

NUCLEAR REGULATORY COMMISSION ISSUANCES

OPINIONS AND DECISIONS OF THE NUCLEAR REGULATORY COMMISSION WITH SELECTED ORDERS

July 1, 1986 - December 31, 1986

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PREFACE

This is the twenty-fourth volume of issuances (1 - 930) of the Nuclear Regulatory Commission and its Atomic Safety and Licensing Appeal Boards, Atomic Safety and Licensing Boards, and Administrative Law Judge. It covers the period from July 1, 1986 to December 31, 1986.

Atomic Safety and Licensing Boards are authorized by Section 191 of the Atomic Energy Act of 1954. These Boards, comprised of three members conduct adjudicatory hearings on applications to construct and operate nuclear power plants and related facilities and issue initial decisions which, subject to internal review and appellate procedures, become the final Commission action with respect to those applications. Boards are drawn from the Atomic Safety and Licensing Board Panel, comprised of lawyers, nuclear physicists and engineers, environmentalists, chemists, and economists. The Atomic Energy Commission first established Licensing Boards in 1962 and the Panel in 1967.

Beginning in 1969, the Atomic Energy Commission authorized Atomic Safety and Licensing Appeal Boards to exercise the authority and perform the review functions which would otherwise have been exercised and performed by the Commission in facility licensing proceedings. In 1972, that Commission created an Appeal Panel, from which are drawn the Appeal Boards assigned to each licensing proceeding. The functions performed by both Appeal Boards and Licensing Boards were transferred to the Nuclear Regulatory Commission by the Energy Reorganization Act of 1974. Appeal Boards represent the final level in the administrative adjudicatory process to which parties may appeal. Parties, however, are permitted to seek discretionary Commission review of certain board rulings. The Commission also may decide to review, on its own motion, various decisions or actions of Appeal Boards.

The Commission also has an Administrative Law Judge appointed pursuant to the Administrative Procedure Act, who presides over proceedings as directed by the Commission.

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 Judge--ALJ, Directors' Decisions--DD, and Denial of Petitions for Rulemaking--DPRM.

The summaries and headnotes preceding the opinions reported herein are not to be deemed a part of those opinions or to have any independent legal significance.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket Nos. 50-275-OLA
50-323-OLA

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

July 22, 1986

The Commission stays, pending completion of the ongoing license amendment hearings and initial Licensing Board decision, that portion of the amendment which authorizes, on an immediately effective basis, Applicant to store in excess of the originally authorized 270 spent fuel assemblies in either of the two pools at Diablo Canyon. The Commission confirms Staff's finding of a "no significant hazards consideration" with respect to replacement of the existing bolted storage racks with high-density, freestanding storage racks, and therefore denies petitioners' request to stay that portion of the license amendment.

NRC: SUPERVISORY AUTHORITY

The absence of any right to directly appeal to the Commission does not divest the Commission of its inherent authority to exercise its discretionary supervisory authority to stay Staff's actions. This is true even when the stay request involves a Staff "no significant hazards consideration" finding.

AEA: LICENSING DECISION ("NO SIGNIFICANT HAZARDS CONSIDERATION")

What may appear to raise a significant hazards consideration at one time may, at some subsequent time and in light of technological advances and further study, be determined to present no significant hazards consideration. In recognition of this, Congress chose not to specify in the *Sholly* amendments to § 189a of the AEA the specific amendments that would, or would not, always present significant hazards considerations. Rather, Congress assigned to the Commission, the expert agency charged to regulate, license, and monitor commercial nuclear energy, the responsibility and authority to make the technical judgments underlying a "no significant hazards consideration" finding.

NWPA: LICENSING DECISIONS

The Nuclear Waste Policy Act does not provide local populations a veto power over NRC licensing decisions. Such a reading of the NWPA would conflict directly with the Commission's statutory role as the national regulator of nuclear energy and render nugatory the principal directive in § 132 of the NWPA to "encourage and expedite the effective use of . . . necessary additional [spent fuel] storage."

NWPA: LICENSING DECISIONS ("NO SIGNIFICANT HAZARDS CONSIDERATION")

The Nuclear Waste Policy Act does not require the Commission to grant intervenors a pre-amendment hearing. Nothing in § 134 of the NWPA amends the *Sholly* amendments to § 189a of the Atomic Energy Act which allow the Staff to issue an immediately effective license amendment following a "no significant hazards consideration" finding. See 50 Fed. Reg. 41,662, 41,667 (Oct. 15, 1985).

