 15 until August 24, 1984, when Mrs. English filed her complaint with DOL, GE was guilty of at least a Severity Level II violation, because its plant management above first-line supervision was aware of the discrimination. However, from August 24, 1984, GE's senior corporate management was aware of the violation, which constitutes a Severity Level I violation. The base civil penalty for these violations is \$20,000 per violation from March 15 to August 24, and \$25,000 per violation from August 24 to the date of the petition. Moreover, since GE was aware of the existence of the violation and failed to initiate corrective action, each day that the condition has been allowed to continue may be considered as a separate violation, and

¹⁰ Petitioner alleges that Mrs. English was discharged because of her repeated reporting of GE's failures to comply with NRC safety requirements and that the validity of a number of complaints was confirmed by GE's internal inspection and the NRC's inspection. The ALJ, in determining that GE discriminated against Mrs. English, noted that it was irrelevant whether her complaints had merit, and did not make a conclusive finding on this issue. ALJ Decision and Order at 8-9. In adopting the ALJ's Decision, I adopt only his finding that GE discriminated against Mrs. English, and do not reach the issue of whether her complaints had merit.

as such is subject to an additional civil penalty. Thus, GE's base penalty is \$3,240,000 for the Severity Level II violation and \$23,850,000 for the Severity Level I violation, making a total base penalty of \$27,090,000. The Petitioner argues, furthermore, that § 210 violations, as opposed to other violations, warrant the most severe classification for enforcement action.

The Enforcement Policy classifies different types of violations by their relative severity, and describes the circumstances in which formal sanctions, including orders, civil penalties, and notices of violation, are appropriate. The Enforcement Policy also provides examples of types of violations and the recommended severity levels for these examples. Under the Enforcement Policy, Severity Level I and II violations are of very significant regulatory concern. According to the Enforcement Policy in effect at the time of the violation, an action by plant management above first-line supervision in violation of § 210 against an employee is classified as a Severity Level II. In the present instance, the NRC has determined that the violation should be classified as a Severity Level II violation because the discrimination involved action by management above first-line supervision. The violation has not been categorized as Severity Level I because the action taken to remove Mrs. English was apparently taken without the knowledge of senior corporate management. Furthermore, daily civil penalties have not been proposed. Both the Under Secretary of Labor and Court of Appeals rejected the theory that Mrs. English's termination represented a continuing violation. Based upon this fact, the NRC has concluded that the violation was not a continuing violation. Accordingly, a daily civil penalty may not be assessed for a violation that is not considered to be a continuing violation.

2. The Petitioner claims that the factors identified in the Enforcement Policy to be considered in adjusting a civil penalty merit escalation of the civil penalty in this case. Specifically, the Petitioner alleges that GE never reported the § 210 violation to the NRC, has taken no corrective action, has had prior poor performance in that Mrs. English felt pressure to "go along to get along" for several years, had prior notice of similar events in that Licensee has been notified by the NRC of the importance of compliance with § 210, and had multiple occurrences of the violation in that each day that passes without corrective action reinforces the adverse impact on other workers. These factors, according to Petitioner, warrant at least a 50% increase in the civil penalty.

The NRC finds these arguments to be without merit. With regard to the issue of GE's failure to report the violation, the NRC does not require reports of discrimination. Nevertheless, the NRC was aware of the potential violation in this case from the time that Mrs. English filed a complaint with DOL on August 24, 1984. With regard to the Petitioner's argument that GE failed to take corrective action, the NRC's primary concern in this area is ensuring that the alleged discrimination does not have a chilling effect upon other employees, and that licensee actions do not thwart employees' reporting of safety concerns.

As will be discussed below, an inspection was conducted March 28 through 30, 1988, by NRC Regional and Headquarters personnel (Inspection Report No. 70-1113/88-05). It is the Staff's view, based on this inspection, that the Licensee's program for receiving, evaluating, and processing employee concerns is multitiered and provides various avenues to employees for raising concerns, and that there has been no chilling effect. Therefore, it appears that the Licensee has taken adequate corrective action. Finally, Petitioner's arguments that the penalty be escalated due to GE's prior poor performance, prior notice of similar events, and multiple occurrences of the violation misconstrue these factors under the Enforcement Policy. The section in the Enforcement Policy that provides for escalation for prior poor performance refers to the Licensee's enforcement history in the area of concern. The evidence documented in inspection reports and the record compiled by DOL do not support the contention that the Licensee has a history of prior discrimination violations. "Prior notice" under the Enforcement Policy refers to specific notice of particular types of events or potential conditions affecting licensed operations. The mere notice that the NRC considers § 210 to be important does not constitute such direct and specific notice to GE that such a violation had occurred or might occur at its facility. "Multiple occurrences" refers to multiple examples of a particular violation. The Petitioner's argument that each day constitutes a multiple occurrence is simply another request that the NRC impose a separate civil penalty for each day that the violation continued, which for the reasons explained above, the NRC has declined to do.

In sum, a civil penalty in the amount proposed by Petitioner is vastly in excess of any amount contemplated by the Enforcement Policy for such a violation. Rather, I have determined that a Notice of Violation and Proposed Imposition of Civil Penalty (NOV) in the amount of \$20,000 for a Severity Level II violation should be issued to GE for its discrimination against Mrs. English. An NOV is being issued today concurrently with this Decision. In taking this enforcement action, however, I note that the U.S. Court of Appeals for the Fourth Circuit has remanded to the Secretary of Labor the Petitioner's claim that she had suffered a continuing course of harassment while she was on "temporary assignment" status following her removal from the Chemet Lab. Following completion of the DOL proceedings, the NRC Staff will determine whether further enforcement action is appropriate with regard to this matter.

In this connection, I note that Petitioner argues that failure to impose a substantial penalty will have a chilling effect on the reporting of safety concerns by workers at the GE Wilmington facility. I find that such is not the case. NRC inspection activities at the GE Wilmington facility continue to be conducted with acceptable results regarding discrimination issues. The Regional Administrator, Region II, has reviewed and found acceptable the actions taken by GE to

minimize any potential chilling effects on current employees.¹¹ Employees at GE Wilmington continue to come forward to the NRC with perceived safety concerns.¹² In addition, an NRC inspection (Report No. 70-1113/88-05) was conducted March 28-30, 1988, and did not find evidence of a chilling effect and found that employees feel comfortable reporting safety concerns through the variety of methods available at the GE Wilmington facility.

Imposition of a License Condition

The second type of enforcement action that Petitioner requests is that the NRC impose a license condition upon GE requiring the Licensee to fully compensate Mrs. English for her losses. The Petitioner argues that the NRC has a "duty to act" since the Department of Labor has acted and has failed to provide any remedy to Mrs. English.

In §210 of the Energy Reorganization Act, Congress has explicitly given to DOL the authority and responsibility to provide the traditional, labor-related remedies such as compensation for individual losses as requested by Mrs. English, while reserving to the NRC its authority under the Atomic Energy Act to take enforcement action against its licensees for violations of NRC requirements. This statutory system has been implemented through a Memorandum of Understanding between the two agencies. *See* 47 Fed. Reg. 54,585 (Dec. 3, 1982). Thus, the NRC does not have the authority to order individual compensation as requested by Mrs. English,¹³ and consequently, this request by the Petitioner is denied.

Additional Issues of Wrongdoing by GE Alleged by Petitioner in Her December 13, 1984 Petition

As indicated above, the Director of the Office of Inspection and Enforcement deferred consideration of certain other issues of alleged wrongdoing by the Licensee pending completion of review of these matters by OI. DD-86-11, *supra*, 24 NRC at 332. OI has now completed its review of these

¹¹ GE has implemented a broad-based program geared to give employees free access for airing all concerns.

¹² Two other individuals employed at the GE Wilmington facility, John C. Lewis and Joy Malpass, filed complaints with DOL that they had been subjected to discrimination by GE. In a letter dated August 30, 1985, to Mozart G. Rather, the DOL Area Director in Raleigh, North Carolina, stated that an investigation found that GE had not discriminated against Mr. Lewis or Ms. Malpass. The Area Director's decision was appealed to an ALJ, who issued a decision on January 14, 1986, 85-ERA-38 and -39, recommending dismissal with prejudice. The ALJ's decision is currently pending before the Secretary of Labor.

¹³ Even if the NRC did have such authority, the employee's failure to file a timely complaint with DOL is no reason to depart from the statutory system. Indeed, for the NRC to provide an individual with a labor-related remedy, such as compensation when the employee fails to file a timely DOL complaint, would largely render meaningless the statutory time period for filing such complaints with DOL.

allegations. NRC did not substantiate any willful, deliberate violations as alleged. Consequently, the Petitioner's request for action based on these allegations is hereby denied.

CONCLUSION

For the reasons given above, the Petitioner's request that enforcement action be taken against GE is hereby granted. However, Petitioner's requests that the NRC impose a civil penalty in the amount of \$40,635,000 plus \$37,500 per day for each day after April 6, 1987, and that the NRC impose a license condition upon GE requiring the Licensee to compensate Mrs. English for her expenses and losses are denied. Furthermore, Petitioner's request as set forth in her December 13, 1984 Petition that the NRC take enforcement action against GE based upon certain other alleged instances of wrongdoing is also 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.

Hugh L. Thompson, Jr.
Deputy Executive Director for
Nuclear Materials Safety, Safeguards,
and Operations Support

Dated at Rockville, Maryland,
this 13th day of March 1989.

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 21, 1989

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 shut down the Rancho Seco Nuclear Generating Station (Rancho Seco). The Petitioner based her request on allegations that (1) SMUD management criminally (willfully) disregarded public health and safety as shown by incidents between 1980 and 1984, and again in 1988, in which SMUD released excessive amounts of water containing radionuclides; (2) indications on the pressurizer support lugs demonstrate embrittlement as a result of rapid cooldown events at Rancho Seco; (3) pipe wall thinning has occurred; (4) in March 1988, while starting the reactor, SMUD lost control of Rancho Seco and was unable to shut the plant down; and, (5) illegal drug use at Rancho Seco poses a danger to public health and safety.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Where a petitioner provides documentation to establish a factual basis for a request and that documentation contradicts petitioner's asserted facts *prima facie*, the Director, NRR, need not take action on the request.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING, CONSOLIDATION

Where the NRC is considering a petitioner's request under 10 C.F.R. § 2.206 and the petitioner makes the same request on the same basis as a part of a subsequent petition, the relevant portion of the latter petition may be considered as a supplement to the former petition.

ENFORCEMENT ACTIONS: EFFECT ON PETITIONS UNDER 10 C.F.R. § 2.206

Where the NRC has taken enforcement action against a licensee for violations of the Commission's regulatory requirements, the NRC will not normally reopen the enforcement action in response to a petitioner's request for enforcement action based on the violation.

TECHNICAL ISSUES DISCUSSED

Release of Radioactive Materials in Effluents;
In-Service Inspection Program Results;
Pipe wall thinning.

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

INTRODUCTION

On August 30, 1988, Ms. Barbara Moller (Petitioner) submitted a petition requesting the U.S. Nuclear Regulatory Commission (NRC) to shut down the Rancho Seco Nuclear Generating Station (Rancho Seco). Ms. Moller's petition was based on allegations that (1) SMUD management criminally (willfully) disregarded public health and safety as shown by incidents between 1980 and 1984, and again in 1988, in which SMUD released excessive amounts of water containing radionuclides; (2) indications on the pressurizer support lugs demonstrate embrittlement as a result of rapid cooldown events at Rancho Seco; (3) pipe wall thinning has occurred; and (4) in March 1988 while starting the reactor, SMUD lost control of Rancho Seco and was unable to shut the plant down.

The petition also reiterated concerns related to the use of illegal drugs at Rancho Seco. The drug-related issues had been raised by the Petitioner in an earlier submittal dated August 3, 1988. These concerns were addressed in

accordance with 10 C.F.R. § 2.206, and a Director's Decision dated December 14, 1988, DD-88-20, 28 NRC 809, was issued. The NRC treated this portion of Ms. Moller's correspondence of August 30, 1988, as a supplement to the Petition of August 3, 1988; the Decision of December 14, 1988, responded to all the drug-related issues raised in these letters, which are not reevaluated as part of this Decision.

The Petitioner's concerns about the release of radioactive liquid effluents were first brought to the attention of the Commission by a letter from the Petitioner to Senator Alan Cranston, dated May 16, 1988, a copy of which the Petitioner sent to the NRC. The Executive Director for Operations, Mr. Victor Stello, responded to these concerns in a letter to Senator Cranston on June 20, 1988, in reply to the Senator's inquiry. The NRC also received a copy of the Petitioner's letter to Senator Cranston dated July 15, 1988, in which the Petitioner reiterated these concerns. Although our response of June 20, 1988, clearly established that liquid effluents were not an ongoing safety issue, the Petitioner's continued concern in this area prompted the NRC Project Manager for Rancho Seco, Mr. George Kalman, to personally meet with the Petitioner in Sacramento on August 25, 1988, to discuss this matter. Since our contact with the Petitioner in August, the NRC issued a Notice of Violation and Proposed Civil Penalty (NOV) to SMUD on January 13, 1989, for improper handling of radioactive liquid waste in 1985. An update of the status of the issues related to the NOV is included in this response. However, there are no new environmental or technical developments associated with liquid effluents, and these issues are not readdressed as part of this Decision.

The other issues included in the petition of August 30, 1988, were evaluated by the NRC Staff in accordance with § 2.206. The evaluation concluded that the allegations raised by the petition are unsubstantiated or do not affect public health and safety. I have decided, therefore, to deny the petition.

BACKGROUND

The Rancho Seco Nuclear Generating Station, operated by the Sacramento Municipal Utility District (SMUD or the Licensee), includes a Babcock & Wilcox-designed pressurized-water reactor located in Sacramento County, California, about 25 miles southeast of Sacramento. The plant received an operating license in 1974. On December 26, 1985, following a reactor trip and overcooling, the NRC issued Confirmatory Action Letters that requested the Licensee to justify resumption of power operations.

Subsequent inspections by the NRC Staff and self-assessments by the Licensee identified extensive deficiencies that had developed during the first 10 years of commercial operations at Rancho Seco. Many of the identified defi-

iciencies were classified as safety significant, and their resolution became a prerequisite to plant restart. One of these deficiencies was the control of radioactive effluents. The restart prerequisite actions were completed in March 1988, and Rancho Seco was authorized to restart. The restart program is described in detail in the Rancho Seco restart Safety Evaluation Report, NUREG-1286, and NUREG-1286, Supplement 1. These documents have already been supplied to the Petitioner in response to previous correspondence.

Since restart, Rancho Seco has completed a very successful power ascension program and is currently operating at power. NRC Staff assessments indicate that operations at Rancho Seco have improved markedly following the restart.

The NRC Staff's intensified inspection program at the facility indicates that the corrective actions completed by the Licensee during the 27-month shutdown appear to have corrected the previously identified safety-significant deficiencies and that there are no existing concerns that warrant additional plant shutdowns.

DISCUSSION

1. Radioactive Liquid Effluents

Between 1980 and 1985, radioactive liquid effluents discharged from Rancho Seco resulted in offsite contamination in the vicinity of the plant that exceeded regulatory limits. On May 16, 1988, the Petitioner wrote to Senator Alan Cranston to request the Senator to query the NRC on this matter. In a letter dated June 20, 1988, Mr. Victor Stello, Jr., Executive Director for Operations, NRC, replied to Senator Cranston's inquiry, explaining that the NRC had initiated an extensive investigation in 1984 into the releases and giving the results of the investigation. A copy of this letter is enclosed (not published). As explained in more detail in the letter, the investigation found that before 1984, the sensitivity of SMUD measurements of radioactivity in liquid waste was insufficient to detect radioactive releases that exceeded regulatory limits. Additionally, SMUD calculations to determine the effect of the releases on the environment were faulty. A subsequent NRC-initiated environmental study* concluded that contamination in the vicinity of Rancho Seco exceeded regulatory limits but that no individual was actually exposed to radiation in excess of these limits.

In 1985, after the liquid release problems were identified, NRC learned that additional releases in excess of regulatory limits were made at Rancho Seco. The 1985 occurrence was the basis of a Notice of Violation and a Proposed Civil Penalty (NOV) that was issued January 13, 1989. A copy of the NOV and

*Letter from J. Stolz (NRC) to R. Rodriguez (SMUD), dated April 28, 1986.

its cover letter are attached (not published). As the NOV and cover letter show, no further enforcement action for this violation is now warranted.

Additionally, criminal prosecution of SMUD managers associated with the 1985 radioactive releases was considered by the U.S. Attorney's Office (which is part of the U.S. Department of Justice) in Sacramento. The U.S. Attorney found the evidence insufficient to establish that plant managers acted criminally by intentionally violating federal regulations, and discontinued the criminal proceedings. Nevertheless, SMUD has removed its managers responsible for the liquid releases from their management positions, including the plant manager.

Following the plant shutdown in December 1985, improvements to the Rancho Seco liquid waste systems were made a prerequisite to plant restart. Before authorizing plant restart in March 1988, the NRC ascertained that plant liquid waste systems could support plant operations while satisfying regulatory limits on releases of radionuclides to the environment. This evaluation is summarized in NUREG-1286, Supp. 1, §4.3. Following the 1988 restart, radioactive liquid waste systems have continued to receive extremely close scrutiny by the NRC technical staff, and there is no indication that existing technical or managerial concerns associated with liquid radioactive waste are sufficient to warrant consideration of plant shutdown.

During plant restart, radioactive water was discharged several times inside the containment building. The Petitioner cites examples of discharges inside containment in an apparent attempt to show that SMUD's program to control liquid radioactive effluents is inadequate. In-containment discharges are relatively common in nuclear power plants, and the specific occurrences at Rancho Seco are not indicative of programmatic deficiencies or incompetence on the part of the operators. The containment building is a watertight structure that is designed to collect radioactive discharges. Radioactive liquids collected in the containment are eventually processed by the plant liquid radioactive waste system, which is now functioning properly within regulatory limits. Accordingly, such releases inside containment do not constitute a hazard to the environment.

2. Pressurizer Support Lug Indications

NRC Inspection Report 50-312/87-03 included findings related to the Rancho Seco Inservice Inspection Program. One of these findings, based on the inspector's review of ultrasonic test records, was left unresolved. In particular, following the record review, the inspector could not ascertain whether variations in the ultrasonic inspections indicated that potential faults in pressurizer support lugs were increasing in size or, if the faults had existed since fabrication, why they had not been detected earlier.

The Licensee examined this matter with the help of independent contractor specialists and responded to the unresolved item by letter dated October 20,

1987. NRC inspectors reexamined the issue and closed out the unresolved item in Inspection Report 88-05, dated May 10, 1988. It was concluded that the variations contained in the ultrasonic test records were expected variations resulting from the accuracy of the ultrasonic measuring technique. The variations that were identified by the first inspector were not indicative of unacceptable faults in the pressurizer support lugs or of faults that were increasing in size, nor do these variations indicate any embrittlement of the lugs.

3. *Pipe Wall Thinning*

Pipe wall thinning at all nuclear plants became an issue of great concern after a feedwater pipe at the Surry nuclear plant in Virginia failed catastrophically in 1987 because of an apparent combination of corrosion and erosion. NRC issued Bulletin 87-01 to obtain data in order to assess the adequacy of industry monitoring programs designed to predict pipe deterioration. Nuclear plants, including Rancho Seco, responded to the NRC bulletin and submitted descriptions of their pipe monitoring programs.

The NRC randomly selected ten plants in order to evaluate the effectiveness of the monitoring programs. Rancho Seco was one of the ten plants selected. An NRC team evaluated the effectiveness of the pipe wall deterioration monitoring program at Rancho Seco on September 28-29, 1988. The NRC inspection team did not detect any pipe wall thinning that had any safety significance and concluded that the pipe wall thicknesses at Rancho Seco were adequate. Additionally, the team made recommendations for improving the Rancho Seco monitoring program by adding consistency to the monitoring procedure to enable meaningful comparison of accumulated data, thus providing the basis for predicting pipe deterioration trends in the future.

In sum, SMUD has an adequate program to detect pipe wall thinning at Rancho Seco, and the NRC has not found any evidence of unacceptable thinning. Accordingly, there are no existing concerns about pipe wall thinning at Rancho Seco that would warrant plant closure.

4. *Inability of Rancho Seco to Shut Down*

Inability to shut down a nuclear plant is an extremely serious matter. This situation has never existed at Rancho Seco. The allegation that SMUD could not shut down Rancho Seco is apparently based on a headline that appeared in the *Sacramento Bee* newspaper on April 26, 1988. The story indicated that SMUD chose to delay shutting down the reactor for convenience while making a repair. At no time did SMUD lose the ability to shut down Rancho Seco, nor does the story so indicate. It is evident that the story does not allege a safety-significant

event and does not give a basis for petitioning to shut down a nuclear power station.

CONCLUSION

On the basis of allegations set forth in the petition, the Petitioner requested that Rancho Seco be shut down. The Petitioner's allegations relating to radioactive liquid effluents have already been addressed by the NRC, and the identified deficiencies have been corrected such that SMUD's current program for controlling radioactive liquid effluents does not adversely affect safe operations at Rancho Seco. Moreover, the NRC has already taken enforcement action for the violations SMUD committed by releasing radioactive liquid effluents. A Staff evaluation has concluded that the other allegations raised by the Petitioner are not substantiated or do not raise any threat to public health and safety.

The institution of proceedings pursuant to 10 C.F.R. §2.206 is appropriate where substantial health and safety issues have been raised. *See Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 175 (1975), and *Washington Public Power Supply System (WPPSS Nuclear Project No. 2)*, DD-84-7, 19 NRC 899, 923 (1984). These are the standards that I have applied to the concerns raised by the Petitioner in this Decision to determine whether enforcement action is warranted.

For the reasons discussed above, I conclude that no substantial health and safety issues have been raised by the Petitioner that warrant the initiation of a proceeding to consider shutdown of Rancho Seco. Accordingly, the Petitioner's request for action pursuant to 10 C.F.R. §2.206 is denied. As provided in 10 C.F.R. §2.206(c), a copy of this Decision will be filed with the Secretary of the Commission for the Commission's review.

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 21st day of March 1989.

[The Attachments have been omitted from this publication but can be found in the NRC Public Document Room, 2120 L Street, NW, Washington, DC 20555.]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. 50-320-OLA

GENERAL PUBLIC UTILITIES
NUCLEAR CORPORATION, et al.
(Three Mile Island Nuclear
Station, Unit 2)

April 13, 1989

As a result of the Commission's review of the final initial decision and comments by the parties, the Commission holds that the Licensing Board's decision should become effective immediately.

AEA: LICENSING DECISION (IMMEDIATE EFFECTIVENESS)

NRC: IMMEDIATE EFFECTIVENESS REVIEW

RULES OF PRACTICE: IMMEDIATE EFFECTIVENESS REVIEW

As a result of the Commission's review of the final initial decision and the comments submitted by the parties regarding whether the decision should be made effective immediately, the Commission finds no reason to stay the effectiveness of the Licensing Board's decision pending completion of the appellate process. Therefore, the Commission finds that the Licensing Board's decision resolving all relevant matters in favor of the licensee, and granting the licensee's application for an operating license amendment should become effective immediately.

ORDER

The Atomic Safety and Licensing Board has issued an initial decision¹ relating to the disposal of accident-generated water at Unit 2 of the Three Mile Island Nuclear Station. The decision resolved all relevant matters in favor of the Applicant-Licensee, General Public Utilities Nuclear Corporation (GPUN), and granted the Licensee's application for an operating license amendment that would delete prohibitions on disposal of the accident-generated water. This decision has been appealed and is not final under the agency's adjudicatory appellate process.²

However, on December 3, 1987, the Commission issued an order (unpublished) providing that if a hearing is held in this matter in which the Board resolves the admitted contentions in the Licensee's favor, the Commission would decide whether the Board's decision should be made effective during the pendency of administrative appellate review. Consistent with this order, the Commission has conducted a review of the Board's decision to determine whether the decision should become effective immediately.

The Board held hearings in this matter between October 31 and November 1, 1988, focusing on the issue whether the intervenors' contention that the accident-generated water should be stored in tanks on site was obviously superior to the Licensee's proposal for disposal by forced evaporation. In a lengthy, detailed, and unanimous opinion, the Board concluded that the Licensee had demonstrated, by a preponderance of the evidence, that the Licensee's alternative is environmentally acceptable because it will have extremely small radiation exposure consequences, both to workers and the general public. The Board also found that the savings in radiation dose that could be attributed to the no-action alternative would be very small and that the no-action alternative would cost \$800,000 more to implement than the evaporation proposal. Based on these findings, the Board determined that the intervenors' no-action alternative is not obviously superior to the evaporation proposal, and granted the Licensee's request for an amendment to its license.

Subsequently, the intervenors filed an application for a stay of the license amendment authorization with the Atomic Safety and Licensing Appeal Board. On April 4, 1989, the Appeal Board issued a memorandum and order (ALAB-914, 29 NRC 357) denying the Intervenor's application for a stay.

¹ LBP-89-7, 29 NRC 138 (1989).

² Intervenor in this proceeding have filed an Application for a Stay and a Notice of Appeal, both of which are before the Atomic Safety and Licensing Appeal Board. The Intervenor also submitted the Application for a Stay as their comments to the Commission regarding whether the Licensing Board's decision should be made effective during the pendency of administrative appellate review.

As a result of our review of the final initial decision and the comments submitted by the parties regarding whether the decision should be made effective immediately, we also find no reason to stay the effectiveness of the Licensing Board's decision pending completion of the appellate process.

Accordingly, the Commission finds that the Licensing Board's decision resolving all relevant matters in favor of the Licensee, and granting the Licensee's application for an operating license amendment, should become effective immediately. This is, of course, without prejudice to the appeal now pending before the Appeal Board.

It is so ORDERED.

For the Commission*

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 13th day of April 1989.

*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

COMMISSIONERS:

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

In the Matter of

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

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

April 20, 1989

The Commission denies motions for limited intervention and for reconsideration of its decision in CLI-88-12, 28 NRC 605 (1988). The Commission holds that the petition for reconsideration makes no attempt to demonstrate compliance with the required criteria for an untimely filing found in 10 C.F.R. § 2.714(a)(1)(i)-(v), and includes no discussion of the five factors that the petition is required to address by that same section. The Commission holds that the petitioner does not have standing to seek either a stay or reconsideration, since he was not a party to the proceeding when the order was issued, nor has he demonstrated an interest that might be affected by the proceeding. Nothing in CLI-88-12 hinders petitioner from presenting his objections to a Settlement Agreement to the Secretary of Labor or precludes the Department of Labor from invalidating the agreement, nor does it preclude litigation before DOL under the principles of *res judicata* or collateral estoppel. The Commission finds that petitioner has not met Commission stay criteria, as he makes no attempt to demonstrate that he meets a balancing of the four traditional factors that would cause a court to grant a preliminary injunction. The Commission holds that

the essential basis for denying the petition for late intervention — that a party may not rely upon another party to represent its position and interest without assuming the risk that it will not do so — is independent of the validity of the agreement.

**INTERVENTION: CONSIDERATION OF ISSUES ASSERTED BY
UNTIMELY INTERVENOR**

REGULATIONS: INTERPRETATION

**RULES OF PRACTICE: APPELLATE REVIEW (INTERVENTION
DENIALS); INTERVENTION PETITIONS (GOOD CAUSE FOR LATE
FILING; TIMELINESS); UNTIMELY INTERVENTION; UNTIMELY
INTERVENTION PETITION(S)**

The motion for limited intervention cannot be granted because it makes no attempt to demonstrate compliance with the required criteria for filing an untimely petition to intervene in an ongoing proceeding found in 10 C.F.R. § 2.714(a)(1)(i)-(v). Neither does it discuss the five factors that a late-filed petition for intervention must address. Therefore, the Commission cannot grant the motion for limited intervention to gain party status under § 2.714(a)(1)(i)-(v).

REGULATIONS: INTERPRETATION

**RULES OF PRACTICE: MOTION FOR RECONSIDERATION;
NONPARTY PARTICIPATION; PARTIES TO COMMISSION
REVIEW; RECONSIDERATION PETITIONS; STANDING TO SEEK
RECONSIDERATION; STAY OF ORDER**

Petitioner does not have standing to seek a stay or reconsideration of a previous Commission decision because he was not a party to the proceeding when that decision was issued. 10 C.F.R. § 2.771(a) (reconsideration) and 10 C.F.R. § 2.788(a) (stay) both specify that a *party* must request the action.

**RULES OF PRACTICE: MOTION FOR RECONSIDERATION;
RECONSIDERATION PETITIONS; STANDING TO SEEK
RECONSIDERATION**

Petitioner does not have the requisite interest to seek reconsideration, i.e., he has not demonstrated an interest that might be affected by the proceeding. Nothing in the Commission's prior order prevents Petitioner from presenting his objections to the settlement agreement to the Secretary of Labor or prevents the Department of Labor from invalidating the agreement if it so chooses, nor

is his litigation before DOL precluded under the principles of res judicata or collateral estoppel because neither Petitioner nor his adversary were parties to the Commission's order.

RULES OF PRACTICE: STAY OF ORDER

Petitioner has not attempted to demonstrate that he meets Commission stay criteria. Under regulations and long-standing precedent, a party seeking a stay must show that it meets a balancing of the traditional four factors that would cause a court to grant a preliminary injunction.

INTERVENTION: CONSIDERATION OF ISSUES ASSERTED BY UNTIMELY INTERVENOR

REGULATIONS: INTERPRETATION

RULES OF PRACTICE: APPELLATE REVIEW (INTERVENTION DENIALS); INTERVENTION; INTERVENTION PETITION(S) (GOOD CAUSE FOR LATE FILING); NONTIMELY SUBMISSION OF CONTENTIONS (OTHER MEANS AND OTHER PARTIES TO PROTECT INTERVENOR'S INTEREST); UNTIMELY INTERVENTION

Assuming *arguendo* that the settlement agreement that is the subject of this motion violated some law or regulation, neither of the Petitioners has demonstrated that the disputed agreement constitutes "good cause" for late intervention in the operating license and construction permit amendment proceedings under 10 C.F.R. §2.714. The essential basis for denying Petitioner's late intervention — that a party may not rely upon another party to represent its position and interest without assuming the risk that it will not do so — is independent of the validity of the agreement.

MEMORANDUM AND ORDER

I. INTRODUCTION

This case is before the Commission on two motions by Mr. Joseph Macktal, an individual petitioner. Mr. Macktal asks the Commission for (1) "limited intervention" in the Comanche Peak proceedings and (2) reconsideration of its recent order denying a petition by the Citizens for Fair Utility Regulation ("CFUR") to intervene late in the Comanche Peak proceedings. *See* CLI-88-12,

28 NRC 605 (1988). The applicant, Texas Utilities Electric Company ("TUEC") and the NRC Staff have responded in opposition to both motions. After due consideration, we have decided to deny both motions for the reasons that follow.

II. BACKGROUND

In order to understand how Mr. Macktal's motions fit into the tortured history of the Comanche Peak proceedings, a brief review of history — both ancient and recent — will be necessary. The Commission published receipt of TUEC's application for an operating license in the *Federal Register* on May 12, 1978. See 43 Fed. Reg. 20,583. Following publication of the Notice of Opportunity for Hearing, 44 Fed. Reg. 6995 (Feb. 5, 1979), three organizations filed timely petitions to intervene and requests for hearing: Citizens Association for Sound Energy ("CASE"), Citizens for Fair Utility Regulation ("CFUR"), and Texas Association of Community Organizations for Reform Now/West Texas Legal Services ("ACORN"). The State of Texas filed a timely petition to participate as an interested state, pursuant to 10 C.F.R. § 2.715 (c). Therefore, the Commission established a Licensing Board, 44 Fed. Reg. 15,813 (Mar. 15, 1979), which subsequently admitted CASE, CFUR, and ACORN as Intervenor and Texas as an interested state. Order Relative to Standing of Petitioners to Intervene (June 27, 1979). On June 16, 1980, the Board issued an order admitting twenty-five contentions and three Board questions for litigation.

On July 21, 1981, the Board accepted ACORN's voluntary motion for dismissal from the proceeding. Likewise, on March 5, 1982, the Board accepted CFUR's voluntary withdrawal from the proceeding. The proceeding then continued unabated with CASE as the sole intervenor. By 1984, the proceeding had resolved all contentions except Contention 5, relating to Quality Control/Quality Assurance ("QA/QC"). In 1986, a second proceeding commenced relating to TUEC's request for an amendment to its Construction Permit for Unit 1 seeking additional time to complete construction.

On July 1, 1988, CASE and TUEC reached a settlement agreement resolving all matters at issue between them. Essentially, CASE agreed to withdraw from the proceedings and TUEC agreed to reimburse CASE for certain expenses incurred during the litigation, to install a CASE representative in an oversight position at Comanche Peak, and to provide that representative with expenses and technical assistance. CASE and TUEC submitted a joint motion to dismiss the proceedings as settled and the Licensing Board granted the motion on July 13, 1988.

Shortly thereafter, on August 11, 1988, CFUR filed a petition before the Licensing Board to "re-intervene" in the proceedings. CFUR also filed two "Supplements" to its initial petition. The NRC Staff and TUEC responded to the

initial petition and the "First Supplement." Initially, there was some confusion over which Commission tribunal had jurisdiction over CFUR's petition. In order to avoid any confusion and to spare the parties needless expense and delay, the Commission itself took jurisdiction of the matter.

On December 16, 1988, while the CFUR petition was still pending, Mr. Macktal filed a motion before the Licensing Board, seeking "leave to proceed as an intervenor limited to questions of the scope, impact and interpretation" of this settlement agreement. Mr. Macktal's motion states that he reviewed the Staff's response in early November and TUEC's response in early December (Motion for Limited Intervention at 1), and that he filed this attempt to intervene in order to rebut the interpretations assigned the disputed agreement by the Staff and TUEC.¹ The NRC Staff has responded in opposition, arguing that Mr. Macktal does not meet the criteria for a late-filed petition for intervention. See 10 C.F.R. § 2.714(a)(1)(i)-(v). TUEC did not respond.

On December 21, 1988, the Commission issued CLI-88-12, denying the CFUR petition to intervene, based upon an application of the five-factor test contained in § 2.714(a)(1)(i)-(v). See CLI-88-12, *supra*. However, the Commission did not rule on Mr. Macktal's motion for limited intervention because the NRC Staff and TUEC had not yet had a chance to respond to it. Mr. Macktal then filed the second motion before us today seeking reconsideration of CLI-88-12, alleging that he was "prejudiced" by that decision.

Specifically, Mr. Macktal requests that the Commission vacate Part IV of CLI-88-12 (in which we discussed the disputed settlement agreement) or, in the alternative, stay the entire order and grant him the relief requested in his earlier motion, i.e., limited intervention status for the purpose of explaining his views on the disputed settlement agreement. Mr. Macktal alleges that the Commission misconstrued or misinterpreted the settlement agreement in reaching its decision in CLI-88-12 and that the decision contains a number of "serious errors of law." Mr. Macktal does not allege any errors in the Commission's determination that CFUR's petition does not meet the five-factor test found in § 2.714(a)(1)(i)-(v).

In response, the NRC Staff argues that Mr. Macktal does not have standing to seek reconsideration because he had not been admitted as a party to the proceeding at the time CLI-88-12 was issued. In its response, TUEC argues

¹ We infer from Mr. Macktal's motion that he believes that he was prejudiced because neither he nor his counsel was served with the responses by Staff or TUEC to CFUR's petition to intervene or to the "First Supplement." We find no indication in the record that either he or his counsel had filed a notice of appearance or had sought to be served by any party to the proceeding. Our last communication from Mr. Macktal's counsel indicated that they were withdrawing from any participation in the case. See Notice of Withdrawal (July 15, 1988). Therefore, we know of no obligation for counsel for the NRC Staff, TUEC, or even CFUR to serve Mr. Macktal with copies of their pleadings.

that Mr. Macktal has not attempted to demonstrate that his motion meets the Commission's criteria for granting a stay of a final order.²

III. THE MOTION FOR "LIMITED INTERVENTION"

The first matter before us is Mr. Macktal's motion for limited intervention.³ In the motion, Mr. Macktal "requests leave to proceed as an intervenor limited to questions of the scope, impact and interpretation of the January 2, 1987 illegal settlement agreement." Motion for Limited Intervention at 2. Mr. Macktal claims that he "may be prejudiced in his 'reopened' Department of Labor proceeding as well as other litigation which may occur regarding the correct interpretation of the January 2 1987 'Settlement Agreement[,]'" and that "no party now before this tribunal shares [his] interest regarding the Settlement Agreement." *Id.*

The motion explicitly states that it seeks only "limited intervention" for a specific purpose, i.e., to brief the Commission on Mr. Macktal's views on the disputed settlement agreement. But the motion makes no attempt to demonstrate compliance with the required criteria for filing an untimely petition to intervene in an ongoing proceeding found in § 2.714(a)(1)(i)-(v). For example, the motion does not discuss the standing and interest criteria, much less show that they are satisfied. Likewise, the motion includes no discussion of the five factors that a late-filed petition for intervention must address.⁴ Therefore, we cannot grant the motion for limited intervention to gain party status under § 2.714(a)(1)(i)-(v). However, we have considered Mr. Macktal's submission in our review of the disputed settlement agreement. *See* 10 C.F.R. § 2.715(d).

²Mr. Macktal has also filed a pleading which he has styled as a "Reply" to the responses filed by Texas Utilities and the NRC Staff. NRC regulations specifically reject such pleadings. "The moving party shall have no right to reply [to an answer in response to a motion], except as permitted by the presiding officer or the Secretary or the Assistant Secretary." 10 C.F.R. § 2.730(c). Nevertheless, in this situation, the Commission has reviewed this pleading in an effort to afford Mr. Macktal every opportunity to present his case. Texas Utilities has responded with an additional pleading of its own.

³Mr. Macktal styled his motion as being "[b]efore the Nuclear Regulatory Commission Atomic Safety and Licensing Board." The Staff likewise styled its opposition to the motion for limited intervention as "[b]efore the Atomic Safety and Licensing Board." (TUEC did not file an opposition.) Over a month after the last pleading directed to the matter, the presiding officer of the Licensing Board panel which had been hearing the original Comanche Peak proceedings notified the Office of the Secretary that it was his belief that no panel of the Licensing Board existed which could review the motion and that, therefore, the Licensing Board did not intend to take any action on the motion whatsoever. Therefore, the Commission has taken jurisdiction to rule on this question.

⁴We contrast this approach with that of CFUR which, while not persuading us that they satisfied the five factors, still attempted to address them — at least in the context of the operating license ("OL") proceeding. *See* 28 NRC at 608-12 & n.7.

IV. THE MOTION FOR RECONSIDERATION AND STAY OF CLI-88-12

Initially, we find that Mr. Macktal does not have standing to seek a stay or reconsideration of the Commission's decision in CLI-88-12 because he was not a party to the proceeding when the decision was issued.⁵ Commission regulations specifically provide that "[a] petition for reconsideration may be filed by a party within ten (10) days after the date of decision." 10 C.F.R. § 2.771(a) (emphasis added). Similarly, "[w]ithin ten (10) days after service of a decision or action any party to the proceeding may file an application for a stay of the effectiveness of the decision or action" 10 C.F.R. § 2.788(a) (emphasis added).

Furthermore, Mr. Macktal does not have the requisite interest to seek reconsideration of this decision, i.e., he has not demonstrated an interest that might be affected by the proceeding. In fact, in his pleadings he argues that only the Secretary of Labor has jurisdiction to interpret the scope and meaning of his settlement agreement with Brown & Root. Accordingly, we find no basis for Mr. Macktal to argue that the NRC's comments on the settlement agreement in CLI-88-12 could have caused him legal harm. Nothing in CLI-88-12 hinders Mr. Macktal from presenting his objections to the settlement agreement to the Secretary of Labor or prevents the Department of Labor from invalidating that agreement if it so chooses. Furthermore, we do not believe that our statements in CLI-88-12 preclude his litigation of the agreement before the DOL under the principles of res judicata or collateral estoppel because neither Mr. Macktal nor Brown & Root were parties to CLI-88-12.

Moreover, Mr. Macktal has not even attempted to demonstrate that he meets the Commission's stay criteria. Under Commission regulations and long-standing Commission precedent, a party seeking a stay must show that it meets a balancing of the traditional four factors that would cause a court to grant a preliminary injunction including (1) the moving party's likelihood of success on the merits, (2) irreparable harm to the moving party absent a stay, (3) harm to any other party in the event of a stay, and (4) the public interest. 10 C.F.R. § 2.788(e)(1)-(4). See, e.g., *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-84-17, 20 NRC 801, 803 n.3 (1984); *Boston Edison Co.* (Pilgrim Nuclear Power Station), ALAB-81, 5 AEC 348 (1972). See generally *Virginia Petroleum Jobbers Ass'n v. FPC*, 259 F.2d 921, 925 (D.C. Cir. 1958).

⁵In his "reply," Mr. Macktal argues that the filing of his motion for limited intervention made him a party to the proceeding, citing *Seacoast Anti-Pollution League of New Hampshire v. NRC*, 690 F.2d 1025, 1028 (D.C. Cir. 1982). We have reviewed this case and it does not stand for the proposition for which it is cited. In fact, the issue of standing is never discussed in that case, either as a part of the merits of the case or in dicta.

V. CONCLUSION

We have determined that Mr. Macktal is not entitled to intervene as a party and does not have standing to seek reconsideration of the Commission's findings in CLI-88-12. Nevertheless, we take note of Mr. Macktal's concerns regarding his perception that our statements in CLI-88-12 constituted a possible endorsement of the settlement agreement. We emphasize that in CLI-88-12, we examined the agreement solely to determine if it prohibited Mr. Macktal from bringing his concerns to the NRC Staff and found that it did not. Our decision in CLI-88-12 was not intended as a Commission "stamp of approval" on the disputed agreement. We did state that "we do not see a violation of federal law or NRC regulation." CLI-88-12, 28 NRC at 613. But our decision denying CFUR's petition should not have depended on anything in the agreement at all. Assuming *arguendo* that the agreement violated some law or regulation, neither Mr. Macktal nor CFUR has demonstrated that the disputed agreement constitutes "good cause" for CFUR's late intervention in the operating license and construction permit amendment proceedings under 10 C.F.R. § 2.714.⁶ The essential basis for denying CFUR's late intervention — that a party may not rely upon another party to represent its position and interest without assuming the risk that it will not do so — is independent of the validity of the agreement.

We are also aware that Mr. Macktal has challenged the settlement agreement before the DOL, which is at this point the appropriate forum for such action. See Memorandum of Understanding, 47 Fed. Reg. 54,585 (Dec. 3, 1982). Therefore, we withdraw any comment on the agreement's acceptability or legality we made in CLI-88-12 and we decline at this point to comment further on the disputed settlement agreement because it is the subject of a pending DOL case.

Finally, we note that Mr. Macktal admits that he withheld information from the NRC Staff during discussions in 1986. See Second Macktal Affidavit at 1. That withholding of information is regrettable. We request Mr. Macktal to promptly bring any concerns he has to the NRC Staff for their resolution.⁷ The

⁶The most that can be said for the agreement regarding the test for late intervention is that Mr. Macktal's presence might support CFUR's ability to contribute to the development of a sound record. 10 C.F.R. § 2.714(a)(1)(iii). However, such support is not sufficient to overcome CFUR's lack of "good cause" under the required balancing of these five factors.

⁷Mr. Macktal signed a confidentiality agreement with the NRC Staff which protected the nature of his concerns but not the fact that he brought concerns to the NRC or his identity. See NRC Staff Response to CFUR's First Supplement at 5. Under that agreement, he provided allegations to the NRC Staff which were addressed in regular inspection reports at the Comanche Peak facility. *Id.* The Staff has attempted to provide Mr. Macktal with copies of those reports and Mr. Macktal has never explained or expressed any disagreement with resolution of any specific allegation. *Id.* If Mr. Macktal is dissatisfied with the resolution of those items or if he has other items of concern, including any that he may have deliberately withheld from the NRC Staff during interviews in 1986 (see Second Macktal Affidavit at 1), he should bring those matters to the attention of the Comanche Peak Division of the Office of Nuclear Reactor Regulation ("NRR") — formerly the Office of Special Projects — or address them directly to the Director of NRR under 10 C.F.R. § 2.206. While we have in essence "vacated" Part IV of CLI-88-12, we

(Continued)

Staff will review Mr. Macktal's technical concerns about Comanche Peak. Such review is a normal Staff practice.

It is so ORDERED.⁸

For the Commission⁹

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 20th day of April 1989.

still adhere to our statement in that order that the disputed agreement does not prevent Mr. Macktal from bringing any of his safety concerns directly to the NRC Staff.

⁸ Mr. Macktal's motion for oral argument on the motion for reconsideration is denied. Mr. Macktal has also filed a "Motion to Be Served with Notice of Commission Proceedings," apparently seeking specific notice of the date of issuance of this order. Normally, the Commission publishes weekly in the *Federal Register* a notice of all Commission meetings for the next 4 weeks, including affirmation sessions and the matters to be affirmed. When matters before the Commission are expedited, the Commission attempts to provide at least one week's notice of the subject of affirmation sessions to all interested parties. In this case, the Commission has attempted to expedite the issuance of this order. Accordingly, the Office of the General Counsel has notified Mr. Macktal's counsel of the date and time of this session. Therefore, we have in essence served Mr. Macktal with the requested notice of the proceedings in this matter.

⁹ Commissioner Carr was not present for the affirmation of this order; if he had been present he would have approved it. Commissioner Curtiss was unavailable to participate in this decision.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Thomas S. Moore, Chairman
Christine N. Kohl
Howard A. Wilber

In the Matter of

Docket No. 50-320-OLA
(Disposal of Accident-
Generated Water)

GENERAL PUBLIC UTILITIES
NUCLEAR CORPORATION
(Three Mile Island Nuclear
Station, Unit 2)

April 4, 1989

The Appeal Board denies the joint intervenors' application for a stay of a Licensing Board initial decision authorizing a license amendment for the now shut down Three Mile Island, Unit 2. The license amendment would delete certain technical specifications from the license that currently prohibit the disposal of accident-generated water at the facility.

RULES OF PRACTICE: STAY OF AGENCY ACTION

The Commission's Rules of Practice provide that, in determining whether a stay is warranted, consideration must be given to the following questions: (a) whether the moving party has made a strong showing that it is likely to prevail on the merits; (b) whether the party will be irreparably injured unless a stay is granted; (c) whether the granting of a stay would harm other parties; and (d) where the public interest lies. 10 C.F.R. § 2.788(e).

RULES OF PRACTICE: STAY OF AGENCY ACTION

The burden of persuasion on each of the questions involved in determining whether a stay is warranted falls on the movant and, “[w]hile no single factor is dispositive, the most crucial is whether irreparable injury will be incurred by the movant absent a stay.” *Alabama Power Co.* (Joseph M. Farley Nuclear Plant, Units 1 and 2), CLI-81-27, 14 NRC 795, 797 (1981).

RULES OF PRACTICE: STAY OF AGENCY ACTION (IRREPARABLE INJURY)

A party seeking a stay “who establishes no amount of irreparable injury is not entitled to a stay in the absence of a showing that a reversal of the decision under attack is not merely likely, but a virtual certainty.” *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-820, 22 NRC 743, 746 n.8 (1985). See *Cuomo v. NRC*, 772 F.2d 972, 974 (D.C. Cir. 1985).

RULES OF PRACTICE: STAY OF AGENCY ACTION (IRREPARABLE INJURY)

In order to establish irreparable injury, the party seeking a stay must demonstrate that the injury claimed is “both certain and great.” *Perry*, 22 NRC at 747 (quoting *Cuomo*, 772 F.2d at 976).

RULES OF PRACTICE: STAY OF AGENCY ACTION (IRREPARABLE INJURY)

As the Commission has held, “[m]ere exposure to risk . . . does not constitute irreparable injury if the risk, as here, is so low as to be remote and speculative. . . .” *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-85-14, 22 NRC 177, 180 (1985).

APPEARANCES

Frances Skolnick, Lancaster, Pennsylvania, for the joint intervenors Three Mile Island Alert and Susquehanna Valley Alliance.

Thomas A. Baxter, Ernest L. Blake, Jr., David R. Lewis, and Maurice A. Ross, Washington, D.C., for the applicant General Public Utilities Nuclear Corporation.

Stephen H. Lewis and Colleen P. Woodhead for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

On February 2, 1989, the Licensing Board issued an initial decision authorizing an operating license amendment for the now shut down Three Mile Island, Unit 2 (TMI), facility owned by the applicant, General Public Utilities Nuclear Corporation.¹ The amendment would delete certain technical specifications from the license that currently prohibit the disposal of accident-generated water (AGW) at the plant. The joint intervenors, Susquehanna Valley Alliance and Three Mile Island Alert, have filed an appeal from the Licensing Board's decision and now seek a stay of the license amendment authorization. The applicant and the NRC staff oppose the intervenors' stay request. For the reasons set forth below, we deny the stay.

1. By way of background, the 1979 accident at TMI and subsequent cleanup generated some 2.3 million gallons of radioactively contaminated water. That water already has been processed through specially designed demineralizer systems to reduce its radioactivity content and currently is stored in various locations in the plant.²

In 1981, when the staff issued its Final Programmatic Environmental Impact Statement (PEIS) on the TMI cleanup, the staff addressed, as best it could at the time, the impacts of the future disposal of the AGW, and the Commission directed that any proposals for such disposal be referred to it for further action.³ Thereafter, in 1986, the applicant submitted a plan to dispose of the AGW by forced evaporation followed by vaporization and atmospheric release over a period of 15-24 months. The applicant's proposal would also collect the radioactive waste solids removed during evaporation and prepare them for shipment to an appropriate low-level waste facility.⁴

The staff issued a draft supplement to the PEIS assessing the environmental consequences of the applicant's proposal and a number of alternatives. After a public comment period, the staff prepared a final supplement in which it concluded that the applicant's proposal, as well as eight alternatives, could be implemented without significant environmental impacts. In response to

¹ LBP-89-7, 29 NRC 138.

² See 52 Fed. Reg. 28,626 (1987) (notice of opportunity for hearing on the requested license amendment).

³ 46 Fed. Reg. 24,764 (1981).

⁴ See PEIS, Supplement No. 2, NUREG-0683 (June 1987), at 3.3.

the applicant's license amendment application, the Commission then issued a hearing notice and this license amendment proceeding commenced.⁵

The Licensing Board granted the applicant's motion for summary disposition on most of the intervenors' admitted contentions.⁶ After a hearing on the remaining safety and environmental issues, the Licensing Board concluded in a lengthy, detailed decision that the license amendment should be granted. Specifically, the Board found that the applicant's proposal to dispose of the AGW was environmentally acceptable and that the disposal plan would have "extremely small radiation exposure consequences, both to workers and the general public."⁷ In this regard, the Board determined that

the worst-case dose to the maximally exposed individual is on the order of a single day of natural background radiation and is received over a 1- to 2-year period. The additional dose to the maximally exposed individual from evaporation is far below the normal environmental dose variability, and the additional dose to the average offsite individual is thousands of times smaller.

Another way of considering these same data is that the dose to the hypothetical individual from evaporation of the AGW would be less than 10% of an additional dose a person would receive from living in a brick building each year, and is comparable to the whole-body dose an average individual in the general population receives from watching color television each year. The dose to the average individual is many hundreds of times less and thus de minimis.⁸

The Board also found that "the health consequences of this additional exposure are expected to be negligible or nonexistent."⁹ It explained that, while doses of radiation above 9 rads have been empirically associated with adverse health effects, there is no similar evidence linking lower dose levels of radiation. Further, projections from high level dose curves suggest that the effects of low doses are so sparse in relation to variations in natural background radiation that empirical evidence of low dose adverse health effects may never be obtained.¹⁰ The Board also noted that, even though adverse health effects from very low doses such as those calculated for the applicant's evaporation proposal have not been observed and could be zero,

for radiation protection purposes, advisory agencies and committees such as the National Academy of Science's Committee on the Biological Effects of Ionizing Radiation ("BEIR") extrapolate from observed effects at high doses to arrive at risk estimates for low-dose

⁵ See 52 Fed. Reg. at 28,626-27.

⁶ LBP-88-23, 28 NRC 178 (1988).

⁷ LBP-89-7, 29 NRC at 143.

⁸ *Id.* at 152 (citations omitted).

⁹ *Id.* at 151.

¹⁰ *Id.* at 167.

exposures. The only effects that could be expressed statistically at doses as low as those predicted for evaporation are cancers and genetic ill health.¹¹

The Board went on to find that

the upper-limit probability of even one fatal cancer among the 2.2 million people living within 50 miles of the plant as the result of the evaporation of AGW would be less than 1 chance in 400. In addition, we find that the upper-limit probability of a fatal cancer for the maximally exposed individual is less than 1 chance in 5 million using the NRC's calculated dose, and less than 1 chance in 2.5 million using [the applicant's] calculated dose.¹²

2. The Commission's Rules of Practice provide that, in determining whether a stay is warranted, consideration must be given to the following questions: (a) whether the moving party has made a strong showing that it is likely to prevail on the merits; (b) whether the party will be irreparably injured unless a stay is granted; (c) whether the granting of a stay would harm other parties; and (d) where the public interest lies.¹³ The burden of persuasion on each of these questions falls on the movant and, "[w]hile no single factor is dispositive, the most crucial is whether irreparable injury will be incurred by the movant absent a stay."¹⁴ Moreover, "one who establishes *no* amount of irreparable injury is not entitled to a stay in the absence of a showing that a reversal of the decision under attack is not merely likely, but a virtual certainty."¹⁵

Although the intervenors allege irreparable injury, they clearly have not met their burden on this preeminent factor.¹⁶ In order to establish such harm, the intervenors must demonstrate that the injury claimed is "both certain and great."¹⁷ Rather than show irreparable injury, the intervenors have put forth a collection of cursory, seemingly contradictory, claims that lack proper supporting explanations and documentation. They assert on the one hand that the AGW is radioactive, that there is no safe level of exposure to radioactivity and therefore the applicant's proposal is not one of zero risk, and that ionizing radiation causes cancer, genetic mutations, and other adverse health effects.¹⁸

¹¹ *Id.* (citations omitted).

¹² *Id.*

¹³ 10 C.F.R. § 2.788(e).