NEPA: ENVIRONMENTAL EVALUATION (NATURE OF CHALLENGE)

In order to challenge Staff's environmental evaluation, required by the National Environmental Policy Act, intervenors must allege some specific deficiency in the evaluation itself, not just a generalized failure to prepare an Environmental Impact Statement or a generalized disagreement with the Staff's conclusion that reracking does not pose a "significant impact" to the environment. *Township of Lower Alloways Creek v. Public Service Electric and Gas Co.*, 667 F.2d 732, 746-48 (3d Cir. 1982).

MEMORANDUM AND ORDER

This matter is before the Commission on a request for a stay of the immediate effectiveness of two license amendments issued by the NRC Staff ("Staff") on May 30, 1986, pursuant to § 189a(2)(A) of the Atomic Energy Act as amended, 42 U.S.C. § 2239(a)(2)(A). The petitioners are the San Luis Obispo Mothers for Peace ("SLOMP") and the Sierra Club, Santa Lucia Chapter ("Sierra Club"). The amendments authorize the Pacific Gas and Electric Company ("PG&E") to rerack the spent fuel pools at both units of its Diablo Canyon Nuclear Power Plant ("Diablo Canyon"). This reracking will replace the existing bolted storage racks with high-density, freestanding storage racks and increase the storage capacity of each pool from 270 to 1324 spent fuel assemblies. For the reasons set out below in this special case, the Commission stays, pending completion of the ongoing license amendment hearing and initial decision, that portion of the amendments which authorizes PG&E to store in excess of 270 fuel assemblies in either of the two pools at Diablo Canyon. In all other respects, petitioners' request for a stay is denied.

I. FACTUAL BACKGROUND AND PROCEDURAL HISTORY

PG&E filed an application for license amendments with the NRC Staff seeking authority to rerack both spent fuel pools at Diablo Canyon on October 30, 1985. The proposed reracking would increase the capacity of each spent fuel pool to hold up to 25 years' worth of spent fuel (1324 assemblies) as opposed to the original licensed capacity of 5 years (270 assemblies). The Staff published notices of the requested amendments and of a proposed finding of "no significant hazards consideration" regarding the amendments in the *Federal Register* on two separate occasions. See 51 Fed. Reg. 1451 (Jan. 13, 1986); 51 Fed. Reg. 18,676 (May 21, 1986).

The petitioners (among others) submitted comments on the proposed amendments and requested a hearing pursuant to § 189a of the Atomic Energy Act ("AEA"), 42 U.S.C. § 2239(a). A three-member Licensing Board was established to hold the requested hearing. That Licensing Board has held a prehearing conference and has issued an order admitting three groups (including SLOMP and the Sierra Club) with at least one contention each as parties to the proceeding. See LBP-86-21, 23 NRC 849 (1986).

The Staff published a notice of "Environmental Assessment and Finding of No Significant Impact" required by the National Environmental Policy Act ("NEPA"). 51 Fed. Reg. 19,430 (May 29, 1986). Then, on

May 30, 1986, the Staff issued a final finding of "no significant hazards consideration" and the requested amendments which were made immediately effective, i.e., allowing PG&E to begin the reracking process without awaiting the result of the hearing process. 51 Fed. Reg. 20,725 (June 6, 1985). See § 189a(2)(A) of the AEA, 42 U.S.C. § 2239(a)(2)(A).

On June 17, some 18 days later, the Commission received the petitioners' request to stay the immediate effectiveness of the license amendments. The petitioners also directed their stay request to the Licensing Board and the Atomic Safety and Licensing Appeal Board ("Appeal Board"). On June 18 both the Licensing Board and the Appeal Board dismissed the requests which had been filed with them. Because the petitioners did not challenge any Licensing Board or Appeal Board decision neither Board had jurisdiction to hear the stay request. See 10 C.F.R. § 2.788 (1986). We issued an order on June 19 expediting our consideration of the stay request which had been filed with us and directing the parties to the license amendment proceeding to respond to that request. The parties have submitted their responses and the issue is now before this body.¹

II. STANDARD AND SCOPE OF REVIEW

In this matter, the petitioners challenge, among other things, the merits of the Staff's "no significant hazards consideration" finding. Yet, our regulations provide that "[n]o 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." 10 C.F.R. § 50.58(b)(6) (1986), as amended in 51 Fed. Reg. 7744, 7765 (Mar. 6, 1986). Thus, at least to the extent petitioners' request invites us to look into the merits of the Staff's "no significant hazards consideration" finding, we must initially consider the threshold question of Commission reviewability.

As the regulations make clear, there is no right of direct appeal to the Commission regarding the merits of the Staff's "no significant hazards consideration" finding. Similarly, petitioners here cannot automatically obtain indirect review through the guise of an application for a stay of the Staff's finding. However, the absence of any right to appeal to the

¹ The petitioners also sought a judicial stay in this matter. See *San Luis Obispo Mothers for Peace v. NRC*, No. 86-7297 (9th Cir. filed June 19, 1986). The Court there has entered a partial stay (prohibiting the placement of any spent fuel into the pools for Unit 1 and prohibiting further reracking on Unit 2) of the Staff's May 30 Order, and has ordered an expedited briefing and argument schedule. See Unpublished Order of July 3, 1986 (Order denying in part and granting in part motion for stay pending review).

Commission does not divest the Commission of its inherent authority to exercise its discretionary supervisory authority to stay Staff's actions. This is true even when the stay request involves a Staff "no significant hazards consideration" finding.

The Commission has decided, due to the special circumstances of this case,² to exercise, on its own initiative, its supervisory authority to review the Staff's finding. In conducting this review, we have noted petitioners' objections to the Staff's finding. The Commission will review the Staff's finding to determine whether it is consistent with all applicable statutory and regulatory requirements and is technically reasonable.

The request before us involves other considerations beyond the merits of the Staff's no significant hazards consideration finding. Among other things, petitioners' request also rests on allegations of violations of the Nuclear Waste Policy Act and the National Environmental Policy Act. As to these other claims, which are subject to review in a hearing before a licensing board, we will apply the traditional factors set out in 10 C.F.R. § 2.788 which bear on the issuance of a stay pending further administrative review. In evaluating requests for stays, the Commission considers the four traditional factors applicable to the grant of a stay: whether the petitioners have made a strong showing that they are likely to prevail on the merits; whether there will be irreparable harm to the petitioners if no stay is granted; whether any other party will be harmed by a stay; and where the public interest lies. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-84-21, 20 NRC 1437, 1440 (1984). See 10 C.F.R. § 2.788. Despite our determination to apply the traditional stay criteria in this review and to address the petitioners' objections, we emphasize again that this review is undertaken pursuant to our inherent authority to exercise discretionary supervisory stays of Staff actions. In normal circumstances we will neither invite nor entertain petitions for review of the Staff's no significant hazards findings.

III. THE STAY REQUEST

In seeking a stay, petitioners allege three statutory violations which have caused, and continue to cause, them irreparable injury. In petitioners' view, the Staff's May 30 "no significant hazards consideration" finding violates § 189a(2)(A) of the Atomic Energy Act, as amended, 42 U.S.C. § 2239(a)(2)(A), §§ 132 and 134 of the Nuclear Waste Policy Act

² The special circumstances are Congress' special concerns about significant hazards considerations for spent fuel pool license amendments and the Court of Appeals' questioning of the Staff's no significant hazards consideration finding in this specific case. See note 1, *supra*.

of 1982, 42 U.S.C. §§ 10,152, 10,154, and the National Environmental Policy Act, 42 U.S.C. § 4332. Moreover, petitioners assert that absent a stay, they will be irreparably injured. They claim the Staff's order will permit the spent fuel storage pools at Diablo Canyon to be irreversibly modified, and will subject the public to additional risks in derogation of petitioners' right to a hearing before the amendments become effective.³

In ruling on petitioners' request for a stay, we first consider their legal claims. Secondly, we turn to the competing harms and equities present in this matter.

A. Petitioners' Legal Claims

1. *Petitioners' AEA Claims*

The petitioners argue that they have been denied their right to a prior hearing under § 189a of the Atomic Energy Act, 42 U.S.C. § 2239(a) because the Staff's May 30 "no significant hazards consideration" finding was improper as a matter of law and a matter of fact.