¹⁴ *Alabama Power Co.* (Joseph M. Farley Nuclear Plant, Units 1 and 2), CLI-81-27, 14 NRC 795, 797 (1981). *Accord Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-84-17, 20 NRC 801, 804 (1984).

¹⁵ *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-820, 22 NRC 743, 746 n.8 (1985). See *Cuomo v. NRC*, 772 F.2d 972, 974 (D.C. Cir. 1985).

¹⁶ See *Intervenors' Application for a Stay* (February 20, 1989) at 5-6.

¹⁷ *Perry*, 22 NRC at 747 (quoting *Cuomo v. NRC*, 772 F.2d at 976).

¹⁸ For example, the intervenors state that the AGW contains "over 1000 curies of tritium, significant amounts of strontium 90, cesium 137, plutonium, antimony, and an array of alpha, gamma, and beta emitting radionuclides

(Continued)

On the other hand, the intervenors seemingly endorse a sentence in the record from a statement by the International Commission on Radiological Protection to the effect that radiation exposures are acceptable only if they are "as low as reasonably achievable" (ALARA).¹⁹ But not only did the Licensing Board rely upon the ALARA regulatory principle in concluding that evaporation of the AGW was environmentally acceptable,²⁰ that standard inherently accepts both some level of radiation exposure and risk, contrary to the notion initially advanced by the intervenors. In any event, the intervenors' assertions obviously fall far short of establishing any injury that is "both certain and great."

As previously noted, the Licensing Board found that the health risks to the surrounding population from the applicant's proposal were, at most, negligible and insubstantial.²¹ Further, the Board found that the radioactive releases from the evaporation of the AGW amount to only a small fraction of the releases permitted under existing regulatory requirements for operating nuclear power plants.²² In the face of such findings, it is incumbent on the intervenors to explain why the Licensing Board's detailed and amply supported findings on the radiological consequences and risks from the forced evaporation of the AGW must be discarded in favor of their position, if they are to prove irreparable injury. Failing such a demonstration, we must conclude, as we have in other proceedings where exposure to radioactive effluents from normal plant operations was claimed to cause irreparable harm, that no such injury is present.²³ As the Commission has held, "[m]ere exposure to risk . . . does not constitute irreparable injury if the risk, as here, is so low as to be remote and speculative. . . ."²⁴

Having failed to demonstrate any irreparable injury, the intervenors must show that it is a virtual certainty that the Licensing Board's initial decision will

(PEIS Supp. #2 Table 2.2)." Intervenors' Application for a Stay at 5. Yet, the very table in the PEIS referenced by the intervenors shows that only the tritium exists in substantial quantities, while the other elements range from insubstantial quantities (0.96 curies in the case of strontium-90 is the largest) to amounts so small as to be "less than detectable." Moreover, the PEIS shows that the forced evaporation of the AGW would leave the majority of the cesium and the strontium in the evaporator bottoms for subsequent burial, and the remainder would be released at a rate less than 1.2% of the continuous release rate already permitted by the applicant's current operating license. PEIS Supplement No. 2 at 3.6-3.7.

Additionally, the intervenors have appended to their stay application a number of exhibits. This material includes, among other things, new testimony of two of the intervenors' witnesses purporting to critique the Licensing Board's decision, articles, and newspaper clippings. The relevance of most of this material to the particular license amendment at issue in this proceeding is, at best, tenuous. Moreover, most of this material is not part of the record below, on which we must base our decision. In any event, its connection to the intervenors' claims of irreparable injury occasioned by the instant Licensing Board decision is not explained.

¹⁹ Licensee's Exhibit 4, fol. Tr. 1687, at 1689A.

²⁰ LBP-89-7, 29 NRC at 180. See 10 C.F.R. Part 50, Appendix I.

²¹ See *supra* pp. 360-61.

²² LBP-89-7, 29 NRC at 146.

²³ See *Perry*, 22 NRC at 747-48.

²⁴ *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-85-14, 22 NRC 177, 180 (1985).

be reversed in order to obtain a stay of the license amendment authorization. Here again, however, the intervenors' stay application is woefully deficient. The intervenors only present a confusing collection of assertedly serious Licensing Board errors for which they provide little or no analysis.²⁵ The intervenors' principal claim seems to be that the no-action alternative that was litigated (involving a 30-year onsite storage period for the AGW, followed by ultimate disposal by unspecified means) was not really the alternative they advanced as part of their Contention 2. Our initial review of the relevant portions of the record, however, does not support the intervenors' claim. Indeed, the Licensing Board fully and directly addressed the intervenors' ever-changing position on their so-called no-action alternative, and the intervenors have not explained how the Board's treatment of this matter is erroneous.²⁶ They simply contend that the alternative evaluated at the hearing was not what they had in mind. Contrary to the intervenors' actions below — no matter how well-intentioned —

administrative proceedings should not be a game or a forum to engage in unjustified obstructionism by making cryptic and obscure reference to matters that "ought to be" considered and then, after failing to do more to bring the matter to the agency's attention, seeking to have that agency determination vacated on the ground that the agency failed to consider matters "forcefully presented."²⁷

We simply cannot conclude on the basis of the intervenors' stay motion that it is a virtual certainty that the Licensing Board's decision will be reversed on this claim of error. Nor are any of the intervenors' other claims of error at this stage any more substantial.

In light of the foregoing, we need not consider at length the third and fourth criteria for the grant of relief pursuant to 10 C.F.R. § 2.788(e). It suffices to note that the intervenors' showing on both of them falls far short of offsetting the total lack of any demonstrated irreparable injury and any showing that they are certain to prevail on the merits of their appeal. Accordingly, the intervenors' application for a stay is *denied*.²⁸

²⁵ See Intervenors' Application for a Stay at 1-5.

²⁶ See LBP-89-7, 29 NRC at 152-155.

²⁷ *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council Inc.*, 435 U.S. 519, 553-54 (1978).

²⁸ This decision is, of course, without prejudice to our consideration of the merits of the intervenors' appeal, following full briefing.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

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| BOSTON EDISON COMPANY (Pilgrim Nuclear Power Station) | Docket No. 50-293 |
| CAROLINA POWER & LIGHT COMPANY (Brunswick Station, Units 1 and 2) | Docket Nos. 50-324 50-325 |
| CLEVELAND ELECTRIC ILLUMINATING COMPANY, et al. (Perry Nuclear Power Plant, Unit 1) | Docket No. 50-440 |
| COMMONWEALTH EDISON COMPANY (Dresden Nuclear Power Plant, Units 2 and 3) | Docket Nos. 50-237 50-249 50-254 50-265 |
| (Quad Cities Nuclear Power Plant, Units 1 and 2) | 50-373 50-374 |
| (LaSalle County Station, Units 1 and 2) | |
| CONSUMERS POWER COMPANY (Big Rock Point Plant) | Docket No. 50-155 |
| DETROIT EDISON COMPANY (Enrico Fermi Atomic Power Plant Unit 2) | Docket No. 50-341 |

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| GENERAL PUBLIC UTILITIES NUCLEAR CORPORATION (Oyster Creek Nuclear Generating Station) | Docket No. 50-219 |
| GEORGIA POWER COMPANY (Hatch Nuclear Power Plant, Units 1 and 2) | Docket Nos. 50-321 50-366 |
| GULF STATES UTILITIES COMPANY (River Bend Station, Unit 1) | Docket No. 50-458 |
| ILLINOIS POWER COMPANY (Clinton Power Station) | Docket No. 50-461 |
| IOWA ELECTRIC LIGHT & POWER COMPANY (Duane Arnold Energy Center) | Docket No. 50-331 |
| LONG ISLAND LIGHTING COMPANY (Shoreham Nuclear Power Plant, Unit 1) | Docket No. 50-322 |
| MISSISSIPPI POWER & LIGHT COMPANY (Grand Gulf Nuclear Station, Unit 1) | Docket No. 50-416 |
| NEBRASKA PUBLIC POWER DISTRICT (Cooper Station, Unit 1) | Docket No. 50-298 |
| NIAGARA MOHAWK POWER CORPORATION (Nine Mile Point Plant, Units 1 and 2) | Docket Nos. 50-220 50-410 |
| NORTHEAST UTILITIES (Millstone Unit 1) | Docket No. 50-245 |
| NORTHERN STATES POWER COMPANY (Monticello Nuclear Generating Plant, Unit 1) | Docket No. 50-263 |

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| PENNSYLVANIA POWER & LIGHT COMPANY (Susquehanna Steam Electric Station, Units 1 and 2) | Docket Nos. 50-387 50-388 |
| PHILADELPHIA ELECTRIC COMPANY (Peach Bottom Atomic Power Station, Units 2 and 3) (Limerick Generating Station, Unit 1) | Docket Nos. 50-277 50-278 50-352 |
| POWER AUTHORITY OF THE STATE OF NEW YORK (James A. Fitzpatrick Nuclear Power Plant) | Docket No. 50-333 |
| PUBLIC SERVICE ELECTRIC & GAS COMPANY (Hope Creek Generating Station, Unit 1) | Docket No. 50-354 |
| TENNESSEE VALLEY AUTHORITY (Browns Ferry Nuclear Plant, Units 1, 2, and 3) | Docket Nos. 50-259 50-260 50-296 |
| VERMONT YANKEE NUCLEAR POWER CORPORATION (Vermont Yankee Nuclear Power Station) | Docket No. 50-271 |
| WASHINGTON PUBLIC POWER SUPPLY SYSTEM (WNP Unit 2) | Docket No. 50-397 April 27, 1989 |

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by Ms. Susan Hiatt on behalf of Ohio Citizens for Responsible Energy, Inc. (Petitioner), that requested the Nuclear Regulatory Commission (NRC or Commission) to order all holders of licenses for boiling water reactors (BWRs) to (1) place their reactors in cold shutdown, (2) develop and implement specified operating procedures to relieve alleged thermal-hydraulic instability problems, (3) demonstrate that certain specified training has been provided relating to these procedures, (4) demonstrate the capability of instrumentation related to power oscillations, (5) develop simulators capable of modeling core-wide and out-of-phase power oscillations, (6) report to the NRC all past and future incidents in which recirculation pumps have tripped off, (7) submit to the NRC justification

for continued operation of BWRs, and (8) submit a report to the NRC within 1 year demonstrating compliance with Criterion 12 of 10 C.F.R. Part 50, Appendix A (GDC 12). In addition, the petition requested the Commission to reopen Generic Issues B-19 and B-59, to reopen the Anticipated Transients Without Scram (ATWS) rulemaking proceeding, and to reconsider the use of the end-of-cycle recirculation pump trip on BWRs. Petitioner based her requests on the power oscillation event at LaSalle Unit 2, which occurred on March 9, 1988 (LaSalle Event). Petitioner specifically alleged that (1) decay ratios determined by licensing calculations are not reliable indicators of core stability, and design analyses of the reactor cannot be relied upon to ensure that oscillations are not possible in BWRs; (2) the General Electric Company's guidance for operations, provided in Service Information Letter (SIL) 380, Revision 1, is inadequate to ensure compliance with GDC 12; and (3) BWR plant instrumentation may not detect power oscillations if they occur out of phase or too rapidly. The Director, NRR, agrees that decay ratios are not reliable indicators of core stability but, based on licensee responses to generic communications, concludes that licensees have procedures in place that would prevent any power oscillation events.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Where a petitioner requests certain actions because of an event and where the NRC has requested licensees to take action through a generic bulletin in response to the event, and the licensees have confirmed that they have taken the action the NRC requested, the Director, NRR, need not take action on petitioner's request if the petitioner has not supplied any new information.

RULES OF PRACTICE: PETITION FOR RULEMAKING

Where a petitioner includes a request for rulemaking in a petition submitted pursuant to 10 C.F.R. § 2.206, that portion of the petition will be treated as a petition for rulemaking and not as a request made pursuant to § 2.206.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING (GENERIC ISSUES)

Where a petitioner requests reopening of a closed generic issue and raises no questions regarding that issue that the prior resolution does not answer, the Director, NRR, need not take action on the petitioner's request.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING (REPORTS)

Where a petitioner requests the NRC to require reports from a licensee and the Commission's regulations already require licensees to report the subject information, the Director, NRR, need not take action on the petitioner's request.

TECHNICAL ISSUES DISCUSSED

Stability predictions in BWRs by decay ratio; Procedural guidance in GE letter SIL 380, Revision 1, to BWR operators; BWR instrumentation for neutron flux measurement; Power oscillation safety significance; Training and simulation relating to BWR thermal-hydraulic instability; End-of-cycle recirculation pump trip on BWRs.

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

I. INTRODUCTION

On July 22, 1988, Ms. Susan Hiatt, on behalf of Ohio Citizens for Responsible Energy, Inc. (Petitioner), filed a petition in accordance with 10 C.F.R. § 2.206 with the Nuclear Regulatory Commission (NRC). The petition was referred to the Director, Office of Nuclear Reactor Regulation (NRR), for consideration.

The petition asked the Director, NRR, to take immediate action to relieve alleged undue risks to the public health and safety posed by the thermal-hydraulic instability of boiling water reactors (BWRs), as revealed by the power oscillation event at LaSalle Unit 2 on March 9, 1988 (LaSalle Event). The Petitioner specifically requested the NRC to order all BWR licensees to (1) place their reactors in cold shutdown, (2) develop and implement specified operating procedures relating to the thermal-hydraulic instability issues, (3) demonstrate that certain specified training has been provided relating to these procedures, (4) demonstrate the capability of instrumentation related to power oscillations, (5) develop simulators capable of modeling power oscillations similar to those occurring at LaSalle as well as out-of-phase power oscillations, (6) report to the NRC all past and future incidents in which recirculation pumps have tripped off, (7) submit to the NRC justification for continued operation of BWRs, and (8) submit a report to the NRC within 1 year demonstrating compliance with Criterion 12 given in 10 C.F.R. Part 50, Appendix A (GDC 12).¹ In addition,

¹ Part 50, Appendix A, Criterion 12, "Suppression of Reactor Power Oscillations," states that: "The reactor core and associated coolant, control, and protection systems shall be designed to assure that power oscillations which
(Continued)

the Petitioner requested the Commission to reopen Generic Issues B-19 and B-59, to reopen the Anticipated Transients Without Scram (ATWS) rulemaking proceeding, and to reconsider the use of the end-of-cycle recirculation pump trip on BWRs.

Ms. Hiatt alleged as grounds for the petition that the LaSalle Event has serious safety implications for all BWRs and that the NRC has failed to take appropriate regulatory action in response to the LaSalle Event. In the petition, Ms. Hiatt cites the following postulated safety implications, some of which had been previously identified in several referenced documents attached to the petition: (1) decay ratios determined by licensing calculations are not reliable indicators of core stability (Attachment 2 to Petition) and design analyses of the reactor cannot be relied upon to ensure that oscillations are not possible in BWRs; (2) the General Electric (GE) Company's guidance for operations provided in Service Information Letter (SIL) 380, Revision 1, is inadequate to ensure compliance with GDC 12 (Attachment 4 to Petition); and (3) BWR plant instrumentation may not detect power oscillations if they occur out of phase or too rapidly (Attachments 1 and 4 to Petition). Ms. Hiatt then asserts that (1) given the implications of the LaSalle Event, the actions requested of BWR licensees in NRC Bulletin No. 88-07 are insufficient, (2) most, if not all BWRs, are in a state of noncompliance with GDC 12, and (3) the NRC must take aggressive enforcement action to protect the health and safety of the public.

On August 26, 1988, I acknowledged receipt of the petition. I informed Ms. Hiatt that (1) her request for immediate relief was denied because the allegations that formed the basis for the petition did not reveal any new operational safety issues that posed an immediate safety concern for continued BWR operation, (2) the petition would be treated under 10 C.F.R. § 2.206 of the Commission's regulations, and (3) appropriate action would be taken within a reasonable amount of time. For reasons discussed below, the petition is denied. Ms. Hiatt's request to reopen rulemaking proceedings regarding ATWS is being treated separately as a petition for rulemaking under 10 C.F.R. § 2.802 of the Commission's regulations.

II. BACKGROUND

The LaSalle nuclear power station, operated by the Commonwealth Edison Company (CECO), is a two-unit site located 11 miles southeast of Ottawa, Illinois. Both units utilize General Electric--designed BWR/5 reactors with containments of the Mark II design.

can result in conditions exceeding specified acceptable fuel design limits are not possible or can be reliably and readily detected and suppressed."

On March 9, 1988, LaSalle Unit 2 underwent a dual recirculation pump trip event that resulted in a loss of forced circulation cooling, a reduction in reactor power, and a decrease in reactor inlet feedwater temperature. Approximately 5 minutes after the recirculation pump trip, with the reactor being cooled via natural circulation, operators observed that the average power range monitor (APRM) indications were oscillating between 25% and 50% power (25% peak to peak) every 2 to 3 seconds. At the same time, the local power range monitor (LPRM) downscale alarms began to annunciate and clear, indicating that power was oscillating about the downscale alarm setpoint. During this period, the operators recognized that they were operating in a region of core instability. They attempted to restart a recirculation pump in order to increase flow to prevent instability, but this action was unsuccessful as all of the pump start permissive conditions had not been satisfied. (Permissives are protective features designed to inhibit startup of equipment when certain specified conditions critical to proper functioning of the equipment are not within specified limits). Approximately 7 minutes after the recirculation pump trip, as operators were preparing to perform a manual scram, the reactor scrambled automatically because of high neutron flux in the reactor. (A reactor scram involves rapid insertion of shutdown and control rods by either manual or automatic actuation of the reactor protection system). The scram shut the reactor down, and recovery from the scram proceeded normally.

On March 16, 1988, after receiving additional information from the licensee concerning the event, the NRC dispatched an augmented inspection team (AIT) to the site. The AIT completed its inspection on March 24, 1988, and issued its inspection report on May 6, 1988. The AIT concluded that (1) fuel design limits had not been exceeded during the transient, and fuel damage had not occurred; (2) plant equipment functioned as designed; and (3) operator actions during the event were within the bounds of their procedures and training, but the procedures and training program themselves were inadequate. The AIT also identified a number of generic technical concerns and recommended that they be considered further by the Staff.

On June 8, 1988, the NRC Office for Analysis and Evaluation of Operational Data (AEOD) issued a special report documenting its concerns regarding the power oscillation event at LaSalle 2 and its recommendations for followup action. A response to the recommendations was provided to AEOD by NRR on June 24, 1988.

On June 15, 1988, following completion of its evaluation of the March 9, 1988, event at LaSalle, the NRC issued Bulletin No. 88-07 to holders of operating licenses and construction permits for BWRs. The bulletin requested that recipients take action to ensure that adequate operating procedures and instrumentation are available and adequate operator training is provided to prevent the occurrence of power oscillations during all modes of BWR operation.

The bulletin required that recipients confirm by letter to the NRC that the requested actions were completed and implemented. All confirmation letters have been received and reviewed. They indicate that:

1. All BWR licensees have procedures in place to detect and suppress instability regardless of the value of previously calculated decay ratios;
2. All licensed reactor operators and shift technical advisors were briefed regarding the LaSalle Event within 15 days following receipt of the bulletin, or before resuming shift duties if they had been unavailable during the 15-day period;
3. All action to modify operating procedures and the operator training program with respect to detection and suppression of potential reactor instabilities had been completed or would be completed before startup from the current outage and, in a few cases, no later than December 15, 1988; and,
4. All licensees have confirmed that instrumentation relied upon by plant operators to execute operating procedures is adequate based on an assessment by the equipment vendor (GE) and a review of any modifications made to equipment since installation.

The Staff has begun to audit licensee responses to the bulletin in more detail. The audits will continue over the next year.

In November 1988, General Electric Company (GE), working with the BWR Owners' Group (BWROG), issued a letter entitled "Interim Recommendations for Stability Actions" to the BWR licensees. The interim recommendations are based on the results of a generic evaluation of power oscillations performed for the BWROG at the request of the NRC Staff. This evaluation has indicated that when regional power oscillations² become detectable on the average power range monitors, the safety margin with respect to the plant minimum critical power ratio (MCPR) may be insufficient under some operating conditions to ensure that operator action in response to APRM signals would prevent violation of the MCPR safety limit. The interim recommendations include explicit restrictions and modified operator actions to ensure that operation in the vulnerable power/flow operating regime is avoided. The recommendations were reviewed by the NRC Staff and have been found acceptable for those plants that have effective automatic scram protection for regional oscillations. For plants that do not have effective automatic scram protection for regional oscillations, the Staff believes that the interim recommendations may not provide sufficient, reliable protection. Consequently, the Staff has requested that licensees implement the interim recommendations, and if appropriate, implement additional actions that

²Regional oscillations are ones in which power oscillates only in distinct regions of the reactor core, as opposed to a core-wide oscillation, in which power oscillates throughout the core as was the case in the LaSalle Event.

compensate for the lack of automatic scram protection for regional oscillations. The Staff's request is contained in Supplement 1 to NRC Bulletin 88-07 which is discussed in the next paragraph.

On December 30, 1988, the NRC issued Supplement 1 to NRC Bulletin 88-07. The supplement provides addressees with new information concerning power oscillations in BWRs and requests that they take specified actions to ensure that the safety limit for the plant minimum critical power ratio (MCPR) is not violated as a result of regional power oscillations. The supplement is an outgrowth of generic evaluations of power oscillations performed by the BWROG at the NRC Staff's request and the Staff's independent study of regional power oscillations. The preliminary results of these evaluations indicate that when regional power oscillations become detectable on the average power range monitors, the MCPR safety margin may be insufficient under some operating conditions to ensure that manual actions taken in response to APRM signals would prevent violation of the MCPR safety limit. Licensees³ were requested to take the following actions:

- (1) Within 30 days of receipt of the supplement, all BWR licensees should implement the GE interim stability recommendations described in the GE letter entitled "Interim Recommendations for Stability Actions." However, for those plants that do not have effective automatic scram protection in the event of regional oscillations, a manual scram should be initiated under all operating conditions when two recirculation pumps trip (or "no pumps operating") with the reactor in the RUN mode.
- (2) The boundaries of Regions A, B, and C shown in Figure 1 of the GE recommendations were derived for those BWRs using NRC-approved GE fuel. For BWRs using fuel supplied by other vendors, these regions should be adopted in principle, but the power/flow boundaries should be based on existing boundaries that have been previously approved by the NRC. For proposed new fuel designs, the stability boundaries should be reevaluated and justified based on any applicable operating experience, calculated changes in core decay ratio using NRC-approved methodology, and/or core decay ratio measurements. There should be a high degree of assurance that instabilities will not occur under any circumstances of operation in Region C.
- (3) The GE interim recommendations are ambiguous with respect to permissible conditions for entry of Regions B and C. Although the recommendations state that intentional operation in Region B is not permitted and operation in Region C is permitted only for purpose of fuel conditioning during rod withdrawal startup operations, intentional entry into Region B or C is also allowable in situations where rod insertion or a flow increase is required by procedures to exit Regions A and B after unintentional entry. Licensees should ensure that the procedures and

³The supplement is not applicable to Big Rock Point (Docket No. 50-155) because of unique design features and because existing operating limitations enforced by technical specifications address the stability concerns that are the subject of the supplement.

training employed for implementation of these recommendations avoid any similar ambiguity which could lead to operator confusion.

Pursuant to 10 C.F.R. § 50.54(f), licensees are required to advise the NRC by letter within 60 days of receipt of the supplement whether the requested actions have been completed and implemented. The Staff will evaluate the responses and the results of studies which are continuing over the next several months to determine whether any additional action by the Staff is necessary.

III. DISCUSSION

My staff and I have considered the safety implications identified in the petition and the specific relief requested and have done so in light of the most recent data available to the Staff from the BWROG and Staff consultants. Our evaluation follows.

A. Bases for Request

1. Reliability of Decay Ratio for Predicting Stability

Decay ratio in a reactor is a measure of the response of the neutron flux to a change or perturbation. As such, it is a convenient measure of the relative stability of a reactor core. A decay ratio of less than 1.0 indicates inherent stability in that the response to a perturbation will decay to the steady-state value. A decay ratio equal to 1.0 represents the special condition when the response to a perturbation will be continuing oscillations of constant magnitude termed limit cycles. A decay ratio greater than 1.0 indicates an unstable condition in that the response to the perturbation diverges in a linear system. In a BWR, which is a nonlinear system, decay ratios greater than 1.0 are indicative of larger amplitude limit cycle oscillations. Predictive methods developed by General Electric for determining BWR decay ratios were approved by the NRC with the provision that a 20% uncertainty be applied conservatively to the result. Calculated core decay ratios of less than 0.80 (i.e., 1.0 minus an uncertainty of .2) by GE methods were approved as acceptable evidence of core stability and compliance with GDC 12.

The predicted decay ratio for the LaSalle Unit 2 reactor was 0.60. However, large oscillations were observed during the LaSalle Event that indicate that the actual decay ratio was greater than 1.0. Consequently, the uncertainty in the predictive method was significantly larger than expected, that is, at least 40% versus 20%.

The larger-than-expected calculational uncertainty has since been attributed to an inadequate representation of actual reactor operating conditions in the

LaSalle calculational model. In light of this potential for error, the Staff has concluded that it will no longer accept predictive calculations of core decay ratio as bases for demonstrating compliance with GDC 12.

In order for a licensee to satisfy GDC 12 with respect to core-wide power oscillations, the Staff's position is that each BWR unit must have the necessary operating limitations, response procedures, and operator training program to readily and reliably detect and suppress core-wide power oscillations regardless of calculated decay ratio. The Staff has communicated this position to licensees in NRC Bulletin No. 88-07. As discussed above, all licensees have now responded to Bulletin No. 88-07 and have indicated that they have the necessary procedures and operator training program to readily and reliably detect and suppress core-wide power oscillations regardless of calculated decay ratios.

2. *Adequacy of Procedural Guidance from GE (Service Information Letter 380, Revision 1)*

The General Electric Company issued Service Information Letter (SIL) 380, Revision 1, to its customers on February 10, 1984. The letter reflected new technical information regarding BWR stability and provided new guidance to BWR operators for detecting and suppressing neutron flux oscillations. The letter superseded the previously issued SIL 380.

The NRC Staff reviewed SIL 380, Revision 1, as part of its action to resolve Generic Issue B-19, "BWR Thermal-Hydraulic Stability." On the basis of the Staff's review and that of its contractor, Oak Ridge National Laboratory, the Staff concluded that "operating limitations which provide for the detection and suppression of flux oscillations in operating regions of potential instability, consistent with the recommendations of General Electric SIL 380 (Rev. 1), are acceptable to demonstrate compliance with GDC-10 and GDC-12 for cores loaded with approved GE fuel designs." The basis for this conclusion was the result of a technical evaluation that indicated that if properly implemented, the recommendations contained in the SIL were sufficient to readily and reliably detect and suppress limit cycle oscillations.⁴

It is important to note that operating procedures consistent with GE SIL 380, Revision 1, were not in place at LaSalle Unit 2 at the time of the March 9, 1988 incident. Consequently, the response and performance of reactor operators during the LaSalle Event does not reflect on the adequacy of the SIL recommendations.

The NRC Staff continues to endorse the general operational guidance given in GE SIL 380, Revision 1, and believes that if properly implemented, it is

⁴NRC Memorandum and attachments from Harold R. Denton to Victor Stello, dated May 21, 1985.

sufficient to identify and terminate core-wide limit cycle oscillations. However, as discussed previously in Part II of this document, supplementary procedural actions are necessary to ensure that the safety limit for the plant minimum critical power ratio is not violated as a result of regional power oscillations.

3. Adequacy of Plant Instrumentation

In BWRs designed by GE, the neutron monitoring system (NMS) is used to monitor the core for neutron flux oscillations. The NMS uses in-core detectors to monitor neutron flux from startup through full-power operation and is a safety-related system. The NRC Staff reviews the design of the NMS as part of its normal licensing review.

In general, the Staff considers the NMS to be adequate for implementation of the guidelines provided in GE SIL 380, Revision 1. However, during followup review of the LaSalle Event the NRC augmented inspection team identified some time response and filtering characteristics of the NMS instruments in LaSalle Unit 2 that they were concerned about. The AIT also expressed concern about the ability of the APRMs to properly detect regional oscillations which cause LPRM signals to oscillate out of phase. Because of these concerns, the Staff requested, in NRC Bulletin No. 88-07 and in meetings with the BWROG, that licensees verify the adequacy of the instrumentation that is relied upon by operators within their procedures.

In response to Bulletin 88-07, all licensees have evaluated their instrumentation with regard to time response and filtering characteristics and have indicated that instrumentation relied upon by plant operators to execute operating procedures is adequate. The BWROG and the NRC Staff have independently evaluated the ability of NMS instrumentation to properly detect regional oscillations that occur as asymmetric out-of-phase oscillations. The results of these evaluations are discussed below.

Power oscillations with an amplitude and phase that vary spatially in the reactor are termed regional oscillations, and usually occur as a symmetric out-of-phase oscillations. These oscillations are difficult to monitor accurately with average power-range instruments in the NMS but can be detected with local power-range instruments. The results of generic evaluations of power oscillations performed by GE for the BWROG at the request of the NRC Staff and the Staff's independent evaluation have indicated that when regional power oscillations become detectable on the APRMs, the safety margin with respect to the plant minimum critical power ratio (MCPR) may be insufficient under some operating conditions to ensure that operator action in response to APRM signals would prevent violation of the MCPR safety limit. In light of this, GE issued interim recommendations to BWR licensees which include explicit restrictions on reactor power level and coolant flow rate, and actions for plant operators to

take if unacceptable power/flow operating regimes are entered unintentionally. The interim recommendations were reviewed by the NRC Staff and found acceptable for those plants that have effective automatic scram protection for regional oscillations. For plants that do not have effective automatic scram protection for regional oscillations, the Staff believes that the interim recommendations may not provide sufficient, reliable protection. Consequently, the Staff has requested that licensees implement the interim recommendations, and if appropriate, implement additional actions that compensate for the lack of automatic scram protection for regional oscillations. The Staff's request is contained in Supplement 1 to NRC Bulletin 88-07 which was discussed previously in Part II of this document. The Staff believes that implementation of the requests in NRC Bulletin 88-07 and Supplement 1 to the bulletin will ensure continued safe plant operation in the interim until long-term corrective actions are developed and put in place. The NRC Staff will continue to work with the BWROG to develop long-term corrective actions. The Staff expects to issue another generic communication within 12 to 24 months that will provide guidance for long-term resolution of this stability issue.

4. Safety Significance of Power Oscillations

Power oscillations in BWRs are not considered to be a serious generic safety concern because oscillations can be detected and suppressed. Tests and operating experience (LaSalle Event) indicate that core-wide power oscillations can be terminated manually in a timely fashion by control room operators or ultimately by automatic action of the high-power-level trip function in the reactor protection system.

Asymmetric out-of-phase oscillations are unlikely because of restrictions on reactor operating conditions. Moreover, procedures specified in Supplement 1 to NRC Bulletin 88-07 ensure that such oscillations would be suppressed quickly with an anticipatory reactor scram initiated manually by a reactor operator.

B. Petitioner's Request

1. Order All BWR Licensees to Place Their Reactors in Cold Shutdown

As described above, the NRC issued Bulletin No. 88-07 in response to the LaSalle Event. As indicated by their responses to Bulletin No. 88-07, all BWR licensees have developed and implemented procedures to detect and suppress core-wide power oscillations. Consequently, no BWR licensee now relies on a calculated decay ratio to demonstrate compliance with GDC 12.

As already explained, Supplement 1 to Bulletin No. 88-07 specified additional procedures to deal with regional power oscillations. The recommendations

of Supplement 1 are currently being implemented. In light of the relatively short period for implementation (60 days), and existing restrictions on reactor operating conditions that minimize the probability of regional oscillations, the Staff has concluded that continued operation of all BWRs while licensees are implementing the recommendations of Supplement 1 is acceptable.

In summary, based on our review of the generic implications of the LaSalle Event to date, we have not identified any operational safety concerns or instances of regulatory noncompliance that warrant a shutdown of boiling water reactors. Consequently, the request is denied.

2. *Order All BWR Licensees to Develop and Implement Specified Procedures*⁵

This request is denied for the following reasons:

- (a) The NRC Staff currently believes that procedural guidance provided to licensees in SIL 380, Revision 1, for detecting and suppressing power oscillations is adequate for mitigating core-wide oscillations.
- (b) The NRC Staff has determined that explicit procedures different from those specified by the Petitioner are necessary to control regional power oscillations and ensure continued plant operation in accordance with GDC 12. The Staff has specified the necessary procedures in Supplement 1 to NRC Bulletin 88-07 and requested that licensees implement the specified procedures within 30 days of receipt of the supplement.

The contents of Supplement 1 to NRC Bulletin 88-07, including the specified procedures, are discussed in Part II of this document. The Staff has judged that continued plant operation during the 30-day implementation period is acceptable based on the low likelihood of a regional oscillation in the relatively short period of 30 days.

⁵ Petitioner requests implementation of the following specific procedures: (a) Immediately insert control rods to below the 80% rod line following reduction or loss of recirculation flow or other transients that result in entry into potentially unstable regions of the power/flow map; (b) increase recirculation flow during routine reactor startups and insert some control rods prior to reducing recirculation flow below 50% during shutdowns to avoid operation in potentially unstable areas of the power/flow map; (c) immediately scram the reactor if (a) or (b) above are not successful in preventing and suppressing oscillations. The licensees shall submit these procedures to the NRC for review and approval.

3. *Order All BWR Licensees to Demonstrate That Certain Training Related to the Specified Procedures Has Been Provided*

This request is denied for the following reasons:

- (a) The responses to NRC Bulletin No. 88-07 indicate that all licensed reactor operators and shift technical advisors performing shift duties at BWRs were briefed thoroughly regarding the LaSalle Event within 15 days of receipt of NRC Bulletin No. 88-07 or soon thereafter.
- (b) The responses to NRC Bulletin No. 88-07 indicate that all BWR licensees have confirmed the adequacy of their existing operator training program regarding detection and suppression of power oscillations or have made the program modifications necessary to properly address this subject and accommodate changes in procedures in response to Supplement 1 to the bulletin.

4. *Order All BWR Licensees to Demonstrate the Capability of Instrumentation Related to Power Oscillations*

This request is denied for the following reasons:

- (a) The NRC Staff considers the neutron monitoring system designed for BWRs by GE to be adequate for detecting core-wide power oscillations in BWRs.
- (b) On the basis of responses to NRC Bulletin No. 88-07, the NRC Staff believes that all licensees have confirmed that the response and filtering characteristics of instrumentation relied upon by operators to execute operating procedures are acceptable.
- (c) Implementation of operating procedures specified in Supplement 1 to NRC Bulletin 88-07 will compensate for inability of APRMs to properly detect regional oscillations.

5. *Order All BWR Licensees to Develop Simulators Capable of Modeling Power Oscillations Similar to Those Occurring at LaSalle and Out-of-Phase Oscillations*

This request is denied for the following reason:

- (a) Current NRC regulations, that is, 10 C.F.R. § 55.45(b), in conjunction with NRC Regulatory Guide 1.149 and NUREG-1258, already require utilities to have a simulation facility capable of modeling the effects of loss of forced reactor coolant flow and to certify the simulation facility for use in operator licensing examination after May 26, 1991. However, although simulator training for control of power oscillations will improve an operator's ability to detect and suppress oscillations

in a timely fashion, nonsimulation-based training can be fashioned which is sufficient to address stability concerns. Consequently, the Staff concludes that training programs now in place, including improvements made in response to NRC Bulletin 88-07, are adequate in the interim until the enhancements of § 55.45(b) take full effect in 1991.

6. *Order All BWR Licensees to Report to the NRC Regarding all Future and Past Incidents in Which Recirculation Pumps Have Tripped Off or That Involved Power Oscillations*

This request is denied for the following reasons:

- (a) Existing NRC regulations, that is, 10 C.F.R. §§ 50.72 and 50.73, already require that significant events involving recirculation pump trips or power oscillations be reported to the Commission. Such events are those in which the pump trips or oscillations lead to (1) completion of any nuclear plant shutdown required by the plant's technical specifications; or, (2) any operation or condition prohibited by the plant's technical specifications; or, (3) the plant being in a condition not covered by the plant's operating and emergency procedures; or (4) any event or condition that resulted in an unplanned manual or automatic actuation of any engineered safety feature, including the reactor protection system. Petitioner demonstrates no basis for requiring repetition of reports already required by §§ 50.72 and 50.73.
- (b) Since the accident at Three Mile Island, Unit 2, in 1979, programs have been developed and implemented in several NRC offices to systematically review and evaluate operating reactor event reports. Such programs include Analysis and Evaluation of Operational Data (AEOD), Operating Reactors Assessment and Events Analysis (NRR), and the Resident Inspector program (NRC Regional Offices). These reviews have been performed to ensure prompt response to accidents, to identify significant precursor events, and to identify adverse trends and patterns in operating experience, including any associated with BWR instability. The Staff considers these past reviews of licensee event reports to have been adequate. The petition gives no basis to reexamine these reports, and the Staff concludes that action to collect and review past event reports is unnecessary.

7. Reopen Generic Issue B-19, "BWR Thermal-Hydraulic Stability"

This request is denied because a generic reassessment of BWR stability is not necessary in order for the Staff to specify criteria licensees must meet to be in compliance with existing regulations.

NRC Staff action on Generic Issue B-19 culminated in the identification of two acceptable methods by which licensees could show compliance with GDC 10 and GDC 12. Licensees could either (1) show that thermal-hydraulic instabilities are not possible by design by calculating acceptably low decay ratios with analytical methods approved by the Staff, or (2) show that proper capabilities for detection and suppression of oscillations are embodied in plant operating procedures and operating limits. As discussed in § A.1 of this Decision, the Staff has concluded that in light of the LaSalle Event, use of a calculated decay ratio to demonstrate compliance with general design criteria is no longer acceptable and that all BWR licensees must show that proper detection and suppression capabilities exist at their plants, that is, Method 2 listed previously. Because the Staff concludes that the implementation of Method 2 listed above continues to be a valid means for complying with GDC 12, Method 2 remains a valid resolution of Generic Issue B-19. Consequently, repetition of the generic issue resolution process for Issue B-19 is unnecessary.

8. Reopen Generic Issue B-59, "Part Loop Operation in PWRs and BWRs"

This request is denied because the LaSalle Event has not revealed any deficiency in the technical resolution of Generic Issue B-59.

In resolving Generic Issue B-59 for BWRs, the Staff evaluated the acceptability of operating the reactor for electricity production at reduced power with only one of two recirculation loops in operation (i.e., at a reduced coolant flow rate). The results of the evaluation were that stable single-loop operation is achievable and acceptable with specified operating limits and procedures for avoiding as well as detecting and suppressing power oscillations that may arise (e.g., if perhaps the operating recirculation pump tripped). In the LaSalle Event, instability arose following inadvertent trip of both recirculation pumps when the reactor operated with no recirculation loops in operation. Power operation with both recirculation loops inoperable is prohibited by each license for operation of a BWR. The LaSalle Event reaffirms the necessity for prohibiting operation with no recirculation loops in operation. However, the LaSalle Event does not invalidate the technical findings from the review of Generic Issue B-59.

9. *Reopen Rulemaking Proceedings Regarding Anticipated Transients Without Scram*

In the acknowledgment letter sent to Petitioner on August 26, 1988, I included this request among those to be considered pursuant to 10 C.F.R. § 2.206. I have subsequently determined, however, that this request is more properly treated as a petition for rulemaking under 10 C.F.R. § 2.802. As such, it has been referred to the NRC Office of Research for appropriate action. However, it is important to note that both the NRC and BWROG currently have programs in which analyses of ATWS conditions are being conducted. These analyses treat large-amplitude power oscillations with state-of-the-art analytical methods. The results of these analyses to date confirm the technical bases for the current ATWS rule. Consequently, at this time, the NRC Staff sees no basis for recommending that the Commission reopen rulemaking proceedings regarding ATWS. If, however, the Staff finds evidence that contradicts the assumptions and results of previous ATWS analyses from either the information you provided in support of the request or new information from ongoing NRC and BWROG programs, it may then be appropriate for the Commission to reconsider the current ATWS rule.

10. *Reconsider Use of the End-of-Cycle Recirculation Pump Trip on BWRs*

The end-of-cycle recirculation pump trip (EOC-RPT) is part of the reactor protection system and is an essential safety supplement to the reactor trip. The EOC-RPT reduces reactor coolant flow rate to provide additional negative reactivity for mitigation of events in which the reactor coolant system is pressurized rapidly. The additional negative reactivity from the EOC-RPT is needed primarily at the end of the cycle to compensate for (1) changes in reactor power distribution over the cycle that have reduced thermal margin and (2) a decrease in the rate of negative reactivity insertion during reactor scram. The two events for which the EOC-RPT protective feature will function are closure of the turbine stop valves and fast closure of the turbine control valves. In both cases, the EOC-RPT is accompanied by an anticipatory scram of the reactor that is initiated by the same signals that initiate the EOC-RPT.

11. *Require Licensees to Submit Justification for Continued Operation in Light of the Issues Raised in the Petition*

In NRC Bulletin 87-07 and Supplement 1 to that bulletin, the NRC Staff specified actions licensees should take to ensure continued safe operation and compliance with the Commission's regulations. All licensees have confirmed,

under oath and affirmation, that (1) all necessary actions requested in NRC Bulletin 87-07 have been completed, and (2) that full documentation of the action taken is available for inspection by the NRC. Licensees are also required to advise the NRC by letter, within 60 days of receipt of Supplement 1 to the bulletin, whether actions requested in the supplement have been completed and implemented. The Staff considers responses to both the bulletin and the supplement, which are acceptable to the Staff, to be adequate justification on the part of licensees for continued operation. Consequently, your request is denied.

12. *Order All BWR Licensees to Submit a Report to the NRC Within 1 Year Demonstrating Compliance with Criterion 12 Given in 10 C.F.R. Part 50, Appendix A (GDC 12)*

As indicated previously in § A.1, the NRC Staff's position regarding compliance with GDC 12 is that, regardless of the magnitude of the calculated decay ratio, each BWR licensee should have in place the necessary operating limitations, response procedures, and operator training program that permit plant operators to identify and terminate limit cycle oscillations.

The Staff's position was communicated to licensees in NRC Bulletin No. 88-07, through meetings with the BWROG, and in Supplement 1 to NRC Bulletin 88-07. The Staff believes that actions licensees are expected to take in response to NRC Bulletin 88-07 are sufficient to ensure compliance with GDC 12 for core-wide oscillations. However, if plant inspections reveal that actions taken by licensees are inadequate, plant-specific actions would be pursued at that time. With respect to regional oscillations, procedures specified in Supplement 1 to NRC Bulletin 88-07 ensure that such oscillations would be suppressed quickly with an anticipatory reactor scram initiated manually by a reactor operator. As discussed previously, the Staff believes that implementation of these procedures will ensure continued safe plant operation in the interim until long-term corrective actions are developed and put in place.

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

**FOR THE NUCLEAR
REGULATORY COMMISSION**

**Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation**

Dated at Rockville, Maryland,
this 27th day of April 1989.

[The attachments have been omitted from this publication but can be found in the NRC Public Document Room, 2120 L Street, NW, Washington, DC 20555.]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF THE EXECUTIVE DIRECTOR FOR OPERATIONS

Victor Stello, Jr., Executive Director Operations

In the Matter of

Docket No. PRM 50-48

UNIVERSITY OF MISSOURI

April 5, 1989

The Nuclear Regulatory Commission (NRC) is denying a petition for rule-making (PRM 50-48) filed by Mr. William F. Reilly, Manager, Reactor Upgrade Project, and endorsed by Dr. Don M. Alger, Associate Director, Research Reactor Facility of University of Missouri. The petition is being denied because: (1) the existing regulations are adequate to ensure protection to public health and safety in licensing test reactors and testing facilities; (2) the proposed amendments would not sufficiently protect the public health and safety; and (3) the need for the clarifications proposed is not otherwise demonstrated by the documentation provided by the Petitioner. The petition requested that NRC amend its regulation to add a new definition for the term "research reactor" and redefine the terms "testing facility" and "testing reactor" based on the function of the facility and its power level. The Petitioner stated that the current definition of "testing facility" results in excessive and unnecessary regulatory requirements being applied to research reactors which are contrary to congressional intent in the Atomic Energy Act of 1954.

REGULATIONS: DEFINITION (TEST FACILITY)

When the current definition of testing facility was proposed in 1959, the Atomic Energy Commission (AEC) adopted a definition based on the type of facility that would involve a significant hazards consideration. The Advisory Committee on Reactor Safeguards (ACRS) reviewed and agreed on this definition. These definitions are still valid and conservative when considered in light of current technology. Facilities with thermal power levels above 10 megawatts are currently regulated as testing facilities.

REGULATIONS: DEFINITION (RESEARCH REACTOR)

The definition of research reactor appears in the existing regulations in 10 C.F.R. § 170.3(h). If a nonpower reactor is not a test reactor or test facility, it is a research reactor; therefore, a need for clarification does not exist. Because of power levels and postulated accident considerations, the existing regulatory process for testing facilities and testing reactors is intended to be more comprehensive than that for research reactors.

REGULATIONS: DEFINITION (RESEARCH REACTOR AND TEST REACTOR)

All the distinctions between research and test reactors in the regulations at 10 C.F.R. Parts 50, 140, and 170 have been promulgated by NRC to ensure the protection of public health and safety and the environment. These distinctions reflect the importance of reactor power level, postulated accidents, and facility function in NRC licensing decisions.

RESEARCH AND TESTING FACILITIES: LICENSING ACTIONS

The regulatory process used in any licensing action must be of sufficient detail to ensure protection of the health and safety of the public. The NRC Staff considers the power level of the facility and postulated accidents to be important safety considerations when evaluating licensing actions on research reactors and testing facilities. The present regulatory options available to the Staff for research reactors (such as referring an application to the ACRS) will continue to exist and will be used by the Staff if warranted.

RESEARCH AND TESTING FACILITIES: LICENSING ACTIONS

A licensee can apply to operate a research reactor with a power level greater than 10 MW(t) if it follows the current licensing process for a testing facility. Because the existing regulations for testing facilities and testing reactors are of greater complexity than those for research reactors, it may require a longer time to complete a testing reactor licensing action. Nevertheless, ensuring the health and safety of the public takes precedence over arbitrarily relaxing licensing requirements for operation.

DENIAL OF PETITION FOR RULEMAKING

I. BACKGROUND

In a letter dated November 19, 1987, Dr. Don M. Alger, Associate Director, Research Reactor Facility, University of Missouri, filed with NRC a petition for rulemaking (PRM 50-48). The Petitioner requested that NRC amend its regulations to add a new definition for the term "research reactor" and redefine the term "testing facility" based on the function of the facility and its power level. The proposed petition was published in the *Federal Register* on March 1, 1988 (53 Fed. Reg. 6159). The 60-day public comment period ended May 2, 1988.

II. BASIS FOR REQUEST

The Petitioner bases the petition on the fact that the current definition of "testing facility" in 10 C.F.R. Part 50 results in excessive and unnecessary routine regulatory requirements being applied to research reactors which is contrary to congressional intent in the Atomic Energy Act of 1954. The Petitioner also proposes to add a definition in Part 50 for "research reactor" to be consistent with the definition used by the American Nuclear Society (ANS) and American National Standards Institute (ANSI). The Petitioner currently operates a research reactor at a maximum power level of 10 MW(t), and plans are being developed to upgrade the power to approximately 30 MW(t). This power upgrade would result in the change of the "research reactor" designation to that of a "testing facility." The Petitioner contends that such a designation would place unnecessary and burdensome regulatory requirements on research reactors similar to those required of power reactors.

The Petitioner believes that the petition establishes a balanced regulatory program for the University of Missouri and future research reactors to ensure the public health and safety without inhibiting the conduct of vital research in the areas of medical research, radioisotope production, material research, neutron activation analysis, radiation effects, and others. The Petitioner further believes that test facilities were intended by Congress to be encompassed in § 104c of the Atomic Energy Act of 1954 (construction application of testing facility). Although this section of the Act does not mention or define "testing facility," the Commission could issue licenses to persons applying for utilization and production facilities useful in the conduct of research and development activities.

III. PUBLIC COMMENTS ON THE PETITION

A notice of receipt of petition for rulemaking was published in the *Federal Register* on March 1, 1988 (53 Fed. Reg. 6159). Interested persons were invited to submit written comments concerning the petition during the 60-day public comment period which ended May 2, 1988.

Fifteen letters were received commenting on the petition. These letters came from universities, government agencies, industry, public interest groups, and an individual. Eleven comments favored the petition and four opposed the petition. The significant comments supporting the petition are summarized below:

1. Clarifications are necessary to specify which regulations apply to research reactors. These clarifications would eliminate the confusion associated with commingled power reactor regulations.
2. A clear distinction among the terms "research reactor," "testing facility," and "testing reactor" should be established.
3. The arbitrary designation for testing facility based on power-level threshold that has little, if any, technical basis, should be eliminated, thereby allowing certain vital research to be performed in a more expeditious manner.

The significant comments opposing the petition are summarized below:

1. It is not prudent to ignore power level in the classification of research reactors used for research purposes from that of power reactors and testing facilities.
2. Protection of public health and safety should be the foremost consideration when amending the regulations in 10 C.F.R. Chapter I.
3. Recourse to seek exemption from regulation should be on a case-by-case basis.
4. The proposed definition implies that testing would be done only at "research reactors" and prevents use of a "testing facility" for other types of work for which it may be suited.
5. Research can be conducted adequately at present or lower power levels.

IV. ANALYSIS OF PUBLIC COMMENTS

Two commenters made the comment that the proposed rule would clarify in the regulations where research reactor regulations apply and would eliminate confusion with power reactor regulations.

In response, the NRC Staff recognizes that the regulatory requirements for test and research reactors appear throughout Title 10 of the *Code of Federal Regulations*. However, upon review of any particular part or section

of the regulations, it is clear what reactor types are being addressed. This petition would change the definitions for "testing facility," "testing reactor," and "research reactor." Where these definitions appear or do not appear in the regulations would not change. Therefore, the clarity of the regulations would not be affected by the petition for rulemaking.

One commenter stated that the petition would establish clear distinction between terms "research reactor" and "testing facility."

In response, these terms are clearly and specifically defined in the existing Title 10 of the *Code of Federal Regulations*. To date, there have not been any instances where uncertainty about a facility has occurred. The petition, if implemented, would replace the existing definitions with no significant improvement in clarity.

Seven commenters stated that adopting this proposal would eliminate the arbitrary designation for testing facility based on a 10-MW-thermal power threshold that holds little, if any, technical basis.

In response, when the current definition of testing facility was proposed in 1959, the Atomic Energy Commission (AEC) adopted a definition based on the type of facility that would involve a significant hazards consideration. The Advisory Committee on Reactor Safeguards (ACRS) reviewed and agreed on this definition. These definitions are still valid and conservative when considered in light of current technology.

One commenter indicated that the petition would allow vital research to be performed in a more expeditious manner.

In response, it is true that a higher power research reactor has a higher neutron flux and the ability to conduct research that would be difficult or very time consuming at a lower power level. However, a licensee can apply to operate a research reactor with a power level greater than 10 MW(t) if it follows the current licensing process for a testing facility. Because the existing regulations for testing facilities and testing reactors are of greater complexity than those for research reactors, it may require a longer time to complete a testing reactor licensing action. Nevertheless, ensuring the health and safety of the public takes precedence over arbitrarily relaxing licensing requirements for operation.

Two commenters stated that it is not prudent to ignore power level in the classification of reactors used for research purposes.

In response, the regulatory process used in any licensing action must be of sufficient detail to ensure protection of the health and safety of the public. The proposed changes in the definitions would change the existing regulatory process for reactors with power levels above 10 MW(t). The NRC Staff considers the power level of the facility and postulated accidents to be important safety considerations when evaluating licensing actions on research reactors and testing facilities. The present regulatory options available to the Staff for research

reactors (such as referring an application to the ACRS) will continue to exist and will be used by the Staff if warranted.

V. REASONS FOR DENIAL

The decision to deny the petition was based on: (1) NRC considering the contents of the petition, (2) the public comments received, and (3) the current regulatory structure affecting the licensing of research reactors, testing reactors, and testing facilities. The discussion that follows addresses the significant points in the Petitioner's proposal and NRC's response to these points.

The Petitioner proposed that the Commission adopt a regulation that would add a new definition for the term "research reactor" and redefine the terms "testing facility" and "testing reactor" based on the function of the facility and its power level.

- *Proposed New Definition:*

"Research reactor" means a nuclear reactor licensed by the Commission under the authority of subsection 104c of the Act and pursuant to the provisions of § 50.21(c) of this chapter for research, developmental, educational, training, or experimental purposes, and which may have provision for production of nonfissile radioisotopes.

- *Proposed New Definition:*

"Testing facility" means a nuclear reactor of a type described in § 50.21(c) to be used for testing reactor components and designs at reduced or uncertain safety margins, and for which an application has been filed for a license authorizing operation at:

- (a) A thermal power level in excess of 10 megawatts; or
- (b) A thermal power level in excess of 1 megawatt, if the reactor is to contain:
 - (i) A circulating loop through the core in which the applicant proposes to conduct fuel experiments; or
 - (ii) A liquid fuel loading; or
 - (iii) An experimental facility in the core in excess of 16 square inches in cross-section.

The definition of research reactor appears in the existing regulations in 10 C.F.R. § 170.3(h). If a nonpower reactor is not a test reactor or test facility, it is a research reactor; therefore, a need for clarification does not exist. Because of power levels and postulated accident considerations, the existing regulatory process for testing facilities and testing reactors is intended to be more comprehensive than that for research reactors.

The Petitioner suggests adding to the definition for testing reactor and testing facility the function of the reactor by including the testing of reactor components and designs at reduced or uncertain safety margins. The Petitioner does not provide justification as to what levels of reduction in safety margin is acceptable. The Petitioner's proposal does not demonstrate why the existing regulatory process is not sufficient to protect the health and safety of the public and the environment.

In the Petitioner's proposed definition, it is not clear where a research reactor (the type of reactor described in § 170.3(h) or 10 C.F.R. § 50.21(c)), that operates at a thermal power level of 10 megawatts or less, or that does not operate at a thermal power level in excess of 1 megawatt with a circulating loop, liquid fuel loading, or an experimental facility in the core in excess of 16 square inches in cross-section that would be used for testing reactor components and designs at reduced or uncertain safety margins, would be considered under the proposed regulations. The Petitioner-proposed definitions of testing facility and testing reactor involve both reactor function and power level. This is an area of uncertainty that has not been addressed by the Petitioner in any of the documentation submitted.

The changes in the definition that the Petitioner has proposed would result in facilities being regulated as research reactors at thermal power levels above 10 megawatts if the facility did not engage in testing reactor components and designs at reduced or uncertain safety margins. Facilities with thermal power levels above 10 megawatts are currently regulated as testing facilities. Thus, this represents a decrease in the scope of the regulatory requirements. The Petitioner has not stated if a reactor thermal power level exists where the scope of the regulatory process should be increased. The Petitioner has not provided any justification to show that reactor power level is independent of the potential hazard to the health and safety of the public and environment. Also, the Petitioner does not justify the decrease in the scope of the regulatory process except to state that the current definitions are arbitrary. In addition to reviewing the petition and comments from the public, the petition was also examined against the existing regulatory requirements affecting test reactors. These regulations are briefly listed as follows:

1. 10 C.F.R. § 50.2 defines "testing facility" as a nuclear reactor that is of a type described in 10 C.F.R. § 50.21(c) and for which an application has been filed for a license authorizing operation at:
 - (a) A thermal power level in excess of 10 megawatts; or
 - (b) A thermal power level in excess of 1 megawatt, if the reactor is to contain
 - (i) A circulating loop through the core in which the applicant proposes to conduct fuel experiments; or

- (ii) A liquid fuel loading; or
 - (iii) An experimental facility in the core in excess of 16 square inches in cross-section.
2. *10 C.F.R. § 50.21(c)* describes a requirement for a production or utilization facility for conducting research and development activities of the types specified in § 31 of the Act, and which is not a facility of the type specified in paragraph (b) of this section or in 10 C.F.R. § 50.22.
 3. *10 C.F.R. § 50.30(f)* requires an environmental report to be submitted with an application for a testing facility construction permit or operating license.
 4. *10 C.F.R. § 50.58* requires ACRS review and report for testing facility construction permit or operating license.
 5. *10 C.F.R. § 50.92(a)* requires a construction permit for a material alteration to a licensed facility and public notice according to 10 C.F.R. § 2.105 (30 days' notice and opportunity for hearing where an amendment to a license involves a significant hazard consideration).
 6. *10 C.F.R. § 140.3(k)* defines "testing reactor" as a nuclear reactor of a type described in 10 C.F.R. § 50.21(c) of this chapter and for which an application has been filed for a license authorizing operation at:
 - (a) A thermal power level in excess of 10 megawatts; or
 - (b) A thermal power level in excess of 1 megawatt, if the reactor is to contain:
 - (i) A circulating loop through the core in which the applicant proposes to conduct fuel experiments; or
 - (ii) A liquid fuel loading; or
 - (iii) An experimental facility in the core in excess of 16 square inches in cross-section.
 7. *10 C.F.R. § 170.3(h)* defines "research reactor" as a nuclear reactor licensed by the Commission under the authority of subsection 104c of the Act and pursuant to the provisions of 10 C.F.R. § 50.21(c) of this chapter for operation at a thermal power level of 10 megawatts or less, which is not a testing facility as defined by paragraph (m) of this section.
 8. *10 C.F.R. § 170.3(m)* defines "testing facility" as a nuclear reactor licensed by the Commission under the authority of subsection 104c of the Act and pursuant to the provisions of 10 C.F.R. § 50.21(c) of this chapter for operation at:
 - (a) A thermal power level in excess of 10 megawatts; or
 - (b) A thermal power level in excess of 1 megawatt, if the reactor is to contain:

- (i) A circulating loop through the core in which the applicant proposes to conduct fuel experiments; or
- (ii) A liquid fuel loading; or
- (iii) An experimental facility in the core in excess of 16 square inches in cross-section.

All the distinctions between research and test reactors cited in the above regulations have been promulgated by NRC to ensure the protection of public health and safety and the environment. These distinctions reflect the importance of reactor power level, postulated accidents, and facility function in NRC licensing decisions. The NRC, in light of this petition, has reexamined its regulations and determined that no additional action is required at this time.

Accordingly, the Commission determines that rulemaking is not necessary at this time.

FOR THE NUCLEAR
REGULATORY COMMISSION

Victor Stello, Jr.,
Executive Director for Operations

Dated at Rockville, Maryland,
this 5th day of April 1989.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket Nos. 50-443-OL-1
50-444-OL-1
(Onsite Emergency Planning
and Safety Issues)

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

May 3, 1989

The Commission denies a "Second Motion for Reconsideration of CLI-88-10," in that Intervenors have again fundamentally misperceived the purpose and nature of the decommissioning *funding* requirements and thus failed to make a case for reconsideration. The Commission finds that the changed circumstances brought to them by Intervenors should not be expected to alter substantially the sums estimated by the Commission.

ATOMIC ENERGY ACT: WASTE DISPOSAL

Even in the event that all three waste disposal sites were barred to Seabrook and the state of New Hampshire does not move to meet its obligations under LLRWPA, the Commission sees no need to alter its decision in CLI-88-10, 28 NRC 573 (1988).

ATOMIC ENERGY ACT: WASTE DISPOSAL

NRC: CONSIDERATION OF ECONOMIC MATTERS

NUCLEAR WASTE POLICY ACT: FUNDING FOR DISPOSAL OF SPENT FUEL

OPERATING LICENSE(S): DISPOSAL OF SPENT FUEL

No demonstration has been made to cause the Commission to believe that the sum that it ordered to be set aside in CLI-88-10, including a contingency in excess of \$14 million, is inadequate to provide the requisite assurance for the limited additional potential costs of continued onsite storage for the term of years until the state of New Hampshire itself becomes responsible for the waste.

ATOMIC ENERGY ACT: WASTE DISPOSAL

NRC: CONSIDERATION OF ECONOMIC MATTERS

NUCLEAR WASTE POLICY ACT: FUNDING FOR DISPOSAL OF SPENT FUEL

OPERATING LICENSE(S): DISPOSAL OF SPENT FUEL

RULES OF PRACTICE: RECONSIDERATION PETITIONS

The Commission finds that the changed circumstances brought to it by Intervenors should not be expected to alter substantially the sums estimated by the Commission, and thus reconsideration is not warranted.

RULES OF PRACTICE: RECONSIDERATION PETITIONS

Because of allegedly changed circumstances that could not have been brought to them, the Commission gives consideration here to matters beyond the original record of the order for which reconsideration is sought.

MEMORANDUM AND ORDER

By this order the Commission rules on the "Second Motion for Reconsideration of CLI-88-10" ("Motion"), filed on March 3, 1989, by the Attorney General of Massachusetts (MassAG) on behalf of himself, the Seacoast Anti-Pollution League and the New England Coalition on Nuclear Pollution (collec-

tively “Intervenors”).¹ CLI-88-10,² among other things, established decommissioning *funding* requirements which Applicants must meet before a license can issue permitting low-power testing operations at Seabrook. Intervenors ask that the Commission, on reconsideration of that order, “remand the issue of low-level waste generation and disposal to the Licensing Board for litigation”³ based on factual allegations of the unavailability of low-level waste disposal sites. As the Commission explains briefly below, the Intervenors have again fundamentally misperceived the purpose and nature of the decommissioning *funding* requirements and thus failed to make a case for reconsideration.

In CLI-89-3⁴ (denying reconsideration of CLI-88-10), the Commission reiterated that it had established specific financial assurance requirements to provide reasonable assurance of the availability of decommissioning funding in the event low-power testing had occurred but a full-power license was not authorized. The Commission made clear that to effect a change in the Commission’s dollar requirements a party would at the least have to “squarely challenge those included in the Commission’s determination.” CLI-89-3, 29 NRC at 241.

Intervenors’ Motion argues that South Carolina’s denial of access by New Hampshire to the low-level-waste regional disposal facility located at Barnwell, South Carolina, and the State of Washington’s denial of access to the facility at Richland, Washington, along with the expected denial by Nevada to the facility at Beatty, Nevada, would ensure that low-level waste generated by low-power operation at Seabrook cannot now be shipped off site.⁵ Intervenors fail to assert what the projected increase in costs of lengthier onsite storage would be, but simply say they must be explored. The Commission disagrees.

Even in the event that all three waste disposal sites were barred to Seabrook and the state of New Hampshire does not move to meet its obligations under LLRWPA — matters that, except for purposes of argument, we may not assume to be true, the Commission sees no need to alter its decision in CLI-88-10. No demonstration has been made to cause the Commission to believe that the sum that it ordered set aside in CLI-88-10, including a contingency in excess of \$14 million, is inadequate to provide the requisite assurance for the limited additional potential costs of continued onsite storage for the term of years until

¹ The Applicants filed their response on March 13, 1989, and the Staff, in turn, filed on March 20, 1989.

² CLI-88-10, 28 NRC 573 (1988).

³ Motion at 2.

⁴ 29 NRC 234 (1989).

⁵ Denial of access is permitted under provisions of the Low-Level Radioactive Waste Policy Act of 1985, 42 U.S.C. § 2011b, et seq. (LLRWPA). In particular, 43 U.S.C. § 2021e(c)(2)(B) establishes requirements for states or interstate compact regions that do not have operating low-level radioactive waste disposal sites and permits sanctions against those states or compacts that do not meet milestones toward the development and licensing of their own disposal sites. Failure to meet the January 1, 1989 milestone subjects the delinquent state or compact to the possibility of a bar of future shipments of waste into Barnwell, Richland, and Beatty.

the state of New Hampshire itself becomes responsible for the waste.⁶ Under LLRWPA, costs to Applicants of low-level waste storage are limited to those accruing until January 1, 1996.⁷

The Commission adheres to the view that it previously emphasized:

The Commission has not determined that decommissioning will be required after low power but simply that in these unique circumstances *financial* protections should be in place to provide reasonable assurance of the availability of funds should commercial operation not occur. In that light the Commission did not require or expect that the analysis of the costs of decommissioning would include precise information The Commission expected approximate estimates of costs so that a reasonable minimum sum could be determined and then adequate assurance provided for its availability.

28 NRC at 586 (emphasis in original).

In light of the foregoing discussion, the Commission finds that the changed circumstances⁸ brought to us by Intervenors should not be expected to alter substantially the sums estimated by the Commission and thus that reconsideration is not warranted. Accordingly, Intervenors' Motion is denied.

It is so ORDERED.⁹

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 3d day of May 1989.

⁶The Commission notes, without necessarily relying on, Applicants' evidence by affidavit of the limited nature of such costs. See Applicants' Response at 6, with supporting Affidavit of George S. Thomas, dated March 10, 1989.

⁷42 U.S.C. § 2021e(d)(2)(C) states in relevant part:

If a State (or, where applicable, a compact region) in which low-level radioactive waste is generated is unable to provide for the disposal of all such waste generated within such State or the compact region by January 1, 1996, each State in which such waste is generated, upon the request of the generator or owner of the waste, shall take title to the waste, be obligated to take possession of waste, and shall be liable for all damages directly or indirectly incurred by such generator or owner as a consequence of the failure of the State to take possession of the waste as soon after January 1, 1996, as the generator or owner notifies the State that the waste is available for shipment.

⁸The Commission previously stated that its decision on reconsideration in CLI-89-3 would be only on the existing record. See CLI-89-3, 29 NRC at 239 n.8. Because of allegedly changed circumstances that could not previously have been brought to us, we have given consideration here to matters beyond the original record.

⁹Commissioner Carr was absent for the affirmation of this order. If he had been present he would have approved it.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Lando W. Zech, Jr., Chairman
Thomas M. Roberts
Kenneth M. Carr
Kenneth C. Rogers
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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 18, 1989

The Commission has before it three separate motions seeking to stay authorization to conduct low-power testing at Seabrook. The Commission denies the motions after analyzing the four factors relevant to consideration of stay motions. Those factors did not favor a stay. The Commission finds that Intervenor's claims of harm did not meet the standards of irreparable harm, and Intervenor did not demonstrate how the irreversible effects from irradiating the reactor were harm to them. The Commission found further that Intervenor did not make a strong showing that they are likely to prevail on the merits: (1) Intervenor err in interpreting the Atomic Energy Act to bar *any* operation of a nuclear reactor until *all* issues material to the issuance of a full-power license are decided; (2) low-power operation is not a new circumstance, or a separate federal action, either of which could require further Environmental Impact Statement analysis under NEPA; (3) delay of corrective measures to three items of the Safety Parameter Display System until as late as the first refueling outage would not result in a lack of reasonable assurance of public health and safety.

The Commission found that delay would harm Applicants and would not serve the public interest.

ADMINISTRATIVE PROCEDURE ACT: STAY OF PROCEEDINGS

**RULES OF PRACTICE: STAY OF AGENCY ACTION
(IRREPARABLE INJURY)**

The Commission's determination of whether to grant or deny a stay application involves consideration of four factors. But it is incontrovertible that the most significant factor is whether the party requesting a stay has shown that it would be irreparably injured unless a stay is granted.

**RULES OF PRACTICE: STAY OF AGENCY ACTION
(IRREPARABLE INJURY)**

Simply reciting claims of risk of some future harm, without discussing the likelihood or degree of any such risk does not meet the standard of irreparable harm required by this Commission or the courts.

**RULES OF PRACTICE: STAY OF AGENCY ACTION
(IRREPARABLE INJURY)**

At a nuclear plant that complies with Commission requirements for low-power operation, there is no threat of irreparable harm either from the risks or the irradiation of the reactor that occur during low-power testing.

**EMERGENCY PLAN(S): LOW-POWER LICENSE (COMPARATIVE
RISK ANALYSIS)**

**RULES OF PRACTICE: STAY OF AGENCY ACTION
(IRREPARABLE INJURY)**

The Commission has consistently found that the risk of an accident during low-power operations is not irreparable harm. Certain factors contribute to a substantial reduction in risk and potential accident consequences for low-power testing as compared to the higher risks of continuous full-power operations.

EMERGENCY PLAN(S): LOW-POWER TESTING AND OPERATION

OPERATING LICENSE PROCEEDINGS: RISK ASSESSMENT

The Commission has recognized a somewhat increased risk of operator error in early phases of operations where operators are less experienced, but nonetheless, determined that the slightly higher risks due to the relative inexperience of operators are significantly outweighed.

EMERGENCY PLAN(S): LOW-POWER TESTING AND OPERATION

NRC: AUTHORITY (IMPOSITION OF LICENSE REQUIREMENTS)

OPERATING LICENSE(S): LOW-POWER LICENSE (EMERGENCY PREPAREDNESS)

The greatly lowered likelihood of any offsite harm even in the unlikely event of an accident during low-power testing is all the more true here where the Commission has strictly limited the operation that may occur pursuant to the low-power license.

RULES OF PRACTICE: STAY OF AGENCY ACTION (IRREPARABLE INJURY)

Irradiation of the reactor is not irreparable harm to the intervenors.

RULES OF PRACTICE: STAY OF AGENCY ACTION (IRREPARABLE INJURY)

It is true that criticality of the reactor will irradiate the reactor core and thus effect some irreversible changes. The D.C. Circuit, in denying a stay of low-power operation at the Shoreham reactor, evaluated the irreversible changes from low power and found that they did not rise to the level of irreparable injury.

ATOMIC ENERGY ACT: WASTE DISPOSAL

NUCLEAR WASTE POLICY ACT: FUNDING FOR DISPOSAL OF SPENT FUEL

OPERATING LICENSE(S): DECOMMISSIONING (FUNDING); DISPOSAL OF SPENT FUEL

The Commission's provisions to ensure availability of funds to decommission after low-power testing mean that any necessary action to avoid hazards from radioactive contamination resulting from low-power testing can be taken promptly. Adequate provisions have been made for decontamination and decommissioning of the reactor and the safe storage of nuclear waste until it can be removed from the site.

ADJUDICATORY BOARDS: SCOPE OF REVIEW (OPERATING LICENSE PROCEEDING)

ATOMIC ENERGY ACT: HEARING RIGHT

OPERATING LICENSE(S): LOW-POWER LICENSE (EFFECT ON FULL-POWER LICENSE)

RULES OF PRACTICE: CONTENTIONS (APPEALABILITY OF DISMISSAL); REOPENING OF PROCEEDINGS

No irreparable harm arises from the "potential mootness" of Intervenors' claims. Those claims would not become moot simply by the occurrence of low-power operation. Were Intervenors ultimately to prevail on their claim that the operator-related exercise was wrongly rejected, their contention could be admitted to reopened hearing for adjudication. Were Intervenors to prevail in the ensuing litigation, Applicants would be required to cure whatever deficiencies were found. Thus Intervenors would not be deprived of the opportunity to have their cause of action heard and to receive meaningful relief.

NUCLEAR REGULATORY COMMISSION: AUTHORITY (RELATION TO APPEAL BOARD)

OPERATING LICENSE PROCEEDINGS: ROLE OF COMMISSION

The Commission's consideration of the Onsite Exercise contention, which is before the Appeal Board on the merits, is without prejudice to the merits of Intervenors' ongoing appeal. In order to make the required predictive finding on the likelihood of success on the merits, the Commission must give at least

threshold consideration to the Licensing Board's decision and the record before the Appeal Board.

NUCLEAR REGULATORY COMMISSION: JURISDICTION

OPERATING LICENSE PROCEEDINGS: ROLE OF COMMISSION REGULATIONS: EXEMPTIONS (WAIVER)

RULES OF PRACTICE: WAIVER OF RULES OR REGULATIONS

The Commission's rules are clear that only the Commission may waive a rule in an NRC proceeding. A rule waiver will be presented to the Commission only when the adjudicatory tribunal finds that a *prima facie* case for waiver has been made, but the decision on whether a waiver is necessary rests with the discretion of the Commission.

RULES OF PRACTICE: WITHDRAWAL OF APPLICATION

Withdrawal of an application is neither automatic nor a matter of right, especially where Applicants would be in possession of an irradiated reactor.

ADMINISTRATIVE PROCEDURE ACT: DENIAL OF APPLICATION

NUCLEAR REGULATORY COMMISSION: AUTHORITY

OPERATING LICENSE PROCEEDINGS: ROLE OF COMMISSION

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

The Commission may deny a pending full-power application if it is not pursued. Subsequent to the denial of the application, NRC would nonetheless retain regulatory authority over applicants that are in possession of nuclear materials.

ADMINISTRATIVE TRIBUNALS: JURISDICTION

**NUCLEAR REGULATORY COMMISSION: JURISDICTION;
RULEMAKING AUTHORITY**

**RULES OF PRACTICE: CHALLENGE TO COMMISSION
REGULATIONS; CONTENTIONS (CHALLENGE OF COMMISSION
RULE)**

An adjudicatory licensing hearing is not a permissible forum for a challenge to Commission regulations. Such a challenge may be brought by means of a petition for rulemaking.

ATOMIC ENERGY ACT: HEARINGS; INTERPRETATION

NUCLEAR REGULATORY COMMISSION: AUTHORITY

Intervenors' claim that Congress did not intend to allow plant operation at *any* power level before the conclusion of *all* hearings is difficult to understand in view of the Commission's consistent interpretation of its organic statute as permitting low-power testing before the conclusion of all hearings.

**RULES OF PRACTICE: CHALLENGE TO COMMISSION
REGULATIONS; CONTENTIONS (CHALLENGE OF COMMISSION
RULES)**

Intervenors' challenge to the Commission regulation that specifically eliminates the need for review and findings on offsite state and local emergency response plans before granting a low-power license is impermissible under the Commission rules.

NUCLEAR REGULATORY COMMISSION: AUTHORITY

**REGULATIONS: INTERPRETATION (10 C.F.R. § 50.47(d));
VALIDITY**

**STATUTORY CONSTRUCTION OR INTERPRETATIONS:
GENERAL RULES**

Section 50.47(d) was issued on a legally sound basis, and the Commission has been issuing low-power licenses pursuant to it for 7 years. It is significant that Congress has been made aware of this process and has never suggested that the practice is unlawful.

**NEPA: RELATIONSHIP TO ADMINISTRATIVE PROCEEDINGS;
SUFFICIENCY OF CONTENTIONS**

**NUCLEAR REGULATORY COMMISSION: ENVIRONMENTAL
RESPONSIBILITIES; RESPONSIBILITIES UNDER NEPA**

Intervenor's contention that full-power operation is unlikely amounts to no more than speculation as to the eventual outcome of litigation on offsite emergency planning issues and is not a new circumstance requiring further analysis under NEPA.

**ADJUDICATORY BOARDS: STANDARD OF REVIEW; SCOPE OF
REVIEW (OPERATING LICENSE PROCEEDING)**

**LICENSING BOARD(S): RESPONSIBILITIES (ASSESS HEALTH
AND SAFETY RISKS)**

**NUCLEAR REGULATORY COMMISSION: HEALTH AND SAFETY
RESPONSIBILITIES**

OPERATING LICENSE(S): HEALTH AND SAFETY ISSUES

**RULES OF PRACTICE: COMMISSION REVIEW OF APPEAL
BOARD DECISIONS**

Intervenor provided no explanation to the Appeal Board or to the Commission as to why permitting corrective measures with respect to three items of the Safety Parameter Display System to occur at any time up to the first refueling outage would result in a lack of reasonable assurance that the health and safety of the public will be protected, nor does the Commission find any reason to disturb the contrary conclusions of the two boards which carefully considered this matter.

**OPERATING LICENSE(S): LOW-POWER LICENSE (EFFECT ON
FULL-POWER LICENSE)**

RULES OF PRACTICE: STAY OF AGENCY ACTION

The Commission finds that there will be harm to the Applicants from further delay of low-power testing. In general the Commission has found that longer periods of time for low-power testing hold the advantage that any problem that may be revealed during the testing process can be corrected without delaying full-power operations with their attendant benefits.

ATOMIC ENERGY ACT: RESPONSIBILITY OF NRC
LICENSING BOARD(S): EXPEDITION AND THOROUGHNESS
LICENSING DECISIONS: EXPEDITION AND THOROUGHNESS
SAFETY STANDARDS: COMPLIANCE

The public has an interest in the resolution of licensing proceedings with reasonable expedition. It is consistent with the expressed intent of Congress, which defines the public interest, that a plant that has been found to be safe for the purposes of low-power testing and is ready to be tested be so permitted.

MEMORANDUM AND ORDER

The Commission has before it three separate motions with a single purpose: to stay authorization for Public Service Company of New Hampshire ("PSNH" or "Applicants") to conduct low-power testing at Seabrook.¹ On consideration of these papers and the responses to them, the Commission declines for the reasons set forth below to impose such a stay. A license for the conduct of low-power testing as circumscribed by the Commission's December 21, 1988 order may therefore be issued.² *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-88-10, 28 NRC 573 (1988).³

I. BACKGROUND

Authorization of the issuance of a license to conduct low-power testing at Seabrook was first granted on March 25, 1987, by the Atomic Safety and Licensing Board (Licensing Board) conducting the hearing on onsite emergency planning and safety issues in this proceeding (Onsite Board). Because of a

¹ The motions are: (1) Intervenor's Motion for a Stay of Low-Power Operation Pending Commission or Appellate Review, dated May 8, 1989; (2) Application for Stay on Behalf of Seacoast Anti-Pollution League, dated May 8, 1989; and (3) Intervenor's Motion for a Stay of Effectiveness of LBP-89-4 Pending Appeal, dated February 8, 1989. The stay application on LBP-89-4 (29 NRC 243) was accompanied by Intervenor's request that it be accepted for filing although in excess of the 10-page limitation set forth in our rules. The Commission grants this request, but notes with displeasure that margin requirements were disregarded and that the filing appeared to be unduly freighted with single-spaced footnotes. We do not expect future filings to abuse the Commission's indulgence in this regard. Oppositions to each of the stay applications have been filed by the Applicants and NRC Staff.

² Provisions for the effective date of the authorization to issue a low-power license are set forth at the conclusion of this order.

³ Hereinafter, all administrative decisions in the Seabrook proceeding will be cited only by number and date. The agency's citation system denotes decisions of the Licensing Board Panel as "LBP" decisions, of the Appeal Board as "ALAB," and the Commission decisions as "CLI."

number of intervening actions by the Commission and the Atomic Safety and Licensing Appeal Board (Appeal Board) that license has not been issued. The Commission does not here retrace the complicated litigation over the past 2 years that has prevented the issuance of that license. Suffice it to note that in that time the entire administrative appellate course has run on all issues on which the Seabrook low-power license depends save one — the Licensing Board's rejection of a contention challenging operator performance based on an emergency planning exercise. Nor are there any design or construction problems unresolved for full-power operations. Thus, apart from the exercise contention and emergency planning issues, there is a final agency decision that the Seabrook nuclear facility is safe to operate at full power.

In the 2 years since low-power testing was first authorized for Seabrook, the Commission itself has caused the license to be twice stayed.⁴ First, as a matter of policy, the Commission required Applicants before low-power testing to submit their own plan to protect Massachusetts residents in the EPZ in light of the state and local governments' failure to participate further in emergency planning. That action was completed. *See* CLI-87-2, 25 NRC 267 (1987); CLI-87-3, 25 NRC 875 (1987); and CLI-87-13, 26 NRC 400 (1987). Second, the Commission required that the Applicants present a plan, with supporting documentation, to ensure the availability of adequate funds for decommissioning the reactor in the hypothesized circumstances that low-power testing was conducted at Seabrook and subsequently a license to conduct full-power operations was not granted. *See* CLI-88-7, 28 NRC 271 (1988). That condition has also been fulfilled.

Pursuant to CLI-88-7, Applicants submitted a decommissioning funding plan which in CLI-88-10 the Commission found acceptable in part. To cure those portions that were unacceptable, the Commission ordered modifications to the submittal both to increase significantly the sum of funds to be ensured — from a little over 20 million to 71.2 million dollars — and to provide greater assurance of the availability of those funds. The Commission required the Applicants to submit the necessary assurances for compliance to the NRC Staff for review. Staff in turn was to provide notice to the Commission that CLI-88-10's requirements had been satisfied. *See* CLI-88-10.

At the time of its CLI-88-10 decision, the Commission was aware that a new contention had been put before the Onsite Board. Taking account of this, the Commission provided that a low-power license could issue after the Staff had provided notice of Applicants' compliance with the decommissioning funding requirements, but only after the Licensing Board had resolved the new contention. Recognizing that some parties might wish to seek an agency or a

⁴The Commission's stays did not cover this entire period. Other administrative decisions identified deficiencies in the earlier decisional foundation for low-power operations. *See* ALAB-883, 27 NRC 43 (1988) (remand on public emergency notification). *See also* ALAB-875, 26 NRC 251 (1987) (remanding two rejected contentions).

judicial stay, the Commission also established a period after these conditions were met within which stays could be filed.⁵ The Licensing Board decided the matter before it on January 30, 1989. LBP-89-4, 29 NRC 62 (1989). On May 3, 1989, the NRC Staff provided notice that the Applicants had satisfied the Commission's requirements of CLI-88-10. As noted above, on May 8 and 9, Intervenors filed requests to stay the low-power operation of the Seabrook facility, in addition to the request seeking a stay of LBP-89-4.

The Commission now turns to its decision on those requests.

II. DECISION ON THE STAY FACTORS

The Commission's determination of whether to grant or deny a stay application involves consideration of four factors. See 10 C.F.R. § 2.788(e). But it is incontrovertible that "the most significant factor in deciding whether to grant a stay request is 'whether the party requesting a stay has shown that it will be irreparably injured unless a stay is granted.'" *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-84-17, 20 NRC 801, 804 (1984), citing *Westinghouse Electric Corp.* (Exports to the Philippines), CLI-80-14, 11 NRC 631, 662 (1980). See also *Alabama Power Co.* (Joseph M. Farley Nuclear Plant, Units 1 and 2), CLI-81-27, 14 NRC 795, 797 (1981) (irreparable injury is "the most crucial factor"). Because we find that our determination on that factor does not support the grant of a stay, we turn to it immediately.

A. Whether Low-Power Testing Irreparably Injures Intervenors

Intervenors' Claims

Intervenors⁶ offer a number of largely unsupported assertions of their claim that they will be irreparably harmed by the low-power operation of Seabrook:

1. Intervenors contend that irreparable harm results from the increased risk to the public from low-power testing which permits low-power operations to take place "despite well-documented inadequacies in the training and knowledge of key plant operators." (Since the Commission has identified no "well-documented inadequacies in the training and knowledge of key plant operators," the Commission assumes that Intervenors refer to disagreements they have with NRC

⁵In a later order the Commission established a 9-day briefing period for stay requests and provided parties the assurance that no low-power license would issue until any stay motions had been decided. Order (unpublished) March 22, 1989.

⁶The term "Intervenors" will be used interchangeably to refer to the various groupings of the four parties: Attorney General for the Commonwealth of Massachusetts (MassAG), New England Coalition on Nuclear Pollution (NECNP), Seacoast Anti-Pollution League (SAPL), and the Town of Hampton (TOH).

Staff and FEMA regarding operator emergency performance during a recent emergency planning exercise. This matter is the subject of LBP-89-4.)

2. They contend that even temporary operation at low power will result in irreversible plant contamination caused by radiation of the reactor and its component parts, and the creation of high-level radioactive waste. SAPL claims in addition that it will suffer irreparable harm from the creation of a *de facto* nuclear waste dump at the site.
3. They state that “[o]peration at low power will also result in increased worker exposures, and poses a risk to the public health and safety.”
4. They state further that should a radiological accident occur at the Seabrook plant, it could cause irreversible health damage.
5. Intervenors contend that to permit low-power operations with their irreversible consequences “would be to allow precisely the harm that Congress intended to prevent in enacting § 189(a) of the Atomic Energy Act. See *Commonwealth of Massachusetts v. Watt*, 716 F.2d 946, 952 (1st Cir. 1983).”
6. SAPL further claims harm from the “tendency of low power operation to foreclose alternative courses of action at the site in the event that emergency planning problems prove to be intractable.”
7. In their stay motion on LBP-89-4, Intervenors say that because they seek a hearing on the operator performance issues before low power, irreparable harm would arise from the potential mooted of their appeal of the Licensing Board’s rejection of their emergency planning exercise contention.

Position of Applicants and Staff

In response, the Applicants and Staff emphasize that the plant has been found safe to operate and that under judicially upheld Commission law and precedent, there can be no finding of irreparable harm.

Decision

Neither separately nor in sum do Intervenors’ claims of harm meet the standard of irreparable harm required by this Commission or the courts. *E.g.*, *Cuomo v. NRC*, 772 F.2d 972, 976 (D.C. Cir. 1985), citing *Wisconsin Gas Co. v. Federal Energy Regulatory Commission*, 758 F.2d 669, 674 (D.C. Cir. 1985) (“harm must be both certain and great”).

Essentially, in all its claims except the fifth and seventh as numbered above, Intervenors do no more than recite claims of risk of some future harm, without

discussing the likelihood or degree of any such risk. They also assert claims that irradiating the reactor will result in irreversible effects, without demonstrating how such effects constitute irreparable harm.⁷ On the other hand, as Applicants and Staff have demonstrated, at a nuclear plant that complies with Commission requirements for low-power operation, there is no threat of irreparable harm from either the risks or the irradiation of the reactor that occur during low-power testing. And the Court of Appeals for the D.C. Circuit reached the same conclusion in *Cuomo v. NRC*, 772 F.2d at 976. With the record of this proceeding before us, the Commission concludes that the Intervenor has little likelihood of prevailing on a claim that Seabrook does not meet these requirements.

The Commission has consistently found that the risk of an accident during low-power operations is not irreparable harm. “[C]ertain factors contribute to a ‘substantial reduction in risk and potential accident consequences for low-power testing as compared to the higher risks in continuous full-power operation.’” [Citing 46 Fed. Reg. 61,132 (1981)]. ALAB-865, 25 NRC 430, 436-37 (1987). Even in the unlikely event of an accident during low-power operations, the risks of any offsite harm are substantially less than at full power. See, e.g., CLI-88-10. See also Emergency Planning and Preparedness Final Rule, 47 Fed. Reg. 30,232, 30,233 n.1. (1982).⁸ This is because:

the fission product inventory during low power testing is much less than during higher power operation due to the low level of reactor power and short period of operation. Second, at low power there is a significant reduction in the required capacity of systems designed to mitigate the consequences of accidents compared to the required capacities under full power operation. Third, the time available for taking actions to identify accident causes and mitigate accident consequences is much longer than at full power.

47 Fed. Reg. at 30,232-33.

The Commission has recognized a somewhat increased risk of operator error in early phases of operations when operators are less experienced. Nonetheless, we determined that in light of the three reasons discussed *infra* the “slightly

⁷ To the contrary, for example, Intervenor’s affiant Bridenbaugh has concluded with respect to worker exposures that they “probably would not exceed allowable limits.” Intervenor’s Stay Exhibit 3, Affidavit of Dale G. Bridenbaugh, ¶ 12, dated October 29, 1987. Moreover, that affidavit supports no claim of injury other than economic, and it is far from clear who suffers any economic harm.

⁸ Footnote 1 states as follows:

The level of risk associated with low-power operation has been estimated by the staff in several recent operating license cases: Diablo Canyon, Docket Nos. 275-OL, 323-OL; San Onofre, Docket Nos. 361-OL, 362-OL; and LaSalle, Docket Nos. 373-OL, 374-OL. 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 compared with full power.

higher risks” due to the relative inexperience of operators are “significantly outweighed.” *Id.*

Moreover, the greatly lowered likelihood of any offsite harm even in the unlikely event of an accident during low-power testing is all the more true in this instance where the Commission has strictly limited the operation that may occur pursuant to the low-power license without obtaining additional Commission approval. Under the terms of CLI-88-10, low-power testing operations (not to exceed power levels of 5%) are limited in duration to no more than the equivalent of 0.75 effective full-power hours.

Similarly, irradiation of the reactor is not irreparable harm to the Intervenor. It is true that criticality of the reactor will irradiate the reactor core and thus effect some irreversible changes.⁹ The *Cuomo* Court, in denying a stay of low-power operation at the Shoreham reactor, evaluated the irreversible changes from low power and found that they did not rise to the level of irreparable injury. In ALAB-865, in denying the 1987 stay petition for Seabrook low power, the Appeal Board evaluated nearly identical claims to those before the *Cuomo* Court and found no basis to distinguish them. It specifically concluded “that the contamination of the plant and the possibility that waste may need to be stored” did not constitute irreparable injury. The Appeal Board’s conclusion then was properly founded on Commission and judicial precedent and is directly applicable now. ALAB-865, 25 NRC at 438. Moreover, the Commission’s provisions to ensure availability of funds to decommission after low-power testing, in the hypothesized circumstance that a full-power license would not be granted, mean that any necessary action to avoid hazards from radioactive contamination resulting from low-power testing activity can be taken promptly. They also ensure that the economic burden will not fall on federal, state, or local governments. In short, adequate provisions have been made for decontamination and decommissioning of the reactor and the safe storage of nuclear waste until it can be removed from the site. Under no circumstances will Seabrook be turned into a “waste dump.”

With regard to the fifth and seventh claims, Intervenor appears to be asserting that they would be irreparably harmed by the *potential* mootness of their claims. But those claims would not become moot simply by the occurrence of low-power operation. Because both claims are made under the Atomic Energy Act, the citation to *Commonwealth of Massachusetts v. Watt, supra*, whose holding is restricted to NEPA violations, is inapposite. Nonetheless, that case is instructive that violations of substantive statutes are susceptible to judicial grants

⁹After the projected low-power testing, contamination levels in the reactor will be negligible apart from the irradiated fuel itself. Applicants’ Response, Affidavit of George S. Thomas, ¶ 13.

of relief and thus are unlikely to be mooted.¹⁰ Were Intervenor ultimately to prevail on their claim before us that their operator-related exercise contention was wrongly rejected, their contention could be admitted to a reopened hearing for adjudication relevant to the grant of a full-power license. Were Intervenor to prevail in the ensuing litigation, Applicants would be required to cure whatever deficiencies were found. Thus Intervenor would not be deprived of the opportunity to have their cause of action heard and to receive meaningful relief.

Lacking *any* meaningful showing of irreparable harm to them, there is scarce basis for the Commission to grant Intervenor a stay. The Commission turns nonetheless to the three remaining stay factors.

B. Whether the Movants Have Made a Strong Showing That They Are Likely to Prevail on the Merits

Intervenor MassAG, NECNP, and TOH base their stay motions on claims of error that they group under four headings: (1) Onsite Exercise Contention; (2) Decommissioning; (3) Violations of the Atomic Energy Act; and (4) Violations of NEPA. To these, which SAPL adopts, SAPL adds (5) Partial Deferral of the Safety Parameter Display System.¹¹ Of these issues, all but the first and a single subissue of the second have already received a final agency decision which the Commission has either made itself, reviewed, or after threshold consideration declined to review. *See generally* 10 C.F.R. § 2.786. Thus, only as to two issues is there even the possibility that movants can prevail on the merits before the Commission, let alone make the overwhelming showing needed to outweigh a weak case on irreparable harm. Accordingly, we turn to them first.

1. The Onsite Exercise Contention

This issue arose from the NRC Staff's report on Applicants' onsite emergency planning exercise which was conducted on June 28-29, 1988. The report found no violations, but Staff did find some matters relating to various operator responses which the Staff initially described as weaknesses. The Staff addressed these matters in followup discussions with Applicants, as is the normal pro-

¹⁰ *Watt* also makes clear that simply alleging that a NEPA violation would become moot is insufficient to justify a stay; a NEPA violation must be clearly established. 564 F.2d at 456. *See also Cuomo*, 772 F.2d at 976. And the equities must be balanced and found to favor injunctive relief. *Amoco Production Co. v. Village of Gambell*, 480 U.S. 531 (1987).

¹¹ SAPL also "Simply Notes, But Does Not Argue At Length" what it perceives as several additional failures of the Commission to properly resolve the issues. This listing without more does not warrant individualized Commission response.

cedure.¹² The matters were resolved in some cases by explanations of misunderstandings and in others by commitments to implement various initiatives and recommendations for improved guidance to operators. The issue that is raised by Intervenor is whether they have been wrongfully denied the opportunity, before low power may proceed, to litigate their contention that, contrary to Staff's view, the weaknesses that Staff noted have not been resolved and demonstrate that Applicants' onsite plan does not provide adequate protection for the public at low power.

Intervenor argue, *inter alia*, that the Board erroneously applied the standards for reopening a proceeding, and also misapplied the late-filed contention standards, causing the rejection of their contention regarding the emergency response judgments of various NRC-licensed operators. The Applicants defend the decision of the Board and also maintain that the exercise performance is not a relevant standard for ruling on the adequacy of the Applicants' onsite emergency plan which must be available for low power. They also assert that under the *Shoreham* rule the exercise contention is inadmissible in any event since the Intervenor do not allege a "fundamental flaw" in the plan but at most a training problem. See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-903, 28 NRC 499 (1988). The Staff observed that the reopening determination was unnecessary, and that Intervenor's failure to file their contention timely, and to satisfy late-filed contention requirements, was sufficient to warrant dismissal.

The Commission's consideration of this issue is, of course, without prejudice to the merits of intervenor's ongoing appeal. However, in order to make the required predictive finding on likelihood of success on the merits, the Commission must give at least threshold consideration to the Licensing Board's decision and the record before the Appeal Board. As set forth below, we find that there is not such a likelihood of a changed outcome in the Licensing Board decision that the Commission might, as a matter of discretion, wish to stay the effectiveness of LBP-89-4.

In particular, as reflected in questioning by the Appeal Board at oral argument,¹³ there is at least a reasonable question whether the exercise is material to a decision on the adequacy of the onsite plan for low power.¹⁴ The scenarios

¹² "[I]t is normal NRC procedure, when an exercise inspection report identifies 'open items,' for the Staff to conduct a followup inspection to determine whether those opened items should be closed in a subsequent inspection report." LBP-89-4, 29 NRC at 74.

¹³ Judge Rosenthal: If in fact the Commission has authorized low power with respect to many reactors without an exercise having taken place, would you agree that that is at least implicitly a rejection by the Commission of your position on that?" Transcript of Oral Argument before the Appeal Board, April 21, 1989, at 11.

¹⁴ The Commission directed in CLI-88-10 that a low-power license could not issue in advance of a Licensing Board decision on admission of the contention and if admitted, until the litigation was completed. That direction did not decide that the issue was one properly before the Onsite Board, but simply required that the Onsite Board decide it before low power. If the Board found that the issue was susceptible to litigation before it and otherwise

(Continued)

being tested were those that would bring into play offsite emergency plans and involved larger and more fast-breaking accidents than any that could reasonably be anticipated at low power in the very unlikely event that such an accident should occur at all.

Assuming, without deciding, that Intervenor's are correct that the reopening standard does not apply, substantial timeliness issues must still be resolved to admit a late-filed contention. The answer to the question of whether the contention was timely does not clearly favor Intervenor's. The exercise that is alleged to have revealed the flaws complained of by Intervenor's occurred on June 28-29, 1988; Intervenor's did not file this contention until September 16, 79 days later. Even assuming they needed the exercise report to frame their contention, that was received in mid-July. Even assuming they needed additional exercise information (contrary to the Licensing Board's finding), Intervenor's received that information the "week of" August 15. Since they did not file their contention until September 16, there was a minimum of 27 days from the last day of "the week of August 15" when the *last* of the information they assert was necessary to their contention was received. That contention was the sole contention pertaining, in their view, to the otherwise concluded "onsite" or low-power portion of the hearing. The Commission reasonably demands that contentions filed after the hearing is under way be filed promptly after receipt of the information needed to frame those contentions. *Duke Power Co. (Catawba Nuclear Station, Units 1 and 2)*, CLI-83-19, 17 NRC 1041, 1048 (1983). In these circumstances, we do not now see that there is a substantial likelihood that there will be a reversal of the finding that this contention was not timely and that its late-filing was without good cause.

Without even reaching the "fundamental flaw" issue, the Commission is satisfied that Intervenor's have not demonstrated a likelihood that they will prevail in overturning the result of LBP-89-4. The Commission is also satisfied that, whether it was required or not, the Board's diligent threshold examination of the significant safety question provides important assurance that no significant safety matter has been overlooked. See LBP-89-4, 29 NRC at 72-86.¹⁵

As we have noted *supra*, this onsite exercise contention is the only issue relevant to the safety of Seabrook low-power operations where appellate review of the Licensing Board decision has not been concluded. If the Intervenor's' showing raised a meaningful doubt whether key plant personnel, who had met NRC

admissible, then the Commission required that the litigation be concluded before low-power operations could be authorized.

¹⁵ Of course, even in the absence of the adjudication sought by intervenors the issues presented by the contention are not unexamined ones. FEMA and the NRC Staff have independently been satisfied that the June 28-29, 1988 Seabrook exercise, which included exercise of the Applicants' onsite plan, has demonstrated reasonable assurance of adequate protection for the public. See Letter, Peterson to Stello (Dec. 14, 1988) referencing FEMA's "Seabrook Exercise Report" (Sept. 1, 1988); NRC Staff Inspection Report No. 50-443/88-09 (July 6, 1988).

operator-licensing requirements, were insufficiently trained and knowledgeable to operate Seabrook safely at low power, then the Commission itself would want to examine this matter further. But both FEMA and the NRC Staff have found that the level of training and knowledge is adequate and that the onsite exercise did not show otherwise, even though some problems were observed. The Intervenor's differing evaluation appears largely conclusory and at most simply reflects their disagreement with FEMA and with the Staff's expert evaluation. The Licensing Board's opinion remains under review but the likelihood that the Staff's and FEMA's judgment will be overturned seems small and is certainly not enough to support a stay.

2. Decommissioning

The Commission's rules are clear that only the Commission may waive a rule in an NRC proceeding. See 10 C.F.R. § 2.758. A rule waiver will be presented to the Commission only when the adjudicatory tribunal finds that a *prima facie* case for waiver has been made, but the decision on whether a waiver is necessary rests with the discretion of the Commission. As explained previously, the Commission on analyzing the concerns of the parties found that a waiver of its rule exempting public utilities from financial qualifications review and findings was not needed. This was in large measure because the Commission could reasonably and without a waiver provide the principal relief sought, i.e., assurance that notwithstanding the pendency of a Chapter 11 Bankruptcy proceeding for Public Service Company of New Hampshire, adequate funds would be available to decommission Seabrook under the hypothesized circumstances that low-power operation was concluded and that a full-power license was not granted.

Answers to Intervenor's claims of error in our resolution of what must comprise the decommissioning funding plan may be found in our responses to Massachusetts AG's successive requests for reconsideration of CLI-88-10.¹⁶ We do not repeat them here, nor do we believe that Intervenor can be heard to complain of the Commission's efforts to establish a reasonable funding mechanism for decommissioning. In brief, the Commission rejected Applicants' proffer of \$21 million in an internal fund as insufficient in amount and in security. It required assurance of \$72.1 million dollars prefunded in 1988 dollars in a separate and segregated internal account with specified additional guarantees or by surety or other guarantee method.¹⁷

¹⁶ See CLI-89-3, 29 NRC 234 (1989), and CLI-89-7, 29 NRC 395 (1989).

¹⁷ On review of Applicants' first proffer of compliance, the NRC Staff found that in changing from a prefunded account to a surety method of guarantee to be paid out in successive years as the need arose, Applicants had

(Continued)

One new argument raised in Intervenor's stay papers may be easily dispatched. With regard to implementation of CLI-88-10, Intervenor's argue that the agreement is deficient in that it provides for obligation of the surety only on denial of a full-power license. Intervenor's fear that Applicants might withdraw their application and thus prevent the Commission from denying the license and triggering the surety agreement.

The simple answer is that withdrawal of an application is neither automatic nor a matter of right,¹⁸ especially where as here Applicants would be in possession of an irradiated reactor. The Commission may deny a pending full-power application if it is not pursued. Subsequent to the denial of the application, NRC would nonetheless retain regulatory authority over applicants that are in possession of nuclear materials.

In light of the foregoing, Intervenor's cannot claim a likelihood of success on this issue.

3. *Violations of the Atomic Energy Act*

Intervenor's also claim that the NRC has erred in interpreting the Atomic Energy Act to permit *any* operation of a nuclear reactor before *all* issues material to the issuance of a full-power license are decided. This claim directly challenges the Commission's regulation at 10 C.F.R. § 50.57(c). An adjudicatory licensing hearing is not a permissible forum for a challenge to Commission regulations. See 10 C.F.R. § 2.758. Such a challenge may be brought by means of a petition for rulemaking.

Intervenor's state in their stay motion that "[i]t is clear that Congress did not intend to allow the initial operation of a nuclear power plant at *any* power level" before the conclusion of *all* hearings. Intervenor's Stay Motion at 4. This claim which is unsupported is difficult to understand in view of the Commission's consistent interpretation of its organic statute as permitting low-power testing before the conclusion of all hearings.¹⁹

insufficiently allowed for the sum to be in 1988 dollars. Adjustments increasing the amount of surety were made before Staff provided notice that Applicants had complied.

¹⁸ See 10 C.F.R. § 2.107(a): "The Commission may permit an applicant to withdraw an application . . . , or may, on receiving a request for withdrawal of an application, deny the application or dismiss it with prejudice"

¹⁹ See § 50.57(c), 37 Fed. Reg. 15,127 (1972):

An applicant may, in a case where a hearing is held in connection with [an operating license proceeding] 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. . . .

(Continued)

In particular, Intervenor's have challenged the Commission's regulation that specifically eliminates the need for review and findings on offsite state and local emergency response plans before a low-power license may be granted. See 10 C.F.R. § 50.47(d).²⁰ This challenge is also impermissible under the Commission rules. See 10 C.F.R. § 2.758. Section 50.47(d) of 10 C.F.R. was issued on a legally sound basis, and for 7 years the Commission has been issuing low-power licenses pursuant to § 50.47. It is also significant that Congress has been made aware of this process through quarterly reports which include notification of the issuance of such licenses. Congress has never suggested that the practice is unlawful.

Intervenor's also assert that "even if the Commission reads the Atomic Energy Act as permitting the issuance of low-power licenses, it would be arbitrary and capricious to issue one in this case, in light of the great uncertainty that Seabrook will ever receive an operating license." Intervenor's Stay Motion at 4. Intervenor's profess that there is great uncertainty because the "Commonwealth's nonparticipation in emergency planning" compounds the unlikelihood that Seabrook will meet the Commission's emergency planning regulations and secondly because, in their view, it is highly questionable (although Intervenor's do not state why) that PSNH, "which has declared bankruptcy, will ultimately receive a license to operate Seabrook."

Our discussion of Intervenor's "improbability" claim *infra* at pp. 418-19 is equally applicable here. The Commission will not speculate at this stage whether and, if so, when a full-power license will issue for Seabrook, but we do note the following. In every NRC authorization act that has been passed since 1980, Congress has instructed the Commission to consider utility emergency plans whenever state or local governments refuse to submit plans. The NRC has amended its rules to make clear that it will consider such plans as a basis for a full-power operating license. 10 C.F.R. § 50.47(c). That rule has been judicially upheld. *Commonwealth of Massachusetts v. United States*, 856 F.2d 378 (1st Cir. 1988). The utility has prepared such plans for those portions of the Seabrook EPZ which are in Massachusetts. The plans have been exercised. The emergency planning for both the New Hampshire and Massachusetts portions of the emergency planning zone have been found adequate by FEMA. A Licensing Board has already found that the New Hampshire plan meets the Commission's licensing requirements. LBP-88-32, 28 NRC 667 (1988). Hearings are under way on the utility's plan for the Massachusetts portion of the emergency planning

The Commission has long issued low-power licenses pursuant to § 50.57(c). E.g., *Duquesne Light Co.* (Beaver Valley Power Station, Unit 1), LBP-76-3, 3 NRC 44 (1976). *Consolidated Edison Co. of New York* (Indian Point, Unit 3), LBP-75-18, 1 NRC 431 (1975).

²⁰This provision has been in place since 1982. See 47 Fed. Reg. at 30,236.

zone. In those hearings, FEMA's favorable finding has the status of a rebuttable presumption.

With respect to Public Service's bankruptcy petition, insofar as it has been relevant to our provisions for the public health and safety the Commission has taken account of it and will continue to do so.

In these circumstances we continue to find that eventual full-power licensing of Seabrook is in the "realm of the possible."²¹ Thus it is reasonable for the Commission to act promptly, before a final resolution of all full-power issues, so that the Applicants may derive the full benefits of low-power testing.

4. *Violations of NEPA*

Intervenors contend that low-power operation is either a significant new circumstance necessitating a supplement to the 1982 Final Environmental Impact Statement (EIS) or a separate federal action requiring its own EIS. The sole reason presented for this asserted obligation is the alleged improbability of Seabrook's receiving a full-power license. This improbability, they argue, mandates that the costs and benefits of operating only at low power be separately evaluated.

This is not the first time that the Commission has faced such a NEPA claim. As the Appeal Board observed in rejecting Intervenors' argument, "[t]he principal and decisive difficulty with this line of argument" is that it has been rejected both by us in the *Shoreham* proceeding and by the Court of Appeals for the District of Columbia Circuit. ALAB-875, 26 NRC 251, 259 (1987), citing *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-84-9, 19 NRC 1323, 1326 (1984), and CLI-85-12, 21 NRC 1587, 1589 (1985); *Cuomo v. NRC*, 772 F.2d at 974-76. Intervenors base their belief that full-power operation is unlikely on the fact that in September 1986 the Commonwealth of Massachusetts refused to submit emergency plans for the Massachusetts sector of the 10-mile emergency planning zone (EPZ) around Seabrook.²²

In this proceeding, as in *Shoreham*, the Commission recognized that "low-power testing could be held up if it were established, beyond significant doubt, that there were truly insuperable obstacles to issuance of a license for operation at any substantial power level." CLI-87-2, *supra*, 25 NRC at 271. To assure itself

²¹ See 26 NRC at 404. Given the current state of the record of emergency planning hearings it would appear that PSNH's likelihood of receiving a full-power license is greater than it was when the Commission first made this observation in 1987.

²² Intervenors also assert that "[t]he bankruptcy of Public Service of New Hampshire, the lead applicant for the Seabrook license, considerably deepens the doubt that Seabrook will ever get its full power license." Stay Motion at 6. Why this should be the case is totally unexplained. The PSNH bankruptcy conceivably could affect the utility's ability to decommission the facility should it not ultimately be granted a full-power license. To assure itself that decommissioning funds will be available in such an eventuality, the Commission has required the establishment of a decommissioning surety fund.

that this was not the case, the Commission, as a matter of policy, required the applicants to file an offsite emergency response plan to include the Massachusetts portion of the EPZ. *Id.*; CLI-87-3. The Applicants did so.²³ The Commission examined that plan and concluded that adequate emergency planning for the Massachusetts portion of the EPZ is at least “in the realm of the possible.” CLI-87-13, 26 NRC 400, 404 (1987). While uncertainty exists with respect to the ultimate outcome of the ongoing litigation over the adequacy of offsite emergency planning, such uncertainty is no different from the uncertainty that always exists where full-power issues remain in dispute.²⁴ See 19 NRC at 1327. In short, Intervenor’s contention that full-power operation is unlikely amounts to no more than speculation as to the eventual outcome of litigation on offsite emergency planning issues and is not a new circumstance requiring further analysis under NEPA.

Finally, we repeat here what we said in the *Shoreham* proceeding:

[E]ven were we required to perform some cost/benefit analysis at this interim stage of these proceedings, we would not say that the uncertainty of [Seabrook] full-power operation is so great that it necessitates avoidance of the environmental effects of low-power testing. The environmental effects of low-power testing are well known, i.e., moderate irradiation of the core and contamination of the remainder of the primary coolant system, with no significant impact on the surrounding environment by releases of effluents during normal operation. These effects of low-power testing are subsumed in the FEIS’s analysis of the far greater, but nonetheless very small impacts from full-power operation. In our view, the benefits of low-power operation clearly outweigh the environmental costs.

CLI-85-12, *supra*, 21 NRC at 1590.

5. *Partial Deferral of the Safety Parameter Display System*

SAPL contends that the Appeal Board (ALAB-875, 26 NRC 251, 264-67 (1987)) erred in affirming the Licensing Board’s finding (LBP-87-10, 25 NRC 177, 183-87 (1987)) that certain deficiencies noted by the Staff in the Seabrook Safety Parameter Display System (SPDS) could await correction until the first refueling outage after full-power operation with no undue risk to the public

²³The utility plan addresses the sixteen planning standards by which emergency plans are judged (*see* 10 C.F.R. § 50.47(b) and NUREG-0654) and has compensating measures for the lack of state and local government participation.

²⁴We note again that the Licensing Board resolved all contentions relating to emergency response planning for that portion of the EPZ within New Hampshire in favor of Applicants. LBP-88-32, 28 NRC 667 (1988). We also again note that although Massachusetts refuses to cooperate with Seabrook emergency planning, such cooperation is not a *sine qua non* for a full-power license. 10 C.F.R. § 50.47(c)(1) (1988); *Commonwealth of Massachusetts v. United States, supra*. In this regard the Federal Emergency Management Agency has approved the utility’s plan for the Massachusetts portion of the EPZ, thus establishing a rebuttable presumption that the plan is adequate.

health and safety.²⁵ SAPL argues that such delay ignores the Staff's statement in Supplement 1 that "[p]rompt implementation of an SPDS can provide an important contribution to plant safety." Suppl. 1 at 8.²⁶

It is important to emphasize that what the Appeal Board sanctioned was not a delay in implementation of the entire SPDS but simply a schedule setting the first refueling outage as the deadline for three corrective measures required by the Staff.²⁷ Those measures pertained to (1) the containment isolation display, a device that depicts the open and closed status of valves that come into play when there is a need for the sealing of the containment; (2) the data validation algorithms, a procedure for treating several measurements of the same parameter to obtain the desired signal for the SPDS; and (3) the tests of SPDS computer response time under heavy loading. See 26 NRC at 265-67.

With regard to the first, the Appeal Board noted that witnesses for Staff and Applicants had testified that a modified display on the main control board would suffice until the display was incorporated into the SPDS, a position un rebutted by SAPL. With regard to the second, the Appeal Board noted that the Staff's concern "appeared to be limited to the case where an off-normal signal might lead to a faulty measurement of one of the parameters displayed by the SPDS" but that Staff testimony showed "that, if such a signal should change enough to affect adversely the information conveyed by the SPDS, it would most likely activate an alarm on the main control board . . . [and that] the operators do not rely on SPDS information alone but are required to corroborate any SPDS data with other control room information before taking any corrective action." 26 NRC at 266. With regard to the third, the Appeal Board noted that uncontradicted testimony showed "that some level of plant operation is required

²⁵ Although all the information available on the SPDS is displayed elsewhere in the control room, the SPDS serves the function of providing in a convenient location in the control room a concise display of critical plant data. The key purpose of the SPDS is to aid control room personnel during abnormal or emergency conditions. The SPDS is one of the requirements approved for implementation in NUREG-0737, "Clarification of TMI Action Plan Requirements" (November 1980). Depending upon safety significance and the immediacy of need for corrective action, NUREG-0737 set an implementation schedule specifying that many of the post-TMI requirements be implemented prior to initial criticality, but did not impose such a requirement with respect to the SPDS. In NUREG-0737, Supplement No. 1 (Suppl. 1), published in January 1983, the Staff provided further clarification regarding the SPDS but determined not to specify an implementation schedule. Rather, Staff decided to permit development of plant-specific schedules which would take into consideration the degree of completion of the power plant. Suppl. 1 at 1-2.

²⁶ SAPL tries to convey the impression that because Supplement 1 was published in 1983, deferral of correction of any deficiencies until a point after the beginning of low-power operation at Seabrook cannot be "prompt." This completely ignores the fact that Supplement 1 deliberately chose not to impose generic schedules based upon lapse of time from 1983 but instead recognized that an SPDS must be integrated with other systems, and thus plant-specific schedules were needed based on the point of development of the particular facility.

²⁷ The Staff argued before the Licensing Board that all eleven deficiencies found in a Staff audit of the Seabrook SPDS could await correction until the first refueling outage. The Board examined each deficiency and concluded that, except for three deficiencies that would have to be corrected prior to full-power operation, the Applicants had established that the others either would have no adverse impact on the public health and safety if corrections are deferred to the first refueling outage or had already been corrected by the applicants in such a manner as to protect the public health and safety.

to load the computer to provide a test that will give representative SPDS response times." *Id.* SAPL provided no explanation to the Appeal Board or to us as to why permitting corrective measures with respect to these three items to occur at any time up to the first refueling outage would result in a lack of reasonable assurance that health and safety of the public will be protected nor do we find any reason to disturb the contrary conclusions of the two boards that carefully considered this matter.²⁸

C. Harm to Other Parties

The Commission finds that there will be harm to the Applicants from further delay of low-power testing. In general the Commission has found that longer periods of time for low-power testing hold the advantage that any problems that may be revealed during the testing process can be corrected without delaying full-power operations with their attendant benefits. *See Shoreham*, 21 NRC at 1590.

The anticipated time left for low-power testing before a full-power license can be granted is not long. An Atomic Safety and Licensing Board decision on a full-power license for Seabrook is expected before September 30, 1989. *See* Commission's Memorandum (unpublished), February 3, 1989.²⁹ If that decision is favorable to Applicants, Seabrook could have a full-power license within 5 months after receiving a low-power license. This is no longer than Intervenor's affiant Bridenbaugh has asserted was the average time between the grant of low-power and full-power licenses during a period when he found that the "two-step process worked reasonably well." Intervenor's Stay Exh. 3 at 6-7, ¶ 8 & n.2.

D. Where the Public Interest Lies

Finally, as the Commission has consistently held, the public has an interest in the resolution of licensing proceedings with reasonable expedition.

Furthermore, it is consistent with the expressed intent of Congress, which defines the public interest, that a plant that has been found to be safe for purposes

²⁸ SAPL implies that deferral of these corrections to the first refueling outage means that the Supplement 1 requirement that "operators should be trained to respond to accident conditions both with and without the SPDS available" cannot be met. First, it is misleading to call the SPDS unavailable simply because a few corrections in the system need to be made. Second, the significance of that operator training requirement is that operators are fully able to handle emergencies with or without an SPDS. Thus the incompleteness of an SPDS does not mean that an operator is not trained to respond to accident conditions.

²⁹ In its February 3, 1989 Memorandum, the Commission noted that, extrapolating from the Licensing Board's published schedule, it appeared that September 30, 1989, would be a realistic time to expect a final initial decision on offsite emergency planning. The Commission then stated that it "would like the Licensing Board to inform the Commission promptly if, at any time, it becomes apparent that the September 30, 1989 target schedule for a final initial decision cannot be achieved." The Commission has received no such notification from the Board.

of low-power testing and is ready to be tested be so permitted. It serves the public interest to have adequate time to test and cure any problems revealed in order that if and when the plant is licensed to operate and provide the benefits of nuclear power to the public, there will be no further delay.

Thus, the Commission finds that the public interest does not favor the grant of a stay.

Conclusion

In light of the foregoing, the three pending applications for a stay are denied.

Effectiveness of Order

Intervenors have filed a challenge to the Seabrook low-power license in the U.S. Court of Appeals for the District of Columbia Circuit. *Commonwealth of Massachusetts v. NRC*, No. 89-1306 (D.C. Cir., filed May 11, 1989). In connection with that challenge, Intervenors have also sought a stay of any low-power license for Seabrook pending resolution of the issues raised in their appeal. That stay request has not been acted on by the Court.

Although, for the reasons set forth in this order, the Intervenors have not made a case for a stay, in order to give the Court an opportunity to review these stay claims and any oppositions that may be filed, we are entering a brief housekeeping stay at this time. No license authorizing low-power testing for Seabrook shall issue before May 25, 1989, at 4 p.m. EDT, or such earlier date as the Court may deny the stay requests now before it.

It is so ORDERED.

For the Commission*

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 18th day of May 1989.

*Commissioner Curtiss did not participate in this Order.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

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, 1989

The Commission finds that Intervenors' motion for reconsideration of CLI-89-8, 29 NRC 399 (1989), does not seek reconsideration of matters before the Commission, but rather seeks a stay based on an entirely new theory. The Commission determines that intervenors' failure even to address the irreparable harm factor in the context of the new theory is fatal to the stay motion and therefore denies the motion. The Commission also notes that intervenors have not made the substantial showing required for reopening of a closed record.

RULES OF PRACTICE: REOPENING OF RECORD

A substantial showing would be needed to reopen a hearing where not only is the evidentiary record closed, but also the Commission has issued a final detailed decision.

ORDER

On May 22, 1989 — 2 days before the expiration of the Commission's housekeeping stay to enable the U.S. Court of Appeals for the District of Columbia Circuit to rule on stay motions before it¹ — the Attorney General of the Commonwealth of Massachusetts on his own behalf and on behalf of Seacoast Anti-Pollution League, the New England Coalition Against Nuclear Pollution, and the Town of Hampton (together the "Intervenors") moved the Commission for "reconsideration of CLI-89-8" and renewed Intervenors' request for a stay. But what is sought is not reconsideration of the matters before the Commission; rather, Intervenors seek a stay based on an entirely new theory never presented to us, the Licensing Board, or the Appeal Board. In essence, Intervenors ask that the Commission delay a low-power license until the conclusion of current emergency planning litigation before the "Offsite Board" on a contention that they have not until now claimed was relevant to a low-power license.²

The Commission denies the motion. First, Intervenors added nothing to their previous showing of irreparable harm which the Commission found was insufficient to warrant a stay. See CLI-89-8, 29 NRC at 409-11. The failure even to address the irreparable harm factor in the context of Intervenors' new theory is fatal. Second, Intervenors have not made the substantial showing that would be needed to reopen a hearing where not only is the evidentiary record closed, but also the Commission has issued a final detailed decision. The lateness of Intervenors' raising this new theory constitutes a total failure to timely alert the Commission to their concerns; moreover, it is clear demonstration that this matter is not one that even in Intervenors' eyes jeopardizes the public health and safety during the limited low-power operations authorized for Seabrook.³

¹ *Commonwealth of Massachusetts v. NRC*, No. 89-1306 (D.C. Cir., filed May 12, 1989).

² In contrast, Intervenors did earlier assert that a different contention (one based on the performance of licensed operators) which also flowed from Applicants' emergency planning exercise was relevant to issuance of a low-power license.

³ Pursuant to the Appeal Board's Order (ALAB-916, 29 NRC 434), the Intervenors' contention on which their instant motion is based, which the Licensing Board had this week dismissed for lack of jurisdiction, was reinstated for litigation.

Stay denied.
It is so ORDERED.

For the Commission⁴

JOHN C. HOYLE
Acting Secretary of the
Commission

Dated at Rockville, Maryland,
this 24th day of May 1989.

⁴ Chairman Zech was not present for the affirmation of this Order, if he had been present he would have approved it. Commissioner Curtiss did not participate in this Order.

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 Issues)**

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

May 15, 1989

The Appeal Board affirms a Licensing Board's ruling, LBP-89-3, 29 NRC 51 (1989), denying an intervenor's petition to reopen a closed record to consider certain seismic issues.

RULES OF PRACTICE: REOPENING OF RECORD

A motion to reopen a closed record must address a significant safety or environmental issue. 10 C.F.R. 2.734(a). In addition, such a motion must be accompanied by one or more affidavits which set forth the factual and/or technical bases for the movant's claim that such an issue is involved. Further, the affidavits must be given by competent individuals with knowledge of the facts alleged, or by experts in the disciplines appropriate to the issues raised. 10 C.F.R. 2.734(b).

RULES OF PRACTICE: REOPENING OF RECORD

Reopening motions that do not meet the requirements of 10 C.F.R. 2.734 within their four corners is subject to rejection out-of-hand; i.e., it must appear from the movant's own submissions that the standards for reopening have been satisfied. *Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), CLI-86-1, 23 NRC 1 (1986); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), CLI-86-7, 23 NRC 233 (1986), *aff'd sub nom. Ohio v. NRC*, 814 F.2d 258 (6th Cir. 1987).

RULES OF PRACTICE: REOPENING OF RECORD

A petitioner who seeks to reopen a closed record is not relieved of the requirements of the reopening standard by virtue of being represented by a non-lawyer. *See Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), ALAB-772, 19 NRC 1193, 1247 (1984), *rev'd in part on other grounds*, CLI-85-2, 21 NRC 282 (1985).

APPEARANCES

Elizabeth Dolly Weinhold, Hampton, New Hampshire, appellant *pro se*.

Thomas G. Dignan, Jr., George H. Lewald, Kathryn A. Selleck, Jeffrey P. Trout, Jay Bradford Smith, and Geoffrey C. Cook, Boston, Massachusetts, for the applicants Public Service Company of New Hampshire, *et al.*

Gregory Alan Berry for the Nuclear Regulatory Commission staff.

DECISION

On November 25, 1988, an earthquake occurred in the Province of Quebec in Canada. This event prompted Elizabeth Dolly Weinhold to endeavor to enter the operating license proceeding for the Seabrook nuclear facility on the New Hampshire seacoast — a proceeding that has been in progress for more than seven years.¹ Specifically, in a petition filed on December 5, Ms. Weinhold called upon the Licensing Board to inquire into the significance of the earthquake from

¹ Ms. Weinhold was a party to the construction permit proceeding for the Seabrook facility.

the standpoints of Seabrook's seismic design basis and emergency response plan. The petition asserted that it was filed pursuant to the Rule of Practice authorizing the grant of a motion to reopen a closed record provided that the following criteria are satisfied:

- (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.²

In a January 30, 1989 decision, the Licensing Board denied the petition.³ Ms. Weinhold appeals. The applicants and the NRC staff oppose the appeal. We affirm.

A. Under Commission regulations, a nuclear power plant must be designed to comply with certain seismic and geologic siting criteria contained in Appendix A to 10 C.F.R. Part 100. As we explained several years ago in a decision in the construction permit proceeding for this facility, the "Safe Shutdown Earthquake" (SSE) concept is at the root of those criteria:

The SSE for a particular site is that earthquake "which is based upon an evaluation of the maximum earthquake potential considering the regional and local geology and seismology and specific characteristics of local sub-surface material" and "which could cause the maximum vibratory ground motion at the site. . . ." 10 C.F.R. Part 100, Appendix A, III(c), V(a). The nuclear power plant must be designed so that, should the SSE occur, "certain [specified safety] structures, systems, and components will remain functional." *Id.*, VI(a). . . .

In short, the SSE is the earthquake postulated for the purpose of determining the adequacy of the seismic design of the facility. The plant has to be capable of being safely shutdown despite the effects of whatever vibratory ground motion might be experienced at the site as a result of the SSE. (One of the elements of the SSE determination is, of course, an ascertainment of the amount of such motion (*Id.*, V(a)).)⁴

As discussed in some detail in a later decision in the construction permit proceeding, the size of an earthquake is generally measured in terms of either "magnitude" or "intensity."⁵ Suffice it to say for present purposes that mag-

² 10 C.F.R. 2.734(a). As will be discussed in greater detail below, subsection (b) requires that the motion be supported by one or more affidavits.

The petition also cited 10 C.F.R. 2.714 and 2.805. The former section of the Rules of Practice is concerned with intervention in adjudicatory proceedings; the latter deals with participation in rulemaking proceedings by interested persons and, as such, has no apparent relevance here.

³ LBP-89-3, 29 NRC 51 (1989).

⁴ ALAB-623, 12 NRC 670, 672 (1980) (quoting *Dairyland Power Cooperative (La Crosse Boiling Water Reactor)*, ALAB-618, 12 NRC 551, 552 (1980)).

⁵ See ALAB-667, 15 NRC 421, 436-37 (1982).

nitude, expressed in terms of arabic numerals on the so-called Richter scale, is determined with the aid of various types of seismographs. In sharp contrast, earthquake intensity, which is reflected in roman numerals on the so-called Modified Mercalli scale, is not instrumentally measured. Put into use to estimate the size of earthquakes occurring before instruments had been devised for the measurement of earth movement, the intensity concept has at its root the subjective assessment of that size on the basis of the observed effect of the earthquake on persons and structures (the greater that effect, the higher the assigned numerical value to its intensity).⁶

In the case of the Seabrook site, the SSE was expressed in terms of maximum intensity.⁷ For this purpose, the applicants selected a value of VIII, with an associated maximum vibratory ground motion (i.e., acceleration) at the site of 0.25g. This choice was challenged and extensively litigated in the construction permit proceeding.⁸ Ultimately, it was upheld.⁹

Despite this consideration, Ms. Weinhold's petition rests essentially on the assertion that a 6.0 magnitude has been assigned to the Seabrook SSE, whereas the recent Quebec earthquake had a magnitude of 6.4. Ms. Weinhold has not informed us of the basis for the first prong of that thesis.¹⁰ As to the second prong, the petition points to "reports in local newspapers" to the effect that Mary Cajka, said to be associated with the Geophysics Division of the Geological Survey of Ottawa, Canada, had "issued a statement that the epicenter magnitude of the [Quebec] earthquake was measured as 6.4 and was felt as far west as Cincinnati, Ohio and as far south as Washington, D.C. and parts of Virginia."¹¹ The petition goes on, however, to acknowledge that the National Oceanic and Atmospheric Administration's Earthquake Center in Golden, Colorado, had measured the earthquake as magnitude 6.0 and to express the hope that the variation will be resolved by the agencies in question and a "correct magnitude" supplied to this Commission.¹²

⁶ See *id.* at 437 n.39 for the effects attributed by Charles F. Richter, a preeminent seismologist, to each intensity level from I to XII. For its part, the Richter scale theoretically has no lower or upper limit. See B. Bolt, *Earthquakes — A Primer* (1978) at 106.

⁷ This was because the major earthquakes in the northeast sections of the United States and Canada that were considered in determining the SSE occurred in the eighteenth century, long before the development of seismographs. See ALAB-422, 6 NRC 33, 57, 60-61 (1977).

⁸ See *id.* at 54-65; ALAB-561, 10 NRC 410 (1979); CLI-80-33, 12 NRC 295 (1980); ALAB-667, 15 NRC 421.

⁹ ALAB-667, 15 NRC at 449.

¹⁰ Although the petition does not refer to ALAB-667, in a footnote in that decision we noted parenthetically that a magnitude of 6.0 represents "an intensity of *approximately* VIII." *Id.* at 442 n.45 [emphasis added]. We did not mean to suggest, however, the existence of a precise correlation between specific intensity and magnitude levels. To the contrary, we earlier observed in the same decision that there is expert opinion to the effect that such a correlation does not exist. *Id.* at 429 n.19.

¹¹ Petition (December 5, 1988) at 2.

¹² *Ibid.* The petition also refers to "taped televised news reports and newspapers throughout the nation" that assertedly reported effects of the earthquake that buttress the claim that the event was severe. *Id.* at 8.

On the assumption that the Quebec earthquake had a 6.4 magnitude, the petition maintains that the Seabrook SSE requires reevaluation with the possible consequence that the facility will require modification to ensure its ability to withstand the effects of a larger earthquake than that now postulated.¹³ In addition, Ms. Weinhold advances five contentions that collectively assert that the Seabrook emergency response plan might prove inadequate in the event of an earthquake exceeding a magnitude of 6.0 in eastern United States regions.¹⁴

B. The Licensing Board based its denial of the Weinhold petition on several alternative grounds. We need not explore each of those grounds. As previously noted, Ms. Weinhold's petition seeks to reopen a closed record.¹⁵ It is plain that, as they have been spelled out in both section 2.734 of the Rules of Practice¹⁶ and Commission decisions concerned with record reopenings, the conditions precedent to the grant of such relief have not been satisfied.

Section 2.734(a) mandates that a reopening motion address a significant safety or environmental issue. To enable an informed judgment on whether this requirement has been met, subsection (b) of that section directs that the motion be accompanied "by one or more affidavits which set forth the factual and/or technical bases" for the movant's claim that such an issue is involved. Further, the affidavit(s) "must be given by competent individuals with knowledge of the facts alleged, or by experts in the disciplines appropriate to the issues raised."

The petition at bar is not accompanied by *any* affidavit, let alone one that complies with the dictates of section 2.734(b). To the contrary, all that the petition provided to the Licensing Board was Ms. Weinhold's opinion that the Quebec earthquake has possible safety significance for Seabrook. Even had it been supplied in affidavit form, that opinion scarcely would have fulfilled the obligation imposed by section 2.734(b).

For one thing, the petition is devoid of anything to suggest that Ms. Weinhold has any formal education or professional experience in the highly technical and complex disciplines of geology, seismology and earthquake engineering. In her appellate brief, she concedes as much but maintains that she "has researched the issue of Earthquakes — Seabrook Nuclear Facility since 1971" and was an active participant in the litigation of the seismic issues presented in the construction permit proceeding for the facility.¹⁷ Apart from the fact that not all of these representations are to be found in the petition put before the Licensing

¹³ *Id.* at 1-2.

¹⁴ *Id.* at 9-10.

¹⁵ Ms. Weinhold apparently recognized that such relief was necessary because, at the time of the filing of the petition, there was no open record in this proceeding regarding any seismic issue. See 10 C.F.R. 2.734(d). As previously noted, all questions pertaining to the seismicity of the Seabrook site were litigated in the construction permit proceeding and none of the parties to the operating license proceeding sought to reopen the subject.

¹⁶ 10 C.F.R. 2.734.

¹⁷ Weinhold Brief (February 27, 1989) at 5-6.

Board, however, the bare assertion of self-education presented to us falls far short of demonstrating that Ms. Weinhold is an expert in any of “the disciplines appropriate to the issues raised.”

Further, it appears that Ms. Weinhold cannot even lay claim to having “knowledge of the facts alleged.” As we have seen, the sole source of her insistence that the Quebec earthquake was of 6.4 magnitude are reports in unspecified “local newspapers” that an employee of the Geological Survey of Ottawa had issued a statement to that effect. Inasmuch as the employee was identified by name in the newspaper accounts, at the very least one might have expected Ms. Weinhold to have obtained that person’s affidavit detailing the basis of her knowledge respecting the seismic measurement of the Quebec earthquake. Most significant, once having done that, it would then have been incumbent upon Ms. Weinhold to supply the sworn opinion of a qualified expert on the safety significance to Seabrook operation (including emergency planning) of an earthquake of the measured magnitude occurring at the particular Quebec location.¹⁸

Any possible doubt that the Commission expects its adjudicatory boards to enforce the section 2.734 requirements rigorously — i.e., to reject out-of-hand reopening motions that do not meet those requirements within their four corners — is dispelled by its 1986 decisions in the *Waterford* and *Perry* operating license proceedings.¹⁹ In the former, the Commission addressed the question of our authority to seek additional information from the agency’s Office of Investigations before ruling on a motion to reopen the record on new contentions. Answering that question in the negative, the Commission squarely held that it must appear from the movant’s own submissions that the standards for reopening have been satisfied.²⁰ On the strength of that determination, the Commission rejected the portion of the reopening motion referred to it by us because of the failure of that portion “on its face” to meet those standards.²¹

Shortly thereafter, in *Perry*, the Commission reiterated its *Waterford* ruling in circumstances closely akin to those presented here. In January 1986, a 5.0 magnitude earthquake occurred in the vicinity of the Perry nuclear facility in Ohio. Within a matter of days, an intervenor in the operating license proceeding

¹⁸ That it is far from established that earthquakes in the Province of Quebec have such possible significance is reflected by the discussion in ALAB-422 of the relevance of the 1732 Montreal earthquake to the Seabrook seismic inquiry. See 6 NRC at 60-61.

¹⁹ *Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), CLI-86-1, 23 NRC 1 (1986); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), CLI-86-7, 23 NRC 233 (1986), *aff’d sub nom. Ohio v. NRC*, 814 F.2d 258 (6th Cir. 1987).

²⁰ At the time of the *Waterford* decision, those standards were set forth in adjudicatory decisions such as *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-598, 11 NRC 876, 879 (1980) (cited with approval in *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-2, 21 NRC 282, 311 (1985)). Later in 1986, they were codified in section 2.734, which added the affidavit requirement. See 51 Fed. Reg. 19,535, 19,539, as corrected, 51 Fed. Reg. 23,523 (1986).

²¹ *Waterford*, 23 NRC at 8.

filed a motion with us to reopen the record for the purpose of admitting a new contention challenging, in light of the earthquake, the adequacy of the facility's seismic design. The gravamen of the motion was that the earthquake exceeded the Perry SSE in a particular respect. Following the receipt of the responses of the utility and the NRC staff to the motion, we ordered an exploratory hearing for the purpose of aiding our determination respecting the significance of the earthquake to safe Perry operation.

Acting *sua sponte*, the Commission vacated our orders calling for the exploratory hearing and itself denied the motion to reopen. It said:

Our *Waterford* decision holds that a Board is to decide the motion to reopen on the information before it and has no authority to engage in discovery in order to supplement the pleadings before it. Simply put, the burden of satisfying reopening requirements is on the movant, and Boards must base their decisions on what is before them. That the movant did not meet this burden in the view of the Appeal Board is evident from the Board's order of April 8, 1986, in which it states that it needs the exploratory hearing to aid its "determination respecting *whether the new issue raised by the [intervenor's] motion has true safety significance.*" (Emphasis added.) Accordingly, the Board had no authority to pursue this matter as it did. See also *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-7, 21 NRC 1104, 1106 (1985).²²

The short of the matter thus is that a grant of the Weinhold petition would fly in the teeth of both the explicit terms of the governing Rule of Practice and controlling Commission precedent. This being so, the outcome below was mandated.

For the foregoing reasons, the Licensing Board's January 30, 1989 denial of Ms. Weinhold's petition, LBP-89-3, 29 NRC 51, is *affirmed*.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

²² *Perry*, 23 NRC at 235-36. The Commission went on to note the intervenor's concession that there was no engineering significance to the respect in which the earthquake exceeded the facility's seismic design. *Id.* at 236. That consideration does not, however, appear to have been crucial to its decision.

It is worthy of passing mention that the Perry intervenor was represented by an individual who, in common with Ms. Weinhold, was not a lawyer. The Commission obviously did not regard that consideration to affect the intervenor's affirmative obligation to meet the reopening standard. Similarly, Ms. Weinhold's *pro se* status here did not relieve her of that obligation. See *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), ALAB-772, 19 NRC 1193, 1247 (1984), *rev'd in part on other grounds*, CLI-85-2, 21 NRC 282 (1985).

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 Issues)

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

May 24, 1989

The Appeal Board grants directed certification and reverses a Licensing Board's oral ruling "expunging" for lack of subject matter jurisdiction a portion of a previously admitted contention of an intervenor in the proceeding.

RULES OF PRACTICE: INTERLOCUTORY APPEALS

An appeal board normally undertakes discretionary interlocutory review only where the ruling below either (1) threatened the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated by a later appeal or (2) affected 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) (footnote omitted).

LICENSING BOARDS: ASSIGNMENT OF RESPONSIBILITY

In the absence of contrary directions from the Commission, the Chief Administrative Judge of the Licensing Board Panel is empowered both (1) to establish two or more licensing boards to hear and decide discrete portions of a licensing proceeding; and (2) to determine which portions will be considered by one board as distinguished from another. *See, generally*, 10 C.F.R. 2.704, 2.721.

LICENSING BOARDS: ASSIGNMENT OF RESPONSIBILITY

The power of the Chief Administrative Judge of the Licensing Board Panel (1) to establish two or more licensing boards to hear and decide discrete portions of a licensing proceeding; and (2) to determine which portions will be considered by one board as distinguished from another must be exercised within the confines of the totality of issues that are properly before one Board or another as a result of the notice of hearing or some Commission directive. *See Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear 1), ALAB-619, 12 NRC 558, 565 (1980); *Commonwealth Edison Co.* (Carroll County Site), ALAB-601, 12 NRC 18, 24 (1980); *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289 n.6 (1979); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976).

APPEARANCES

John Traficonte, Boston, Massachusetts, for the intervenor Attorney General of Massachusetts.

Thomas G. Dignan, Jr., George H. Lewald, Kathryn A. Selleck, Jeffrey P. Trout, Jay Bradford Smith, Geoffrey C. Cook, and William Parker, Boston, Massachusetts, for the applicants Public Service Company of New Hampshire, *et al.*

Sherwin E. Turk for the Nuclear Regulatory Commission.

MEMORANDUM AND ORDER

Before us is the May 23, 1989, motion of the intervenor Attorney General of Massachusetts seeking directed certification (i.e., interlocutory review under

10 C.F.R. 2.718(i)¹) of a May 22, 1989, oral ruling of the Licensing Board in this operating license proceeding involving the Seabrook nuclear power facility. That ruling "expunged" for lack of jurisdiction over the subject matter a portion of a previously admitted contention (MAG EX-19) proffered by the Attorney General. Because of the apparent necessity for a prompt decision on the motion, we directed that the responses of the applicants and the NRC staff be in our hands by 9:00 a.m. this morning.² Upon consideration of the motion and the responses, we conclude that interlocutory review is warranted and that the challenged ruling is erroneous. Accordingly, we grant directed certification and reverse the ruling.

A. Insofar as here relevant, contention MAG EX-19 asserts (in Basis D) that the June 1988 exercise of emergency response plans for the Seabrook facility disclosed that the computer model utilized to develop protective action recommendations (PARs) contained fundamental flaws. This contention was submitted by the Attorney General on September 21, 1988, in accordance with a schedule promulgated by the Licensing Board assigned to consider "offsite emergency planning issues." In an unpublished December 15, 1988, memorandum and order, the Board admitted, *inter alia*, that portion of the contention.

In expunging Basis D for the contention in its oral ruling now under attack, the Licensing Board (through its Chairman) explained that it was without jurisdiction to consider that Basis. This conclusion stemmed from the insistence of the Attorney General that a precondition to low-power operation is an acceptable computer model for PARs generation. According to the Board, it lacks the jurisdiction to entertain so-called "low-power" issues.³ Apparently, the Board believes that such issues come within the exclusive province of the separate Licensing Board that had been established some time ago to consider safety and onsite emergency planning issues.⁴

B. The directed certification motion at hand would have us review the conclusion of the Board below respecting the outer bounds of its jurisdiction. The first question we must address is whether the standard for interlocutory review of Licensing Board action is here satisfied. Given the proscription against interlocutory appeals found in the Commission's Rules of Practice,⁵ we

¹ See *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478, 482-83 (1975).

² See May 23, 1989, order (unpublished). The need for expedition rested on the fact that the applicants' request for the ruling in question was prompted by a pending motion filed by the Attorney General with the Commission on May 22, 1989. See Tr. 22,178-79. On behalf of other intervenors as well as himself, the Attorney General has asked the Commission in that motion to reconsider its denial in CLI-89-8, 29 NRC 399 (1989), of intervenor motions seeking a stay of the issuance to the applicants of a license authorizing low-power testing of Seabrook. In calling for reconsideration of CLI-89-8, the Attorney General explicitly relied upon the pendency of the now expunged portion of his contention MAG EX-19.

³ Tr. 22,220-21.

⁴ See Tr. 22,190.

⁵ See 10 C.F.R. 2.730(f).

exercise most sparing our discretionary authority to embark upon such review. Specifically, we observed more than a decade ago that

[a]most without exception in recent times, we have undertaken discretionary interlocutory review only where the ruling below either (1) threatened the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated by a later appeal or (2) affected the basic structure of the proceeding in a pervasive or unusual manner.⁶

We need not decide whether, as the Attorney General maintains, his motion satisfies the first prong of this test. For, be that as it may, we are persuaded that the challenged ruling “affects the basic structure of the proceeding” in a “pervasive” manner. Surely, a Licensing Board determination as to what type of issues are before it to consider and decide (as opposed to being before some other Licensing Board assigned to the same proceeding) goes to the “basic structure” of the proceeding. And that this Licensing Board’s view of its jurisdictional boundaries has been pervasive in effect is reflected by the recollection of its Chairman that the Board was “always aware that [it was] the offsite board [and had] repeatedly turned down contentions which would go onsite.”⁷

C. We now turn to the merits of the ruling below. It is settled, of course, that a licensing board must confine itself to those matters with respect to which it has been given authority to act. In circumstances where, as here, there is more than one board assigned to consider aspects of a particular licensing proceeding, this means that each must be careful not to invade the territory that has been carved out for another. This consideration led us last year to reverse an action taken by one licensing board in the *Shoreham* operating license proceeding to the extent that that action materially affected the disposition of issues pending before a second board in that proceeding.⁸

For these reasons, the Licensing Board in the proceeding at bar correctly focused on the question of the scope of its jurisdiction *vis a vis* that of the so-called “onsite” Board. Unfortunately, however, it came up with the wrong answer. This is apparent from a notice issued last January 10 by the Chief Administrative Judge of the Licensing Board Panel.

The primary purpose of that notice was to advise the parties of certain changes in the composition of the Licensing Board assigned to offsite emergency

⁶ *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977) (footnote omitted).

⁷ Tr. 22,182. See also Tr. 22,191 (“We have never consciously taken jurisdiction over matters that we felt arguably would have been [for] the Onsite Board”).

⁸ See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-902, 28 NRC 423, *Commission review declined*, CLI-88-11, 28 NRC 603 (1988).

planning matters (i.e., the Board that issued the ruling at hand). But the notice went on to address specifically the matter of that Board's jurisdiction:

At present, a separate Licensing Board of limited jurisdiction (sometimes referred to for convenience as the "onsite" Board), exists to hear and resolve issues related to "safety and onsite emergency planning issues." Notice of Reconstitution of Board (September 9, 1985). See Unpublished Order (Instructions Re Submissions), dated October 7, 1985. In view of the existence of two Licensing Boards in this proceeding, the jurisdiction of each Board should be stated clearly.

The instant Board (sometimes referred to for convenience as the "offsite Board"), as reconstituted herein, stands in the shoes of the original Licensing Board constituted November 30, 1981 in response to the October 19, 1981 notice of hearing. See 46 Fed. Reg. 51,330 (1981). Thus, the Licensing Board reconstituted herewith has general jurisdiction over all matters pertaining now or in the future to the application for a license to operate Units 1 and 2 of the Seabrook Station not otherwise expressly assigned to the onsite Board.⁹

There is no room for serious doubt that, at least in the absence of contrary directions from the Commission, the Chief Administrative Judge of the Licensing Board Panel is empowered both (1) to establish two or more licensing boards to hear and decide discrete portions of a licensing proceeding; and (2) to determine which portions will be considered by one board as distinguished from another.¹⁰ Thus, the allocation of jurisdiction set forth in the January notice was well within the Chief Judge's authority and, as such, is entitled to full respect.

This being so, the pivotal consideration is whether the substance of contention MAG EX-19 has been "expressly assigned" to the "onsite" Board. Our review of the annals of the proceeding indicates that that Board has a single issue remaining for its determination: the adequacy, from the standpoint of full-power operation, of the applicants' arrangements for public notification in Massachusetts of a radiological emergency.¹¹ While acknowledging that the "onsite" Board's current jurisdiction is so limited, the staff tells us, in effect, that both Licensing Boards had lost jurisdiction over the issue raised by contention MAG EX-19 at the time the contention was filed. The staff does not elaborate on this thesis and we do not find any foundation for it. In September, there clearly was room to advance a low-power issue before *some* Licensing Board and the

⁹ Notice of Reconstitution of Board, 54 Fed. Reg. 2009 (1989) (emphasis supplied).

¹⁰ See, generally, 10 C.F.R. 2.704, 2.721. Needless to say, that power must be exercised within the confines of the totality of issues that are properly before one Board or another as a result of the notice of hearing or some Commission directive. See *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear 1), ALAB-619, 12 NRC 558, 565 (1980); *Commonwealth Edison Co.* (Carroll County Site), ALAB-601, 12 NRC 18, 24 (1980); *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289 n.6 (1979); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976).

¹¹ See CLI-88-8, 28 NRC 419 (1988); 53 Fed. Reg. 40,804 (1988); 54 Fed. Reg. 6463 (1989) (the publication of a notice of reconstitution of the "onsite" Board that specifically refers in its caption to the "notification system" and carries the implication that this is the only issue now before that Board).

authority of such Board to act on MAG EX-19 was not subsequently withdrawn. Moreover, also contrary to the staff's seeming belief, once MAG EX-19 had been *admitted* to this operating license proceeding by the Board with general jurisdiction, it was not necessary for the Attorney General to file the identical contention a second time before another Licensing Board merely because the subject of the contention had both full and low power ramifications by reason of the Commission's regulations.¹² Any other conclusion would occasion the dual litigation of the same issue with possibly inconsistent results.

For their part, the applicants maintain that the "offsite" Board lacked "plenary" jurisdiction over MAG EX-19 when it admitted the contention. Our tracing of the jurisdiction of the Licensing Boards demonstrates that that belief is simply wrong. On the date the contention was admitted, the "offsite" Board stood in the shoes of the original Board.¹³

For the foregoing reasons, directed certification is *granted*; the Licensing Board's May 22, 1989, oral ruling expunging a portion of contention MAG EX-19 is *reversed*; and the cause is *remanded* to the Licensing Board with instructions to reinstate that portion of the contention.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

¹² See 53 Fed. Reg. 36,955 (1988) (codified in 10 C.F.R. 50.47(d)).

¹³ See 54 Fed. Reg. 2009 (1989); 53 Fed. Reg. 40,804 (1988); 52 Fed. Reg. 35,820 (1987); 52 Fed. Reg. 2966 (1987); 50 Fed. Reg. 37,608 (1985); 47 Fed. Reg. 38,656 (1982); 46 Fed. Reg. 59,667 (1981).

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)

May 9, 1989

In this issuance, the Licensing Board sustains the NRC Staff's grant of a license amendment permitting an increase in the storage capacity of the St. Lucie Unit 1 spent fuel pool by reracking the pool into two discrete regions using new, high-density storage racks. However, the Board conditioned the license amendment to require evaluations of the Boraflex panels within 30 days of in-service surveillance test results indicating gama irradiation above a Board-specified threshold.

RULES OF PRACTICE: BURDEN OF PROOF

In considering whether a license amendment granted by the NRC Staff may remain in effect, the Licensing Board must determine, for each of the factual issues remaining in dispute, whether the preponderance of the evidence supports the Licensee's position. See *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-763, 19 NRC 571, 577 (1984), review declined, CLI-84-14, 20 NRC 285 (1984).

TECHNICAL ISSUES DISCUSSED

The following technical issues are discussed: Criticality excursions in spent fuel pools; Spent fuel pool design (racks); Spent fuel pool design (Boraflex panels).

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INITIAL DECISION

(Authorizing Spent Fuel Pool Reracking)

I. INTRODUCTION

Licensee, Florida Power & Light Company, applied for and received¹ a license to rerack the spent fuel pool at its St. Lucie Unit 1 plant. Staff Exh. 1. The reracking enabled Licensee to increase the spent fuel storage capacity from 728 to 1706 fuel assemblies by reracking the spent fuel pool into two discrete regions using new, high-density storage racks.

Campbell Rich, a nearby resident ("Mr. Rich" or "Intervenor"), challenged the reracking, contending that specific aspects of Licensee's plan would not adequately protect the public health and safety. Of Intervenor's seven contentions originally admitted, LBP-88-10A, 27 NRC 452 (1988), *aff'd*, ALAB-893, 27 NRC 627 (1988), one was dismissed at the request of the Intervenor, and all of four and parts of two additional contentions were dismissed by this Board in a ruling on Licensee's motion for summary disposition. LBP-88-27, 28 NRC 455 (1988).

In the modified contentions remaining at issue, Mr. Rich asserts that the safety of the reracked spent fuel pool is not ensured because of uncertainties in the effectiveness of Boraflex (a reactivity inhibitor), the risk of an accident resulting from the possible mishandling of fresh fuel rods, and the possibility of a criticality accident in the absence of a neutron moderator in the spent fuel pool. The foregoing issues were tried in a 3-day hearing in the Martin County Courthouse, Stuart, Florida, beginning on January 24, 1989.²

In considering whether the license amendment granted by the NRC Staff may remain in effect, we must determine, for each of the factual issues remaining in dispute, whether the preponderance of the evidence supports the Licensee's position. *See Pacific Gas and Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2)*, ALAB-763, 19 NRC 571, 577 (1984), *review declined*, CLI-84-14, 20 NRC 285 (1984). For the reasons set forth within, we find that Licensee is entitled to judgment on all these contentions subject to the condition we impose as to the use of Boraflex. Anything in the record not expressly addressed in this Decision is rejected as unsupported by the record as a whole or as unnecessary to reaching our Decision.

¹ On March 11, 1988, pursuant to 10 C.F.R. § 50.91(a)(4) (1988), the Nuclear Regulatory Commission Staff made a finding of "no significant hazard consideration," approved the high-density reracking, and issued Amendment 91 to License No. DPR-67 authorizing the modification to the spent fuel pool.

² The parties completed posthearing filings on March 27, 1989. Staff and Applicant filings suggested corrections to the transcript. Those accepted by the Board are attached hereto as Appendix A (not published).

II. THE SPENT FUEL POOL CONFIGURATION AND OPERATION

For clarity it is worth reiterating some aspects of an earlier description of the configuration and operation of the spent fuel pool ("pool") at issue in this proceeding. LBP-88-27, *supra*, 28 NRC at 457-59. The pool is adjacent to Unit 1 of the St. Lucie nuclear power plant which is owned and operated by Florida Power & Light Company on Hutchinson Island in St. Lucie County, Florida. The St. Lucie plant contains two units and is sited 12 miles south of Fort Pierce on the east coast of Florida.

A. General Configuration

The spent fuel pool is 37 feet long, 33 feet wide, and 40 feet 6 inches deep. It is constructed of 6-foot-thick reinforced concrete walls and a reinforced concrete floor and foundation mat 9 feet 6 inches thick. The floor and walls are lined with stainless steel, $\frac{1}{4}$ -inch thick on the floor and bottom of the walls and $\frac{3}{16}$ -inch thick on the remainder of the walls.

A separate but adjacent fuel cask storage area is located in the northeast corner of the spent fuel pool. It is 10 feet long and 12 feet wide. Its floor is a depression in the basemat which is 3 feet 6 inches deep, lined with 1-inch-thick stainless steel plate. The walls are lined with $\frac{1}{2}$ -inch stainless steel plate. The cask storage area is separated from the fuel storage area by steel plate walls $6\frac{7}{8}$ inches thick, 14 feet 9 inches high, and lined with $\frac{1}{4}$ -inch stainless steel. This requires that the fuel cask must be raised above the top of the stored fuel before the cask can be moved laterally. The spent fuel cask weight is limited to 25 tons.

The fuel assembly structures containing the spent fuel to be stored in the pool are made of stainless steel and inconel. The fuel rod cladding is Zircaloy. These materials were selected because of their resistance to harmful changes in their properties resulting from: (1) high radiation fields in nuclear reactors; and (2) their exceptional resistance to corrosion in high-temperature water and steam. The assemblies were designed and constructed to withstand the high temperatures experienced in nuclear reactor vessels (500° to 640° Fahrenheit ("F") at the coolant outlet). Vessel or core temperatures are far more severe than those normally encountered in spent fuel pools which are well below the boiling temperature of water, 212°F at atmospheric pressure. The fuel assemblies are stored in storage racks resting under water on the bottom of the spent fuel pool.

B. The Reracked Spent Fuel Pool

As noted, the amendment authorized Licensee to increase the spent pool capacity from 728 to 1706 fuel assemblies. The old storage racks were removed. The pool, as reracked with new, high-density racks, is divided into two discrete regions, identified as Regions 1 and 2, each with its own specially designed racks. Region 1 contains four rack modules with capacity for 342 fuel assemblies. It is designed to receive and store new assemblies up to 4.5 weight percent U-235 or spent fuel that has not achieved adequate "burnup" (i.e., U-235 depletion) for storage in Region 2. "Safety Evaluation by the Office of Nuclear Reactor Regulation Relating to the Reracking of the Spent Fuel Pool at the St. Lucie Plant, Unit No. 1 as Related to Amendment No. 91 to Unit 1 Facility Operating License No. DPR-67, Florida Power and Light Company, Docket No. 50-335," at 2 (hereinafter "SER-Amendment 91"). The foregoing document is attached to License Amendment 91 for the St. Lucie Plant.

The essential difference between Region 1 and Region 2 storage rack modules is that the Region 1 racks are provided with additional neutron-absorbing material in the form of Boraflex so as to control the higher potential reactivity that would result with fresh nuclear fuel. The Region 1 racks consist of stainless steel, square cross-section tubes equipped with a sheet of Boraflex and cover plate on each of its four sides. The spacing between assemblies in Region 1 is 10.12 inches. SER-Amendment 91 at 2 and Appendix A at 39, 40.

Region 2 contains thirteen rack modules with capacity for 1364 fuel assemblies. The spacing between assemblies is 8.86 inches, and Boraflex panels are sandwiched between channels. The Region 2 channels do not have cover plates, and the Boraflex panels are held in place by the mating of adjacent channels. *Id.*, Appendix A at 41, 42. Region 2 racks with their slightly closer spacing and about 50% of the Boraflex neutron shielding material contained in Region 1 racks are designed to receive and store spent fuel that meets fuel burnup requirements. The burnup requirements depend upon initial U-235 concentration and are graphically displayed in Figure 5.6-1 of Amendment 91 to License DPR-67 at 5-6b. The racks, as installed, are designed to provide storage up to the year 2008, assuming full-core offload capability is maintained. SER-Amendment 91 at 2.

The basic source of heat energy in the spent fuel pool is the decay heat emanating from the spent fuel. "Decay heat" is the term used to describe the heat generated by the continuing radioactive decay of fission products within spent fuel assemblies stored in the spent fuel pool after the fuel assembly contents have burned up to a certain extent in the nuclear reactor. The decay heat generated from such assemblies in the spent fuel pool diminishes very rapidly, but it is significant for an appreciable length of time. Decay heat is transferred to the

pool water and hence to materials in contact with the water. Secondary heat sources are the gamma rays and neutrons emitted by the stored spent fuel rods.

The spent fuel pool cooling system is a closed loop consisting of two centrifugal pumps and a tube-and-shell heat exchanger with a maximum capacity of 34 million British thermal units per hour (MBtu/hr). The normal maximum heat load condition was calculated to be 33.70 MBtu/hr. SER-Amendment 91 at 7, 8.

III. DECISION

A. The Safety of Boraflex

We adopt Licensee's and Intervenor's agreed statement of the Boraflex issues,³ as follows:

Contention 3. The possible materials degradation and failure that might occur in Boraflex panels due to heat and radioactivity generated in the spent fuel pool have not been adequately considered or analyzed.

Contention 6. The proposed use of Boraflex in the high-density spent fuel storage racks designed and fabricated by the Joseph Oat Corporation is essentially a new and unproven technology.

Licensee's Proposed Findings of Fact and Conclusions of Law, ¶6 at 4; Intervenor's Proposed Findings of Fact and Conclusions of Law, ¶6 at 2-3.

Licensee and NRC Staff argue that the effects of heat and radiation on Boraflex are known and predictable and that there are no outstanding safety problems related to the use of Boraflex in spent fuel pools. Licensee presented three witnesses on this issue. Dr. Krishna P. Singh testified on behalf of Licensee. Dr. Singh is President of Holtec International, a consulting firm that handled the design, analyses, and licensing of the St. Lucie 1 spent fuel racks as a subcontractor to the rack manufacturer, the Joseph Oat Corporation. He described the specific structural and mechanical design and fabrication of the

³ Contention 3, which originally pertained to all rack and spent fuel cell materials as well as the concrete and steel of the fuel pool structure was the subject of a summary disposition motion which was granted as to all materials except Boraflex. See Memorandum and Order dated October 14, 1988, LBP-88-27, *supra*. The motion was denied as to Boraflex because Licensee had not adequately demonstrated that there were no outstanding safety problems regarding the performance of Boraflex. *Id.* at 467. Even though the motion was denied, the Board accepted some proposed findings submitted with Licensee's motion for summary disposition pertaining to the application of Boraflex at St. Lucie. The accepted Boraflex-related findings from the August 5, 1988 filing (Licensee's Statement of Material Facts as to Which There Is No Genuine Issue to Be Heard with Respect to Intervenor's Contentions) are Contention 3: Findings Nos. 1, 7, 9, 10, 12, 15-20, and 62-67. As to Contention 6, Findings Nos. 1, 7, 8, 12, 16, 20, 22, 27, and 29 were accepted by the Board. *Id.* at 467, 473. These previously accepted findings are considered together with the evidence received during the January 24-26, 1989 hearings in Stuart, Florida.

St. Lucie 1 spent fuel racks so as to accommodate shrinkage of the Boraflex material in such a manner as to prevent loss of its effectiveness following irradiation in the spent fuel pool. Dr. Singh also testified on the results of the Boraflex acceptance testing program and subsequent testing programs. Testimony of Dr. Krishna P. Singh on Contentions 3 & 6 (Singh on 3 & 6), following Tr. 139. Dr. Stanley E. Turner, Chief Scientist for Holtec International testified as to the design of the spent fuel racks authorized by the spent fuel pool expansion amendment (Amendment No. 91 to DPR-67), issued March 11, 1988 (see note 1, *supra*); NRC criteria and guidance; and industry standards for spent fuel pool criticality analysis and their application to the analyses performed for St. Lucie 1. Dr. Turner also addressed the calculational methods used in the criticality analysis and results obtained for the St. Lucie 1 spent fuel pool and the effectiveness of the Boraflex testing program with respect to its ability to identify Boraflex property changes that might affect the performance of the material as a neutron absorber. Testimony of Dr. Stanley E. Turner on Contentions 3 and 6 (Turner on 3 & 6), following Tr. 139. Edward J. Weinkam, III, a Principal Engineer with the Florida Power & Light Company, testified as to the surveillance activities prescribed by the FPL program for testing and in-service surveillance of the Boraflex neutron-absorbing material contained in the St. Lucie 1 spent fuel storage racks. Testimony of Edward J. Weinkam, III, on Contentions 3 and 6 (Weinkam on 3 & 6), following Tr. 139.

The NRC Staff also provided three witnesses on this contention, NRC employees Drs. James Wing and Laurence I. Kopp and Mr. Edmond G. Tourigny. Dr. Wing addressed the effects of radiation and heat on Boraflex. Dr. Kopp addressed reactivity considerations attributable to potential or unforeseen Boraflex degradation. Mr. Tourigny's testimony described and evaluated Licensee's in-service surveillance program which was set up to detect unforeseen Boraflex degradation. Testimony of James Wing, Edmond G. Tourigny, and Laurence I. Kopp on Contentions 3, 6, and 7 at 1, 6, and 8, respectively, following Tr. 110 (Wing, Tourigny, and Kopp on 3, 6, & 7).

All of the witnesses had appropriate credentials to support their expert testimony. Intervenor Campbell Rich presented no witnesses.

As described in our October 1988 Memorandum and Order, gaps in the neutron-absorbing sheets of Boraflex were found at the Quad Cities Plant, a commercial reactor with high-density storage racks similar in design to the St. Lucie 1 racks. LBP-88-27, *supra*, 28 NRC at 466-67. The Quad Cities and St. Lucie 1 racks were manufactured by the Joseph Oat Corporation. Licensee argues that the problems identified at Quad Cities have been resolved and will not occur at St. Lucie. *Id.* at 466 *et seq.*

1. The Use of Boraflex in High-Density Fuel Storage Racks

Neutron attenuation in the St. Lucie 1 racks is accomplished through the combined action of borated water and a widely used neutron absorber material, Boraflex. Commonly referred to as a neutron "poison," Boraflex is an effective entrapper of neutrons. It is produced by uniformly dispersing Boron carbide particles in a polymeric silicone encapsulant, which performs as the matrix element. Singh on 3 & 6 at 7, 8. The neutron-absorbing element is Boron. Since 1980, 85% of all high-density racks ordered by U.S. utilities have used Boraflex as the preferred "poison" material for neutron absorption. This involved twenty-three separate U.S. commercial nuclear power plants. *Id.* at 7, 14 (Table B). The Joseph Oat Corporation was involved in the fabrication of almost half (eleven plants) of the spent fuel storage racks using Boraflex. *Id.* at 18, Table A.

2. Problems with Boraflex — Shrinkage and the Formation of Gaps in Boraflex Panels

Gaps or separations were found in the Boraflex absorber materials used in the high-density spent fuel storage racks at the Quad Cities Plant, LBP-88-27, *supra*, 28 NRC at 466, 477. NRC Information Notice No. 87-43, "Gaps in Neutron Absorbing Material in High-Density Spent Fuel Storage Racks" and "Board Notification regarding Anomalies in Boraflex Absorbing Material (BN-87-11)" alerted licensees to potential problems with the use of Boraflex in the spent fuel pools at the Quad Cities and Point Beach facilities. Gaps in the Boraflex plates were found at Quad Cities, and anomalies involving the discoloration and water permeation of Boraflex samples were found at Point Beach. Singh at 10. The Point Beach anomalies were found to be of no safety significance. *Id.* The gaps found at Quad Cities (some up to 4 inches) were determined to be of potential safety significance. *Id.* More recently, gaps up to 1.4 inches were found in Boraflex panels at the Grand Gulf Station, Unit 1. Wing on 3 at 3. Both Quad Cities and Grand Gulf are Boiling Water Reactors (BWRs) with high-density spent fuel storage racks using Boraflex and fabricated by the Joseph Oat Corporation. *Id.*, Tables A and B at 17, 19.

3. Results and Conclusions of Boraflex Study Programs

A considerable amount of information pertaining to Boraflex performance has been accumulated over the last decade. As part of a larger program to qualify Boraflex for use in spent fuel pools, a series of irradiation tests were conducted on small samples at the Ford Reactor at the University of Michigan at Ann Arbor. Singh on 3 & 6 at 13-17. These earlier tests focused primarily on the neutron

attenuation characteristics of Boraflex using small coupon samples. The size of the samples used did not permit ready identification of shrinkage characteristics. *Id.* at 197. Following the discovery of gaps in Boraflex panels used in the Quad Cities spent fuel racks, additional testing was initiated to quantitatively determine radiation-induced shrinkage in Boraflex. Exh. 9; Turner on 3 & 6 at 10, 13, 14. Also as a result of the identified Boraflex problems, the Electric Power Research Institute (EPRI) collected and analyzed data from utility surveillance programs, test reactor irradiations, and the open literature to assess the effect of service environment in spent fuel storage racks on Boraflex. Exh. 1. The evidence presented as to the effects of heat and radiation on long-term Boraflex performance is summarized below.

a. The Effect of Heat

Prior to accepting Boraflex as the neutron-absorber material, the NRC required testing of this material under physical conditions that were more severe than the environment to which the material would be exposed in actual use. Heat aging tests at 350°F and long-term (over 6000 hours) pressure bomb tests at 240°F in boric acid solution (3000 ppm) demonstrated Boraflex's stability under aggravated environmental conditions. Singh on 3 & 6 at 14; Exh. 4 at 7, 8. Measurement of the physical characteristics of the test specimens of Boraflex after 251 days indicated a dimensional change, i.e., shrinkage, of less than 1% (0.83%) and an average decrease in weight of the test sample of 0.03%. The rate of gas evolution was also measured and found to be less than 1.8×10^{-3} cubic inches per day per pound of Boraflex. Staff agreed that gas generation was not a problem. Wing on 3 at 2, 3, 6. See also Exh. 1 at 4-5, 4-6. The spent fuel pool water at St. Lucie 1 hovers around 100°F, considerably below the test temperatures. Moreover, Boraflex is never exposed to temperatures in excess of 200°F anywhere in the St. Lucie spent fuel pool. Singh on 3 & 6 at 14.

Intervenor argues that the combined effect of heat and radioactivity were not considered in the study programs and therefore the data are meaningless. While it is true that the combined effect of temperature and radioactivity is not reported on as such, the results of in-reactor Boraflex irradiation studies would include the effects of reactor temperature along with radiation effects. Wing, Tr. 548, 549. Since the reactor temperatures are much higher in the reactor than in the spent fuel pool, synergistic effects of heat and radiation would be included in the reported in-reactor irradiation studies. Based on these studies and a review of the 240°F test data, the NRC Staff anticipates no significant heat-induced deterioration of the Boraflex material or its neutron-attenuation ability. Wing on 3 at 5, 6.

b. The Effect of Radiation

Upon irradiation, Boraflex undergoes shrinkage, becoming a hard, ceramic-like material, with increased compressive strength and reduced ductility. Turner on 3 & 6, ff. Tr. 139, at 10. Gamma radiation induces cross-linkage of the polymer in Boraflex which leads to shrinkage. As the accumulated radiation dosage increases, cross-linking becomes saturated and no further shrinkage will occur. The NRC Staff estimates that saturation of cross-linking in Boraflex occurs at the cumulative dose of 10^{10} rads, the dose at which Boraflex attains maximum shrinkage. Wing on 3 & 6, ff. Tr. 110, at 3. Radiation exposure tests of Boraflex at total equivalent doses of over 10^{12} rads (including 10^{11} rads gamma dose) were performed at the Ford nuclear reactor at the University of Michigan. The Michigan tests support the saturation of cross-linking theory in that the results showed no significant changes of Boraflex shrinkage at cumulative radiation doses from 5×10^9 to 10^{10} rads. *Id.* The EPRI Study (Exh. 1) also concluded that shrinkage stops when cross-linking saturates at a gamma exposure of about 10^{10} rads with projected maximum shrinkage at 3-4%. Exh. 1 at 5-12, 6-2.

The EPRI Study concluded that an essential factor in Boraflex gap formation and growth appears to be the existence of a mechanism for restraint of the Boraflex sheet. *Id.* at 5-14 through 5-18. In Point Beach, the sheets were held in place between a pair of V-shaped grooves in the stainless steel sheathing. When removed for examination, the Boraflex sheets were intact. It was concluded that the frictional restraint provided by the V-grooves was not sufficient to result in local stresses to cause the material to tear as the radiation-induced shrinking of the Boraflex proceeded. *Id.*, Figure 2-6 at 2-9.

In those racks where gaps were observed, there was evidence of restraint through the use of adhesives or by mechanical means sufficient to cause the formation of tears or gaps. At Quad Cities, the Boraflex panels were held in place during manufacture with an adhesive, Dow Silicone Sealant No. 999. Additionally, the Quad Cities racks employ the so-called "cruciform" construction, wherein angles are welded together along the edges in a fixture to form a cruciform with the Boraflex panel contained between the faces of the angle. Cruciforms are attached to each other by welding along their junction. This welding must be done remotely and, as a result, the weld quality depends on the flatness and straightness of the cruciform surfaces. Singh at 10.

Licensee's witnesses concluded that it was the fabrication process that led to excessive restraint of the Boraflex panels, and their subsequent cracking and gap formation following shrinkage upon irradiation at Quad Cities. The "cruciform" construction method is used for rack modules for BWR plants. *Id.* at 11. NRC Staff stated that, although it did not have sufficient information to determine conclusively what caused the gap formation, it postulated that because the

Boraflex panels were physically restrained, gamma-radiation-induced shrinkage caused the breakup of the panels and led to separation. Wing on 3 at 4. No gaps were observed in Boraflex panels used in pressurized water reactors (PWRs). Turner, Tr. 367. Both Staff and Licensee witnesses concluded that gaps observed in Boraflex panels were the result of the material being physically restrained while being irradiated (Wing at 10; Exh. 1 at 5-16) and further testified that if the Boraflex panels are free to shrink (absence of physical restraint) no gaps will be formed. Singh, Tr. 296; Wing on 3 at 4; Kopp, Tr. 495; Wing, Tr. 544, 545.

4. *St. Lucie 1 Rack Design and Fabrication Process with Respect to Avoiding Excessive Mechanical Constraint*

The racks fabricated for St. Lucie 1 are not of the "cruciform" design which is unique to BWRs. St. Lucie is a PWR, and the apparently excessive restraint of Boraflex inherent in the BWR rack construction has never been found in the PWR rack design used by the Joseph Oat Corporation. No glue was used in the fabrication of the St. Lucie 1 racks. The racks as fabricated for Region 2 of the St. Lucie 1 spent fuel pool permit unconstrained shrinkage movement of the Boraflex panels within the stainless steel jacket. The panels are more than 6 inches longer than the active fuel length and, if not restrained, can accommodate panel shrinkage of at least 4%. The exterior cells in Region 1 are also more than 6 inches longer than the fuel length and are able to accommodate shrinkage movement without external stress. The interior cells in Region 1 are (as a result of construction requirements) of a design that upon shrinkage of the panel would tend to promote the generation of multiple cracks or gaps. The interior cell construction necessitated spot welds at 6-inch distances along the edge of the stainless steel wrapper (12 inches along each side staggered). On shrinking, the Boraflex panels may encounter these spot welds, and local stresses might appear along the axial length of the panels. Singh, ff. Tr. 139, at 11.

5. *The Potential Effects of Gap Formation on Reactivity*

Licensee has evaluated the consequences of various scenarios involving the formation of gaps in the Boraflex panels and loss of borated water in the spent fuel pool. Turner on 3 & 6 at 7, 17, and Table 1 at 19. Assuming 4% Boraflex shrinkage distributed in 0.5-inch gaps at 12-inch intervals, with gaps at the same elevation in all panels, the calculations show a maximum k_{eff} of 0.771 under normal operating conditions in Region 1 of the spent fuel pool. Adding to this, a loss of all borated water in the pool results in a k_{eff} of 0.948, a value still within the acceptable bounds for reactivity. *Id.* Calculations for Region 2,

where Licensee states that gaps are precluded because the panels are fully free to contract, show a k_{eff} of 0.760 for normal operating conditions and a value of 0.944 for loss of all soluble borate in the fuel pool. *Id.*

The Staff sees no criticality concerns because the Staff's criteria for k_{eff} (not greater than 0.95) would not be exceeded. Kopp, Tr. 535. Dr. Turner also calculated the reactivity coefficient for a condition of 4% shrinkage of the entire 144-inch panel (5.72-inch shrinkage) occurring at the most reactive position in the same axial plane in all the panels in Region 1 (5.72-inch gaps in all panels at the same elevation) and with no Boron in the spent fuel pool water. Under these extremely unlikely conditions, he calculated a k_{eff} of 0.992, a value below criticality. Turner, Tr. 412. The k_{eff} for the same 5.72-inch gap condition with water borated at 1720 ppm would be considerably less. *Id.*, Tr. 413.

6. *The In-Service Surveillance Program at St. Lucie 1*

Long-term and synergistic effects of factors such as radiation, heat, and atmosphere are, at best, very difficult to determine in the short term. It is therefore necessary to employ accelerated testing as a necessary technology to obtain data that can be used with some confidence in an operational situation. To this end, an in-service surveillance testing program will be conducted at St. Lucie 1. The program is designed to verify the physical characteristics and neutron-absorbing properties of the Boraflex utilized in both Regions 1 and 2 of the St. Lucie 1 fuel storage racks.

The Boraflex used in the surveillance program is representative of the absorber material within the storage racks. It is of the same composition, produced by the same method, and certified to the same criteria as the production lot material. The sample coupons are the same thickness as the poison employed within the storage system, and approximately 5 inches in width, and 15 inches in length. Each Boraflex specimen is encased in a stainless steel jacket of an austenitic stainless steel alloy identical to that utilized in the storage racks, formed so as to encase the Boraflex material and fix it in a position and with tolerances similar to the design utilized in the racks. The jacket permits wetting and venting of the specimens in a manner similar to that which occurs in the actual rack environment. Weinkam Testimony, ff. Tr. 139, at 4.

In the current program, two types of tests for each Region are planned: a long-term test, with coupons surrounded by the same spent fuel assemblies during the entire irradiation period; and an accelerated test, with coupons surrounded by freshly discharged spent fuel assemblies during each refueling. The long-term test coupon examination frequency is after nominal irradiation times of 90 days, 180 days, 1 year, 5 years, 10 years, 15 years, 25 years, and 35 years. The accelerated test coupon examination frequency is after each discharge from the second discharge to ninth discharge after the rack installation. *Id.* at 5.

The coupons will be carefully examined for the following properties:

1. Visual examination intended to reveal any surface or excessive edge deterioration that might appear and to provide supporting information to assist in interpreting any degradation suggested by other measurements.
2. Dimensional measurements to provide a continuing measure of Boraflex shrinkage. The length measurement is of particular importance as an indicator of the potential for gap formation in excess of that accommodated in the design.
3. Neutron attenuation measurements will be made for establishing areal density to confirm that boron is not being lost from the Boraflex. Although previous irradiation tests indicate that boron is retained, this is perhaps the single most important measure of the ability of Boraflex to continue to serve its intended function.
4. Neutron radiography provides supporting information on neutron attenuation and is intended to reveal any non-uniformities in the boron distribution within the Boraflex that might not be uncovered in the attenuation measurements.
5. Shore A hardness measurements will be performed on a continuing basis. Although the Boraflex is expected to become fully hard in the first few cycles of irradiation, continued measurement is intended to uncover any softening or friability as an indicator of excessive degradation.
6. Weight and specific gravity measurements are supporting measurements intended to reveal any significant loss of Boraflex material or the development of more open porosity than expected.

Turner Testimony, ff. Tr. 139, at 16, 17.

Although Boraflex is expected to satisfactorily perform its intended function, the surveillance program ensures that any radiation effects beyond those expected and accommodated in the design will be detected well in advance (probably years) of the need for remedial action. This surveillance program is consistent with the program described by EPRI in its study with respect to all parameters relevant to the performance of Boraflex as a neutron absorber. *Id.* at 17.

7. Oat Corporation Racks as New and Unproven Technology

Intervenor contends that because of the changes made in the fabrication process as a result of problems identified during in-service use of Boraflex in high-density racks, the technology employing the Boraflex is new and unproven. Licensee and NRC Staff disagree. Both contend that high-density spent fuel racks with Boraflex panels as the neutron absorber have been in use since the early 1980s and are not unproven technical innovations or unproven technology. Tourigny on 6 at 10; Singh on 3 & 6 at 4-7 and 17.

The Joseph Oat Corporation ("the Corporation"), the St. Lucie 1 rack manufacturer, has had extensive experience with the fabrication of spent fuel pool racks. Prior to the early 1980s when the Corporation began using Boraflex in high-density fuel storage racks, the Corporation was involved in the fabrication of "new fuel racks" which employ the same technological base as spent fuel racks. Additionally, the Corporation has decades of experience in the fitup, cleaning, and handling of stainless steel components, and in the welding processes used in fabricating from stainless steel in sheet metal form, such as in fuel storage rack applications. Singh on 3 & 6 at 4-6. Rigorous quality control procedures have been employed at Oat for decades. Their Quality Assurance Program has been reviewed by the survey team of the American Society of Mechanical Engineers (ASME) at 3-year intervals since 1969. The Corporation has passed all of its ASME surveys. Hundreds of pieces of Corporation equipment have been used in nuclear and nonnuclear plants for years. There is undisputed testimony in this record that not a single case of equipment failure leading to plant shutdown has been ascribed to Corporation-supplied equipment. *Id.*

The Board agrees with Licensee and Staff that utilization of high-density racks designed and fabricated by the Joseph Oat Corporation is not utilization of a new and unproven technology.

B. Erroneous Fuel Assembly Storage and Criticality

We adopt Licensee's and Intervenor's agreed statement of the Contention 7 issues⁴ as follows:

Contention 7

1. The mechanisms which prevent the erroneous insertion of a fuel assembly into a storage cell such that the prescription of Standard Review Plan ("SRP") Section 9.1.2, Part III.2.b., that it not be possible for "a fuel assembly . . . (to) be inserted anywhere other than a design location," have not been demonstrated; and
2. It has not been shown why criticality will not occur in the spent fuel pool in the absence of a moderator.

Standard Review Plan, § 9.1.2, Part II, 2.b, requires that "[t]he design of the storage racks is such that a fuel assembly cannot be inserted anywhere other than in a design location." The St. Lucie pool racks are divided into two regions, Region 1, in which any of the St. Lucie fuel assemblies can be stored,

⁴In our October 14, 1988 Memorandum and Order Ruling on Motions for Summary Disposition, we granted summary disposition of Contention 7 with the exception of the two issues discussed in this decision as to which there remained a dispute of fact. LBP-88-27, *supra*, 28 NRC at 473-75.

including fresh fuel, and Region 2, in which only fuel that has reached the burnup requirements set forth in the "Initial Enrichment vs. Burnup Requirements for Storage of Fuel Assemblies in Region 2" curve in Technical Specification 5.6.1.b, Fig. 5.6-1. Tourigny Testimony, ff. Tr. 110, at 13.

The racks themselves are designed such that it is physically impossible to insert a fuel assembly in any place other than the storage cells. It is, however, possible to insert an assembly with less than the requisite burnup into Region 2. It is also physically possible to lower a fuel assembly into the shipping cask area and a small area between the east wall of the pool and rack modules E₁ and H₁. There are no racks in those areas. Weinkam Testimony, ff. Tr. 21, at 3-4; Tourigny Testimony, ff. Tr. 110, at 12-13.

The Standard Review Plan (SRP) requires the Licensee to develop and employ a system that prevents improper placement of a fuel assembly through the use of administrative controls, physical restraints, or by a combination of both. SRP 9.1.2, "Spent Fuel Storage," NUREG-0800. Tourigny Testimony, ff. Tr. 110, at 12.

NRC Staff guidance, however, allows for administrative controls, utilizing written procedures, to prevent the misplacement of fuel in the pool. (See Turner on Contention 7, ff. Tr. 21, at 17-18; Tourigny on Contention 7, ff. Tr. 110, at 13.) The Licensee's fuel-handling methods are by administrative control. Licensee described its methodology as follows:

Each fuel assembly arrives at St. Lucie 1 with a unique serial number which is engraved on it. The serial number remains visible regardless of storage location within the pool to facilitate identification. The Licensee tracks the location of a fuel assembly throughout its life by its serial number.

Fuel is moved to, and inserted into, a spent fuel rack cell location with a spent fuel pool machine which consists of a rolling bridge which spans the pool, and a fuel lifting device. The fuel lifting device may be positioned by a spent fuel machine operator over any rack cell location in Regions 1 or 2. Each cell location within the racks is identified by a region-unique index system, which uses a grid for Region 1 and another for Region 2. Fuel assemblies are tracked within the pool by maintaining records of their serial numbers on maps indicating the cell locations and associated alpha-numeric index codes where the assemblies are located. Location of new and burned fuel assemblies, stored in the spent fuel racks, are tracked by serial numbers which are reported in fuel status report records and spent fuel pool fuel locations maps. The transfer of assemblies to predetermined locations is conducted by an NRC-licensed operator under the direction of the licensed Control Room operator.

Following refueling, an independent verification (by a remotely controlled camera) of the location of the fuel assemblies in the reactor core and the spent fuel pool is conducted, and fuel status records are updated to reflect any assembly location changes. In addition, an audit of the spent and new fuel in storage must be completed at least annually in accordance with 10 C.F.R. Part 75.

Weinkam Testimony, ff. Tr. 21, at 3-7.

The Board finds that the foregoing procedures and restraints used in the handling of fuel assemblies in the spent fuel pool are adequate to provide reasonable assurance that fuel will be stored in the prescribed areas of the pool. The procedures satisfy the guidelines of SRP 9.1.2 and will ensure against improper storage of fuel assemblies.⁵ This issue under Contention 7 is dismissed.

The second issue under Contention 7 to be resolved arises out of Licensee's statement, in several places in its motion for summary disposition, that in the absence of a moderator it would not be possible for the St. Lucie fuel assemblies to form a critical mass in any configuration. The Intervenor questioned this statement and pointed out that a Dr. Slotin was fatally injured in an incident that resulted in a "dry" criticality at Los Alamos in 1947, and that atomic weapons achieve criticality with no moderator present.

Licensee and Staff dispute Intervenor's assertion and deny the relevance of the two examples he cites. Licensee's witness, Dr. Turner, testified to Licensee's underlying criticality theory as follows:

The term "fissile material" refers to material the atoms of which are capable of being split or fissioned with the attendant production of large quantities of heat energy (the useful product from the reactor) upon the capture (absorption) of neutrons. The primary fissile material in new fuel assemblies of most nuclear power reactors, including St. Lucie 1, is a nuclide of uranium called uranium-235. In natural uranium, the uranium-235 is present at a concentration less than 1% by weight, with almost all of the remainder being the uranium-238 nuclide. To be useful in a light-water nuclear power reactor, natural uranium is enriched in uranium-235. The nuclear fuel utilized at St. Lucie 1 may be enriched up to 4.5% by weight of uranium-235, with almost all of the remaining 95.5% being the uranium-238 nuclide.

In general, when a neutron is absorbed by uranium-235, there is a high probability that uranium-235 will undergo fission, resulting in the release of energy, fission products and more neutrons. These neutrons, in turn, can (1) be absorbed by uranium-235 or other fissile nuclides, (2) be absorbed by uranium-238 nuclides, resulting in virtually no additional fission, (3) be absorbed non-productively by non-fissile materials called "poisons" (resulting in no additional fission), or (4) escape without being absorbed (*i.e.*, leakage, which also results in no additional fission).

As a practical matter, not all neutrons released as a result of fission will cause additional fissions. Uranium-238 nuclides, poison materials and leakage inhibit the fission process by reducing the number of neutrons available to cause fissions. If fewer neutrons are being produced as a result of fission than are leaking and being absorbed, the fission process will not sustain itself; this condition is called "subcriticality." In contrast, if the rate of neutron production as a result of the fission process is equal to the rate of neutron absorption and leakage, the fission process will sustain itself, and the condition is referred to as "critical."

⁵ It is also pertinent to note that, even if a fresh fuel assembly were to be mislocated within the storage pool in the worst possible location, the maximum k_{eff} would remain below 0.8, taking into account the presence of soluble boron in the pool water. Turner on Contention 7, ff. Tr. 21, at 18-19; Turner, Tr. 92-93. Even in the absence of soluble boron, the misinsertion of a fresh fuel assembly into a Region 2 location would not result in criticality. Turner, Tr. 92-93. Multiple misinsertions would be necessary. (*Id.*) With the prescribed soluble boron in the pool, criticality would not occur even if fresh fuel were misinserted into each and every Region 2 cell. Turner, Tr. 55-57.

The term "effective multiplication factor" is defined as the ratio of the number of neutrons per unit of time produced in the fission process, to the number of neutrons per unit of time absorbed and escaping. The effective multiplication factor, commonly called k-effective (or k_{eff}), is a measure of the ability of a system to sustain a fission reaction. Criticality occurs whenever the effective multiplication factor reaches or exceeds a value of 1.0 because at least as many neutrons are being produced as are being lost by absorption and leakage. For a k_{eff} less than 1.0, the fission rate cannot be sustained. The margin below a k_{eff} of 1.0 is the safety margin to criticality, and this subcritical margin is the difference between a k_{eff} of 1.0 and the k_{eff} of a given system.

Turner Testimony, ff. Tr. 21, at 5-7.

U-235, the reactive isotope of uranium used in the reactor system, is a poor absorber of the "fast" neutrons produced in the fission process, but is a very good absorber of "slow" or "thermal" neutrons. U-238, which comprises the bulk of the uranium in the fuel, is, conversely, a very good absorber of fast neutrons but a poor absorber of thermal neutrons. Unless some mechanism is brought into play that will slow down the fast neutrons to allow neutron absorption by U-235, the fraction of neutrons absorbed by U-235 is small compared with the absorption by U-238.⁶ *Id.* at 19-20. This requires the presence of a moderator.

A moderator is a material consisting of light elements which scatter and slow down the neutrons, but which do not absorb many of the neutrons in the process. Turner, Tr. 60. There are only a few good moderators. The only ones that are in common use are water (hydrogen), heavy water (deuterium), graphite, and beryllium. The moderator used in the St. Lucie reactor and fuel pool is light water. *Id.*, Tr. 60-62.

Intervenor attempted to establish that if the fuel melted and slumped to the floor of the pool that there would be sufficient zirconium, air, wood, and concrete in the mass to act as moderators. Both Licensee's and Staff's witnesses denied this, saying that while there might be some small moderation by these materials, in practice it would be negligible and insignificant. *Id.*, Tr. 62; Kopp, Tr. 116-19. Intervenor also questioned the amount of plutonium in spent fuel. Dr. Turner replied that the total amount of fissionable material in spent fuel, including both U-235 and the fissionable plutonium isotopes was about the equivalent of fresh fuel enriched to about 1.7%. Turner, Tr. 67. This is far less reactive than fresh fuel. Intervenor then asked about the total weight of uranium oxide, plutonium, fission products, and zirconium in the pool. Licensee's witness had no figures, but stated that the total amounts were irrelevant, as in his calculations he assumed an infinite mass as a matter of conservatism. The conservatism in assuming infinite mass is that neutron leakage, i.e., a net neutron loss, is ignored. *Id.*, Tr. 66.

⁶In order to simplify this discussion, the possibility of escape or nonfission capture of neutrons, neither of which produce new neutrons, is ignored.

As a basis for his thesis that a moderator was not necessary for criticality, Intervenor asserted that several incidents had occurred where criticality was achieved without a moderator. Intervenor's Response to Licensee's Motion for Summary Disposition of Intervenor's Contention 7, ¶9. One, a criticality accident at Los Alamos in 1947, involved experiments with a supercritical mass of highly enriched plutonium metal in a form capable of attaining "dry" criticality. Turner Testimony, ff. Tr. 21, at 21, 22.

That material has no relationship to the low-enriched St. Lucie 1 uranium fuel. Similarly, the fact that nuclear weapons do not use a moderator is irrelevant. Weapons use either highly enriched U-235 or plutonium metal, which is not the case at St. Lucie. Three Mile Island and Chernobyl, both mentioned by the Intervenor, *were* moderated, the former with water and the latter with graphite, and do not apply to Intervenor's assertion that criticality could occur in the St. Lucie spent fuel pool if no moderator were present.

The Board has reviewed the entire record on the criticality issue and has found no basis to question Licensee's position. The Staff agrees with Licensee that in a dry fuel pool there is no danger of accumulating a critical mass of fissile material. We therefore find that Licensee has met its burden of proof in this matter and find in favor of Licensee on Contention 7.

The Board finds that Licensee has met its burden on each of the admitted contentions, and operation of the spent fuel pool as modified is and would be in compliance with the Rules and Regulations of the Commission.

IV. CONDITION

However, there is one aspect of the application which was the subject of much discussion at the evidentiary hearing and by the Licensing Board following the hearing. That is the matter of the "controlled gap formation" in the interior Boraflex panels in Region 1. Licensee's experts argue that the construction technique used in Region 1, while required because of the manner in which the cells are held together, is such that if the Boraflex panels are subjected to gamma radiation sufficient to cause shrinkage and sufficient stress at the weld connection points, they would selectively break at the weld point locations. Weld connections are located at 12-inch spacing staggered along each side of the Boraflex cover panel (6-inch vertical spacing staggered along the panel length). Licensee's witnesses contend that the panel, if stressed sufficiently to cause rupture, would break at the weld connection on 6- or 12-inch intervals. Assuming 4% shrinkage and stress relief at 12-inch spacing, they calculated a gap size of 0.5 inch. Singh, ff. Tr. 139, at 11; Turner, ff. Tr. 139, at 19. The NRC Staff did not address this aspect of Licensee's design. Written and oral testimony by Staff witnesses stated that no mechanism for gap formation

existed and therefore no gaps should be formed in the Boraflex panels. This Staff assertion was reiterated on the stand even after the rack designers described the system for controlling the location of gaps in Region 1. Wing, ff. Tr. 110, at 4; Tr. 544-45.

The controlled gap system is unique and has not been tested. As far as the Board is aware, there is only one practical way to determine the effectiveness of the Licensee's method for controlling gaps and that is to measure the ability of the Boraflex panel to absorb neutrons by a technique known as "blackness testing." Both Licensee and Staff argue that the predicted 0.5-inch gaps would not be detectible by blackness testing and therefore it is not necessary. Tourigny, Tr. 552; Turner, Tr. 321-22. Licensee further argues that the Region 1 pool is generally not subject to irradiation. Spent fuel is normally discharged to Region 2, while Region 1 is used to store fresh fuel prior to refueling and for contingencies such as the possible need for a full-core offload: Weinkam, Tr. 140; Turner, Tr. 350. Because of the normal use of Region 1, shrinking and subsequent gap formation should thus be nonexistent or minimal in the Region 1 racks. In the Region 2 racks Boraflex is unconstrained and no gapping should occur. Singh, ff. Tr. 139, at 11. The one exception which does result in some gamma irradiation of Region 1 cells occurs because of the in-service surveillance program which Licensee has undertaken. This program includes two cells in Region 1 with separate sets of sample coupons. Turner, ff. Tr. 139, at 15-16; Weinkam, ff. Tr. 139, at 5.

The Board agrees that, without gamma irradiation, the Boraflex in Region 1 should not form gaps. The Board also agrees that even with irradiation the unconstrained exterior Boraflex panels in Region 1 and all the panels in Region 2 should not form gaps. Gamma irradiation of the interior panels in Region 1, however, poses a different situation.

We, therefore, impose the following condition on the license amendment: In the event that any of the Region 1 Boraflex test coupons are found to be subjected to gamma irradiation equal to or greater than 1×10^8 rads, Licensee is directed within 30 days to prepare a study program to be approved by NRC Staff and performed by the Licensee to assess the effect of the irradiation on the integrity of the Boraflex panels. The study program should include blackness testing or a state-of-the-art equivalent approved by the NRC Staff.

V. ORDER

For all the foregoing reasons and upon consideration of the entire record in this matter, it is, this 9th day of May 1989, ORDERED:

1. That judgment is granted for Licensee on the matters remaining at issue in Contentions 3, 6, and 7, except as to the condition imposed in ¶ 3, below;

2. That License Amendment No. 91 to License No. DPR-67, issued by the NRC Office of Nuclear Reactor Regulation on March 11, 1988, shall remain in full force and effect as issued;

3. That in the event that any of the Region 1 Boraflex test coupons are subjected to gamma irradiation equal to or greater than 1×10^8 rads, Licensee is directed to prepare within 30 days a study program to be approved by the NRC Staff and performed by the Licensee to assess the effect of the irradiation on the integrity of the Boraflex panels. The study program should include blackness testing or a state-of-the-art equivalent approved by the NRC Staff; and

4. That, pursuant to 10 C.F.R. § 2.760 (1988) of the Commission's Rules of Practice, this Initial Decision shall become effective immediately. It will constitute the final decision of the Commission forty-five (45) days from the date of issuance, unless it is appealed in accordance with 10 C.F.R. § 2.762⁷ (1988) or the Commission directs otherwise. *See also* 10 C.F.R. §§ 2.764, 2.785, and 2.786 (1988).

ATOMIC SAFETY AND
LICENSING BOARD*

B. Paul Cotter, Jr., Chairman
ADMINISTRATIVE JUDGE

Glenn O. Bright
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 9th day of May 1989.

[The Appendix has been omitted from this publication but can be found in the NRC Public Document Room, 2120 L Street, NW, Washington, DC 20555.]

⁷ Any party may appeal from this Decision by filing a notice of appeal within ten (10) days after device of this Initial Decision. Pursuant to 10 C.F.R. § 2.762 (1988), 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, the appeal of the other party. A responding party shall file a single, responsive brief *only*, regardless of the number of appellant's briefs filed.

*Dr. Cole participated fully in preparing this Decision, concurs in the result, but was not available to sign it at issuance.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. James H. Carpenter
Gustave A. Linenberger, Jr.

In the Matter of

Docket No. 50-271-OLA-2
(Testing Requirements for
ECCS and SLC Systems)
(ASLBP No. 88-567-04-OLA)

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

May 23, 1989

The Licensing Board grants a joint motion by the Intervenors and the Applicant to withdraw the only contention in the proceeding and to dismiss the proceeding.

MEMORANDUM AND ORDER
(Dismissing Proceeding)

This proceeding concerns a proposal by Vermont Yankee Nuclear Power Corporation (Applicant), dated December 7, 1987, to modify certain of the technical specifications applicable to the Vermont Yankee Nuclear Power Station, a boiling water reactor located in Vernon, Vermont. The proposed changes concern the surveillance and testing requirements applicable to certain equipment on the reactor.

In response to a notice of opportunity for hearing dated January 19, 1988 (53 Fed. Reg. 2114 (Jan. 26, 1988)), two petitioners (the State of Vermont and the Commonwealth of Massachusetts) filed requests for a hearing and petitions to intervene. By Memorandum and Order (Intervention Requests and Prehearing Conference), dated May 24, 1988 (unpublished), we ruled that the two petitioners had standing to intervene and scheduled a prehearing conference to consider contentions. Following the conference (at which the opportunity for oral limited appearance statements pursuant to 10 C.F.R. §2.715(a) was offered), we accepted a single joint contention proffered by the two petitioners. We also outlined several substantive matters relevant to that contention which we believed should be addressed on the record of the proceeding. Prehearing Conference Order (Rulings on Contention and Schedules), dated July 18, 1988 (unpublished).

Following that Order, the parties participated in extensive discovery. At this time, we are awaiting issuance of the Staff's Safety Evaluation Report (SER) and Environmental Assessment. By a filing dated May 15, 1989, however, the two Intervenors and the Applicant filed a joint motion to withdraw the contention and to dismiss the proceeding.

We are aware of no reason why we should not grant the motion. Because of the safety questions that we raised at the prehearing conference, however, we would appreciate the Staff's serving on the Board a copy of the SER when issued. This request is not to be construed as a retention of jurisdiction by us over the proceeding (although we of course have available nonadjudicatory methods for expressing our view on substantive matters, if warranted).

Based on the foregoing, the joint motion to withdraw the only contention in this proceeding and to dismiss the proceeding is hereby *granted* and the proceeding is *dismissed*. This Order is effective immediately. In accordance

with 10 C.F.R. §§2.762 and 2.785, this Memorandum and Order may be appealed by any party to the Atomic Safety and Licensing Appeal Board.

IT IS SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Dr. James H. Carpenter
ADMINISTRATIVE JUDGE

Gustave A. Linenberger, Jr.
ADMINISTRATIVE JUDGE

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 23d day of May 1989.

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 Issues)

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

June 16, 1989

The Appeal Board (1) denies the applicants' motion to strike an intervenor's notice of appeal from a Licensing Board order (unpublished) addressing (but not disposing of) an issue in this operating license proceeding, and (2) dismisses the notice of appeal as premature.

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. ALAB-894, 27 NRC 632, 636 (1988) (quoting *Toledo Edison Co.* (Davis-Besse Nuclear Power Station), ALAB-300, 2 NRC 752, 758 (1975) (footnotes omitted)).

RULES OF PRACTICE: APPELLATE ARGUMENTS

When a party totally fails to come to grips with pivotal and manifestly nonfrivolous arguments advanced by an adversary, a permissible inference arises that that party recognizes the force of the arguments.

APPEAL BOARDS: JURISDICTION

Even in the absence of assistance from the litigants, an Appeal Board has some responsibility for looking independently at questions put before it that have jurisdictional overtones.

APPEARANCES

Allan R. Fierce, Boston, Massachusetts, for the intervenor Attorney General of Massachusetts.

Thomas G. Dignan, Jr., George H. Lewald, Kathryn A. Selleck, Jeffrey P. Trout, Jay Bradford Smith, Geoffrey C. Cook, and William Parker, Boston, Massachusetts, for the applicants Public Service Company of New Hampshire, *et al.*

Edwin J. Reis for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

A. On December 30, 1988, the Licensing Board rendered a partial initial decision concerned with the State of New Hampshire's radiological emergency response plan for the portions of the Seabrook facility's plume exposure pathway emergency planning zone (EPZ) located within that state.¹ Among the issues considered in that decision was that of "returning commuters," i.e., the impact on the applicants' evacuation time estimates (ETEs) for the EPZ of those commuters whose vehicle trips to their homes located within the EPZ would occur simultaneously with the evacuation trips of other individuals.² Although apparently making findings on some aspects of the issue, the Board retained jurisdiction over at least a portion of it. In the Board's words in paragraph 9.60 of the decision:

¹ See LBP-88-32, 28 NRC 667.

² *Id.* at 783-89.

The Board believes that the omission of the commuter trips to home will not have a large effect on the ETEs. Perhaps the answer lies somewhere in the record and we simply haven't found it. It is extremely unlikely that adding the commuter trips to home will influence a protective action. Nevertheless the New Hampshire decisionmakers are entitled to the most accurate ETE reasonably achievable. Therefore the Board retains jurisdiction over this aspect of the proceeding so that we may return to the parties for further advice.³

This retention of jurisdiction was later repeated in paragraph 9.130(2) in terms of the "subissue" whether "trips by returning commuters within the EPZ to their homes in the EPZ are properly accounted for in the evacuation time analysis."⁴

On May 5, the Licensing Board filed an unpublished memorandum and order addressed to (but not disposing of) the returning commuter issue. In the introductory paragraph, the Board reiterated its statement in paragraph 9.130(2) of the December 30 decision to the effect that jurisdiction was retained over those aspects of the ETEs pertaining to whether the estimates properly accounted for "trips by returning commuters within the EPZ to their homes in the EPZ."⁵ At a later point, it referred to its retention of jurisdiction as extending to "only the narrow problem of commuters starting within the EPZ for homes also within the EPZ."⁶

Although the Attorney General of Massachusetts (along with other intervenors) has pending an appeal from the December 30 decision, the brief on his appeal (in common with the briefs of the other intervenors) says nothing of significance on the returning commuter issue. Once the May 5 order surfaced, however, the Attorney General submitted a notice of appeal that was said to be from "those aspects" of the December 30 decision "pertain[ing] to the impact of returning commuters on the evacuation time estimates" over which jurisdiction had *not* been retained.⁷ In an accompanying statement, the Attorney General explained why he believed that *no* returning commuter matter was as yet ripe for appellate consideration, with the consequence that the notice of appeal had been filed solely as a "precautionary measure to protect [his] appellate rights."⁸

According to the Attorney General, a "fair reading" of the December 30 decision indicated that the Licensing Board had retained jurisdiction in that decision over the entire issue of the impact of the returning commuters on the ETEs, not just limited aspects of the issue.⁹ Thus, as the Attorney General sees it, the May 5 order contains the first announcement of the Licensing Board's

³ *Id.* at 789.

⁴ *Id.* at 804.

⁵ Memorandum and Order (May 5, 1989), at 1.

⁶ *Id.* at 7.

⁷ Notice of Appeal of Commonwealth of Massachusetts Attorney General James M. Shannon (May 16, 1989).

⁸ Massachusetts Attorney General's Statement Regarding Prematurity of Accompanying Notice of Appeal (May 16, 1989) [hereafter "Attorney General's Statement"] at 1.

⁹ *Id.* at 3.

intention to restrict its retention of jurisdiction so as not to consider further "the impact on ETEs of the large number of commuters whose trips home start *outside* the EPZ and who will interact with evacuating traffic as they travel home in directions opposite to and across, as well as with, the evacuation traffic."¹⁰ In this circumstance, the Attorney General goes on to assert, finality for appellate purposes could not have attached to any portion of the Licensing Board's disposition of the returning commuter issue in advance of the May 5 order.

The Attorney General further maintains, however, that, so long as any aspect of the returning commuter issue remains for Licensing Board consideration, no portion of it can be deemed to have achieved finality and, consequently, be ripe for an appeal.¹¹ On this score, our attention is directed to our reiteration last year in this proceeding of the settled principle that

"[t]he 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."¹²

In the Attorney General's view, the disposition of a part, but not all, of the returning commuter issue cannot be deemed the disposition of "a major segment of the case."¹³

In a May 24 order (unpublished), we called for the views of the applicants and the NRC staff regarding the Attorney General's thesis that the notice of appeal is premature. The applicants' three-page response comes down to this: the notice of appeal was not premature but, rather, was "extremely late" and, as such, should be struck.¹⁴ This is because, we are told, the Licensing Board made it clear in the December 30 decision that it was retaining jurisdiction over only the portion of the returning commuter issue concerned with commuters commencing their homeward trip from *within* the EPZ. For this proposition, the applicants rely upon paragraph 9.130(2), quoted *supra* p. 467, as well as upon the Board's earlier discussion in paragraphs 9.52 and 9.53 of the decision.¹⁵ Consequently, the applicants maintain, any challenge to the Board's disposition of the portions of the issue over which jurisdiction was not so retained had to be included in the appeal taken by the Attorney General from the December 30

¹⁰ *Id.* at 4 (emphasis in the original).

¹¹ *Id.* at 4-6.

¹² ALAB-894, 27 NRC 632, 636 (1988) (quoting *Toledo Edison Co. (Davis-Besse Nuclear Power Station)*, ALAB-300, 2 NRC 752, 758 (1975) (footnotes omitted)).

¹³ We discuss the Attorney General's position in greater detail below, *infra* pp. 469-70.

¹⁴ Applicants' Motion to Strike Notice of Appeal and Response to Appeal Board Order of May 23 [sic], 1989 (May 30, 1989) at 2, 4.

¹⁵ See 28 NRC at 787-88.

decision and could not be advanced several months later through a new notice of appeal.

For its part, the staff agrees with the applicants (for essentially the reasons assigned by them) that the Attorney General is too late in his endeavor to raise at this juncture the Licensing Board's disposition of that portion of the returning commuter issue concerned with commuter trips commencing outside the EPZ.¹⁶ The staff further observes (and presumably the applicants do not disagree) that any appeal regarding the matter of trips by returning commuters within the EPZ must await the Board's decision on that matter in accordance with its retention of jurisdiction over it.

B.1. There is considerable merit to the Attorney General's insistence that the May 5 memorandum and order was the first indication that the Licensing Board had not retained jurisdiction over the entire returning commuter issue (rather than just that portion relating to commuters returning to homes in the EPZ from *within* the EPZ). To begin with, the first reference to the retention of jurisdiction in paragraph 9.60 of the December 30 decision, when read in light of the Licensing Board's preceding discussion, lends substantial credence to the Attorney General's position.¹⁷ Moreover, the reference in paragraph 9.130(2) of the decision to the retention of jurisdiction over the "subissue" respecting "trips by returning commuters within the EPZ to their homes in the EPZ" does not necessarily aid the applicants and staff. As the Attorney General observes in his opposition to the applicants' motion to strike the appeal, that statement might reasonably be read as applying to, *inter alia*, the within-EPZ portion of commuter trips originating outside of the EPZ.¹⁸ It was not until the receipt of the May 5 order, with its unambiguous notation that jurisdiction had been retained only with respect to the "narrow problem of commuters *starting* within the EPZ for homes also within the EPZ,"¹⁹ that the Attorney General was placed on sufficient notice that such a reading was not intended by the Board.

2. Even were the applicants and staff on firmer footing in their reliance upon paragraph 9.130(2) of the December 30 decision, it would not perforce follow that the Attorney General was obligated to present his arguments respecting the non-retained portion of the returning commuters issue as part of his pending appeal from the December 30 decision. The Attorney General's papers confront

¹⁶ See NRC Staff Response to Appeal Board Order of May [24], 1989 and Applicants' Motion to Strike Notice of Appeal (June 2, 1989) [hereafter "Staff Response"].

¹⁷ For example, in paragraph 9.51 the Licensing Board identifies and discusses the problem of commuters moving *across* the flow of evacuating traffic. But in its findings the Board does not resolve this matter, thereby leaving the impression that the matter is one of the unresolved returning commuter issues the Board is leaving open in paragraph 9.60.

¹⁸ See Massachusetts Attorney General's Opposition to Applicants' Motion to Strike Notice of Appeal (June 12, 1989) at 5-6. In our view, contrary to the applicants' claim, such a reading was not rendered impermissible by the discussion in paragraphs 9.52 and 9.53 of the December 30 decision.

¹⁹ See *supra* p. 467 (emphasis supplied).

us with the claim that, in all events, *no* portion of the issue should be deemed ripe for appellate consideration until *every* portion of it has been decided below. As we have seen, his belief on that score is founded in good measure upon the well-established test respecting finality for appeal purposes. In this connection, the Attorney General notes that, in its totality, the returning commuters issue arose from a single basis offered in support of ETE contentions of the intervenors Town of Hampton and Seacoast Anti-Pollution League. His argument then proceeds:

However one draws the precise line between what is and what is not a "major segment" of a case, a ruling which disposes of part but not all of a single basis is not at all close to that line. Such a ruling cannot reasonably be described as having disposed of a major segment of a case. Furthermore, the Mass AG asserts that beyond the generic argument that a *part* of a single basis does not constitute a "major segment," there is an issue-specific reason why the "returning commuters" issue should not be appealed in piecemeal fashion. The "returning commuters" issue does not break down neatly into clear-cut sub-issues. Returning commuters whose trips home originate both within and without the EPZ can and do travel with, against, and across the flow of both New Hampshire and Massachusetts evacuees traveling outbound on the key evacuation routes. The effects of returning commuter traffic on evacuation traffic, and vice versa, are interactive, and these interactive [e]ffects cannot be assessed without running the computer model (that generated the ETEs) in a way that assesses these interactions on ETEs. The Board's decision to divide commuters into two groups — those whose trips start within the EPZ and those whose trips start outside the EPZ — and then to retain jurisdiction of only one of the two groups (inside starters) makes little practical sense for the purposes of assessing impact on ETEs. At the very least, the faint distinction between these groups cannot be said to give rise to a "major segment" when the Board disposes of one but not the other.²⁰

This line of reasoning may well have flaws. If so, however, they have not been identified by either the applicants or the staff. While not at all hesitant to point out what they deemed to be the error in the Attorney General's assertion that the now-apparent limited nature of the retention of jurisdiction was not disclosed in the December 30 decision, neither of those parties has offered one word in response to his argument that, for appeal purposes, the returning commuter issue should not be bifurcated.²¹

²⁰ Attorney General's Statement at 5-6 (emphasis in the original).

²¹ Despite the fact that a total of seven lawyers seemingly were involved in the preparation of its three-page response (see the listing of counsel at the outset of this opinion), the applicants simply ignore the Attorney General's claim in that regard. The most that the staff offers is a characterization of the reach of the claim that is not sufficiently precise. According to the staff, the Attorney General is contending merely that the Licensing Board erred by dividing the returning commuter issue into two parts and that, because this was done in the December 30 decision, the assertion of error had to be included in the earlier and timely appeal from that decision. See Staff Response at 4. But the quotation from the Attorney General's filing set forth in the text plainly shows that his claim is not so restricted. While the Attorney General does believe that the division makes "little practical sense," his principal point is that, even if divided, the returning commuters issue "should not be appealed in piecemeal fashion." See *supra* p. 470. The staff, like the applicants, is silent on that point.

When a party totally fails to come to grips with pivotal and manifestly nonfrivolous arguments advanced by an adversary, a permissible inference arises that that party recognizes the force of the arguments. We are tempted here to adopt that inference and, without further discussion, to accept the Attorney General's prematurity thesis. Even in the absence of assistance from the litigants before us, however, we have some responsibility for looking independently at questions put before us that have jurisdictional overtones. Thus, albeit without the benefit of the views of the applicants and staff, we have undertaken such an examination of the matter of finality. That examination persuades us that, although some facets of his analysis may be in doubt, the Attorney General's ultimate conclusion is sound.

It is not clear to what extent the "major segment of the case" test comes into play in instances where, as here, a licensing board renders an initial decision that disposes of a wide variety of issues with a retention of jurisdiction over a portion of one of those issues. We can, however, leave that question for another day. For, irrespective of how it might be resolved, there is another compelling reason why no part of the returning commuter issue is as yet ripe for appeal. In a nutshell, we are in agreement with the Attorney General that in no circumstances would it have made sense for him to have included a portion of the issue in the briefing of his appeal of the December 30 decision, leaving the balance of the issue for our scrutiny at such time as the Licensing Board acts in fulfillment of its retained jurisdiction.

To reach that conclusion we need not and do not now decide whether the Licensing Board justifiably has divided the returning commuter issue into segments for the purpose of *its own* consideration of the issue. Be that as it may, it cannot be gainsaid that the line of separation between the two segments is at best thin indeed. For one thing, as the Attorney General observes, the entire issue is rooted in *one* basis assigned in support of the ETE contentions of two of the intervenors.²² More important, it is difficult to perceive a significant difference, from the standpoint of the potential impact upon ETEs, between a commuter trip originating just outside the EPZ and one having a nearby origin barely within the boundary. This is particularly so if both commuters employ essentially the same routes to reach ultimate destinations in the same general area within the EPZ.

Given these considerations, and notwithstanding the Licensing Board's disparate approach to the litigation and disposition of it, we are not prepared to take on the returning commuter issue piecemeal.²³ In our judgment, this is a single

²² See *supra* p. 470.

²³ In this connection, no matter how we resolved the question of the message conveyed by the December 30 decision, either at one time or piecemeal at different times we nevertheless would have been called upon to examine the whole issue.

issue that, at least for appellate purposes, is not properly severable. Rather, it warrants examination by us in its entirety following the development of a full evidentiary record that covers *all* commuter trips terminating within the EPZ, irrespective of whether a particular trip commenced inside or outside of that zone. In the course of that examination, we will be in a much better position to determine whether the Licensing Board's bifurcation of the issue for trial and decision was justified and, if not, whether prejudice to the intervenors resulted therefrom.

In sum, the Attorney General is right. The recently filed protective notice of appeal is premature in that no part of the returning commuter issue is appropriately subject to appeal until the whole issue has been decided by the Licensing Board.

The applicants' motion to strike the Attorney General's May 16, 1989, notice of appeal as too late is *denied*. The notice of appeal is *dismissed* on the sole ground that it is premature.²⁴

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

²⁴In light of this disposition of the matter, the Attorney General's motion for an extension of the time in which to file the brief in support of his protective appeal is *denied* as moot.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

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

In the Matter of

Docket Nos. 50-443-OL-1
50-444-OL-1
(Onsite Emergency Planning)

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

June 20, 1989

On the appeal of the intervenors from the Licensing Board's denial of their motion to admit an emergency preparedness exercise contention or, in the alternative, to reopen the record, the Appeal Board affirms the denial of the motion to admit the contention.

RULES OF PRACTICE: CONTENTIONS (UNTIMELY FILINGS)

The Rules of Practice provide that *any* contention filed "later than fifteen (15) days prior to the holding of the special prehearing conference . . . or where no special prehearing conference is held, fifteen (15) days prior to the holding of the first prehearing conference" is nontimely and can be admitted only upon a balancing of the five lateness factors of 10 C.F.R. § 2.714(a)(1). 10 C.F.R. § 2.714(b).

RULES OF PRACTICE: CONTENTIONS (UNTIMELY FILINGS)

The intervenors' contention was late-filed and subject to a balancing of the five lateness factors even though the emergency preparedness exercise on which the contention was based had yet to be held at the time the period for filing contentions in this proceeding closed. *See Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041 (1983).

APPEAL BOARDS: STANDARD OF REVIEW (LATE-FILED CONTENTIONS)

Appeal Board review of the Licensing Board's balancing of the factors in 10 C.F.R. § 2.714(a)(1) is strictly limited to determining whether the Licensing Board abused its discretion. *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 1), ALAB-868, 25 NRC 912, 922 (1987); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-828, 23 NRC 13, 20-21 (1986); *Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), ALAB-707, 16 NRC 1760, 1763 (1982).

APPEAL BOARDS: STANDARD OF REVIEW (LATE-FILED CONTENTIONS)

To establish that the Licensing Board transgressed the abuse of discretion standard, the intervenors have a heavy burden on appeal. It is insufficient for the intervenors to show merely that the Board below might legitimately have determined that the five lateness factors of 10 C.F.R. § 2.714(a)(1) weighed in favor of admitting the contention; rather, the intervenors must demonstrate that a reasonable mind could reach no other result. *Comanche Peak*, 25 NRC at 922; *Washington Public Power Supply System* (WPPSS Nuclear Project No. 3), ALAB-747, 18 NRC 1167, 1171 (1983).

RULES OF PRACTICE: CONTENTIONS (UNTIMELY FILINGS)

It is settled that a late-filed contention must be tendered promptly upon the discovery of the information upon which it is based. *Catawba*, 17 NRC at 1048 (1983). *See Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), CLI-86-8, 23 NRC 241, 244-45 (1986).

ATOMIC ENERGY ACT: HEARINGS (EMERGENCY PREPAREDNESS EXERCISE RESULTS)

The Commission has restricted licensing hearings on the results of emergency planning exercises to contentions involving "deficiencies which preclude a finding of reasonable assurance that protective measures can and will be taken, i.e., fundamental flaws in the plan." *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-86-11, 23 NRC 577, 581 (1986).

EMERGENCY PLANS: CONTENT (DEFICIENCIES IN)

In defining a "fundamental flaw" the Appeal Board has stated that "[f]irst, it reflects a failure of an essential element of the plan, *and*, second, it can be remedied only through a significant revision of the plan." *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-903, 28 NRC 499, 505 (1988) (emphasis in original).

APPEARANCES

John Traficonte, Boston, Massachusetts (with whom **Diane Curran**, Washington, D.C., and **Robert A. Backus**, Manchester, New Hampshire, were on the brief) for the intervenors **James M. Shannon**, Attorney General of Massachusetts, **New England Coalition on Nuclear Pollution**, and **Seacoast Anti-Pollution League**.

Thomas G. Dignan, Jr., Boston, Massachusetts (with whom **George H. Lewald**, **Kathryn A. Selleck**, **Jeffrey P. Trout**, **Jay Bradford Smith**, and **Geoffrey C. Cook**, Boston, Massachusetts, were on the brief) for the applicants **Public Service Company of New Hampshire**, *et al.*

Gregory Alan Berry for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

After the Licensing Board presiding over the so-called onsite issues in this operating license proceeding renewed its authorization for a low power testing license for Seabrook, Unit 1, the Massachusetts Attorney General, the New England Coalition on Nuclear Pollution, the Seacoast Anti-Pollution League, and the Town of Hampton, New Hampshire (intervenors) filed a joint motion

to admit a new contention.¹ The intervenors claimed that the contention arose out of the then recently concluded graded emergency preparedness exercise for Seabrook station. Alternatively, the intervenors' motion requested that the record be reopened to admit their contention which raised an issue not previously in controversy in the proceeding.² The Licensing Board denied the intervenors' motion in its entirety³ and the intervenors have appealed.⁴ For the reasons that follow, we affirm the Licensing Board's denial of the intervenors' motion.

I.

On June 27, 28, and 29, 1988, the applicants held a full participation emergency exercise to test the emergency plans for the Seabrook facility. An NRC inspection team observed the onsite portion of the exercise and subsequently issued an inspection report dated July 6, 1988, setting out the results of its observations. The report first stated that "[n]o violations were identified" and that the applicants' "[e]mergency response actions were adequate to provide protective measures for the health and safety of the public."⁵ In six sections, the report then recounted the details of the inspection and the exercise. Included among these sections was one listing the strengths and weaknesses of the exercise, stating that

[t]he NRC team noted that the licensee's activation and augmentation of the emergency organization, activation of the emergency response facilities, and use of the facilities were generally consistent with their emergency response plan and implementing procedures. The team also noted the following actions that provided strong positive indication of their ability to cope with abnormal plant conditions:

1. Very good command and control of all emergency response facilities (ERFs) was [sic] demonstrated;
2. Plant conditions were quickly recognized and classified;
3. Shift turnover was accomplished smoothly and with no apparent loss of control of the situation;
4. The ERFs were activated in a timely manner; and
5. Protective Action Recommendations (PARs) were prompt and conservative. Evacuation time estimates were effectively utilized in determining the PARs.⁶

¹ Motion to Admit Exercise Contention or, in the Alternative, to Reopen the Record (September 16, 1988) [hereinafter, "Intervenors' Motion"] at 1-9.

² *Id.* at 9-12.

³ LBP-89-4, 29 NRC 62 (1989).

⁴ The denial of a motion to admit a contention or to reopen the record is normally interlocutory and, therefore, not immediately appealable. See 10 C.F.R. § 2.730(f). At the time of the instant ruling, however, the Licensing Board already had disposed of all other issues pertinent to low-power operation thereby making this order appealable.

⁵ Inspection Report No. 50-443/88-09 (July 6, 1988) at 1.

⁶ *Id.* at 4.

This same section also indicated that

[t]he NRC identified the following exercise weaknesses which need to be evaluated and corrected by the licensee. The licensee conducted an adequate self critique of the exercise that also identified these areas.

1. The Technical Support Center (TSC) and Emergency Operations Facility (EOF) staff displayed questionable engineering judgment and/or did not recognize or address technical concerns (50-443/88-08-01). For example:
 - Neither the EOF nor TSC staff questioned a release of greater than 7000 curies per second with only clad damage and no core uncover [sic];
 - Efforts continued to restore the Emergency Feedwater Pump after a large break LOCA;
 - A questionable fix for the Containment Building Spray system;
 - A lack of effort to locate and isolate the release path; and
 - No effort was noted to blowdown Steam Generators to lessen the heat load in containment.⁷

These five examples of purported exercise weaknesses served as the bases for the exercise contention that the intervenors sought to have admitted before the Licensing Board, as well as the foundation for their alternative request to reopen the record. The contention asserted that the exercise showed that the present state of onsite emergency preparedness at Seabrook did not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency as required by 10 C.F.R. § 50.47(d). Hence the contention claimed that low-power authorization was precluded even though the Licensing Board had already authorized such a license for the facility. Specifically, the contention alleged that the exercise revealed fundamental deficiencies in the applicants' emergency plan, which deficiencies, in turn, showed that the applicants' plan did not comply with 10 C.F.R. § 50.47(b)(15), requiring the training of those persons who assist in an emergency.⁸

As the bases for their contention, the intervenors relied upon an affidavit of Robert D. Pollard, a nuclear safety engineer with the Union of Concerned Scientists. In his affidavit, Mr. Pollard examined the five examples of purported exercise weaknesses identified in the inspection report and concluded that each instance was much more significant than the NRC staff believed. Unlike the

⁷ *Id.* at 5. The inspection report also listed three additional items as weaknesses but none of these matters is pertinent to the issues before us on appeal.

⁸ Intervenors' Motion, Exhibit 1, Joint Intervenors On-Site Exercise Contention.

The contention also alleged that the applicants' emergency plan failed to meet the standards of 10 C.F.R. §§ 50.47(b)(2), (b)(14) and Part 50, Appendix E, § IV.F. Subsection (b)(2) requires, *inter alia*, that the applicants have "adequate staffing to provide initial facility accident response in key functional areas . . . at all times," while subsection (b)(14) requires that the applicants conduct "[p]eriodic exercises . . . to evaluate major portions of emergency response capabilities . . ." Section IV.F of Appendix E also provides for the training of the applicants' employees to ensure they are familiar with their emergency response duties.

staff, he concluded that each of the staff's examples demonstrated a fundamental deficiency in the applicants' emergency plan by showing that the applicants' personnel, contrary to the requirements of the Commission's regulations, were inadequately trained to accomplish the tasks assigned to them in the exercise. For example, the first exercise weakness noted in the report was that neither the TSC nor EOF staffs questioned the exercise release rate of 7000 curies per second when the exercise accident scenario prescribed only fuel cladding damage but no uncovering of the core. In dealing with this matter, Mr. Pollard's affidavit states that

[t]his failure of both the TSC and EOF staff is an indication that the onsite emergency response personnel's knowledge of the relationship between the magnitude and rate of a radioactive release and the amount of core damage is seriously deficient Without a sound knowledge of the magnitude of releases possible under varying degrees of core damage, the emergency response staff may not recognize that their analysis of plant conditions is incorrect, leading them to take incorrect protective actions or fail to take the correct protective actions.⁹

After analyzing each of the other examples, Mr. Pollard reached a similar conclusion, i.e., that the TSC and EOF staffs lacked sufficient knowledge and understanding of plant fundamentals to meet the objectives of the emergency exercise.¹⁰

The applicants and the staff opposed the intervenors' motion before the Licensing Board.¹¹ After reviewing the parties' initial round of pleadings, the Licensing Board ordered the filing of additional submissions with respect to the

⁹ Intervenors' Motion, Affidavit of Robert D. Pollard at 12-13.

¹⁰ *Id.* at 8-12.

¹¹ Both the staff and the applicants opposed the admission of the exercise contention. Because the staff took the position that a reopening motion was unnecessary in the circumstances, however, it initially did not address the intervenors' alternative motion to reopen the record. *See* NRC Staff Response to Joint Intervenors' Motion to Admit Exercise Contention or, in the Alternative, to Reopen the Record (October 3, 1988) at 2 n.1. The applicants, on the other hand, opposed the intervenors' alternative reopening motion and, in accordance with 10 C.F.R. § 2.730(c), filed affidavits of three experts addressing the five examples of purported exercise weaknesses from the staff's inspection report relied upon by the intervenors. Applicants' Response to Motion to Admit Exercise Contention or, in the Alternative, to Reopen the Record (September 28, 1988) at 10-14. For example, the affidavit of the applicants' Radiological Assessment Manager for Seabrook, James A. MacDonald, addressed the first purported weakness concerning the applicants' failure to question the lack of correlation between the release rate of 7000 curies per second and the status of the core. His affidavit stated that the release figure was supplied by the exercise controllers, and pursuant to their guidance, exercise participants were instructed to accept the information as given. Mr. MacDonald's affidavit also stated that a review of the exercise showed that this lack of correlation, in fact, was discussed by the exercise participants and, in any event, the actual response and implementation of all emergency response procedures by the applicants' personnel (i.e., sampling and analysis) were not hindered by the purported lack of correlation. His affidavit concluded that the observation contained in the staff inspection report was inaccurate and did not evidence any weakness by the TSC and EOF staffs. *Id.*, Affidavit of James A. MacDonald at 2-4. The affidavits of the applicants' two additional experts addressed the other four examples from the inspection report and similarly concluded that the staff's criticisms were unfounded. *Id.*, Affidavits of Gary J. Kline and Gregg F. Sessler.

intervenor's alternative motion to reopen the record.¹² Specifically, the Board directed the parties to file further briefs and supporting affidavits addressing, *inter alia*, whether the intervenor's motion raised a significant safety issue as required by 10 C.F.R. § 2.734.¹³ Thereafter, the Board denied the intervenor's motion in its entirety.¹⁴

In its opinion, the Licensing Board first found that the intervenor's exercise contention was late-filed because it had not been filed within the time limits contained in 10 C.F.R. § 2.714(b).¹⁵ Next, the Board assumed that the record of the proceeding was open and balanced the five factors set forth in 10 C.F.R. § 2.714(a)(1) for considering the admission of late-filed contentions. The Board concluded that a majority of the factors, and the most important of those factors, weighed against admitting the contention.¹⁶ Finally, the Board turned to the intervenor's alternative motion to reopen the record. Even though the Commission's Rules of Practice require that a reopening motion raising a contention not previously in controversy must also satisfy the requirements set forth in 10 C.F.R. § 2.714(a)(1) for nontimely contentions — the same factors

¹² Order (Directing Additional Briefing and Affidavits) (October 25, 1988).

The Licensing Board ordered the supplemental filings when the applicants called to its attention a second inspection report issued by the staff after a further inspection at Seabrook. LBP-89-4, 29 NRC at 71. See Applicants' Response to Joint Intervenors' Motion for Leave to File a Reply (October 12, 1988) at 2-3. Among other things, the second inspection report addressed and "closed" the items identified in the first report as exercise weaknesses that needed correction by the applicants. Inspection Report No. 50-443/88-10 (September 28, 1988) at 8-10. For example, with respect to the first purported weakness (i.e., the applicants' failure to question the lack of correlation between the release rate and the specified core condition), the second report stated that

[t]he inspector reviewed the player and controller logs for selected TSC, EOF and engineering support center (ESC) staff. These logs revealed that several staff members did question and/or comment on the mismatch between the reactor coolant activity and the release rate. Subsequent discussions with the TSC and EOF controllers and players also indicated that they were aware of this mismatch. In actuality, the ESC staff made very accurate core damage assessments based upon the data supplied by the TSC. The EOF dose assessment staff made accurate dose projections based upon the release rate, as well as correlation of field data to the release rate.

Id. at 10. After further investigation of the other four purported exercise weaknesses, the staff concluded in each instance that the applicants' actions were appropriate. *Id.* at 8-10.

¹³ The applicants' submission in response to the Licensing Board's order generally recited their earlier filings. See Applicants' Response to Board Order of October 25, 1988 (November 8, 1988). The intervenor's reply included a second affidavit of their expert addressing the initial affidavits of the applicants' experts and the second staff inspection report. From their analysis, the intervenors concluded that, in the circumstances, the applicants' affidavits and the second inspection report lacked credibility. See Memorandum of Joint Intervenors in Response to October 25, 1988 Order of Licensing Board (November 9, 1988). The staff's filing included the joint affidavit of two staff members involved in the emergency preparedness exercise and it explained the further information leading the staff to conclude in the second inspection report why none of the initially reported exercise weaknesses was valid. See NRC Staff Response to Licensing Board Order of October 25, 1988 (November 28, 1988). The intervenors then filed a further response to the staff submission and the staff filed a rejoinder. See Joint Intervenors' Response to "NRC Staff Response to Licensing Board Order of October 25, 1988" (December 7, 1988); NRC Staff Response to Joint Intervenors' Motion for Leave to Submit Response to NRC Staff Response to Licensing Board Order of October 25, 1988 (December 27, 1988).

¹⁴ LBP-89-4, 29 NRC at 86.

¹⁵ *Id.* at 67-68.

¹⁶ *Id.* at 68-71.

the Board had already decided against the intervenors — the Board nevertheless considered the motion and found it did not raise a significant safety issue.¹⁷

II.

A. Before us, the intervenors argue that the Licensing Board erred in ruling that their exercise contention was nontimely and therefore subject to a balancing of the five factors set forth in 10 C.F.R. § 2.714(a)(1) for the consideration of late-filed contentions. Contrary to this assertion, however, the Licensing Board was correct in finding that the exercise contention was late-filed. The Rules of Practice provide that *any* contention filed “later than fifteen (15) days prior to the holding of the special prehearing conference . . . or where no special prehearing conference is held, fifteen (15) days prior to the holding of the first prehearing conference” is nontimely and can be admitted only upon a balancing of the five lateness factors.¹⁸ Here, because the intervenors’ exercise contention was not filed within the time constraints of the Commission’s rule, it is necessarily late.

That there are no exceptions to the time limits for filing contentions under the Rules of Practice is one of the teachings of the Commission’s decision in *Catawba*.¹⁹ There the Commission dealt with the question whether all five of the late-filed contention criteria apply to a contention based on licensing-related documents, such as the agency’s environmental impact statement, that are not prepared early enough in the licensing proceeding to permit the timely filing of a contention. In answering that question in the affirmative, the Commission held that section 189a of the Atomic Energy Act, as amended, does not provide an unqualified right to a hearing and does not mandate the automatic admission of a late-filed contention in that situation. It ruled that a party’s hearing rights are not offended by a reasonable procedural rule applying all of the factors of 10 C.F.R. § 2.714(a)(1) for admitting a late-filed contention, even if the contention could not have been filed within the period for timely filing contentions.²⁰ *Catawba* is controlling here and establishes that the intervenors’ contention was late-filed and subject to a balancing of the five lateness factors, even though the emergency preparedness exercise on which the contention was based had yet to be held at the time the period for filing contentions in this proceeding closed.²¹

¹⁷ *Id.* at 71-86. See 10 C.F.R. § 2.734(a), (d).

¹⁸ 10 C.F.R. § 2.714(b).

¹⁹ *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041 (1983).

²⁰ *Id.* at 1046-47.

²¹ The intervenors’ attempt to distinguish *Catawba* on the ground that only licensing-related documents were involved in that case while here a material licensing event is involved, obviously cannot withstand scrutiny. Neither the history, language, nor reasoning of *Catawba* supports such a notion.

(Continued)

B. Alternatively, the intervenors argue that even if their exercise contention was nontimely, the Licensing Board nevertheless erred in finding that the factors governing the acceptance of a late-filed contention in 10 C.F.R. § 2.714(a)(1) weighed against admitting the contention. That section requires that the Licensing Board consider the following five factors:

- (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.²²

In rejecting the intervenors' contentions, the Board below found that the first, third, and fifth factors weighed against admitting the contention, while the second and fourth factors favored accepting it.

Although the intervenors challenge the Licensing Board's balancing of the lateness factors, their argument is silent on the standard we are required to apply in reviewing that ruling. Because the lateness factors were placed in the rules to give the hearing boards "broad discretion in the circumstance of individual cases,"²³ we have noted previously that "neither this Board nor the Commission has been readily disposed to substitute its judgment for that of the Licensing Board insofar as the outcome of the balancing of the Section 2.714(a) factors

Moreover, the intervenors' reliance upon *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), cert. denied, 469 U.S. 1132 (1985), is also wide of the mark. In that case, the court invalidated an amendment to the Commission's regulations that eliminated the emergency preparedness exercise as a prerequisite to the agency's operating license authorization. By making the exercise part of the operational inspection program, the amendment effectively removed any challenge to the exercise from the adjudicatory licensing proceeding. The court found that, in spite of the amendment, the Commission nevertheless considered the offsite emergency preparedness exercise material to its decision whether to license a plant. It held, therefore, that it was beyond the Commission's statutory authority to remove from the licensing hearings required by section 189a of the Atomic Energy Act issues material to the licensing decision. In reaching this decision, the court also rejected the Commission's argument that a party's hearing rights were protected because a party could always seek to reopen the record if the exercise identified fundamental defects in the emergency plans.

In an effort to cloak themselves in the rationale of the *UCS* case, the intervenors argue that their right to litigate the exercise is burdened when the hearing record is closed before they have an opportunity to file contentions on the exercise and here the Licensing Board "has deemed every June 1988 onsite exercise contention to be filed after the record has closed." Brief of the Appellants on Appeal of LBP-89-04 (February 13, 1989) at 7. The short answer to the intervenors' claim, however, is that the Licensing Board did not deem the exercise contention to be filed after the record was closed at all. Indeed, the Board specifically assumed the record remained open in finding the exercise contention was late-filed and in applying the five factors of 10 C.F.R. § 2.714(a)(1). LBP-89-4, 29 NRC at 68. Further, contrary to the intervenors' apparent belief, the *UCS* case does not prohibit placing reasonable procedural requirements upon the filing of late-filed contentions. Rather, it holds that a party's statutory hearing rights on a material licensing issue cannot be made to hinge upon the agency's unfettered discretion to reopen the record. See 735 F.2d at 1443-44.

²² 10 C.F.R. § 2.714(a)(1).

²³ *Nuclear Fuel Services, Inc. (West Valley Reprocessing Plant)*, CLI-75-4, 1 NRC 273, 275 (1975).

is concerned."²⁴ Our review in such instances is strictly limited to determining whether the Board abused its discretion.²⁵ To establish that the Licensing Board transgressed that standard, the intervenors have a heavy burden on appeal. It is insufficient for them to show merely that the Board below might legitimately have determined that the five lateness factors weighed in favor of admitting the contention; rather, they must demonstrate that a reasonable mind could reach no other result.²⁶ In their arguments to us, the intervenors have fallen far short of making this showing.

The intervenors first dispute the Licensing Board's determination that they failed to demonstrate good cause for not filing their exercise contention in a more timely manner. The Board concluded that the intervenors unjustifiably delayed filing their contention until September 16 when, by their own admission, they received the July 6 inspection report on which the contention was based by July 15. The Board rejected the intervenors' claim that they had insufficient information to file the contention until at least the week of August 15 when they received the eight-volume exercise documentation that contained, *inter alia*, the objectives and scenario sections for the emergency exercise. The Board reviewed the relied upon sections of these materials and found that they were not necessary to the preparation of an appropriate contention. Rather, it found that the July 6 inspection report was all that was needed in order for the intervenors to plead their exercise contention properly.

The intervenors renew this same argument before us. But we cannot find that the Licensing Board acted unreasonably in rejecting their claim. It is, of course, settled that a late-filed contention must be tendered promptly upon the discovery of the information upon which it is based.²⁷ From our examination of the same exercise documentation reviewed by the Licensing Board, we would be hard pressed to conclude, as the intervenors argue, that these materials were indispensable to the proper pleading of their contention. Rather, as the Licensing Board found, the pertinent details of the exercise accident scenario are all listed in the July 6 inspection report.²⁸

Equally unpersuasive is the intervenors' claim that this same documentation was necessary for them to learn of the exercise objectives. In particular, the intervenors argue that in order to frame their contention they had to know that one of the exercise objectives required the applicants to demonstrate that the

²⁴ *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-743, 18 NRC 387, 395-96 (1983).

²⁵ *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 1), ALAB-868, 25 NRC 912, 922 (1987); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-828, 23 NRC 13, 20-21 (1986); *Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), ALAB-707, 16 NRC 1760, 1763 (1982).

²⁶ See *Comanche Peak*, 25 NRC at 922; *Washington Public Power Supply System (WPPSS Nuclear Project No. 3)*, ALAB-747, 18 NRC 1167, 1171 (1983).

²⁷ *Catawba*, 17 NRC at 1048 (1983). See *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), CLI-86-8, 23 NRC 241, 244-45 (1986); *Limerick*, 23 NRC at 21.

²⁸ See Inspection Report No. 50-443/88-09 at 3.

onsite staff could develop appropriate solutions to reactor problems. Like the exercise accident scenario, this information is found in the July 6 inspection report. The report specifically notes those activities of the applicants' personnel that the NRC inspectors observed during the exercise, including the "[d]etection, classification, and assessment of scenario events" and "[p]erformance of technical support, repair and *corrective actions*."²⁹ Moreover, this particular exercise objective is, or reasonably should have been, self-evident to the intervenors because every onsite emergency preparedness exercise necessarily must test the operators' ability to develop appropriate solutions to the reactor problems causing the emergency.³⁰ Accordingly, we cannot find that the Licensing Board erred in determining that the intervenors failed to establish good cause for not submitting their exercise contention much earlier than September 16, 1988, when the information on which the contention was based was available to them by July 15.

The Licensing Board also concluded that the second and fourth factors tipped the scales in favor of the intervenors, but that these two factors were entitled to less weight than the other three factors. It found, however, that the third factor (i.e., the extent intervenors may reasonably be expected to assist in developing a sound record) weighed against the admission of the exercise contention. The Board reiterated that the intervenors had an obligation in addressing the third criterion to set out with as much particularity as possible the precise issues they plan to cover, the identity of their prospective witnesses, and a summary of their proposed testimony. It then found that even though the intervenors were experienced litigants before the agency, they failed in their original motion to furnish the required information in the prescribed form and, in their reply pleading, they still did little to supply this information. The intervenors challenge this determination and argue that the Licensing Board placed form over substance in deciding the third factor against them.

The Commission has emphasized "the necessity of the moving party to demonstrate that it has special expertise on the subjects which it seeks to raise."³¹ Hence, the Commission has indicated that, in addressing the third criterion,

²⁹ *Id.* at 3-4 (emphasis supplied).

³⁰ Although we do not rely on it, we note that the onsite exercise objectives were announced at a public meeting attended by one of the counsel for the intervenors shortly after the conclusion of the emergency planning exercise. On July 2, 1988, in Portsmouth, New Hampshire, the Federal Emergency Management Agency sponsored a public meeting on the exercise where various officials involved in the exercise entertained questions from interested members of the public. The transcript of that meeting reveals that Alan Fierce, one of the attorneys involved in the Seabrook licensing proceeding from the Massachusetts Attorney General's office, raised several questions at the meeting. FEMA Tr. 93, 145-60. The transcript also shows that Craig Conklin, an NRC senior emergency preparedness specialist, explained the agency's inspection of the onsite portion of the exercise. As part of his presentation, Mr. Conklin enumerated the "major areas" of the exercise concentrated upon by the NRC inspectors that included, *inter alia*, the ability of the applicants "to formulate and implement actions that could mitigate further damages to the plant." FEMA Tr. 56.

³¹ *Braidwood*, 23 NRC at 246.

the intervenors must not only identify the issues they plan to cover but they also must identify their prospective witnesses and summarize their proposed testimony.³² Here, finding that the intervenors were experienced litigants that were cognizant of these pleading requirements, the Licensing Board refused to ignore them as the intervenors would have it. In the circumstances, we cannot fault the Licensing Board for its decision. The intervenors fulfilled their obligation to identify the issue they sought to raise by including the exercise contention with their motion to admit it.³³ But their assertion that the Licensing Board put form over substance has a hollow ring, given that their initial motion stated only that they would contribute to the development of a sound record "by providing an expert witness"³⁴ and then, in their reply to the responses of the applicants and the staff noting this deficiency, they claimed that "[o]bviously, the contention itself which incorporates the Pollard Affidavit was intended to satisfy this requirement."³⁵ The Licensing Board's refusal to countenance such tactics by weighing the third factor against the intervenors was not unreasonable.

Finally, the Licensing Board found that the fifth factor (i.e., the extent the contention will broaden the issues or delay the proceeding) militated against admitting the exercise contention, and the intervenors do not question this determination. On balance, the Board concluded that the intervenors had failed to demonstrate that they prevailed on the five-factor test and it denied the intervenors' motion to admit the contention. Our review of the Licensing Board's consideration of the five lateness criteria does not permit us to find under the applicable review standard that a reasonable mind could reach no other result than to admit the intervenors' late-filed exercise contention.

Further, even if we were to find that the Licensing Board should have weighed the third factor in intervenors' favor, we still would reach the same result. It is well established that the first factor is the most crucial and, when the proponent of a contention fails to demonstrate good cause for not filing the contention in a more timely fashion, the movant must make a *compelling* showing on the other four factors.³⁶ Here, as the Licensing Board found, the intervenors failed to make a sufficiently compelling showing on factors two through five to overcome their failure to establish good cause. Further, in considering whether to admit a

³² *Id.* See *Mississippi Power & Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-704, 16 NRC 1725, 1730 (1982).

³³ See *Comanche Peak*, 25 NRC at 925 n.48.

³⁴ Intervenors' Motion at 10.

³⁵ Joint Intervenors' Reply to Responses of the Applicants and the NRC Staff to Onsite Exercise Contention (October 7, 1988) at 18.

Not only did the intervenors not identify their affiant as the prospective witness in their motion to admit the exercise contention but, as the applicants' counsel noted in an unchallenged statement at oral argument before us, the intervenors' affiant has previously filed many affidavits in the Seabrook proceeding yet he has never appeared as a witness in any phase of the proceeding. App. Tr. 38.

³⁶ *Braidwood*, 23 NRC at 244.

late-filed contention, the second and fourth factors are accorded less weight than the first, third, and fifth factors.³⁷ Therefore, when the relative importance of the five factors is considered, the most important first factor and the significant fifth factor weigh heavily against the admission of the intervenors' exercise contention. On the other side of the equation, the less important second and fourth factors favor admission and, under our assumption, the significant third factor would favor admission. But the intervenors failed to make a compelling showing on any of these three factors. In the circumstances, a proper balancing of the factors would still weigh against admitting the intervenors' contention. Accordingly, the Licensing Board's balancing of the five factors and its denial of the intervenors' motion to admit the exercise contention are affirmed.

C. In light of our affirmance of the Licensing Board's denial of the intervenors' motion to admit their exercise contention, we need not reach any of the issues involved in the lower Board's consideration of the alternative motion to reopen the record. There is, however, an independent basis for affirming the Licensing Board's result that was raised below by the staff. The Commission has restricted licensing hearings on the results of emergency planning exercises to contentions involving "deficiencies which preclude a finding of reasonable assurance that protective measures can and will be taken, i.e., fundamental flaws in the plan."³⁸ In defining a "fundamental flaw" we have stated that "[f]irst, it reflects a failure of an essential element of the plan, and, second, it can be remedied only through a significant revision of the plan."³⁹ It is clear that the intervenors' exercise contention does not meet this standard.

Even if we generously assume that the intervenors' exercise contention complies with the first requirement of the fundamental-flaw test by properly implicating an essential element of the applicants' onsite emergency plan, i.e., training, there is no room for doubt that the contention does not meet the second prong. We have noted that "where the problem can be readily corrected, the flaw cannot reasonably be characterized as fundamental."⁴⁰ The gist of the intervenors' contention is that each of the purported weaknesses listed in the staff inspection report shows that the staffs of the TSC and EOF were insufficiently trained to accomplish the tasks assigned to them in the exercise. But contrary to the intervenors' apparent belief, the asserted weaknesses, even if accepted as true, do not implicate the applicants' emergency *plan* itself at all, and therefore they cannot be remedied "only through a significant revision of the plan".⁴¹ Rather, as the intervenors' contention recognizes, "[t]he personnel at the TSC

³⁷ *Id.* at 245.

³⁸ *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-86-11, 23 NRC 577, 581 (1986).

³⁹ *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-903, 28 NRC 499, 505 (1988) (emphasis in original).

⁴⁰ *Id.* at 506.

⁴¹ *Id.* at 505.

and EOF are expected to use the emergency operating procedures to assist in recognizing an emergency condition in order to prescribe the actions necessary to correct the condition."⁴² At most, the intervenors' contention highlights deficiencies that would require minor modifications to several plant operating procedures, and the intervenors do not claim that such procedures are part of the emergency plan. Moreover, even if we further assume that the applicants' emergency plan was somehow directly involved in these purported deficiencies, such problems are readily corrected by providing supplemental training to some of the applicants' personnel; such training does not involve any revision, much less a significant one, of the emergency plan. Thus, the intervenors' contention fails to assert a fundamental flaw, and we affirm the Licensing Board's denial of the intervenors' motion for this additional reason.

For the foregoing reasons, the Licensing Board's denial of the intervenors' motion to admit their exercise contention, LBP-89-4, 29 NRC 62, is *affirmed*. It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

⁴² Intervenors' Motion, Exhibit 1, Joint Intervenors On-Site Exercise Contention, at 2.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulles, Chairman
Dr. Jerry Harbour
Dr. Jerry R. Kline

In the Matter of

Docket Nos. 50-352-OL
50-353-OL
(ASLBP No. 89-587-03-OL-R)

PHILADELPHIA ELECTRIC
COMPANY
(Limerick Generating Station,
Units 1 and 2)

June 2, 1989

MEMORANDUM AND ORDER

On May 30, 1989, Counsel for Philadelphia Electric Company, Nuclear Regulatory Commission Staff, Federal Emergency Management Agency, Pennsylvania Emergency Management Agency, Pennsylvania Department of Corrections, and the Graterford inmates submitted a stipulation in the captioned proceeding for the purpose of resolving the interest of the Graterford inmates in the proceeding without the need for a formal hearing. The Commission, by Order of April 14, 1989 (unpublished), defined the issue to be resolved in this proceeding as whether the radiological emergency response plan relating to the Graterford Institution complies with the standard of 10 C.F.R. § 50.47(b)(15) insofar as radiological emergency response training is provided to civilian personnel (e.g., bus and ambulance drivers) who may be called upon to assist in the event of an emergency that would require evacuation of the Graterford prison. The Third Circuit Court of Appeals remanded the issue to the Commission in an opinion

of February 28, 1989, granting a petition for review filed by the Graterford inmates in *Martin v. NRC*, Nos. 85-3444, 87-3190, and 87-3565.

The Stipulation, a copy of which is attached and made a part hereof, recites that the Pennsylvania Department of Corrections, having concluded that because of uncertainties as to the training of civilian bus drivers, has revised its Radiological Emergency Response Plan by substituting the use of Department of Corrections employees as bus and ambulance drivers rather than employees of bus companies.

In the Stipulation, the parties agree, *inter alia*, that all evacuation bus and ambulance drivers will be employees of the Department of Corrections; that they will receive specified requisite training; and that appropriate changes will be made in the Graterford Radiological Emergency Response Plan.

The parties to the Stipulation further agreed that the concerns expressed by the Graterford inmates in their remaining contention have been met, and that the Stipulation provides reasonable assurance that the radiological response plan relating to the Graterford prison complies with the standard of § 50.47(b)(15) that radiological emergency response training will be provided to Department of Corrections personnel (e.g., bus and ambulance drivers) who may be called upon to assist in the event of an emergency that would require evacuation of the Graterford prison.

The Stipulation then provides that the remaining contention of the Graterford inmates shall be dismissed and the proceeding before the Licensing Board terminated. It is to be made effective on notification to the Board and parties by the Department of Corrections that at least seventy-five of the drivers have received the described training provided; however, in the event that such notification is not given, the proceeding will be reopened on request by the Graterford inmates.

At the outset, we wish to commend the parties for their immediate willingness to resolve the issue at hand through cooperation rather than confrontation.

The Licensing Board has reviewed the Stipulation in its entirety. The Board accepts and approves the agreement insofar as it provides: that Department of Corrections personnel will act as the bus and ambulance drivers in the event of an emergency that would require evacuation of the Graterford prison; that the personnel will be provided with the described training; that the appropriate changes will be made in the Graterford Radiological Emergency Response Plan; that the concerns expressed by the Graterford inmates in their remaining contention have been met; and that the radiological emergency response plan relating to the Graterford prison complies with the standard of § 50.47(b)(15) that radiological emergency response training will be provided to the Department of Corrections personnel as required.

The Licensing Board does not accept and approve of that part of the agreement that provides for the dismissal and termination of the proceeding

when notification is given to the Board and the parties by the Department of Corrections that at least seventy-five of the drivers have received the described training.

If the Licensing Board were to approve the process for terminating the proceeding as called for in the Stipulation, it would cede its responsibility for regulating the course of the proceeding to the parties, which it cannot do. The Licensing Board cannot act as a mere observer in the proceeding over which it is charged to preside. We will terminate this proceeding at the request of the parties when we are satisfied that the requirements for doing so are met. We would have no hesitancy about passing upon a request by the parties for dismissal and termination of the proceeding when seventy-five of the drivers have been trained, the condition provided for in the Stipulation.

Another inadequacy in the process proposed in the Stipulation for terminating the proceeding is the failure to set any time limits for the actions to be taken to conclude the proceeding. There is no schedule indicating when the seventy-five drivers will be trained or within which time period the Graterford inmates can request that the proceeding be "reopened."

The Commission in its Order of April 14, 1989, directed that this proceeding shall be expedited to the extent consistent with fairness to the parties. It is the Board's responsibility to see that this is accomplished. The parties shall submit to the Licensing Board at the end of 30 days a progress report specifying the steps already taken to implement the requirements of the Stipulation and a schedule for completing the remainder.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Morton B. Margulies, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland
June 2, 1989

STIPULATION

WHEREAS, the parties to this proceeding and interested Commonwealth and Federal agencies with interests relevant to the disposition of the remaining contention of the inmates at the State Correctional Institution at Graterford (Graterford inmates) are the Nuclear Regulatory Commission Staff (NRC Staff),

the Federal Emergency Management Agency (FEMA), the Pennsylvania Emergency Management Agency (PEMA), the Pennsylvania Department of Corrections, Philadelphia Electric Company (PECO), and the Graterford inmates; and

WHEREAS, the United States Court of Appeals for the Third Circuit issued an opinion on February 28, 1989, granting, *inter alia*, a petition for review filed by the Graterford inmates in *Martin v. NRC*, Nos. 85-3444, 87-3190, and 87-3565 ordering the NRC to give additional consideration to an inmate contention questioning whether the radiological emergency response plan relating to the Graterford prison complies with the standard of 10 C.F.R. § 50.47(b)(15) that radiological response emergency training is provided to civilian personnel (e.g., bus and ambulance drivers) who may be called upon to assist in the event of an emergency that would require evacuation of the Graterford prison; and

WHEREAS, the Commission issued an Order on April 14, 1989, requiring further proceedings before an Atomic Safety and Licensing Board in compliance with the Opinion of the Court of Appeals and a prehearing conference before the duly appointed Atomic Safety and Licensing Board was conducted on May 12, 1989, in furtherance of the Order of the Commission; and

WHEREAS, due to uncertainties as to the training of civilian bus drivers, the Department of Corrections has revised its Radiological Emergency Response Plan by substituting the use of Department of Corrections employees as bus and ambulance drivers rather than employees of private bus companies; and

WHEREAS, the parties declare their desire to resolve the Graterford inmates' remaining contention by a stipulated agreement to avoid the necessity of a formal hearing;

IT IS THEREFORE STIPULATED AND AGREED AS FOLLOWS:

1. At the present time, there are approximately 3000 inmates in custody at Graterford. The Department of Corrections in its "Response of Commonwealth of Pennsylvania Department of Corrections Request for Information Raised at the February 27, 1985 Atomic Safety and Licensing Board Conference" stated the evacuation plan called for the use of 58 buses with an additional 13 buses in reserve, each with a capacity of 40 inmates per bus. The revised plan calls for 66 buses and an additional 34 in reserve, with a maximum capacity of 45 per bus.

2. All bus drivers will be employees of the Department of Corrections and will have appropriate Pennsylvania Class II licenses as necessary to operate the vehicle. There will never be more than two or three nonambulatory inmates housed in the Graterford medical facility at any time, seriously ill inmates being sent to outside hospitals. The Department of Corrections will provide ambulances to evacuate the nonambulatory inmates. The ambulance drivers will be trained Department of Corrections employees.

3. PEMA and the Department of Corrections will review and approve in the advance of training classes a standardized lesson plan. The plan will be similar

in content and format to the plan which was previously approved and utilized in the training of school bus drivers who would participate in an evacuation of schools located within the plume exposure pathway emergency planning zone for the Limerick Generating Station. Appropriate modifications will be made with respect to the particular mission of evacuating the Graterford inmates.

4. Once the lesson plan has been approved, PECO will furnish the services of its consultant, Schneider Engineers, whose employees will conduct a radiological training program at various times and places for Department of Corrections personnel as necessary to complete training. The training would include a general orientation and overview of radiological principles, emergency management principles, government response to disaster, levels of radiation during an incident at a fixed nuclear facility, decontamination, and monitoring procedures. Best efforts will be made to complete the training within thirty days after the Licensing Board has approved this Stipulation. The parties recognize that the temporary unavailability of some individuals may, as a practical matter, require that additional training classes be held beyond this period. Retraining shall be in accordance with NUREG-0654, Planning Standard O.

5. The Department of Corrections is preparing appropriate changes to the Graterford Radiological Emergency Response Plan, including changes in capacity not relevant to this proceeding. Revisions undertaken by the Department of Corrections will be consistent with the estimates of the time of evacuation included in the Plan. All revisions pertinent to training will be provided to the Graterford inmates' counsel and technical consultant for comment. Every reasonable effort will be made to accommodate any concern expressed by the inmates through their representatives.

WHEREFORE, the parties agree and stipulate that the concerns expressed by the Graterford inmates in their remaining contention have been met; and that the stipulation provides reasonable assurance that the radiological emergency response plan relating to the Graterford prison complies with the standard of 10 C.F.R. § 50.47(b)(15) that radiological emergency response training will be provided to Department of Corrections personnel (e.g., bus and ambulance drivers) who may be called upon to assist in the event of an emergency that would require evacuation of the Graterford prison; and

WHEREFORE, the parties further agree and stipulate that the remaining contention of the Graterford inmates shall be dismissed and the proceeding before this Licensing Board terminated. Dismissal of this contention and termination of the proceeding shall be effective upon notification to the Board and parties by the Department of Corrections that at least 75 of the drivers have received the training described above, provided, however, that in the event such

notification is not provided, the proceeding will be reopened on request by the Graterford inmates.

/S/

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/S/

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/S/

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

B. Paul Cotter, Jr., Chairman
Glenn O. Bright
Jerry Harbour

In the Matter of

Docket Nos. 50-250-OLA-4
50-251-OLA-4
(ASLBP No. 89-584-01-OLA)
(Pressure-Temperature Limits)

FLORIDA POWER AND LIGHT
COMPANY
(Turkey Point Nuclear Generating
Plant, Units 3 and 4)

June 8, 1989

Following a request for a hearing seeking to challenge the issuance of license amendments under 10 C.F.R. § 50.91(a) ("no significant hazards consideration"), the Licensing Board rejects one contention for lack of jurisdiction and accepts two contentions for litigation.

RULES OF PRACTICE: CONTENTIONS, ADMISSIBILITY OF

A proffered contention must fall within the scope of the issues set out in the *Federal Register* notice of opportunity for hearing. See, e.g., *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 426 (1980); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976).

RULES OF PRACTICE: CONTENTIONS, ADMISSIBILITY OF

Petitioners need only set forth the bases, i.e., the reasons, for each contention with reasonable specificity and need not detail the evidence in support thereof. *Mississippi Power & Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 426 (1973). However, "reasonable specificity" means that the bases must be sufficiently detailed so that they: (1) demonstrate that the issue is admissible and requires further inquiry into the matter; and (2) put the parties on notice as to what they will have to oppose or defend.

RULES OF PRACTICE: CONTENTIONS, ADMISSIBILITY OF

The admissibility of contentions must be decided on a case-by-case basis. *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20 (1974).

RULES OF PRACTICE: CONTENTIONS, ADMISSIBILITY OF

The Commission's rules do not permit admitting a contention that constitutes an attack on a Commission regulation absent special circumstances that would justify waiving the prohibition. 10 C.F.R. § 2.758.

RULES OF PRACTICE: CONTENTIONS, ADMISSIBILITY OF

A contention that seeks to address an issue previously considered in an earlier proceeding cannot be admitted for relitigation in a subsequent proceeding. *Portland General Electric Co.* (Trojan Nuclear Plant), LBP-78-40, 8 NRC 717, 745 (1978), *aff'd*, ALAB-534, 9 NRC 287 (1979).

LICENSING BOARD(S): JURISDICTION

Licensing boards derive their subject matter jurisdiction from the orders, rules, and regulations promulgated by the Commission. *See Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790 (1985).

LICENSING BOARD(S): JURISDICTION

The Commission has made the Staff's "no significant hazards consideration" under 10 C.F.R. § 50.91(a) determination final and reserved only a discretionary right of review in the Commission itself. There is no right to appeal the Staff's hazards determination, itself, to the licensing boards or any other body within

the agency. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-86-12, 24 NRC 1, 4 (1986), *rev'd in part on other grounds*, *San Luis Obispo Mothers for Peace v. NRC*, 799 F.2d 1268 (9th Cir. 1986).

RULES OF PRACTICE: CONTENTIONS, ADMISSIBILITY OF

Where a prior license amendment, handled as an administrative matter, was not accompanied by a notice of opportunity for hearing and thus no party was available that did challenge or could have challenged the amendment, a petitioner is not estopped from raising the issue in a subsequent license amendment proceeding. See *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), LBP-85-11, 21 NRC 609, 621-24 (1985), *rev'd and remanded on other grounds*, CLI-86-8, 23 NRC 241 (1986).

TECHNICAL ISSUES DISCUSSED

General Design Criteria 31, 10 C.F.R. Part 50, Appendix A;
Fracture Toughness Requirements, 10 C.F.R. Part 50, Appendix G;
Reactor Vessel Material Surveillance Program Requirements, 10 C.F.R. Part 50, Appendix H;
Reference Temperature for nil-ductility transition.

MEMORANDUM AND ORDER **(Ruling upon Contentions)**

Petitioners Center for Nuclear Responsibility and Joette Lorion challenge license amendments issued to Florida Power and Light Company for its Turkey Point Units 3 and 4 nuclear power plants. The license amendments change the technical specifications governing pressure/temperature limits for the operation of the units. The petition to intervene and request for hearing was timely filed and subsequently amended. Neither Licensee nor the Nuclear Regulatory Commission Staff (Staff) challenge Petitioners' standing to intervene. Consequently, the only issue before this Board is whether Petitioners have presented an admissible issue ("contention") to be litigated.

I. TECHNICAL BACKGROUND

Turkey Point Units 3 and 4 are 760-Mw pressurized water reactors. The two units began full-power operation in 1972 and 1973, respectively, with

pressure/temperature (P/T) limits specified for the next 10 years of effective full-power operation.¹

P/T limits are specified because these two factors in combination with radiation affect the integrity of the material making up the vessel in which nuclear reactions take place. The reactor vessel must be designed to withstand these pressures and temperatures during operation as well as the changes in P/T when the reactor is started up, cooled down, or tested for leaks. See 10 C.F.R. Part 50, Appendix G.

The NRC regulatory scheme setting out these requirements is found in Part 50 of Title 10 of the *Code of Federal Regulations*. Some fifty-three General Design Criteria for nuclear reactors are set out in Appendix A to Part 50. General Design Criterion 31 (GDC 31) sets out design criteria for fracture prevention of the reactor coolant pressure boundary, which includes the reactor vessel beltline materials. It requires that

when stressed under operating, maintenance, testing, and postulated accident conditions (1) the boundary behaves in a nonbrittle manner and (2) the probability of rapidly propagating fracture is minimized. The design shall reflect consideration of service temperatures and other conditions of the boundary material under operating, maintenance, testing, and postulated accident conditions and the uncertainties in determining (1) material properties, (2) the effects of irradiation on material properties, (3) residual, steady state and transient stresses, and (4) size of flaws.

Section 50.60 sets out acceptance criteria for fracture prevention measures for reactor vessel materials at the beltline during normal operation, and Appendices G, "Fracture Toughness Requirements," and H, "Reactor Vessel Material Surveillance Program Requirements," to Part 50 describe specific criteria that the Turkey Point reactor vessel materials must meet to satisfy the design criteria of GDC-31.

The significance of these requirements is summed up in the Staff's Safety Evaluation of Licensee's requested P/T changes at page 6:

The fracture toughness of the steel in a reactor pressure vessel wall is determined primarily by the following factors: (1) the particular material (composition and metallurgical history), (2) the accumulated irradiation level (neutron fluence) to which the material is exposed, and (3) the temperature of the material. In a reactor pressure vessel, significant loadings result from the internal pressure and thermal gradient through the vessel wall thickness during heatup and cool down. Since the fracture toughness of the vessel material decreases with decreasing temperature, P/T limits are required during normal reactor operation and tests to control operational stresses to the reactor vessel. Furthermore, because the fracture toughness of the vessel material decreases with increasing neutron irradiation (i.e., time duration of operation), a material surveillance program is required to monitor changes in the fracture

¹ Because of outages, planned and unplanned, the two units had not achieved 10 years of full-power operation by the end of 1988. Tr. 71.

toughness properties of the reactor vessel belline material over the lifetime of the vessel. The P/T limits are periodically revised to take into account additional test data from the surveillance program on the changes in the fracture toughness properties due to irradiation.

The implementation of these requirements for Turkey Point is set out in the NRC Approved Technical Specifications governing the operation of the plant.

In 1988, the Licensee requested license amendments for both units revising the P/T limits and extending their applicability. Two license amendments (No. 134 to License No. DPR-31 for Unit 3 and No. 128 to License No. DPR-41 for Unit 4) were issued January 10, 1989, with the Staff Safety Evaluation and Final Determination of No Significant Hazards pursuant to 10 C.F.R. § 50.91(a)(4) (1988). The amendments incorporate revised P/T limit curves applicable up to 20 Effective Full-Power Years (EFPY) of service life for each Turkey Point unit. See "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 134 to Facility Operating License No. DPR-31 and Amendment No. 128 to Facility Operating License No. DPR-41," issued January 10, 1989, at 10.

The contentions sought to be admitted here charge that the revised P/T limits will jeopardize the safety margins required for the belline (roughly the midpoint) of the reactor vessels at Turkey Point. Petitioners contend that the materials making up the belline may become brittle and be subject to rapidly propagating fracture.

The effect of neutron radiation of reactor vessel materials ("neutron embrittlement") at Turkey Point is monitored through an integrated surveillance program approved by the Staff in 1985. Integrated surveillance programs for like reactors authorize the use of samples from either reactor in measuring neutron embrittlement. 10 C.F.R. Part 50, Appendix H, § II.C. Capsules containing the same materials that make up the pressure vessel belline were inserted in the vessel at the belline at the time the reactors became operational. The most limiting, i.e., vulnerable, of these materials is the material making up the welds at the belline.

The reference temperature for nil-ductility transition, " RT_{NDT} " is the reference temperature of certain materials such as ferritic metals at or below which the materials may fail in a brittle, instead of a ductile, manner if high stress conditions occur. RT_{NDT} is also referred to as the nil-ductility temperature. The nil-ductility temperature is affected by both the composition of the material and its neutron radiation history. The nil ductility temperature increases with: (1) higher initial copper (and certain other alloy) content of the material; and (2) neutron irradiation over time, i.e., neutron embrittlement. Typically the fracture toughness (or "strength") of the metal will increase with increasing temperature and decrease with decreasing temperature. In the region of the nil-ductility temperature the fracture toughness decreases very abruptly as the temperature

decreases. To determine a change in RT_{NDT} due to neutron bombardment, specimens are irradiated in the capsules mounted in the reactor vessel to: (1) identify any change in the fracture toughness of those sample materials as a result of irradiation; and (2) predict future changes in RT_{NDT} (based on future neutron irradiation) for the reactor vessel materials that the samples represent. Tr. 12, 51-54, 72-76, 81-82; *see also* 10 C.F.R. Part 50, Appendices A (General Design Criteria 31 and 51), G, and H.

II. DECISION

For a contention to be admissible, our regulations require that the bases for the contention must be stated with reasonable specificity. 10 C.F.R. § 2.714(b)(2) (1988). That requirement has been exhaustively interpreted in Commission case law, holding, *inter alia*, that the contention proffered must fall within the scope of the issues set out in the *Federal Register* notice of opportunity for hearing. *See, e.g., Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 426 (1980); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976). Petitioners need only set forth the bases, i.e., the reasons, for each contention and need not detail the evidence in support thereof. *Mississippi Power & Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 426 (1973). However, "reasonable specificity" means that the bases must be sufficiently detailed so that they: (1) demonstrate that the issue is admissible and requires further inquiry into the matter; and (2) put the parties on notice as to what they will have to oppose or defend. The admissibility of contentions must be decided on a case-by-case basis. *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20 (1974).

On the other hand, our rules do not permit admitting a contention that constitutes an attack on a Commission regulation absent special circumstances that would justify waiving the prohibition. 10 C.F.R. § 2.758 (1988). *See Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 544-46 (1986); *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), ALAB-784, 20 NRC 845 (1984); *Commonwealth Edison Co.* (Byron Nuclear Power Station, Units 1 and 2), LBP-80-30, 12 NRC 683 (1980). Nor can a contention be considered which addresses an issue previously considered in an earlier proceeding. *Portland General Electric Co.* (Trojan Nuclear Plant), LBP-78-40, 8 NRC 717, 745 (1978), *aff'd*, ALAB-534, 9 NRC 287 (1979).

A. Contention 1

Contention 1 presents a question of law and reads as follows:

That the Nuclear Regulatory Commission Staff's Final Determination of No Significant Hazards Consideration issued on January 10, 1989 in support of license amendment nos. 134 and 128 issued to allow FPL to revise the pressure/temperature limits for Turkey Point nuclear units 3 and 4 respectively, is based on incomplete, faulty and non-conservative data, is in error, and should be reviewed by this Atomic Safety and Licensing Board in order to protect the public health and safety from a loss of pressure vessel integrity and subsequent meltdown.

Petitioners' Amended Request for Hearing and Petition for Leave to Intervene at 5-6 ("Petition").

As bases for the contention, Petitioners state that the Staff's No Significant Hazards determination is erroneous because it is

based on substantial uncertainties, incomplete data, and non-conservative assumptions in the prediction of adjusted reference temperature nil-ductility-transfer (RTNDT) for the reactor units.

Petition at 6. Petitioners conclude that the Staff's alleged error could result in vessel failure and a meltdown, thus warranting action by this Board to protect the public health and safety by reversing the Staff's determination.

Both Licensee and Staff oppose admission of Contention 1 on the ground that this Licensing Board lacks jurisdiction to consider the matter. We agree.

Section 191 of the Atomic Energy Act, as amended, authorizes the Commission

to establish one or more atomic safety and licensing boards . . . to conduct such hearings as the Commission may direct and make such intermediate or final decisions as the Commission may authorize

42 U.S.C. § 2241 (1982) (emphasis added). Thus, Licensing Boards derive their subject matter jurisdiction from the orders, rules, and regulations promulgated by the Commission. *See Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790 (1985). In the instant case, the Staff's No Significant Hazards determination was made pursuant to 10 C.F.R. § 50.91(a)(4) (1988). That section was promulgated along with 10 C.F.R. § 50.58(b)(6) 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.

The statement of considerations accompanying the issuance of §§ 50.58 and 50.91 makes even more explicit the foregoing reservation of jurisdiction by the Commission. It provides that

The Commission also explained in the interim final rules that while the substance of public comments on the no significant hazards consideration finding could be litigated in a hearing, when one is held, neither the Commission nor its Licensing Boards or Presiding Officers would entertain hearing requests on the NRC staff's substantive findings with respect to these comments.

51 Fed. Reg. 7744, 7765 (1986). In short, the Commission has made the Staff's determination on hazards final and binding and reserved only a discretionary right of review in the Commission itself. There is no *right* to appeal the "no significant hazards determination" itself to the licensing boards or any other body within the agency. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-86-12, 24 NRC 1, 4 (1986), *rev'd in part on other grounds, San Luis Obispo Mothers for Peace v. NRC*, 799 F.2d 1268 (9th Cir. 1986).

Licensing Boards have twice before recognized this limitation on their jurisdiction in the context of spent fuel pool expansion proceedings. *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Unit 1), LBP-88-10A, 27 NRC 452, 456-57 (1988); *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), LBP-87-17, 25 NRC 838, 844 (1987). However, in the *St. Lucie* case, the Licensing Board noted at 457 that

[t]hat 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 and safety disclosed at any subsequent hearing.

That principle applies in the instant case.

However, with respect to the Staff's no significant hazards determination itself, the law is otherwise clear. Contention 1 must be rejected as beyond the jurisdiction of this Board.

B. Contention 2

Contention 2 states:

That the revised temperature/pressure limits that have been set for Turkey Point Unit 4 are non-conservative and will cause that reactor unit to exceed the requirements of General Design Criterion 31 of Appendix A to 10 CFR Part 50, which requires that the reactor coolant pressure boundary be designed with a sufficient margin to insure that, when stressed under operating, maintenance, testing, and postulated accident conditions, (1) the boundary

behaves in a non-brittle manner and (2) the probability of a rapidly propagating fracture is minimized.

Petitioners contend that the new pressure/temperature limits could cause the reactor vessel to exceed these requirements because the Licensee has based its calculation of the predicted RTNDT for Unit 4 partly on surveillance capsule V test results from Turkey Point Unit 3 rather than predicting the RTNDT for Unit 4 based on Unit 4 capsule V surveillance capsule data — a practice which is not scientific, not valid, and could cause the Unit 4 reactor to behave in a brittle manner which would make the chances of a pressure vessel failure and resultant meltdown more likely. Petitioners contend that predictions of RTNDT and pressure/temperature limits derived from the shift in nil-ductility transfer should be based only on plant-specific Unit 4 data, especially in light of the fact that the only tests ever performed on Unit 4 weld specimens demonstrated that the weld material in the Unit 4 vessel was 30% more brittle than that of Unit 3. Because Unit 4's weld material is more embrittled, Petitioners contend that the FPL Integrated Surveillance program does not meet the Requirements of 10 CFR Appendix G Parts V.A and V.B, and 10 CFR Appendix H, including Appendix H Parts IIC and IIIB. Finally, Petitioners contend that the surveillance capsule V for Unit 4 should be tested to establish the new pressure/temperature limits and should the testing indicate that the RTNDT for Unit 4 has passed the 300-degree Fahrenheit [sic] screening criterion set by the NRC, Unit 4 should be shut down until it is demonstrated that the Unit 4 reactor pressure vessel can maintain its integrity beyond this limit.

Petition at 7-8.

As bases for this contention, Petitioners make two arguments. First, Petitioners argue that, after 7 years of operation, RT_{NDT} was to be calculated based upon the data obtained from the capsule material to be removed from each reactor. Petitioners cite a Southwest Research Institute report issued in 1979 for that proposition. However, Petitioners charge, FPL did not use data from Unit 4, but rather data from "the less severely affected reactor Unit 3 for predicting the RT_{NDT} and revising the heat-up and cooldown limits." Petition at 9. Petitioners buttress their argument by citing the conclusions of Dr. George Sih, Director of Fracture Mechanics at Lehigh University, in another lawsuit. Dr. Sih took the position that

one is not justified to assume that data collected in Unit No. 3 could be applied to predict the behavior of Unit No. 4. Hence, conclusions drawn on RTNDT for Unit No. 4 based on the data of Unit No. 3 cannot be considered valid.

Id. Dr. Sih further concluded that "according to FPL's own test data, Unit 4 has already passed the 300-degree NRC screening criterion." *Id.*

Licensee objects to admission of the contention on two grounds. First, Licensee argues that the contention is founded upon an impermissible attack on a rule, namely the Commission's Integrated Surveillance Program set out in 10 C.F.R. Part 50, Appendix H, which was approved for use at the Turkey Point units in 1985. Section IIC of Appendix H authorizes integrated surveillance,

i.e., the use of sample data from a set of reactors with similar design and operating features, as follows:

C. An integrated surveillance program may be considered for a set of reactors that have similar design and operating features. The representative materials chosen for surveillance from each reactor in the set may be irradiated in one or more of the reactors, but there must be an adequate dosimetry program for each reactor. No reduction in the requirements for number of materials to be irradiated, specimen types, or number of specimens per reactor is permitted, but the amount of testing may be reduced if the initial results agree with predictions. Integrated surveillance programs must be approved by the Director, Office of Nuclear Reactor Regulation, on a case-by-case basis. Criteria for approval include the following considerations:

1. The design and operating features of the reactors in the set must be sufficiently similar to permit accurate comparisons of the predicted amount of radiation damage as a function of total power output.
2. There must be adequate arrangement for data sharing between plants.
3. There must be a contingency plan to assure that the surveillance program for each reactor will not be jeopardized by operation at reduced power level or by an extended outage of another reactor from which data are expected.
4. There must be substantial advantages to be gained, such as reduced power outages or reduced personnel exposure to radiation, as a direct result of not requiring surveillance capsules in all reactors in the set.

Licensee points to the well-established prohibition in 10 C.F.R. § 2.758 (1988) and supporting case law.

Licensee's second objection assumes Petitioners are not attacking the integrated surveillance rule but rather its implementation at Turkey Point. Licensee argues that that challenge, too, is barred. The use of an integrated surveillance program at Turkey Point was authorized by license amendments issued in 1985 after notice and opportunity to request a hearing were published in the *Federal Register*. No hearing was requested at the time. Licensee notes that Petitioners have actively followed Turkey Point and that the amendment was served on Petitioner Lorion. Tr. 39-40. Accordingly, Licensee argues that Petitioners are barred from attacking the 1985 license amendments in this proceeding. Licensee Response at 9-10. Licensee also notes that Dr. Sih's conclusions concerning integrated surveillance were previously rejected in a 1986 letter from NRC Executive Director of Operations Victor Stello to Senator Lawton Chiles. *Id.* at 8.

Staff concurs in Licensee's first objection to admission of the contention and adds two additional grounds for denying admissibility. First, Staff argues that the contention as it pertains to the integrated surveillance test program is beyond the jurisdiction of the Board because it was not encompassed in the scope of the Notice of Hearing for these licensing actions. 50 Fed. Reg. 40,981-82, 40,988 (1988). Second, Staff argues that to the extent the integrated surveillance program does not comply with certain sections of Appendices G and H, the

contention must be rejected because it was the subject of the 1985 amendment which petitioners cannot challenge now. Tr. 55-57.

It is clear that Commission regulations and case law do not permit an attack upon the Commission's rules in a case such as this. Petitioners recognized that at oral argument by taking the alternative position they were attacking the implementation of the rule and the use of this specific capsule at issue. Tr. 64. Were Contention 2 simply an attack upon the integrated surveillance test program itself or as specifically applied to the Turkey Point units by the 1985 license amendments, the contention would have to be rejected. 10 C.F.R. § 2.758 (1988).

However, a third alternative exists, namely, that Licensee's conduct of the integrated surveillance test program at Turkey Point fails to meet the requirements of the program itself. One of those requirements is for a contingency plan to

assure that the surveillance program for each reactor will not be jeopardized . . . by an extended outage of another reactor from which data are expected.

10 C.F.R. Part 50, Appendix H, § II.C.3 (1988). Were there some indication that data derived from the materials in the Unit 3 capsule are significantly different from the data that could be derived from the Unit 4 capsule, we might well be required to inquire further. Petitioners' contention concerning the validity of the Capsule V data from Unit 3 is based on the assertion that the Unit 3 Capsule material has been irradiated for a significantly shorter period of time than capsule material in Unit 4. However, the Safety Evaluation establishes that materials in both units have been irradiated for essentially the same period of time. The report, quoted by Licensee's Counsel (Tr. 71), notes on page 1 that

[i]t is estimated that TP 3 will reach 10 EFPY early in 1989, and TP4 will reach 10 EFPY in mid-1989.

We cannot say on this state of the record that this difference of less than 5% in the operating time between the two units is simply not significant and cannot form a basis for the contention. However, it appears clear to us that Petitioners have a heavy burden of proof. Accordingly, Contention 2 is admitted.

Finally, Petitioners argue that Capsule V in Unit 4 should be tested and if the results show that the screening temperature ("RT_{PTS}") of 300°F, set forth in 10 C.F.R. § 50.61(b)(2), cannot be met, Unit 4 should be shut down until certain conditions are met. A Pressurized Thermal Shock (PTS) event is defined as "an event or transient . . . causing severe overcooling (thermal shock) concurrent with or followed by significant pressure in the reactor vessel." 10 C.F.R. § 50.61(a)(2) (1988). The 300-degree screening criterion, i.e., the

Reference Temperature for Pressurized Thermal Shock ("RT_{PTS}"), applies to protection against pressurized thermal shock, and is calculated according to one of the two equations provided in 10 C.F.R. § 50.61, whichever provides the lower RT_{PTS} for the particular material. The equations contain a term, "M," which "means the margin to be added to cover uncertainties in the values of initial RT_{NDT}, copper and nickel content, fluence and the calculational procedures." § 50.61(b)(2).

We find that this issue cannot be considered in this hearing. The jurisdiction of the Board is founded upon the October 19, 1988 *Federal Register* Notice of Opportunity to Request Hearing. 53 Fed. Reg. 40,981, 40,988 (1988). A careful reading of the notice reveals that the subject of the hearing includes only a modification of pressure and temperature (P/T) limits during normal operation, governed by 10 C.F.R. § 50.60, and does not include a determination of fracture toughness requirements for pressurized thermal shock which is an accident condition governed by 10 C.F.R. § 50.61. This part of Petitioners' contention is therefore beyond the scope of this hearing and cannot be admitted.

C. Contention 3

Contention 3 is based on the same allegation of nonconservative P/T limits as they affect weld material at the bellline of the reactor vessel. Contention 3 states

That the revised pressure/temperature limits that have been set for Units 3 and 4 are nonconservative and will not meet the requirements of General Design Criterion 31 of Appendix A to 10 CFR Part 50 which requires that the reactor coolant pressure boundary be designed with sufficient margin to ensure that, when stressed under operating, maintenance, testing, and postulated accident conditions, (1) the boundary behaves in a non-brittle manner and (2) the probability of a rapidly propagating fracture is minimized. Petitioners contend that the sufficient safety margin required by GDC 31 does not exist because the P/T limits for units 3 and 4 were not based on the most limiting value of RT_{NDT} as required by 10 CFR Part 50 Appendix G and H, for reactor vessel welds because the percentage of copper that was used in the RT_{NDT} calculation is non-conservative in that it is lower than the percentage of copper that was used in previous surveillance test reports and lower than the percentage of copper quoted in many of the earlier FPL documents. Petitioners contend that the use of this non-conservative estimate of copper content means that the adjusted RT_{NDT} is unrealistically low and that the current revised P/T limits are not restrictive enough to insure that an adequate margin of safety against brittle fracture of the reactor vessel exists. This increases the possibility that the reactor vessels [*sic*] for Unit 4 will behave in a brittle manner resulting in a fracture of the vessel and subsequent meltdown of the reactor core.

Petitioners further contend that if a more conservative and accurate estimate of copper content was used to calculate the RT_{NDT}, the P/T limits would be more restrictive and that in fact, there is a possibility that it could be discovered that the NRC Screening criterion of 300-degree [*sic*] Fahrenheit [*sic*] has been reached and the Turkey Point Units 3 and 4 would

have to be shut down because they do not meet the fracture toughness requirement of 10 CFR Part 50 Appendix G.

Petition at 10-11.

Petitioners assert that, because the Licensee's calculations of RT_{NDT} assumed a copper content (0.26%) which is too low for the weld metal in the beltline materials, the resulting P/T limits at issue will not provide an adequate margin of safety against brittle fracture of the reactor vessel, as required by GDC 31 of Appendix A, 10 C.F.R. Part 50. Petition at 10.

Petitioners assert further that

there is a possibility that it could be discovered that the NRC screening criterion of 300-degree Fahrenheit² has been reached and the Turkey Point Units 3 and 4 would have to be shut down because they do not meet the fracture toughness requirement of 10 C.F.R. Part 50 Appendix G.

Amended Petition at 11.

As bases, Petitioners assert that many earlier documents on Turkey Point assumed a copper content of 0.30% or above, and that a lowering of the copper content a few hundredths of a percent can lower the RT_{NDT} by 10° to 15° degrees per hundredth of copper content. Tr. 75-76. Petitioners also assert that the

Charpy Notch capsule V weld metal specimens which were removed from Unit 3 indicate that the measured Charpy upper-shelf energy for the limiting beltline weld material already does not meet the fracture toughness requirements of 10 C.F.R. Appendix G, Section V.C.

Petition at 11-12.

Licensee objects to the admission of Contention 3 in its entirety on the grounds that it does not meet requirements for admissibility. First, Licensee argues that the value of 0.26% for copper content of the weld material was approved in a Safety Evaluation issued by the NRC Staff on April 26, 1984, and that a contention in a license amendment proceeding may not challenge previous decisions made by the NRC, *citing St. Lucie*, LBP-88-10A, *supra*, 27 NRC at 466. In a footnote, Licensee recognizes that the cases leading to that decision dealt with issues that were subject to review as part of a license proceeding, but argues that the reasoning in the cases applies equally whether the issues were previously subject to a license proceeding, or subject to NRC review outside of a license hearing. Licensee urges that a review under the provisions of 10 C.F.R. § 2.206 would appear to be the appropriate method of reexamining the continuing validity of either type of earlier NRC action. Licensee Response at 11-12. We do not find that "bootstrap" logic persuasive.

²See discussion at pp. 503-04, *supra*.

Second, Licensee objects to this contention insofar as it may address issues relating to whether or not the Turkey Point units satisfy the 300°F pressurized thermal shock (PTS) screening criterion in 10 C.F.R. § 50.61. Licensee argues that such a determination would be beyond the Board's jurisdiction because it is outside the scope of the notice of hearing for this proceeding. 53 Fed. Reg. 40,981, 40,988 (1988). Because NRC has already determined that Turkey Point Units 3 and 4 satisfy the screening criterion in the March 11, 1987 Safety Evaluation, nothing in the P/T limits amendments before this Board concerns Turkey Point's compliance with the 300°F screening criterion. Licensee Response at 12-13. Similarly, Licensee argues that Petitioners' challenge to the Charpy upper-shelf energy for the reactor specimens has no relevance to the present P/T amendments at issue, and that Petitioners have shown no nexus. Tr. 79.

Staff also objects to those portions of Petitioners' contentions addressing the 300°F PTS screening criterion, and whether the upper-shelf energy of specimens meets the requirements of 10 C.F.R. Part 50, Appendix G, on the grounds that they are outside the scope of this license amendment. We agree.

Staff, however, does not object to admission of the issue of whether the correct percentage of copper was used in predicting the RT_{NDT} of the materials from which the revised P/T limits were derived. Staff Response at 10-12. Staff's position in this regard is based on the fact that its previous Safety Evaluation that approved the copper content of the weld materials was not a noticed proceeding and not part of a licensing action. Hence, Staff concludes, the issue is not barred from this P/T limits proceeding. Tr. 83.

We agree with the Staff that the issue of whether the correct copper content was used in predicting the RT_{NDT} of the weld materials may not be excluded as an issue in this proceeding. The 1984 Staff approval was not subject to notice of opportunity for hearing. No party was available or could have challenged a change handled essentially as an administrative matter and thus Petitioners are not estopped from raising the issue in this license amendment proceeding. See *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), LBP-85-11, 21 NRC 609, 621-24 (1985), *rev'd and remanded on other grounds*, CLI-86-8, 23 NRC 241 (1986).

Because a finding under 10 C.F.R. § 2.206 is not subject to review as a matter of right, that approach cannot be argued to be acceptable as an alternative to hearing an otherwise admissible contention. Therefore, we admit Contention 3, as limited to whether the correct percentage of copper content was used in predicting the RT_{NDT} of the critical beltline materials for setting P/T limits.

Order

For all the foregoing reasons and based on the entire record in this matter, it is, this 8th day of June 1989, ORDERED

1. That Petitioners' Contention 1 is not admissible for litigation in this proceeding;

2. That Petitioners' Contentions 2 and 3 are admitted but limited to the issues detailed in the foregoing opinion; and

3. That the parties shall complete and file motions for summary disposition, if any, and written testimony in accordance with the parties' agreed-upon schedule set out in the March 13, 1989 letter from counsel for Licensee so that hearing will commence on December 12, 1989, at a place and time to be established.

THE ATOMIC SAFETY AND
LICENSING BOARD

Glenn O. Bright
ADMINISTRATIVE JUDGE

Jerry Harbour
ADMINISTRATIVE JUDGE

B. Paul Cotter, Jr., Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland
June 8, 1989

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

John H Frye, III, Chairman
Dr. James H. Carpenter
Dr. Jerry R. Kline

In the Matter of

Docket No. 40-2061-ML
(ASLBP No. 83-495-01-ML)

KERR-McGEE CHEMICAL
CORPORATION
(West Chicago Rare Earths
Facility)

June 22, 1989

Following issuance of the final supplement to the Final Environmental Impact Statement (SFES) pertaining to disposal of certain thorium mill tailings stored at the West Chicago site, the Staff moved to hold this proceeding in abeyance pending Commission action on Illinois' request to assume responsibility for the tailings, and Illinois, while concurring in Staff's motion, sought to file new contentions based on the SFES. The Board held that basic fairness requires a prompt conclusion to this proceeding and denied Staff's motion. The Board also admitted certain of Illinois' contentions.

**RULES OF PRACTICE: STANDARD GOVERNING LATE
CONTENTIONS**

Contentions filed after the deadline originally established must satisfy all five factors set out in 10 C.F.R. § 2.714(a)(1)(i-v). *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041 (1983).

RULES OF PRACTICE: PROMPT RESOLUTION OF PROCEEDING

Applicants and intervenors are entitled to a prompt resolution of the issues pending in NRC proceedings. While Staff's concerns that future events may moot the proceeding with the consequence that resources may have been wasted are entitled to deference, they do not outweigh an applicant's interest in a decision on its application, particularly where Staff's resources are already largely invested.

MEMORANDUM AND ORDER (Ruling on Contentions and Staff's Motion to Hold Proceeding in Abeyance)

This proceeding began in June 1983, when Staff published a notice in the *Federal Register* affording an opportunity to interested persons to request a hearing on Kerr-McGee's application to permanently dispose of certain thorium mill tailings at the site of its West Chicago Rare Earths Facility.¹ Staff had earlier issued draft and final environmental impact statements approving onsite storage for an indeterminate period and deferring a final decision on permanent disposal until completion of a monitoring period of at least 5 years. The People of the State of Illinois and the Illinois Department of Nuclear Safety (collectively referred to as Illinois) filed a petition to intervene and a request for a hearing which was granted. Although it did not request a hearing, Kerr-McGee filed three contentions. One of these challenged Staff's refusal to approve permanent onsite disposal, and the others raised technical points concerning the FES. These contentions were admitted over Staff's objection. LBP-84-42, 20 NRC 1296, 1300-07 (1984).

In LBP-84-42, 20 NRC at 1307-17, *reconsideration denied*, LBP-85-3, 21 NRC 244 (1985), acting at the request of Illinois, we held that Staff must prepare and circulate for comment a supplement to its FES. The supplement was required because Staff had not considered permanent disposal of the mill tailings on that site, an alternative strongly opposed by Illinois, although the FES made it clear that onsite disposal was the most likely course of action.² Staff circulated a draft supplement for comment in June 1987, and published the final supplement (SFES) in April 1989. The SFES concludes that permanent onsite disposal should be authorized. On April 24, we held a status conference to determine the future course of this proceeding.

¹ This facility was at that time being decommissioned pursuant to authority granted by the Staff.

² Kerr-McGee and Illinois agreed that the issue of permanent disposal should not be deferred. LBP-84-42, 20 NRC at 1300.

At that conference, Staff counsel informed us that on April 11, Illinois formally requested that its agreement with the Commission be amended to delegate jurisdiction over the tailings in question to it. Staff counsel indicated that it would require a minimum of 6 months to review this application and suggested that, in order to conserve resources, we should hold the proceeding in abeyance until it is known whether the Commission will delegate regulatory jurisdiction over the tailings to Illinois. Illinois' counsel concurred in this recommendation, while Counsel for Kerr-McGee strongly opposed it. Kerr-McGee suggested that the proceeding move forward on a schedule that contemplated a hearing commencing on September 5.

At the conference and in a May 1 unpublished Memorandum and Order establishing a schedule, we indicated that before ruling on Staff's motion to hold the proceeding in abeyance, we wished to know whether the existing contentions remained at issue and whether the final supplement to the FES had prompted any new contentions. The existing contentions are Kerr-McGee's KM 1, 2, and 3, and Illinois' AG 2(a), 2(b), 2(d), 2(e), 2(h), 2(j) through 2(s), 2(u), and 2(w). Rulings on AG 2(f) and 2(g) were withheld. Contention AG 1 was dismissed as a sanction for failure to comply with discovery obligations. LBP-86-4, 23 NRC 75, 86-87 (1986).

Subsequently, Kerr-McGee advised that none of its contentions remained at issue and that it did not seek to advance any new contentions. Illinois advised that all of the admitted portion³ of contention AG 2, except subparts (j) and (n),⁴ remained at issue and stated seven new contentions. We pointed out in the cited Memorandum and Order dismissing AG 1 and in our May 1 Memorandum and Order that, if Illinois wished to advance any new contentions, it must address the factors set out in 10 C.F.R. § 2.714(a)(1)(i-v). *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041 (1983). It should also address our concerns expressed in LBP-86-4 regarding the implications of its noncompliance with discovery orders for the balancing of those factors.

³ In LBP-84-42, we held Contention 2(f), which concerns the possibility of adding wastes from Reed-Keppeler Park and Kress Creek to the disposal cell, in abeyance pending a decision to include these wastes in the disposal cell. See 20 NRC at 1318 n.52. In view of the Commission's holding in *State of Illinois* (Section 274 Agreement), CLI-88-6, 28 NRC 75 (1988), that these wastes are within the jurisdiction of Illinois under its existing agreement, we assume that no such decision will be made.

In the same decision, we held Contention 2(g) in abeyance pending a decision in the courts of Illinois that Kerr-McGee is bound by the Illinois groundwater standards which are the subject of this contention. See 20 NRC at 1325 n.84. We have not been informed of such a decision and continue to hold this contention in abeyance.

⁴ Illinois' May 30 motion to withdraw these subparts was granted on June 8, 1989.

ILLINOIS' NEW CONTENTIONS

Illinois' seven new contentions are summarized in the margin.⁵ In support of its motion, Illinois maintains that the new contentions meet the test for good cause for late filing set out in § 2.714(a)(1)(i) as interpreted by *Catawba* in that they are wholly dependent on the availability of the SFES, could not have been advanced prior to the availability of the SFES, and were timely submitted after the SFES became available. Illinois maintains that the other factors set out in § 2.714(a)(1) are also satisfied in that there are no other means by which Illinois can air the issues raised in these contentions, these contentions must be admitted to ensure the development of a sound record, no other party is in a position to raise these issues, and, because most of the issues raised may be decided on briefs without a hearing, admission of these contentions will not unduly broaden the hearing or delay the proceeding. In short, Illinois believes that a balancing of these factors weighs in favor of admission of the contentions.

Kerr-McGee opposes admission of these contentions. First, Kerr-McGee contends that Illinois has not established good cause for the late filing of these contentions, pointing out that they are based on Kerr-McGee documents and the criteria of Part 40, Appendix A, which have been available for years. Kerr-McGee also points out that Illinois has failed to satisfy the third factor, concerning the extent to which Illinois will contribute to the development of a sound record, in that it did not identify its prospective witnesses or summarize their testimony. Kerr-McGee asserts that the admission of the contentions

⁵ Proposed Contention 3 asserts that the SFES fails to comply with NEPA and applicable regulations in that:

- a. The assumption that 0.1% of unpackaged wastes would be lost for every 100 miles transported is arbitrary and capricious.
- b. Alternate sites were not properly selected.
- c. The long-term cost of not returning the West Chicago site to unrestricted use was not adequately considered;
- d. The Universal Soil Loss Equation is obsolete and conclusions based on it lack foundation;
- e. Costs and benefits to parties other than Kerr-McGee were not considered;
- f. It does not adequately consider comments of Illinois; and
- g. It does not employ a standard evaluation basis for alternative sites.

Proposed Contention 4 asserts that the proposed action does not meet Criteria 1 through 4, 6, 7A, and 12 of 10 C.F.R. Part 40, Appendix A.

Proposed Contention 5 asserts that "[t]he enunciated legal standard for approval of the proposed action is improper."

Proposed Contention 6 asserts alternate side D is obviously superior to the West Chicago site.

Proposed Contention 7 asserts that NRC may not approve a proposed action that fails to meet the criteria of 10 C.F.R. Part 40 simply because it is better than the alternatives to which it was compared.

Proposed Contention 8 asserts that the SFES is deficient in that it does not adequately consider the management organization and controls that Kerr-McGee would use to execute the proposed program or the quality assurance standard, program and practices, and procedures used in the execution of the proposed program and the collection and analysis of data in the SFES.

Proposed Contention 9 asserts that the Staff has not complied with LBP-85-3, 21 NRC 244, 261 (*see* ¶¶ 5 and 8).

will necessitate an expanded proceeding in that considerable discovery will be necessary to understand the issues raised by the contentions and, despite Illinois' contrary position, evidentiary hearings will be required to resolve them.

Second, Kerr-McGee attacks the contentions as lacking sufficient basis and specificity to advise the Board and the parties of what it is Illinois wishes to litigate. It maintains that Illinois has not provided even rudimentary notice of the substance of its claims.

Finally, Kerr-McGee asserts that Proposed Contentions 3(b), 3(e), 3(g), 6, 7, and 9 are thinly veiled attempts to reintroduce portions of Contention AG 1 which were dismissed as a discovery sanction.

Staff would accept Contentions 3(a), 3(d), 3(e), 4(b), 4(c), 4(d), 4(e), 4(f), and 9. Additionally, Staff believes that Contentions 4(a) and 7 raise relevant legal issues which should be decided, but which do not necessitate evidentiary proceedings. Staff opposes the admission of Contentions 3(b), 3(c), 3(f), 3(g), 4(g), and 5 on the ground that they all lack sufficient basis and specificity. On applying the five factors of § 2.714(a) to those contentions which have, in its view, sufficient basis and specificity, Staff concludes that factors (ii) and (iv) weigh favorably to Illinois while factors (iii) and (v) do not. Staff therefore takes the position that the decision whether to admit the contentions turns on the first factor, good cause. It finds that only Contention 8 should be denied as failing to satisfy this factor. In Staff's view, Contention 8 is based on Kerr-McGee's stabilization plan, not the SFES.⁶

We afforded Illinois an opportunity to reply to Kerr-McGee's and Staff's responses to its contentions. On June 16, Illinois filed such a reply and sought permission to amend those contentions. Specifically, Illinois seeks to amend Contentions 3(a), 3(b), 3(c), 3(f), 3(g), 4(g), and 5 to make them more specific.⁷ It offers no reason why the necessary specificity was not furnished in the first instance. We deal with the parties' basis-and-specificity arguments first.

If we are to consider these amendments, we must first obtain the views of Staff and Kerr-McGee as to whether the amendments satisfy their objections that the contentions are overly vague. The specificity furnished by the amendments should have been furnished in the first instance, and we are not willing to further delay this long-delayed proceeding in order to consider them now. However, the amended contentions appear to raise matters that may have some importance for this proceeding.

⁶ Staff has not specifically treated Contention 6 in its response. We assume that Staff would find that it, like Contention 5, lacks sufficient basis to advise of the issues intended to be raised.

⁷ Illinois also corrected typographical errors in Contention 8 and withdrew Contention 3(d). See Reply at 7.

Therefore we are requesting Staff's and Kerr-McGee's views on the amendments.⁸ If, after having considered those views, we rule that any of the amended contentions are admissible, those contentions will be incorporated into the schedule that we are establishing for the other newly admitted contentions in this Memorandum and Order. In other words, the schedule for resolving those amended contentions will run from the date of this Memorandum and Order, not from the date of their admission.

Because Illinois' newly filed contentions all address the SFES, Staff's opinion as to whether they are specific enough to satisfy §2.714(b) is entitled to considerable weight. After all, the burden of responding to these contentions will fall on Staff. Therefore we are reluctant to exclude a contention that Staff finds unobjectionable. For this reason, we overrule Kerr-McGee's objection to unamended Contention 3(e) and defer to Staff's judgment that it adequately advises of the issues it raises. Staff did not address Contention 6, and Kerr-McGee objects to it. Despite the wealth of information provided in the SFES, this contention provides no reasons for its assertion that alternative site D is obviously superior to the West Chicago site. Thus, we are unwilling to infer that Staff had no objection to it as Illinois would have us do. It is denied.

Staff finds that Contentions 4(b-f) meet the basis-and-specificity requirement. Staff would not admit Contentions 4(a) and 7, but views them as raising relevant legal issues and would set them down for briefing. We agree with Staff's assessment with regard to basis. However, we do not separately treat Contentions 4(a) and 7 because, as indicated later, we suspect that other contentions may also raise purely legal issues.

Thus we find that Contentions 3(a), 3(e), 4(a-f), 7, and 9⁹ are sufficiently specific to be admissible and proceed to a consideration of the §2.714(a) factors. Pending a ruling following Staff's and Kerr-McGee's comments, we also consider amended Contentions 3(b), 3(c), 3(g), 4(g), and 5 in this group. Contention 3(f) is denied because it does not raise a litigable issue, and Contention 6 because it is not sufficiently specific.

⁸ Staff and Kerr-McGee need not respond to the amendments to Contentions 3(a) and 3(f).

Kerr-McGee objects that unamended Contention 3(a) provides no explanation of the view that the assumption concerning the dispersal of particulates and gases during transportation is arbitrary and capricious or of any alternative approach favored by the state. Kerr-McGee is mistaken to the extent that it finds that the Commission's regulations impose an obligation on an intervenor to put forward alternatives in challenging Staff or applicant conclusions. However, its argument that Contention 3(a) provides no basis for its assertions is not without merit. While the subject of the contention is specific, no reason to inquire into it is provided.

However, Staff is apparently aware of the reasons for Illinois' assertions, for it has not objected to litigating this contention. In view of the fact that the burden with respect to this contention falls on Staff, rather than Kerr-McGee, we defer to Staff's view.

We have reviewed amended Contention 3(f). We find that Staff has addressed each of Illinois' comments. Nothing would be gained by litigating Illinois' unhappiness with Staff's responses to its comments. Illinois' disagreements with Staff's conclusions are the subject of other contentions.

⁹ The specificity of this contention was not addressed by Staff. Clearly, it meets this requirement.

With the exception of Contention 8, Staff believes that Illinois' new contentions could not reasonably have been raised earlier in the proceeding and that they do not mimic Contention 1 which was dismissed as a discovery sanction. Kerr-McGee, on the other hand, questions whether the SFES can justify the filing of new contentions, arguing that its purpose was to remove contentions from dispute, not add them. We agree with Kerr-McGee that the SFES was ordered in response to specific contentions and had the effect of removing them from the proceeding. That does not mean that Illinois is precluded from challenging the SFES, no matter what it might say. Similarly, we agree with Illinois' position stated in its reply that it makes no sense to have required it to file contentions based on the draft SFES, as Kerr-McGee argues. That document is a draft, and the filing of contentions based on it would only introduce an unnecessary procedural step. The contentions would have to be revisited once the final issued. And we agree with Illinois that it is not possible to have challenged the *Staff's assessment* of certain long-available Kerr-McGee documents prior to the issuance of the SFES. Finally, we find Kerr-McGee's argument that Illinois has simply restated portions of Contention AG 1 to be unconvincing. Thus, with the exception of Contention 8, we find that Illinois has satisfied the good cause requirement of § 2.714(a).

Illinois amended Contention 8 to correct typographical errors and make it more clear. Contention 8 concerns management organization, quality assurance practices, and other controls. It is not focussed on the SFES and therefore could have been advanced earlier. In its reply, Illinois has not addressed the substance of Contention 8. Consequently its position to the contrary is not persuasive. We agree with Staff and Kerr-McGee that Illinois has not shown good cause for its late filing.

Staff believes that Illinois has no other means for challenging the SFES which is equivalent to admitting these contentions. Kerr-McGee has not addressed this factor. We agree with Staff that this factor weighs in Illinois' favor.

Staff notes that Illinois' arguments in support of its contentions fail to demonstrate that its participation would contribute to the development of a sound record, particularly in light of the fact that Illinois' past noncompliance with Board orders required the imposition of sanctions. Kerr-McGee agrees, pointing out that Illinois has not complied with the admonition that it should identify its witnesses and summarize their testimony contained in *Commonwealth Edison Co.* (Braidwood Nuclear Power Station), CLI-86-8, 23 NRC 241, 246 (1986). Both weigh this factor against admission of the contentions. In reply, Illinois argues that without admission of the contentions, the SFES will escape close scrutiny, that its agencies possess specialized knowledge with regard to this subject, and that its interest in acquiring jurisdiction over the West Chicago site will ensure its effective participation.

While Illinois has stopped short of promising to pay closer attention to its obligations as a party in the future, we are inclined to agree with it that the three factors it cites tend to argue in favor of the conclusion that its participation will contribute to the development of the record. Moreover, the procedures that we are adopting for resolution of these contentions will tend to make it more difficult for Illinois to ignore its obligations. We conclude that this factor weighs slightly in Illinois' favor.

Staff points out that there is no other party to this proceeding who might represent Illinois' interests. Kerr-McGee has not addressed this factor. This factor weighs in Illinois' favor.

Both Staff and Kerr-McGee argue that admission of the contentions will broaden and delay the proceeding, noting that without them, the scope of the proceeding will be much narrower. Kerr-McGee argues that resolution of the contentions will require considerable effort on the part of the parties and that Illinois, after having delayed the proceeding by demanding the SFES, should not be permitted to further delay it. In reply, Illinois argues that the contentions will not *unduly* broaden or *substantially* delay the proceeding. It believes that the added effort to resolve them is reasonable. Save for Contention 8, we agree. The matters raised by Contention 8 do not appear to be of such importance as to justify the conclusion that their admission will not *unduly* broaden the proceeding. The other contentions appear to raise issues that have some substance and should be resolved. With the exception of Contention 8, we weigh this factor in Illinois' favor.

In summary, we find that the factors set forth in § 2.714(a) weigh in favor of admission of all the contentions save Contention 8. With regard to that contention, we find that the favorable weights of factors (ii) through (iv) do not outweigh the factors (i) and (v). We admit Contentions 3(a), 3(e), 4(a-f), 7, and 9. Contentions 3(f), 6, and 8 are denied. A ruling on Contentions 3(b), 3(c), 3(g), and 4(g) will be rendered promptly on receipt of Staff's and Kerr-McGee's views as to whether Illinois has satisfied their objections with regard to basis and specificity.

Illinois has indicated that, for the most part, the issues raised in its contentions may be decided on briefs. However, it has not indicated which specific contentions may be decided in this manner. Staff has identified only Contentions 4(a) and 7 and Kerr-McGee has not identified any contentions as falling into this category. We suspect that perhaps all of the admitted contentions may be decided on briefs, but we are unable to make such a determination based on the submissions now before us. Consequently, rather than permit these admitted contentions to become the subject of discovery as is customarily the practice, we direct Illinois to move for summary disposition of them under § 2.749. If Illinois believes that it is not possible, for whatever reason, for it to so move, it is to indicate why in detail, paying particular attention to any claimed need for

discovery. In their responses, Staff and Kerr-McGee must similarly justify any need for discovery in order to adequately answer the motion. See § 2.749(c). With the motion and answers in hand, we will either resolve these contentions on the merits or order further proceedings with respect to some or all of them.

STAFF'S MOTION TO HOLD PROCEEDING IN ABEYANCE

In support of its motion, Staff notes that it regards Illinois' request to amend its agreement with NRC to include the tailings here in question as raising a jurisdictional issue. In Staff's view, if the agreement is so amended, the Commission will lose jurisdiction over these tailings. Staff estimates that it will require 6 to 12 months to complete Commission action on the request and believes that it is unlikely that there could be a final Commission decision in this proceeding within that time period. In these circumstances, Staff does not wish to expend further resources on this proceeding. Tr. 422-23, 432. Illinois, citing its limited resources, concurs in Staff's view. Tr. 423-24.

Kerr-McGee opposes Staff's motion. It points out that the 6- to 12-month time estimate to review Illinois' request may well be optimistic, that Illinois' request raises serious legal and policy issues, and that it may never be approved. Kerr-McGee suggests that this Board should proceed with all deliberate speed and proposed the following schedule:

| | |
|-------------------|---|
| May 15, 1989 | Identify witnesses and commence depositions |
| July 10, 1989 | End depositions |
| August 7, 1989 | File testimony |
| September 5, 1989 | Commence hearing |

Speaking prior to Illinois' motion to add contentions, Kerr-McGee's counsel noted that the essence of the remaining controversy is between Illinois and Kerr-McGee. Tr. 424-29, 440-44. Staff counsel agreed with this last assertion. Tr. 446.

In July 1977, Staff required Kerr-McGee to submit a plan to decommission the West Chicago site and dispose of the contaminated material. After rejecting Kerr-McGee's first submission, Staff began review of Kerr-McGee's application dated August 15, 1979.¹⁰ Thus this matter has been pending for almost 12 years, and review of Kerr-McGee's application has been under way for almost 10 years, the last 4 1/4 of which have been consumed in producing the SFES. That document completes Staff's review and constitutes Staff's approval of

¹⁰ See Staff's Final Environmental Impact Statement, NUREG-0904, May 1983, at xi.

Kerr-McGee's application. Yet despite the expenditure of substantial resources over more than 10 years, Staff now proposes to halt the process while it decides whether to turn the whole matter over to Illinois.

In these circumstances, Kerr-McGee's frustration at the inability of the Commission to make a decision in a reasonable period of time is understandable. In these circumstances, its vehement opposition to Staff's effort to halt the proceeding is well taken. Kerr-McGee is entitled to a ruling on its application.

We are not unsympathetic to Staff's resource concerns. Clearly, Staff has many pressing tasks and must decide which will receive priority. Were this proceeding in its initial stages, Staff's resource concerns might well carry the day. But here Staff's resources have already been invested. In comparison to the Staff resources already invested, the new contentions that we are admitting should constitute an insignificant impact on Staff resources, particularly in light of the procedures that we have adopted for their resolution.

Illinois successfully sought the ruling directing that the SFES be prepared. It too has invested substantial resources in the 6 years that this litigation has been pending. While in light of the Staff's conclusions in the SFES, Illinois may prefer to hold this proceeding in abeyance, it initiated this litigation and cannot complain if it is brought to a conclusion.¹¹ Indeed, as a party it is equally entitled to a resolution.

In short, the mere possibility that jurisdiction over the subject matter of the proceeding might be transferred provides no justification to hold it in abeyance. Basic fairness requires that it be resolved expeditiously. Accordingly, we are adopting a schedule toward that end.

ORDER

In consideration of the foregoing, it is hereby ORDERED:

1. Illinois Contentions 3(a), 3(e), 4(a-f), 7, and 9 are admitted. In accord with the schedule set out below, Illinois is to move for summary disposition of these contentions or indicate in detail why it cannot do so.
2. Staff's motion to hold this proceeding in abeyance is denied.
3. The following schedule is adopted:

June 30

Staff and Kerr-McGee respond to Illinois' amended Contentions 3(b), 3(c), 3(g), and 4(g).

¹¹ We do not understand Illinois to be seeking to hold this proceeding in abeyance itself, but only to have agreed with Staff's proposal to do so.

| | |
|--------------|---|
| July 13 | All parties exchange lists of affirmative witnesses and begin depositions on Contention 2. |
| July 20 | Illinois files motion for summary disposition of Contentions 3(a), 3(d), 3(e), 4(a-f), 7, and 9. Responses are to be filed in accord with § 2.749(a). |
| September 7 | End depositions. |
| September 28 | All parties file written affirmative testimony. |
| October 5 | Prehearing conference (if necessary). |
| October 17 | Commence hearing. |

4. Unless otherwise ordered, no discovery (other than that set forth in the above schedule) is authorized.

5. Service shall be by express mail or equivalent.

THE ATOMIC SAFETY AND
LICENSING BOARD¹²

Dr. Jerry R. Kline
ADMINISTRATIVE JUDGE

John H Frye, III, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland
June 22, 1989

¹²Judge Carpenter was unavailable to review and sign this Memorandum and Order. He concurs in the result.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chair
Dr. Emmeth A. Luebke
Dr. Jerry Harbour

In the Matter of

Docket Nos. 50-443-OL-1R2
50-444-OL-1R2
(ASLBP No. 88-858-01-OL)
(Onsite Emergency
Planning and Safety
Issues — Notification)

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

June 23, 1989

The Licensing Board finds a portion of Applicants' emergency plans to be adequate. The portion relates to plans to alert people within the portion of the emergency planning zone that is in Massachusetts. Those plans are found to result in the alerting and notification of the public within about 15 minutes, as required by regulations and guidance, and the sounding of a signal that is adequate — although it somewhat exceeds in volume the 124-dB maximum volume standard found in applicable guidance.

EMERGENCY PLANNING: TIME FOR ALERTING THE PUBLIC

The total time for alerting the public, pursuant to applicable regulations and guidance, includes conservative estimates of time for all actions prior to the time

that essentially all the people within 5 miles of the plant are both alerted by a siren signal and informed by the simultaneously broadcast emergency message. Some of the people to be alerted are considered to have tuned in the message approximately 20 seconds *after* the 3-minute siren stops sounding.

EMERGENCY PLANNING: MAXIMUM SIGNAL MAY NOT EXCEED 124 dBC EXCEPT FOR MINOR DEVIATIONS

When a siren signal may exceed 124 dBC for a limited time period and within limited local areas, the signal is not considered to be excessively loud. In this case, the signal could be as high as 31 dBC for 4 seconds and it also could experience an increment of 6 dBC in areas near buildings, due to sound reflection.

TECHNICAL ISSUES DISCUSSED

- Emergency Planning: Maximum volume permitted for sirens;
- Emergency Planning: Determination on whether a warning signal can be sounded fast enough;
- Sound Reflection (emergency planning);
- Calculating Time for Alerting of Public (emergency planning).

FINAL INITIAL DECISION

This case involves one aspect of the efforts of Public Service Company of New Hampshire, *et al.* (Applicants) to comply with the emergency planning regulations of the Commission. The particular aspect with which we are concerned involves the adequacy of Applicants' plans, should an emergency occur, to alert people who are within the portion of the emergency planning zone that is in Massachusetts.

Applicants' plans had been to send electronic signals that would sound sirens that they had permanently mounted on fixed poles. But then the ground was taken out from under the poles. Applicants learned that the Town of West Newbury, Massachusetts, had directed that five utility poles on which sirens were mounted should be removed.¹ Applicants sought to block the removal

¹ ALAB-883, 27 NRC 43, 47 (1988).

through legal action, but the courts ruled that the Town was within its rights.² Subsequently, Applicants abandoned all fixed-position sirens in Massachusetts.³

Applicants have now planned a system called VANS (Vehicular Alert Notification System). VANS would hire 120 people to work round-the-clock shifts to ensure that there will be those ready to rush out in the event of an emergency driving trucks equipped with a hydraulic telescoping boom that would arrive at designated destinations, rapidly raise their sirens to at least 45 feet and sound the alarm.⁴ The Commonwealth of Massachusetts has attempted to demonstrate that the Applicants have not carried their burden of proof in showing that people will be adequately protected by this system.

This Decision deals with those issues left to be litigated subsequent to our Summary Disposition Decision, LBP-89-9, which narrowed the issues in a manner that we will discuss below.

This is the background of our consideration. Because all other issues were decided in our Summary Disposition Decision,⁵ our remaining charge is to consider whether the VANS system, as currently designed, complies with emergency planning regulations by not sounding too loud and discomfoting a signal and by providing adequately rapid notification of people who might be in the emergency planning zone in the event of a rapidly developing accident at Seabrook.

I. BACKGROUND DETERMINATIONS

A. Contested Issues

The specific issues left for determination pursuant to our Summary Disposition Decision, LBP-89-9, 29 NRC at 294-95, are:

1. *Whether the Planned Siren Sound Level Is Too Loud*

A.1-1. Whether sound levels in excess of 123 dBC cause enough discomfort so that the Board should not approve the use of sirens at a higher level of sound.

A.1-2. If there is some level higher than 123 dBC that the Board should allow, what is that level?

A.1-3. Whether Applicants' sirens can provide adequate coverage if used at sound levels that are not unduly uncomfortable.

² *Id.*

³ *Id.* at 48.

⁴ At the same time, emergency messages would be broadcast over the emergency broadcast system (EBS), to which the public will have been referred by various preemergency notification devices (calendars, notices, etc.). See generally, Appl. Exhs. 11A & 11B; Appl. Dir. post Tr. 75, Attachs. A-G.

⁵ LBP-89-9, 29 NRC 271 (1989) (Summary Disposition Decision).

A.1-4. Whether Applicants' position on the sound level resulting from their sirens is an underestimate because of sound reflection from buildings.

2. *Whether the Destination Sites for the VANS Vehicles Are Adequate*

A.3-1. Whether the appointed destination locations, including VL-06, VL-07, VL-12, are sufficiently level for the safe deployment of the VANS vehicles.

A.3-2. Whether or not VANS vehicles may gain physical access to VL-03, VL-06, VL-07, and VL-12.

3. *Whether the Sirens Will Be Sounded Fast Enough*

A.5-1. What is an appropriate conservative estimate of the length of time it would take for drivers to take the necessary actions before their vehicles leave their stations during conditions likely to prevail at the time of need?

A.5-2. Given that there is snowfall of 0.5 inch or more during 5.5% of the days of the year, would a conservative estimate of travel times to VANS acoustic locations include the somewhat prolonged travel times anticipated during snow conditions? If so, what time estimates should be included?

A.5-3. What is an appropriate conservative estimate of the length of time it would take for people within 5 miles of Seabrook to receive the informational message to be broadcast over the EBS?

A.5-4. What is an appropriate conservative estimate of the total length of time for alerting and informing people within 5 miles of Seabrook? Is that estimate within acceptable guidelines? (If it is longer than 15 minutes, what are the factors we are to consider in deciding whether the time period is adequate?)

B. Stipulation

We note that the issue of adequacy of the destination sites (Issues A.3-1 and A.3-2) was resolved, favorably to Applicants, by stipulation of the parties; therefore, this issue was not part of the hearing held on May 2-3, 1989, in Boston, Massachusetts.

C. Competence of Witnesses

We also note that we found all the witnesses of the parties competent to testify,⁶ as follows:

⁶ See Qualifications, post Tr. 38, 454 (*passim*), 310 (*passim*).

Applicants' Witnesses

Edward W. Desmarais of the Independent Review Team for the New Hampshire Yankee Division of Public Service Company of New Hampshire

David N. Kcast, Principal Consultant, Warning System Services

Karl D. Kryter, Staff Scientist, Bioengineering Division of SRI International.

Edward Lieberman, President, KLD Associates, Inc.

Louis C. Sutherland, Deputy Director and Chief Scientist, Wyle Research Laboratories, Wyle Laboratories

Intervenor's Witnesses

Ruth Kanfer, Professor, University of Minnesota

Karl S. Pearsons, Senior Consultant, Acentech, Inc.

Charles B. Perrow, Professor, Yale University

Gregory C. Tocci, President, Cavanaugh Tocci Associates.

Nuclear Regulatory Commission Staff's Witnesses ("Staff")

Kenneth M. Eldred, P.E., Principal of Ken Eldred Engineering

Falk Kanter, Section Chief, Emergency Preparedness Branch, Division of Radiation Protection and Emergency Planning, Office of Nuclear Reactor Regulation

D. FEMA Approval

The Federal Emergency Management Agency has approved the design of VANS. Appl. Dir. post Tr. 75 at 4. This clothes the design with a rebuttable presumption as to adequacy. 10 C.F.R. § 50.47(a)(2). However, FEMA did not produce any sponsoring witness in this case. Tr. 298. FEMA has not completed its final review. Tr. 364. The review that FEMA did complete did not cover any of the factual or legal issues raised in this hearing. Tr. 365-70. Hence, the FEMA presumption has had no effect on our decision. It has not shifted the burden of proof on litigated issues from Applicants. (Had we considered the rebuttable presumption to apply, it still would not have affected the outcome; as we have reached our conclusions by a clear preponderance of the evidence and do not consider the evidence ever to have rested in equipoise — a state from which a presumption might have dislodged it.)

II. WHETHER THE PLANNED SIREN SOUND LEVEL IS TOO LOUD

NUREG-0654, which provides guidance for us in this case, states that:

The maximum sound levels received by any member of the public should be lower than 123 dB, the level which may cause discomfort to individuals.

NUREG-0654, Appendix 3 at 3-8. This maximum sound level of 123 dB appears to have been breached because the sirens to be utilized in the VANS system operate at a frequency of 550 Hz and are rated at 134 dBC at 100 feet. Appl. Exh. 11B at 2-2 to 2-3.

However, Applicants have demonstrated that there are only very limited situations in which a bystander will actually hear a sound in excess of the maximum sound level, and we are satisfied that NUREG-0654's intention of balancing emergency needs against the *discomfort*⁷ of the public has been served. Hence, we find Applicants in compliance with this guidance,⁸ which FEMA also interpreted as permitting similar sirens at the Clinton Power Station.⁹

We are persuaded to adopt the following proposed findings set forth by Applicants:

In order to clarify the difference between the rated sound output of sirens and the sound level to which bystanders might be exposed, one can draw an analogy between the sound emanating from the horn of a siren and the light from a flashlight. A flashlight produces a focused beam of light. Some light is shed to the side of this beam but the amount is less than that within the beam. Similarly, the sound from the horn of a siren is focused into a beam and less sound is radiated to the sides of the beam.

Appl. Dir. post Tr. 75 at 5-6.

⁷ We are not impressed with Applicants' extensive argument that we should interpret the word "discomfort" to mean physical injury. Although the reference point for setting the discomfort level apparently was derived from considering a level of sound that would cause hearing damage through daily exposure over a 10-year period (see Appl. Dir. post Tr. 75 at 13), the level was set as one of "discomfort." To interpret the language otherwise would be contrary to the clear wording of the NUREG.

Even the testimony of officials involved in drafting the NUREG is inadequate to cause us to vary the meaning of the plain words. There is no exception in the language for sirens that would be sounded only at rare intervals, rather than daily, and it is very difficult to believe that such an exception should be carved in a guidance document addressed to nuclear power plants. We will not create such an exception.

⁸ NUREG-0654 is not a regulation. It is guidance. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), ALAB-698, 16 NRC 1290, 1298-99 (1982). Guidance may be challenged in a proceeding and need not be applied verbatim. *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-179, 7 AEC 174 (1974); *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 772 (1977).

⁹ Appl. Dir. post Tr. 75 at 6.

Sirens are normally rated in terms of the maximum sound levels observed in the focused beam of sound, at 100 feet from the siren. Hence, in the case of the VANS siren, it is rated at 134 dBC at 100 feet *in the main beam*. However, because the siren is elevated above the ground, the sound level to which bystanders might be exposed is generally less than the rated sound output of the siren, just like the light received from a flashlight would be less than in its main beam if the flashlight shined over their heads.

Id. at 6.

In this case, the VANS vehicles are designed to raise their sirens to 51 feet, thus creating the auditory analog of displaying a light from the top of a lighthouse.

When the sirens are raised to their full height, there is no problem from the direct sound beam. The sound beam is aimed parallel to the earth, and no member of the public will be subject to a sound pressure level greater than 123 dBC. *Id.* at 6-14.

There could be a problem for 4 seconds concerning maximum sound levels if there is an emergency of such severity that it was decided to begin sounding the siren when it is not fully extended but has been raised to 25 feet above the ground. *Id.* at 15-16; Tr. 88. Should that occur at a time that an individual were located 90 feet from the siren and directly in front of it, then there might briefly be an exposure to a sound level of 131 dBC. However, the boom will continue to be raised so that the sound level will continually diminish as it is sounded. By the time it reaches 45 feet, the sound exposure will have been reduced to 123 dBC. Appl. Dir. post Tr. 75 at 15-16 and Attach. H.

There also is an issue concerning sound reflection. Intervenor's witnesses testified that people standing in certain positions between the siren and nearby buildings could experience up to 6-dBC additional sound due to reflection from the buildings. Massachusetts Attorney General Dir. post Tr. 454 at 10-13. When this is *additional* to the 131 dBC that is possible during the 4 seconds a siren might sound when it is elevated only to a 25-foot height, it is therefore theoretically possible for an individual to receive 137 dBC for 4 seconds. *Id.* at 12. Once the siren reaches a 51-foot height, then 128 dBC is possible in these locations. *Id.*

We agree with Applicants and Staff that these temporary (4 seconds) and local (reflective) deviations from the 124-dBC maximum provided in the guidance documents are not significant from a planning standpoint. The guidance is designed to prevent discomfort, not hearing damage. There is no indication that actual damage will occur. Even as a discomfort standard, the minimum deviations found are acceptable. The increased volume of 134-dBC rated sirens will be effective throughout the emergency planning zone with only minimum discomfort to a few people.

We note that the guidance we are interpreting would permit *more* discomfort than Applicants will cause. For example, the guidance would permit a steady-

state siren signal of as much as 3 minutes (NUREG-0654) and the Applicants have chosen to rotate their sirens 2.5 times per minute, reducing the sound exposure at any one part of the arc. The regulations also would permit a 1000-Hz signal, whereas Applicants have chosen a less uncomfortable 550-Hz signal.

Discomfort resulting from sound signals has been studied by examining the extent to which there is a temporary hearing loss 2 minutes after the signal was sounded. This "temporary threshold shift after 2 minutes" has been called TTS2. The TTS2 for the maximum signal permitted by the guidance (a 123-dBC sound at 1000 Hz that remains steady and is not rotated for 3 minutes) is 18 dB, as compared to the maximum possible signal generated by Applicants (131-dBC sound from a 25-foot siren — not considering building reflection — at 550 Hz, rotated 2.5 times per minute), which has a TTS2 of 3 or 4 dB. Appl. Dir. post Tr. 75 at 9-10, 14. Even with building reflection included, we find that a 4-second signal of 137 dBC would have a TTS2 not much over 4 dBC — well below the TTS2 of 18 dB for the maximum signal permitted by the guidance.

We therefore conclude that the discomfort generated by Applicants' sirens is acceptable. The deviation from guidance levels is minimal because of its short duration and because of the limited areas in which building reflection becomes a problem.¹⁰ Furthermore, the discomfort caused by Applicants is less than would be permitted had Applicants chosen to generate the most discomforting signal permitted by the guidance.

We also are pleased to note that Applicants plan an improvement in the VANS' hydraulics, which should make it unnecessary ever to sound sirens at a height less than the full 51 feet. Appl. Dir. post Tr. 75 at 19-19A. However, we do not rely on that capability in reaching our determination.

III. WHETHER THE SIRENS WILL BE SOUNDED FAST ENOUGH

Some of the issues relating to speed of dispatch were decided in our Summary Disposition Decision, which settled the times needed for transmitting the alert signal to drivers, the time it will take to drive from the staging area to the destination area, the setup time, and the siren sounding time. LBP-89-9, 29 NRC at 284-85.

In this portion of our opinion, we will first state the law that is applicable to our determination, then we will review (in the order in which they will occur) each of the stages of the alerting and notification system, concluding with a chart

¹⁰We note Mr. Eldred's testimony that it has been customary to apply the 123-dBC level from NUREG-0654 without consideration of building reflection. Eldred Dir. Tr. 319-21.

that summarizes the expected total alerting and notification times with respect to each of the sites on which VANS vehicles will be deployed.

A. Legal Setting

We have concluded that the law requires that Applicants have the *capability* for their alert and notification of the public to be *essentially* complete within *about* 15 minutes of a determination that there is a fast-breaking emergency. That the regulation focuses on *capability* means to us a practical realization that the system must be able to comply with the regulations but that no system can guarantee results regardless of events and that there could be events in which the capability of the system would not be realized.

The use of the words “essentially complete” and “about” also indicates to us the appropriateness of some flexibility in interpretation. That flexibility does not, however, permit us to exclude the notification of the public, through an EBS system message, from the elapsed time. Based on both the regulations and the guidance, we interpret the regulation to include *both* alerting and notification of the public within the “about 15 minutes” time period.

We turn now to the legal materials themselves. Appendix E to Part 50, “Emergency Planning and Preparedness for Production and Utilization Facilities” was published for notice and comment and adopted by the Commission. Administrative Procedure Act (5 U.S.C. §§ 552, 553, 44 Fed. Reg. 75,167, 75,171 (1979); 45 Fed. Reg. 55,402, 55,408 (1980). Appendix E provides that:

The design objective of the prompt public notification system shall be to have the *capability* to *essentially* complete the initial notification of the public within the plume exposure pathway EPZ within *about* 15 minutes. [Emphasis added.]

Appendix E then states planning criteria that must be met by an applicant for a license to operate a nuclear power plant.

In addition to these regulations, which have the force of law, this proceeding is affected by a “guidance” document, NUREG-0654, Rev. 1 (1980), which provides further explanation of the planning criteria set forth in 10 C.F.R. Part 50, Appendix E, and which was itself subjected to public comment (44 Fed. Reg. 9768 (Feb. 13, 1980)) but which has a nonbinding or suggestive effect.¹¹ Relevant parts of NUREG-0654 state:

¹¹ Regulatory guidance is always subject to attack in licensing proceedings. *River Bend*, ALAB-444, *supra*, 6 NRC at 772; *see Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-875, 26 NRC 251, 260-61 (1987).

Planning Standard

[M]eans to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

Id. at 43; *see also* 10 C.F.R. § 50.47(b)(5).

Evaluation Criteria

Each organization shall establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public within the plume exposure pathway Emergency Planning Zone. (See Appendix 3.) It shall be the licensee's responsibility to demonstrate that such means exist, regardless of who implements this requirement. . . .

NUREG-0654 at 45.

APPENDIX 3

*MEANS FOR PROVIDING PROMPT ALERTING AND NOTIFICATION OF
. . . THE POPULATION*

* * *

Commercial broadcast messages are the primary means for advising the general public of the conditions of any nuclear accident. The primary means for alerting the public to an impending notification by public authorities may be any combination of fixed, mobile or electronic tone generators which will convey the alerting signal with sufficient timing and intensity to permit completion of notification by broadcast media in a timely manner. . . .

Id. at 3-2.

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. . . .

. . . 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. [Emphasis added.]

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. . . .

Id. at 3-3.

We note, as Applicants have argued, that FEMA Guidance Memorandum AN-1, "FEMA Action to Qualify Alert and Notification Systems Against NUREG-0654/FEMA-REP-1 and FEMA-REP-10" provides that "[w]ithin 15 or 45 (if applicable) minutes of [the decision to activate . . . the system] . . . the

alert signal must be activated and an instructional message must be on the air.” However, we consider this to be improper interpretation of NUREG-0654, which requires that alerting and notification both occur within 15 minutes. We interpret this to require sequential alerting and notification since people will not know to receive the EBS notification until after they have heard the siren alerting signal. Therefore, we reject this guidance.

B. Alert

We concluded in our Summary Disposition decision that there was no genuine issue of fact concerning Applicants’ assertion that it would take 10 seconds from the time the contact person received an initial notification call to the time that each of the VANS operators would have received an alert message. LBP-89-9, 29 NRC at 284. However, we beclouded that issue by raising the related question of “How long will it take [to alert VANS drivers] if electronic activation fails and radio or telephone voice contact becomes necessary?” *Id.* Hence, we consider that the question of additional time for voice contact was left open.

Intervenor claims that it will take 1 minute to alert drivers when electronic activation fails and radio or telephone voice contact become necessary. Tr. 121.”¹² We have reviewed the cited passage in the transcript and find that there is unopposed testimony, not objected to by Applicants, that establishes that if electronic alerting is entirely unavailable then it would take “on the order of a minute” to alert all the VANS vehicles using voice communication. There is no direct evidence on how much time it would take to telephone one or two of the VANS vehicle sites should there be a partial failure in electronic communication. In our discretion, we find that it would take somewhat longer than 10 seconds to alert all the sites if the electronic system failed at one of the sites. Therefore, we add 10 seconds to the alerting time to compensate for the possibility that one of the sites would require telephonic alerting, bringing total alerting time to 20 seconds. (Even were we to rule, based on the burden of proof, that Applicants would take a full 1 minute to alert a single site telephonically, this additional 50 seconds of alerting time would not change our judgment concerning the outcome.)

C. Dispatch

In our Summary Disposition Decision we stated that:

We agree with Intervenor that Applicants have misinterpreted the requirement for conservative calculations with respect to dispatch time. Dispatch time tests included a

¹² Mass AG’s Proposed Findings and Rulings of Law with Respect to Siren Issues, June 12, 1989, at 20.

maximum of 53.35 seconds. Beard Affidavit, Attach. B at 1 of 4. There were seventeen runs with a dispatch time of over 40 seconds. *Id.* We notice that *all* of the runs of over 40 seconds occurred in the first twenty-seven of the fifty runs, indicating a possible bias due to a practice effect. Hence, we conclude that these trials are consistent with a dispatch time of as great as 53 seconds. Furthermore, it is not clear whether these tests, where the operators were aware that they would be repeatedly called, are a fair prediction of what would actually happen in an event with no forewarning.

LBP-89-9, 29 NRC at 284.

We note that there are reasons to believe that Applicants' tests were conservative; Applicants cite those reasons to us. There also are reasons to believe that Applicants' tests lacked sufficient conservatism; Intervenor cites those reasons to us. This has led us to review each of the reasons advanced, to weigh them, and to reach our own independent conclusion on the appropriate dispatch time to use.

The parameters of Applicants' test of response time were generally conservative. Test conditions were chosen which would be representative of staging area conditions in general. Appl. Dir. post Tr. 75 at 24-25. Other test conditions, such as requiring the operators to walk — not run — to the vehicles after being mobilized, to verbally acknowledge activation rather than take credit for electronic acknowledgment, and to open overhead doors that will be designed for automatic activation, were designed to assure reasonable bounding time estimates. *Id.* at 25.

On the other hand, we are impressed by Intervenor's expert testimony that the job of VANS driver is intrinsically a boring job in which employees will be difficult to motivate and may be expected to exhibit undesirable traits, such as lateness, absenteeism, and unexcused absence from duty posts. Mass AG Dir. Tr. 469-72. We also agree with the Intervenor that the design of the office environment creates a space to work in that may add to the boredom. Tr. 106, 112.

We do, however, expect that the Applicants' procedures will have some effect in reducing the risks related to boredom. First, the alarms at the duty stations will be both audible and visual (flashing strobe-type lights). Appl. Dir. post Tr. 75 at 24. Also, there will be an effort made to include other tasks in the VANS-drivers' duties. *See* Intervenor's Testimony, Tr. 520, 523. More important, there will be a rule that VANS operators are not to leave their duty station until relieved and, given all the attention this issue has received, we are confident that the Applicants will develop supervisory procedures that will ensure that this procedure is effective and that nonperformers will be either fired or rotated to other jobs.¹³ Appl. Dir. post Tr. 75 at 20-24; *see* Tr. 523.

¹³ We note Intervenor's testimony concerning railroad engineers. Tr. 523-25. However, we have not been informed of the labor and contractual context in which the engineers in the study operated and we are confident that for this

(Continued)

We also are impressed by Applicants' plans for "prioritized dispatch." Under this plan, the first VANS vehicles dispatched will go to the furthest acoustic location. Each of the staging areas has a minimum of one corresponding acoustic location where a VANS vehicle can be completely deployed in an average of 7 minutes or less, which provides a several-minute margin in the event that a driver is momentarily off-post at the time of an alert. Appl. Dir. post Tr. 75 at 23. (We also note that, whenever possible, actions are taken to provide an advance warning to VANS operators. *Id.* at 23-24.)

On balance, we consider 53 seconds — a time estimate that we derive from Applicants' testing program — to be an appropriate conservative estimate of the time it will take for VANS vehicles to be dispatched. It is obvious that there could be extreme, unanticipated conditions in which this time could be exceeded. It is, of course, even possible that one or more drivers would be unavailable because of improper performance of their duty to be alert and on site. Although this contingency would be fully avoided if sirens were hung on poles and there was no need to dispatch vehicles, that approach is not available, and nonperformance is a resulting risk. Applicants have done their best to mitigate it. We do not consider that this possibility prevents Applicants from having the required "capability" to provide an appropriate alerting system.

D. Route Transit

The only question concerning route transit is the extent to which winter snow or ice conditions slow down the VANS vehicles. In this regard, we accept Applicants' position that there will be a 25% reduction in the speed factor. Appl. Dir. post Tr. 75 at 25-30. We use as an element of conservatism the large wheels on VANS vehicles, but we do not deduct any time for this feature since a vehicle may always find itself behind an ordinary car with smaller wheels. *See id.* We do not consider it necessary for Applicants to plan for more extreme weather conditions, such as those existing in Portland, Maine, on 21 days over an 8-year period — during which transit times varied from 27% to 39%. Tr. 245.

We will use the 25% reduction factor in our conclusions.

E. Setup of Sirens

In our Summary Disposition Decision, we accepted Applicants' position that once VANS vehicles arrive at their destination sites they can set up their sirens within 1 minute. LBP-89-9, 29 NRC at 285.

newly created position a job can be defined that would permit discipline and firing for absence from the job post. The only significant responsibility in this job is to be present and alert enough to hear a loud siren, accompanied by strobe lights.

F. Siren Sounding

There is no dispute concerning Applicants' assertion that sirens will be sounded for 3 minutes. *Id.*

G. Message Capability

Based on our reading of the regulations and guidance, as also set forth *supra* at 528 ff., Applicants must have the “[c]apability for providing *both* an alert signal *and* an informational or instructional message” within 15 minutes. The fact that the message and siren sounding are simultaneous is not persuasive. Until a person hears both the siren and the message, the person is not informed of the appropriate action to take. We consider that the full 3-minute timing for the siren is appropriate for the purpose of assuring that essentially all the people in the 5-mile zone are alerted. Logically, there is a distribution of the times at which the people will hear those signals, with some receiving it at the end of the 3-minute time period.

For conservatism, we consider it appropriate to add the length of time for the EBS message to all the previous times involved, so that those hearing the siren near the end of its sounding will have time to hear the EBS message.

In this instance, the longest EBS message is 2 minutes and 38 seconds, as timed by the Board under stipulation by the parties. Tr. 285. Under the EBS procedure, a tone and initial announcement lasting 55 seconds will begin at the onset of the 3-minute siren period. Then the 2-minute, 38-second message may be played, for a total of 3 minutes and 3 seconds for the tone, initial announcement, and longest EBS message to play sequentially. After the 3-minute siren stops sounding, therefore, the longest message may continue for 3 seconds. For those hearing the siren near the end of the 3 minutes, it will therefore take 3 minutes and 36 seconds (3-second delay; 55-second tone and initial announcement; and 2-minute, 38-second substantive announcement) before they will be fully informed.¹⁴

¹⁴ Because of the continuous playing of messages, some people will begin hearing the beginning of a message, while others will begin hearing in the middle. A portion of those beginning in the middle may be confused and need a full hearing from beginning to end. However, this will extend the time beyond what we compute only for a portion of those people who wait until the end of the alerting period to begin tuning in their radio. We do not consider it necessary to account for this contingency within the requirement that people be alerted and notified.

We note that Staff has cited NUREG-0654, Appendix 3, to state that

A prompt notification scheme shall include the capability of local and State agencies to provide information promptly over radio and TV *at the time of activation of the alerting signal*. [Emphasis added by Staff in Proposed Finding at 32.]

This guidance anticipates that there is a single time of activation for all the signals (“the time”), which will not be the case. We assume the EBS message should begin simultaneously with the activation of *the first siren* — there being no reason to wait until all sirens are deployed before sounding the first sirens. However, we do not interpret this “capability” as detracting from the simultaneously requirement of alerting and notifying within 15 minutes.

Since these messages appear to be of a reasonable length for the purpose intended, we are not persuaded by Applicants' argument that they cannot control the length of the broadcast message and should not be penalized for that length within their allotted 15-minute time period. Were the message of unreasonable length, we might consider this issue in another light.

We are adding an additional 12 seconds of time because there could be a delay in finding and tuning in a radio. We have no direct evidence on how much time to allot; however, we assume that the public has had an opportunity to learn the EBS procedure and that 15 seconds is adequate time to find and tune a radio. We add only 12 seconds because only those who are actually alerted at the very end of the siren sounding are affected and there is a 3-second delay before the alert tone and message will start — a message that begins with a tone that does not contain essential information.

We therefore find that it will take 3 minutes and 58 seconds after the end of the sounding of the siren before people may reasonably be expected to hear a recording of the longest prerecorded EBS message.

H. Conclusions Concerning Overall Time

We have now discussed each of the elements of time, other than the transit times to each of the sites. Since the transit times for each of the sites were accepted by us in the Summary Disposition Decision and are accepted by all the parties, all the elements of time are fixed and all we need do now is add them together.

The following times are the same for all the sites:

TABLE 1

Time Required for Functions Affecting All Sites

| Function | Time (Minutes:Seconds) |
|--------------------------|-----------------------------------|
| Alert | :20 |
| Dispatch | :50 |
| Setup | 1:00 |
| Sound Siren | 3:00 |
| Tuning and Message | 3:58 |
| TOTAL (ALL SITES) | 9:08 |

As a result, the summary of times for each site can now be set forth in Table 2. The times in Table 2 have been computed with a variety of conservative assumptions, including an assumption of winter weather that will reduce transit times by 25%. Note that three of the locations, shown in boldface type in Table 2, have total times in excess of 15 minutes. No location has a time in excess of 20 minutes.

Under all the circumstances of this case, including the fact that concerned political jurisdictions can reduce alerting and notification times by making sites available for sirens permanently mounted on poles, we consider this distribution of alerting times to be permissible. Indeed, we appreciate how well Applicants have done in surmounting difficult problems in order to design an acceptable second-best system.¹⁵

IV. STATEMENT OF CONCLUSION

In this Decision, we have determined that the VANS system does adequately comply with emergency planning regulations in that the plan for using the sirens does not generate an inordinate volume of sound. We have also determined that the expected time for alerting and notification — though three VANS locations somewhat exceed 15 minutes — is adequate, considering all the circumstances of this case.

Our answers to each of the questions set for hearing are:

1. *Whether the Planned Siren Sound Level Is Too Loud*

A.1-1. Whether sound levels in excess of 123 dBC cause enough discomfort so that the Board should not approve the use of sirens at a higher level of sound.

Answer: Applicants plan to exceed 123 dBC for a very brief time period and to use their sirens in such a way that people standing in the reflective area in front of buildings located within 100 yards of the sirens will receive sound levels of up to 6 dBC in excess of 123 dBC. We find that these violations of the standard set in the guidance, which is not binding on us, are minor. We accept these minor deviations from the standard suggested in the guidance.

¹⁵ Although the matter has not been litigated directly, there is little question that the best alerting system would be to use sirens fixed on poles. Because that option is not available to Applicants, this proceeding represents their attempt to persuade this Board that they can satisfy the Commission's regulations with a next-best effort. We note that if the citizens of Massachusetts are seriously concerned about the few extra minutes we are permitting VANS, they can save this time and more by changing local regulations to permit sirens to be mounted on fixed poles.

TABLE 2
Times for Each Site —
Including in the Total 9 Minutes, 8 Seconds from Table 1
(Times in: Minutes:Seconds)

| Location | Transit ¹⁶ | Winter Transit (+ 25%) | Total Winter (+9:08) |
|----------|-----------------------|------------------------------|----------------------------|
| 1 | 8:37 | 10:46 | 19:54 ¹⁷ |
| 2 | 5:03 | 6:19 | 15:27* |
| 3 | 6:29 | 8:06 | 17:14* |
| 4 | 0:00 | 0:00 | 9:08 |
| 5 | 0:00 | 0:00 | 9:08 |
| 6 | 3:09 | 3:56 | 13:04* |
| 7 | 3:42 | 4:38 | 13:46 |
| 8 | 7:13 | 9:01 | 18:09* |
| 9 | 7:17 | 9:06 | 18:14* |
| 10 | 7:18 | 9:08 | 18:16* |
| 11 | 7:32 | 9:25 | 18:33* |
| 12 | 8:25 | 10:31 | 19:39 |
| 13 | 8:03 | 10:04 | 19:12 |
| 14 | 0:55 | 1:09 | 10:17* |
| 15 | 3:01 | 3:46 | 12:54 |
| 16 | 11:43 | 14:39 | 23:47* |

*These locations provide primary siren coverage only for populations beyond 5 miles of the site. They are, therefore, not subject to the Appendix 3 requirement that "essentially 100% of the population" be alerted within 15 minutes.

NOTE: Times of over 15 minutes for areas within 5 miles of the Seabrook Station site are shown in boldface type.

A.1-2. If there is some level higher than 123 dBC that the Board should allow, what is that level?

Answer: Under the circumstances of this case, we have permitted up to 137 dBC for 4 seconds and, generally, up to 129 dBC, which may occur only in local areas near buildings, where sound reflection is expected to occur.

¹⁶ Appl. Dir. post Tr. 75 at 28.

¹⁷ We find that in winter months, the population served by this location is reduced enough in density that it would be adequately alerted by a 60-dBC sound level, which is provided by sirens at acoustic locations VL-02, -04, and -15, all of which have shorter predicted winter transit times and resulting total times. *Id.* at 26-27.

A.1-3. Whether Applicants' sirens can provide adequate coverage if used at sound levels that are not unduly uncomfortable.

Answer: We have found that Applicants' notification system is adequately comfortable and, at the proposed sound levels, it is conceded to provide adequate coverage.¹⁸

A.1-4. Whether Applicants' position on the sound level resulting from their sirens is an underestimate because of sound reflection from buildings.

Answer: We agree with Intervenor on this point. Reflection of sound from buildings will cause up to a 6-dBC increase in sound levels. The evidence suggests that these increased levels will occur.

2. Whether the Destination Sites for the VANS Vehicles Are Adequate

A.3-1. Whether the appointed destination locations, including VL-06, VL-07, VL-12, are sufficiently level for the safe deployment of the VANS vehicles.

Answer: The sites are sufficiently level. The parties have stipulated to this.

A.3-2. Whether or not VANS vehicles may gain physical access to VL-03, VL-06, VL-07, and VL-12.

Answer: The VANS vehicles may gain physical access to the listed sites. The parties have stipulated to this.

3. Whether the Sirens Will Be Sounded Fast Enough

A.5-1. What is an appropriate conservative estimate of the length of time it would take drivers to take for the necessary actions before their vehicles leave their stations during conditions likely to prevail at the time of need?

Answer: We have decided to use a conservative time-of-dispatch figure derived from tests conducted by Applicants. The figure is slower than the one suggested by Applicants but it does not assume unavailability of drivers because of motivational concerns. We are satisfied that the loudness of sirens, the visual prominence of strobe lights, the use of regular supervision to fire

¹⁸ Had we required a reduction in volume of sound from the sirens, sound coverage would have been reduced to unacceptable levels. Appl. Dir. post Tr. 75 at 206-07.

nonperforming employees, and a phased system for dispatching drivers, provide adequate combined guarantees. We do not require Applicants to ensure the impossible: that some driver some time may be delinquent at the time of an emergency. Applicants have promised to do what is practicable, and we are satisfied that is adequate.

A.5-2. Given that there is snowfall of 0.5 inch or more during 5.5% of the days of the year, would a conservative estimate of travel times to VANS acoustic locations include the somewhat prolonged travel times anticipated during snow conditions? If so, what time estimates should be included?

Answer: We find that it will take 25% more time for Applicants to travel to VANS destination locations during winter weather.

A.5-3. What is an appropriate conservative estimate of the length of time it would take for people within 5 miles of Seabrook to receive the informational message to be broadcast over the EBS?

Answer: Three minutes and 58 seconds after the siren has stopped sounding.

A.5-4. What is an appropriate conservative estimate of the total length of time for alerting and informing people within 5 miles of Seabrook? Is that estimate within acceptable guidelines? (If it is longer than 15 minutes, what are the factors we are to consider in deciding whether the time period is adequate?)

Answer: The total length of time for alerting and informing people is set forth in Table 2, which shows different time values for different VANS locations due to the amount of travel time involved. Note that the sites marked with asterisks are not required to alert and notify people within 15 minutes because they are not the primary alerting mechanism for any population within 5 miles of the site.

V. ORDER

For all the foregoing reasons and upon consideration of the entire record in this matter, it is this 23d day of June 1989, ORDERED, that:

1. All genuine issues of fact are hereby resolved in favor of the compliance of Public Service Company of New Hampshire, *et al.* (Applicants) with the applicable regulations and guidance, as applied by this Board.

2. VANS (Vehicular Alert and Notification System), which is Applicants' public alert notification system for the Massachusetts portion of the Seabrook

Station EPZ, is found to meet the requirements of the Commission's regulations and guidance, as applied by this Board.

3. There is reasonable assurance that persons located in the Massachusetts portion of the Seabrook EPZ will be notified of a radiological emergency at Seabrook Station within about 15 minutes of the time that cognizant officials of the Commonwealth of Massachusetts decide to make such notification.

4. This Decision disposes of a discrete and major segment of the full-power operating license proceeding. Accordingly, any party may take an appeal from this Decision by filing a Notice of Appeal within ten (10) days after service of this Decision. Each appellant must file a brief supporting its position on appeal within thirty (30) days after filing its Notice of Appeal (forty (40) days if the Staff is the appellant). Within thirty (30) days after the period has expired for the filing and service of 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 the appeal of any other party. A responding party shall file only a single, responsive brief regardless of the number of appellants' briefs filed. See 10 C.F.R. § 2.762 (which controls the appeal proceeding, regardless of the language of this paragraph).

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Emmeth A. Luebke
ADMINISTRATIVE JUDGE**

**Jerry Harbour
ADMINISTRATIVE JUDGE**

**Peter B. Bloch, Chair
ADMINISTRATIVE JUDGE**

Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. James H. Carpenter
Gustave A. Linenberger, Jr.

In the Matter of

Docket No. 50-271-OLA
(ASLBP No. 87-547-02-LA)
(Spent Fuel Pool Amendment)

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

June 30, 1989

The Licensing Board grants in part motions of the Applicant and NRC Staff to strike testimony of an Intervenor's witness submitted for oral argument. Striking of the testimony was without prejudice to its later submission under defined circumstances. As a result of the Intervenor's determination not to contest further the portion of the contention for which the stricken testimony was submitted, the Board also dismisses for lack of contest that portion of the contention.

NEPA: CONSIDERATION OF ALTERNATIVES (§ 102(2)(E))

In an Environmental Assessment, under § 102(2)(E) of the National Environmental Policy Act (NEPA), 42 U.S.C § 4332(2)(E), an agency must give informed and meaningful consideration to — i.e., must take a “hard look” at — viable alternatives. *See, e.g., Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228-29 (9th Cir. 1988), *U.S. appeal pending*; *Van Abbema v. Fornell*, 807

F.2d 633, 642 (7th Cir. 1986); *North Carolina v. Hudson*, 665 F. Supp. 428, 447 (E.D.N.C. 1987).

NEPA: CONSIDERATION OF ALTERNATIVES (§ 102(2)(E))

The unused capacity of a spent fuel pool may constitute a "resource," within the meaning of § 102(2)(E) of NEPA, 42 U.S.C. § 4332(2)(E), as to which there is an "unresolved conflict." *City of New York v. U.S. Department of Transportation*, 715 F.2d 732, 742 (2d Cir. 1983); *North Carolina v. Hudson*, 665 F. Supp. 428, 445-46 (E.D.N.C. 1987); cf. *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 458 n.14 (1980).

MEMORANDUM AND ORDER (Environmental Contention 3)

On June 21, 1989, the Licensing Board conducted an oral argument, as authorized by 10 C.F.R. § 2.1113, concerning the non-accident portion of Environmental Contention 3, sponsored by the New England Coalition on Nuclear Pollution (NECNP), an Intervenor, and the Commonwealth of Massachusetts, an interested State (hereinafter Intervenor).¹ Appearing at the oral argument were representatives of NECNP, the Commonwealth of Massachusetts, the State of Vermont, the Applicant, and the NRC Staff.

At the oral argument, we struck (without prejudice to possible later resubmission) portions of the testimony submitted by NECNP, for reasons set forth below. We also dismissed the non-accident portion of Environmental Contention 3 but are permitting those portions of its bases as are necessary to litigate the accident portion of the contention to remain in controversy, to be utilized only if the accident portion of the contention is in fact litigated.²

1. Environmental Contention 3 was admitted by our Memorandum and Order (Late-Filed Environmental Contentions) dated October 11, 1988, LBP-88-26, 28 NRC 440, 448-50. It reads as follows:

¹The oral argument was scheduled through our Memorandum (Telephone Conference of 4/19/89), dated April 21, 1989 (unpublished) and our Notice of Oral Argument, dated April 24, 1989 (published at 54 Fed. Reg. 18,618 (May 1, 1989)).

²For convenience of reference, the non-accident portion of Environmental Contention 3 will be designated as Environmental Contention 3(A) and the accident portion of the contention will be designated as Environmental Contention 3(B).

The NRC has failed to give adequate consideration to the alternative of dry cask storage, and has thus not complied with the provisions of the National Environmental Policy Act, nor of its own rules in 10 C.F.R. Part 51.³

As bases for this contention, the Intervenor relied both on the bases for Environmental Contention 1, their severe-accident contention (incorporated by reference), and on certain perceived deficiencies in the NRC Staff's Environmental Assessment (EA), dated July 25, 1988.

In LBP-88-26, we admitted the contention but specifically declined to accept the severe-accident portion of the bases that had been proffered.⁴ Subsequently, however, we reconsidered our severe-accident rulings and admitted the severe-accident bases for Environmental Contention 3, as well as Environmental Contention 1. Memorandum and Order (Motion for Reconsideration of Severe-Accident Ruling), LBP-89-6, 29 NRC 127 (1989). We referred these latter rulings, however, to the Appeal Board and postponed their effectiveness pending Appeal Board (or Commission) action that would confirm their effectiveness. The Appeal Board thus far has not ruled on our referral.

2. Various parties, including NECNP, filed their testimony on Environmental Contention 3 on May 23, 1989. In a Memorandum (Issues for Consideration at 6/21/89 Oral Argument), dated May 25, 1989 (unpublished), we spelled out several issues raised by the direct testimony which we desired the parties to address, either in responsive statements or at oral argument. One of those issues was the extent to which NECNP's direct testimony (of Dr. Gordon Thompson) rested upon accident considerations pending (by virtue of our referral of LBP-89-6) before the Appeal Board.

NECNP, the Applicant, and the NRC Staff each filed responses on June 9, 1989, which dealt, *inter alia*, with the questions we had posed in our May 25, 1989 Memorandum. Among other matters, NECNP filed rebuttal testimony of Dr. Thompson. Moreover, on June 9, 1989, the Applicant and NRC Staff each filed motions to strike in its entirety the direct testimony of Dr. Thompson. They also sought dismissal of Environmental Contention 3 (at least its non-accident portions) (*see* Tr. 463). At oral argument, the Applicant and NRC Staff extended their motions to strike to cover as well the rebuttal testimony of Dr. Thompson (Tr. 548-49 (Applicant); Tr. 484-86, 493 (Staff)).

3. Most of the oral argument was devoted to consideration of the motions of the Applicant and NRC Staff to strike the testimony of Dr. Thompson and to dismiss the non-accident portions of Environmental Contention 3. The Applicant and Staff each argued that the claims concerning the superiority of dry cask

³ Joint Motion of New England Coalition on Nuclear Pollution and the Commonwealth of Massachusetts for Leave to File Late-Filed Contentions, dated August 15, 1988, at 4.

⁴ LBP-88-26, *supra*, 28 NRC at 450 n.16. We also declined to admit at that time Environmental Contention 1, concerning the risk of severe accidents.

storage on the basis of accident considerations could not be considered in the absence of Appeal Board action on our referral of LBP-89-6. For its part, NECNP tried to distinguish between severe-accident considerations involving core-melt accidents and other beyond-design-basis accidents not necessarily involving core-melt consequences — claiming that only the former was included in the referral to the Appeal Board (Tr. 508-11, 530-34).

NECNP also asserted that not all of Dr. Thompson's testimony dealt with accidents and sought at least to retain the non-accident portions of the testimony. (That testimony dealt with the costs of dry cask storage and the time needed to design and license a dry cask storage facility.) With respect to this claim, the Applicant asserted that Dr. Thompson lacked competence to address the non-accident portions of his testimony (Applicant's Memorandum in Support of Its Motion to Strike and to Dismiss, dated June 9, 1989, at 5-6; Tr. 454-62); whereas the Staff treated his entire testimony as pertinent only to the consideration of accidents (Staff Motion to Strike, dated June 9, 1989, at 1; Tr. 485, 486, 493).

At the oral argument, we ruled that the entire portion of NECNP's bases for Environmental Contention 3 which dealt with accidents had been referred by LBP-89-6 to the Appeal Board, and we *granted* the motions to strike insofar as they dealt with the accident-related portions of Dr. Thompson's testimony (i.e., all of § VI, the second question and first paragraph of the answer in § VII, the last Question and Answer in § VII (at 11), all of §§ VIII and IX, and § IIA of Dr. Thompson's Rebuttal Testimony) (Tr. 582-83). This action is without prejudice to the later submission of the testimony, if NECNP elects to do so, in the event the Appeal Board permits litigation of Environmental Contention 3(B). We concluded that the non-accident claims of NECNP were sufficiently disparate from the accident claims to permit their separate litigation and that Dr. Thompson has sufficient qualifications to permit the consideration of the remainder of his testimony bearing on the non-accident aspects of Environmental Contention 3.⁵

4. In our ruling on the motions to strike Dr. Thompson's testimony and to dismiss Environmental Contention 3, we noted that, in permitting litigation of the nonaccident portion of the contention, there remained the question of whether the NRC Staff, in its EA, had given informed and meaningful consideration to — i.e., had taken a "hard look" at — viable alternatives as demanded by many courts (Tr. 583, 615). *See, e.g., Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228-29 (9th Cir. 1988), *U.S. appeal pending*; *Van Abbema v. Fornell*, 807 F.2d 633, 642 (7th Cir. 1986); *North Carolina v. Hudson*, 665 F. Supp. 428, 447 (E.D.N.C. 1987). We also noted an open question as to whether the unused capacity of the pool itself constituted a "resource," within the meaning

⁵ We express no opinion, of course, as to the weight that might be accorded to Dr. Thompson's testimony.

of § 102(2)(E) of NEPA, 42 U.S.C. § 4332(2)(E), as to which there was an "unresolved conflict." *City of New York v. U.S. Department of Transportation*, 715 F.2d 732, 742 (2d Cir. 1983); *Hudson, supra*, 465 F. Supp. at 445-46; *cf. Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 458 n.14 (1980); *see also* Staff's EA, dated July 25, 1988, at 4, ¶ 5 ("the expansion capacity of the existing pool is a resource that should be used"); *but cf.* Tr. 487 (Staff); Tr. 505 (NECNP).

Nonetheless, following our ruling, NECNP, the Commonwealth of Massachusetts and the Applicant each agreed that the environmental impacts of dry cask storage and reracking are, apart from accident considerations, essentially benign and approximately equal (Tr. 586, 593, 598-99); and that there is no longer any dispute as to alternative uses of resources, necessary to bring the "hard look" requirement of § 102(2)(E) of NEPA into play. They and the Staff agreed that, without any further contest as to the non-accident aspects of the contention, those portions of the contention should be dismissed, for lack of contest.

At the conclusion of the oral argument, the Licensing Board determined to *dismiss* Environmental Contention 3(A) as no longer in contest. We leave for another day the resolution of the open questions which we identified above. However, we are permitting retention of such parts of the bases for Environmental Contention 3(A) as are necessary to litigate properly the accident portion of the contention, should that action be authorized by the Appeal Board or Commission. To the extent these bases are being retained, they may be used only for litigation of the accident portion of the contention and not independently (Tr. 615).

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland
June 30, 1989

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

Docket No. 50-482

WOLF CREEK NUCLEAR OPERATING
CORPORATION(Wolf Creek Generating Station,
Unit 1)

June 5, 1989

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by the Kansas Chapter of the Sierra Club that requested the Nuclear Regulatory Commission (NRC) to suspend the operating license issued to the Wolf Creek Nuclear Operating Corporation (WCNOC or Licensee) until the Licensee takes the corrective actions requested in the Petition to achieve assurance of adequate protection of the public health and safety. Petitioners based their request on allegations that (1) from the inception of its Quality Assurance program to date, management at Wolf Creek has ignored real safety concerns; (2) from the inception of operations at Wolf Creek, management has repeatedly failed to safeguard the integrity of its quality assurance program and has failed to demonstrate management competence to address and resolve real safety concerns; and (3) the NRC's actions to date provide no reason to conclude that the acknowledged safety problems at Wolf Creek have been resolved or will be resolved within a reasonable period of time.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING, PRIOR DECISIONS

Where the Director, NRR, has issued a decision denying a petitioner's request, and a second petitioner makes a request based on the same grounds as the first petitioner without submitting any new information, the Director, NRR, may rely on his prior decision.

NUCLEAR REGULATORY COMMISSION: HEALTH AND SAFETY RESPONSIBILITIES

Where a licensee has initiated a voluntary program to resolve employee allegations and the NRC has inspected all the files generated by the program and resolved 100% of the technical issues raised in those files, the NRC need not take further action, even though the files contained documentation of procedural deficiencies unrelated to the safety aspects of any allegation.

ENFORCEMENT ACTIONS: EFFECT ON PETITIONS UNDER 10 C.F.R. § 2.206

Where the NRC has taken enforcement action against a licensee for violations of the Commission's regulatory requirements, the NRC will not normally reopen the enforcement action in response to a petitioner's request for enforcement action based on the violation.

TECHNICAL ISSUES DISCUSSED

Quality Assurance Program;
Q1 Program (voluntary);
SALP Reports.

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

I. INTRODUCTION

By Petition dated January 30, 1989 (hereafter referred to as the Petition), submitted to the Nuclear Regulatory Commission (NRC or Commission) pursuant to 10 C.F.R. § 2.206, the Kansas Chapter of the Sierra Club (hereafter referred to as the Petitioners) requested immediate NRC action to prevent undue risks to the public health and safety posed by the operation of the Wolf Creek Generating Station (Wolf Creek) in Burlington, Kansas. The Petition requested the NRC to suspend the operating license issued to the Wolf Creek Nuclear Operating Corporation (WCNOC or Licensee) until the Licensee takes the corrective actions requested in the Petition to achieve assurance of adequate protection of the public health and safety. Specifically, the Petitioners allege that (1) from the inception of its Quality Assurance program to date, management at Wolf Creek has ignored real safety concerns; (2) from the inception of operations at Wolf Creek, management has repeatedly failed to safeguard the integrity of its quality

assurance programs and has failed to demonstrate management competence to address and resolve real safety concerns; and (3) the NRC's actions to date provide no reason to conclude that the acknowledged safety problems at Wolf Creek have been resolved or will be resolved within a reasonable period of time.

The Petitioners requested that the NRC accomplish the following:

1. Suspend WCNOC's operating license for Wolf Creek.
2. Before reinstating the operating license:
 - a. Reopen its Office of Investigations (OI) Case No. 4-86-004 to provide sound technical reasons for its conclusion that this nuclear power plant is safe enough to operate in spite of all of its investigative conclusions regarding quality assurance problems.
 - b. Review all of its information on quality assurance at Wolf Creek developed subsequent to the issuance of Case No. 4-86-004 and covering operations at Wolf Creek through 1989 to provide sound technical reasons for its conclusion that this nuclear power plant is safe enough to operate.
 - c. Modify WCNOC's license to operate Wolf Creek by incorporating license conditions that require all corrective actions determined by NRC to be necessary to achieve a level of operating safety that complies with federal regulations, and if these conditions are not met, revoke the operating license.
 - d. Bar the following persons, whose activities were detailed in the Office of Investigations Case No. 4-86-004 because of their alleged failures to safeguard the integrity of Wolf Creek quality assurance programs and their alleged lack of competence to identify and resolve real safety concerns, from any and all involvement or participation in activities at Wolf Creek Generating Station whether as a salaried employee, a contract employee, a consultant, a volunteer, a manager, or in any other position:
 - (i) William Rudolph
 - (ii) Glenn Koester
 - (iii) Robert L. Scott
 - (iv) Charles Snyder
 - (v) Any other individual who the NRC determines has prevented Wolf Creek Generating Station from complying with federal quality assurance regulations in a culpable manner.

By letter dated March 23, 1989, I acknowledged receipt of the Petition and informed the Petitioners that the matters identified in their Petition did not require any immediate action to protect the health and safety of the public. I also stated that appropriate action would be taken on the Petition within a reasonable time.

I have now completed my evaluation of the Petition.¹ For the reasons set forth in the discussion below, the Petitioners' requests for action are denied.

II. BACKGROUND

Every NRC licensee is required by regulation to have a quality assurance program, as described in 10 C.F.R. Part 50, Appendix B, which applies to all activities affecting the safety-related functions of all structures, systems, and components. These activities include designing, purchasing, fabricating, handling, shipping, storing, cleaning, erecting, installing, inspecting, testing, operating, maintaining, repairing, refueling, and modifying, and apply to both construction and operation. Appendix B contains eighteen separate criteria that licensees must satisfy, including design control (Criterion III), material control (Criteria VII, VIII, X, and XV), and corrective action (Criterion XVI). Licensees satisfy these criteria by following procedures that ensure that Appendix B requirements are satisfied on a continual basis throughout the normal course of construction and operation of the facility.

In early 1984, the Licensee initiated the Quality First (Q1) program at Wolf Creek to establish "the necessary administrative and investigative measures to ensure that all quality concerns related to safe plant operations, quality of work, compliance with requirements or management are appropriately evaluated, investigated, dispositioned, verified, and documented."² The Q1 program provided an independent route for Wolf Creek employees to raise quality concerns.³ The Q1 program evaluated concerns brought to it and referred those concerns appearing to have merit back to the Licensee's appropriate organization. These organizations then resolved the technical issues pursuant to the strict requirements of Appendix B. The Q1 program, which was entirely separate from the Licensee's required quality assurance program, was not intended to resolve concerns pursuant to Appendix B, and its actions were not intended as a substitute for satisfaction of Appendix B requirements. Regardless of whether or not the Licensee had a Q1 program, or, if so, how well or poorly it functioned, the Licensee always was required by NRC regulations to comply with the quality assurance criteria of Appendix B. Appendix B does not require licensees to have programs like Q1, but the NRC does encourage its licensees to develop and implement them. The program, available to all site employees, affords them an

¹ By letter dated June 20, 1989, the Licensee submitted a response in opposition to Petitioners' request. While I did not have the Licensee's letter while I was evaluating the Petition, it is consistent with this Decision and raises no new information.

² Kansas Gas & Electric Company's (KG&E's) Quality Concern Reporting System, Procedure No. III.29, Rev. O, dated February 24, 1984.

³ NRC resident inspectors are always available to receive employees' concerns about safety, whether the Licensee has an independent program such as Q1 or not.

opportunity to report concerns personally to Q1 investigators or anonymously by a telephone "hot line." Information about the program and instructions for reporting concerns are posted at the site and made available to site employees. In addition, employees are interviewed by Q1 personnel when they terminate their employment at Wolf Creek and asked if they have any quality concerns to report for Q1 investigation.

In May 1985, acting on behalf of the Nuclear Awareness Network (NAN), the Government Accountability Project (GAP) filed a petition pursuant to 10 C.F.R. § 2.206 alleging that safety concerns raised through the Q1 program were being either "ignored or buried" by both KG&E management and the NRC. In addition, GAP asserted that the NRC should have taken possession of the Q1 files but did not do so, and alleged that the NRC Staff had provided an inaccurate presentation to the Commission during the Wolf Creek operating license proceedings. The GAP petition alluded to over 700 alleged safety concerns from over 240 individuals in the Q1 files and requested the NRC to accomplish the following:

1. Take possession of the Q1 files and provide the Commission and the public an analysis of why the alleged significant safety-related deficiencies identified for the previous year (i.e., the year preceding May 15, 1985) by members of the work force do not pose a danger to the public health and safety.
2. Conduct an inquiry on the ramifications of the collective safety significance and/or adequacy of the quality assurance program in light of the information contained in the Q1 files.
3. Provide an explanation from both NRR and Region IV as to why they allegedly allowed the allegations to be exempt from the regulatory analysis for determination of safety significance.
4. Initiate an OI investigation into the alleged compromise of the Q1 program by William Rudolph, site Quality Assurance (QA) manager.

The GAP petition was addressed in Director's Decision DD-88-14 (28 NRC 260), dated August 22, 1988, a copy of which was forwarded to Petitioners in my letter of March 23, 1989, that acknowledged receipt of their Petition. Briefly stated, Director's Decision DD-88-14 responded to the GAP petition in the following manner (numbering corresponds to the above allegations):

1. During May 1985, a special sixteen-member NRC Staff team reviewed in depth all Q1 files (271 case files containing a total of 752 concerns) to determine whether Licensee management had properly dealt with the concerns brought to the organization. After a careful review, the team concluded that a number of programmatic aspects of the Q1 program were deficient, but did not identify any violations of, or deviations from, NRC requirements, nor did it find any indica-

- tions that the Q1 program failed to properly assess and resolve any significant safety concerns.
2. Despite critical comments regarding programmatic elements of the Q1 program, the NRC review team found the Q1 program effective in investigating and resolving identified safety concerns. The NRC team found that Q1 management investigated, resolved, and corrected, as appropriate, all technical safety concerns and that there was no evidence to support the allegation that either the Licensee or the NRC Staff "ignored or buried" any safety concern.
 3. The NRC Staff discussed the results of its review of the Q1 program case files with the Commission during the public meeting on June 3, 1985, regarding issuance of a full-power license for the Wolf Creek Generating Station. Nine issues arising from the Q1 program were identified as requiring supplemental work. This work was performed by the Staff, and the issues were satisfactorily resolved. The Staff concluded that there were no technical issues that would cause it to recommend against issuing a full-power license.
 4. The OI investigation completed in November 1987 concluded that a substantial number of concerns that merited a thorough investigation were given only superficial attention, were inadequately investigated, and accepted by Q1 management. Despite the number of shortcomings identified in the Q1 program, OI concluded that the evidence did not establish wrongdoing on the part of KG&E management. Although the NRC Staff was well aware of the limitations of the Q1 investigative program, independent inspections regarding the adequacy of Q1's treatment of each technical safety concern concluded that each concern was properly resolved and that there were no issues that would be a restraint to a full-power operating license for the Wolf Creek Generating Station.

III. DISCUSSION

The following discussion will analyze the Petitioners' bases to determine whether to take action on the Petitioners' requests. I note that the Petitioners requested that the Wolf Creek Generating Station operating license be suspended and that prior to reinstating the operating license certain actions be taken by the NRC. For the reasons explained in my letter dated March 23, 1989, immediate suspension of the Wolf Creek operating license was not warranted. After further consideration of the Petition, and for the reasons explained below, no sufficient basis has been provided to suspend the Wolf Creek operating license. As further

explained below, neither is there a sufficient basis to take any of the other actions requested by the Petitioners.

The requests of the Petitioners are treated as follows:

1. Suspension of the Operating License for Wolf Creek Generating Station, Burlington, Kansas

The Petitioners request license suspension for alleged inadequacies in WCNO's Q1 program. As discussed in Director's Decision DD-88-14, the Staff reviewed 100% of the Q1 files during May 1985 and found no substantial safety concerns that would be a restraint to full-power operation of the Wolf Creek Generating Station. In addition, in a separate Staff review of the OI report, the Staff concluded that the OI report did not raise any issues requiring further Staff actions.

The Petition does not raise any new issues regarding OI Report No. 4-86-004 or the substantive Staff review of Q1. The Commission does not require licensees to implement programs with purposes similar to Q1. Furthermore, the Commission does not rely on results yielded by programs like Q1 in its licensing decisions. Therefore, in consideration of the information concerning WCNO's Q1 program provided by the Petition, the Staff finds no basis to suspend the operating license for Wolf Creek.

The Petitioners also base their request for suspension of WCNO's license on NRC's citation of WCNO for various violations of NRC requirements and on the NRC's Systematic Assessment of Licensee Performance (SALP) for Wolf Creek. For the Petitioners' information, I have enclosed the Notices of Violation (Notices) and their associated cover letters regarding the \$100,000 civil penalty and the violations relating to the reactor vessel O-ring seals on which the Petition is based. The Notice of Violation concerning controlling access to restricted areas that was also referenced in the Petition contains safeguards information and is not available for public disclosure.

The NRC agrees that WCNO violated some NRC requirements, as documented in these Notices. The NRC issued the Notices in accordance with its regulations in 10 C.F.R. Part 2 and the General Statement of Policy and Procedure for NRC Enforcement Actions, 10 C.F.R. Part 2, Appendix C (Enforcement Policy); the Notices explain the significance of the violations, consistent with the Enforcement Policy. In accordance with the Enforcement Policy, none of these violations is a basis for suspending WCNO's license to operate Wolf Creek. Moreover, these violations are isolated incidents and do not show a pattern of inadequate management oversight of WCNO's Quality Assurance (QA) program. Although management at Wolf Creek has not always taken timely action to correct identified problems, as reflected by the low rating in the QA area in the SALP dated June 23, 1988 (Inspection Report 50-482/88-14) for Wolf

Creek and as discussed in § 2.b, below, this problem, combined with the isolated violations cited, does not establish a pattern of inadequate management at Wolf Creek. Also, the Petitioners have submitted no new information relating to these concerns, and therefore, the Petitioners have not presented the NRC with facts on which to reevaluate these concerns. Accordingly, I find no basis to suspend the operating license for Wolf Creek.

- a. *"Prior to reinstating the operating license the NRC should reopen its Office of Investigations Case No. 4-86-004 to provide sound technical reasons for its conclusion that this nuclear power plant is safe enough to operate in spite of all of its investigative conclusions regarding quality assurance problems."*

I will treat this as a separate request that is not dependent on granting the Petitioners' request to suspend WCNO's license to operate Wolf Creek. As explained in § 1 of this discussion, the NRC's review of the Q1 files revealed no technical reason for questioning the safety of operation at Wolf Creek. I have, nevertheless, considered the Petitioners' specific concerns.

The OI investigation in Case No. 4-86-004 began in June 1986 and focused on the Q1 program from late August 1984 to the initial fuel-load date of December 1984. The purpose of the investigation was to determine whether utility management used the Q1 program in such a way as to suppress employee concerns from being fully investigated and for having appropriate corrective actions implemented so that employee concerns would not interfere with the issuance of the Wolf Creek Generating Station operating license.

The Petition is based upon information taken from the OI investigation. The following allegations, taken from the OI investigation report, are being used as the bases for reopening OI Case No. 4-86-004:

- An incident of document shredding and blackballing of a former inspector by Q1 management
- Improper reorganization of Q1 management
- Pressure on Q1 investigators to close out cases
- Confiscation of Q1 tape recorders
- Imposition of improper limits on Q1 investigations by Q1 supervisors
- Q1's mishandling of allegations concerning falsified documents
- Muzzling of Q1 investigators
- Q1's ignoring wrongdoing
- Improper changing of Q1 investigator's conclusions by Q1 supervisors
- Improper firing of Q1 investigators by management
- Conflicts of interest within Q1
- Q1's failure to deal with drug allegations.

Our review of the Petition shows that it does not disclose any new information that was not available to OI during its preparation of Case No. 4-86-004. The bases provided by the Petitioners simply reiterate previously known information. The Staff has known about the programmatic deficiencies of the Q1 program, and this knowledge is discussed in Director's Decision DD-88-14.

OI Case No. 4-86-004 considered twelve allegations received from Q1 investigators and other employees regarding the manner in which the Q1 program had been conducted. Although the OI investigation identified many shortcomings in the Q1 program, including the bases reiterated in the Petition, the NRC concluded that no technical safety issues arose from them. OI Case No. 4-86-004 concluded that

- (1) Q1 had not been given a mandate to close all cases before fuel load.
- (2) Q1 Action Requests referred to other organizational elements were addressed before fuel load even though the verification of corrective action by Q1 was not meaningful.
- (3) Q1 organizational procedures were changed to require that new items discovered during an investigation be referred back to the operating organization rather than expand the Q1 investigation.
- (4) A significant number of allegations were closed with superficial investigative effort; however, there was no evidence to suggest wholesale discarding of allegations.
- (5) The practice of summarizing Q1 allegations in one or two sentences resulted in insufficient information for the Q1 investigators to use in pursuing their investigations, leading to meaningless closures of issues that merited further investigation.
- (6) Q1 management had changed the investigative findings made by a Q1 reviewer and had refused to accept significant investigative findings made by another investigator.
- (7) There was little evidence that Q1 management had changed investigators' conclusions; however, there were instances in which substantiated allegations were listed as having no merit.
- (8) Some Q1 investigators were removed from the program because of their aggressive investigations, their resistance to limiting the scope of investigations, or management's unwillingness to accept their investigative findings.
- (9) Q1 procedures were changed to require that investigators remain within the parameters of the original allegation and not expand the investigation into new areas.
- (10) The new Q1 manager's decision to close an investigation into pipe cleanliness, an area for which he had previous responsibility, was inconsistent with the objectivity necessary in an effective and meaningful investigative program.

- (11) Drug allegations made to Q1 were referred to Security for action; however, Security did not investigate these allegations but merely viewed them as an additional source of information.

The overall OI investigation drew the following conclusion: "Despite substantial shortcomings identified in the Q1 program, it is concluded that the evidence gathered does not substantiate wrongdoing on the part of KG&E management in their conduct of this voluntary program." The NRC Staff has independently reviewed the conclusions reached by OI and is in agreement with OI's overall findings that the Q1 program was not used to prevent the NRC Staff from becoming aware of the Q1 allegations.

It again should be noted that the NRC Staff did not rely on the results of the Q1 program to make decisions related to the licensing of Wolf Creek. The Staff was fully cognizant of the content of the Q1 program based on six inspections carried out by regional and NRR personnel before licensing between September 25, 1984, and May 31, 1985. The Staff concluded that no technical safety issue arose from the Q1 program's shortcomings. Moreover, the NRC's decision to license the Wolf Creek plant was based on the Staff's normal program of independent inspections and licensing reviews, including those of the Licensee's quality assurance program required by Appendix B, not the separate Q1 program.

I reiterate that Q1 is a voluntary program run by the Licensee, is not required by NRC regulations, and does not serve the purpose of demonstrating compliance with Appendix B to 10 C.F.R. Part 50, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants." The deficiencies that OI identified in the Q1 program in no way constituted violations of Appendix B. Moreover, with the exception of the violation discussed above, for which the NRC has already taken enforcement action by imposing a civil penalty, the Licensee's Quality Assurance organization has properly implemented Appendix B. The NRC Staff's review of the Licensee's Quality Assurance program is included in the Wolf Creek Safety Evaluation Report (NUREG-0881). Finally, and as stated above, in May 1985 the NRC comprehensively inspected the Q1 program. I repeat that this inspection found that the Licensee's Quality Assurance and other appropriate organizations had properly resolved, pursuant to the strict requirements of Appendix B, the concerns relating to plant quality referred to them by Q1.

In summary, a review by the Staff supports the conclusions made by the OI report. Considering that the Petition does not offer any new information or additional insights into the available data, the Staff sees no basis for reopening OI Case No. 4-86-004.

b. "Prior to reinstating the operating license the NRC should review all of its information on quality assurance at Wolf Creek developed subsequent to the issuance of Case No. 4-86-004 and covering operations at Wolf Creek through 1989 to provide sound technical reasons for its conclusion that this nuclear power plant is safe enough to operate."

NRC has in place a program to periodically monitor and assess available licensee performance information in selected functional areas. The Systematic Assessment of Licensee Performance (SALP) program is an integrated NRC Staff effort to collect available observations and data on a periodic basis and to evaluate licensee performance based upon this information. The SALP is designed to provide a rational basis for allocating NRC resources and to provide meaningful guidance to the licensee's management to promote the quality and safety of plant operation. Additional information regarding NRC's SALP program, including areas of review, evaluation criteria, and performance categories, is discussed in the enclosed (not published) NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance."

SALP reviews at the Wolf Creek Generating Station have been ongoing since August 1981. The Petition refers to the SALP performed at Wolf Creek for the period between March 1, 1987, and March 31, 1988. That document provides the Staff's assessment of both the Licensee's quality assurance and operations programs for that period. The following discussion was taken from that SALP report:

Quality Programs and Administrative Controls Affecting Quality

The assessment of this area includes all management control, verification and oversight activities which affect or assure the quality of plant activities, structures, systems, and components. This area may be viewed as a comprehensive management system for controlling the quality of verification activities that confirm that the work was performed correctly. The evaluation of the effectiveness of the quality assurance system is based on the results of management actions to ensure that necessary people, procedures, facilities, and materials are provided and used during the operation of the nuclear power plant. Principal emphasis is given to evaluation of the effectiveness and involvement of management in establishing and assuring the effective implementation of the quality assurance program along with evaluation of the history of licensee performance in the key areas of: committee activities, design and procurement control, control of design change processes, inspections, audits, corrective action systems, and records.

Conclusions

The assessment of this functional area indicates that management has not been effective in timely resolution of important issues. Corporate management oversight of plant activities does not always ensure adequate involvement of the quality and engineering organizations in plant operations. When problems are identified by the quality and engineering organizations they are not always acted upon in a timely manner.

The licensee is considered to be in Performance Category 3 for an overall rating of the SALP area of quality programs and administrative controls affecting quality.

Plant Operations

The assessment of this area consists chiefly of the activities of the Licensee's operational Staff (e.g., licensed operators and nuclear station operators). It is intended to be limited to operating activities such as: plant startup, power operation, plant shutdown, and system lineups. Thus, it includes activities such as reading and logging plant conditions, responding to off-normal conditions, manipulating the reactor and auxiliary controls, plant-wide house-keeping, and control room professionalism.

Conclusions

The overall assessment of this area indicates that improvements need to be made. As stated in the previous SALP report, licensee attention to detail in this area can be improved. The use of procedures in operations was noted to improve; however, this occurred only after the situation had been allowed to deteriorate to an unacceptable level.

The examples of inattention to detail and the lack of effective operations interface with other departments reflect an ineffective management oversight in this functional area.

Staffing in this area is considered a strength, along with good control room professionalism during power operations.

The licensee is considered to be in Performance Category 2 in this area, with a declining trend.

A trending of SALP results for these two functional areas⁴ subsequent to the issuance of OI Case No. 4-86-004 is as follows:

| Functional Area | Performance Period | | |
|---|-----------------------|---------------------|----------------------|
| | (10/2/84– 1/31/86) | (2/1/86– 2/28/8) | (3/1/87– 3/31/88) |
| Quality programs and administrative controls affecting quality | 1 | 2 | 3 |
| Plant operations | 2 | 2 | 2 |

⁴It should be noted that functional areas have been redefined pursuant to NRC Manual Chapter 0516, revised June 6, 1988, titled, "Systematic Assessment of Licensee Performance." Consequently, the rating tabulated above for the functional area Quality Programs and Administration Controls Affecting Quality does not correlate directly with the Staff's most recent SALP report which covered the period between April 1, 1988, and March 31, 1989. The Staff's most recent SALP report, dated June 2, 1989, does not contradict any of the findings made in this Director's Decision. In this most recent report the Staff found the overall performance at the Wolf Creek Generating Station to be satisfactory with an overall improving trend.

As previously discussed, the above Wolf Creek SALP ratings are not the most desirable but are acceptable in terms of allowing continued operation of the facility. The Petition cites the SALP, violations of NRC requirements, and the Q1 program as bases for the NRC to review all its information on the Wolf Creek QA program. As discussed in § 1 of this discussion, the Petition presents no new information on these subjects. Therefore, the Staff finds no basis to initiate new reviews to justify continued operations.

c. *"Prior to reinstating the operating license all corrective actions determined by NRC to be necessary to achieve a level of operating safety that complies with federal regulations should be incorporated as conditions of the operating license and if they are not met the operating license should be revoked."*

In consideration of the information provided in the Petition, and as discussed in § 1, above, the Staff does not find a basis to impose corrective actions on the Licensee. Existing applicable regulations, enforceable to the same extent as license conditions, already require the identification and correction of conditions adverse to quality. Therefore, imposing license conditions to require actions already required by regulation would be meaningless.

d. *"Prior to reinstating the operating license that the following persons whose activities were detailed in Mr. Griffin's report of Case No. 4-86-004 so as to show their failure to safeguard the integrity of Wolf Creek quality assurance programs and their lack of competence to identify and resolve real safety concerns, be barred from any and all involvement or participation in activities at Wolf Creek Generating Station whether as a salaried employee, a contract employee, a consultant, a volunteer, a management or any other position:*

- (i) William Rudolph*
- (ii) Glenn Koester*
- (iii) Robert L. Scott*
- (iv) Charles Snyder*
- (v) any other individual who the NRC determines has prevented Wolf Creek Generating Station from complying with federal quality assurance regulations in a culpable manner."*

The conclusion of OI Case No. 4-86-004 states that "the evidence gathered does not substantiate wrongdoing on the part of KG&E management in their conduct of this voluntary program." The NRC's technical staff review of the OI report supported this conclusion. Considering that the Petition does not provide

any new information to the Staff, the Staff does not find a basis to prohibit the named individuals from licensed activities at the Wolf Creek Generating Station. Moreover, no information has been presented identifying any other individuals who have prevented Wolf Creek Generating Station from complying with NRC regulations.

IV. CONCLUSION

The institution of proceedings pursuant to 10 C.F.R. 2.202 is appropriate only where substantial health and safety issues have been raised (*see Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 175 (1975); *Washington Public Power System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 924 (1984)). This is the standard that I have applied to the concerns raised by the Petitioners in this decision to determine whether enforcement action is warranted.

For the reasons discussed above, I find no basis for taking the actions requested by the Petitioners. Rather, based on the NRC Staff's inspections relating to the concerns raised in the Petition and its subsequent evaluation of those inspections, I conclude that no substantial health and safety issues have been raised by the Petitioners. Accordingly, the Petitioners' requests for action pursuant to 10 C.F.R. § 2.206 are denied as described in this Decision. As provided by 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary of the Commission for the Commission's review.

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 26th day of June 1989.

Enclosures:⁵ (1) Letter from R. Martin, USNRC, to B. Withers, WCNO, dated March 17, 1988; (2) Letter from L. Callan, USNRC, to B. Withers, WCNO, dated March 7, 1988; (3) USNRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance."

⁵The enclosures consist of previously docketed information and are only being forwarded to the addressee, Kansas Chapter Sierra Club.

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