In arguing that the Staff's May 30 finding was improper as a matter of law, petitioners point to portions of the legislative history behind the *Sholly* amendments to § 189a of the Atomic Energy Act which, petitioners allege, evidence a congressional intent to preclude a "no significant hazards consideration" finding with respect to license amendments of the type here at issue. The Commission addressed that legislative history and the basis for its prior practice with respect to reracking in the adoption of both the interim final rules and the final rules implementing the *Sholly* amendments and that discussion will not be repeated in the same detail here. See 48 Fed. Reg. 14,864, 14,869 (Apr. 6, 1983); 51 Fed. Reg. 7744, 7749-50, 7753-55 (Mar. 6, 1986). We believe it sufficient to observe that what may appear to raise a significant hazards consideration at one time may, at some subsequent time and in light of technological advances and further study, be determined to present no significant hazards consideration. In recognition of this, Congress did not choose to specify in the statute specific amendments that would, or would not, always present significant hazards considerations. Rather, Congress assigned to the Commission, the expert agency charged to regulate, license, and monitor commercial nuclear energy, the responsibility and authority to make the technical judgments underlying a "no significant hazards consideration" finding.

³ Since a "no significant hazards consideration" finding is a procedural device to determine when, not whether, petitioners' right to a hearing under the Atomic Energy Act will occur, the merits of the legal and technical challenges raised by the petitioners' with respect to the amendments themselves are not before the Commission. Those matters are currently before the Licensing Board.

The Commission must have the ability to make policy and procedural decisions based upon subsequent technological advances and study. The Commission has performed that function here by promulgating regulations implementing § 189a(2)(A) in a manner that is consistent with the *Sholly* amendments. 10 C.F.R. § 50.92(c). These regulations do not identify all spent fuel pool rerackings as amendments likely to raise a "significant hazard consideration." As explained in detail by the Commission in issuing its final procedures and standards in this area, of the three types of reracking approaches (closer spacing, double tiering, and rod consolidation), rerackings by closer spacing (the type here at issue) could qualify for a "no significant hazards consideration" finding.⁴ 51 Fed. Reg. at 7753-55. See "Review and Evaluation of Spent Fuel Pool Expansion Potential Hazards Considerations," SAI-84-221-WA Rev. 1 (July 29, 1983).

In particular, the Commission pointed in the rulemaking to the Staff's experience in reviewing and evaluating ninety-six prior amendments involving spent fuel pool storage expansion. That experience led the Staff to conclude that a reracking of spent fuel storage pools by replacing existing racks with a design allowing a closer spacing between stored assemblies would not likely involve significant hazards considerations if the multiplication factor, K-effective (" K_{eff} "), of the pool is maintained less than or equal to 0.95 and if no new technology or unproven technology is utilized in the construction process or in the analytical techniques necessary to justify the expansion. 51 Fed. Reg. at 7754. Petitioners' have failed to show that this is not the case here. It appears that the Staff has correctly refused to automatically treat spent fuel pool reracking as involving a significant hazards consideration and has rendered a decision consistent with the Commission's "no significant hazards consideration" regulation. See 10 C.F.R. § 50.92. We turn now to that decision.

In support of their argument that the Staff's May 30 Order was improper as a matter of fact, petitioners assert that the increase in the ca-

⁴ The Commission notes, in any case, that the spent fuel pool rerackings which had been or were being conducted at the time of the congressional considerations of the *Sholly* amendments generally involved license amendments that would increase the amount of stored spent fuel significantly beyond what had been previously authorized. In view of the Commission's actions in this Order, the amendment to the Diablo Canyon license will not be used as a basis for increasing the amount of spent fuel storage beyond what the unamended Diablo Canyon operating license originally allowed. The Commission believes that such a limited amendment is different in kind from the reracking amendments on which the attention of some members of Congress was focused during consideration of the *Sholly* legislation. There is no reason to conclude that the legislators speaking of "reracking" were concerned with merely changing rack designs as distinct from actually putting more spent fuel into the pools than the original license had authorized.

Accordingly, the Commission believes that whatever weight can be placed on the isolated remarks in the *Sholly* legislative history on reracking amendments, those remarks need not and should not be taken as indicating a congressional view that an amendment such as this, which as modified by this Order merely substitutes a different kind of racking without increasing the authorized amount of spent fuel, would involve a significant hazards consideration.

capacity of the pools through the use of high-density, freestanding racks in light of the seismic conditions around Diablo Canyon, presents a significant increase in the probability or consequences of an accident, creates the possibility of a new or different kind of accident, and involves a significant reduction in the margin of safety. 10 C.F.R. § 50.92(c). Upon close analysis of the technical claims at issue, we do not find that the Staff's finding was technically unreasonable.

In pertinent part, the technical specifications of the original Diablo Canyon spent fuel pools specify storage racks that maintain "a nominal 21 inch center-to-center distance" between no more than 270 spent fuel assemblies. Technical Specifications §§ 5.6.1.1.b and 5.6.3. The amendments in question change these specifications to "a nominal 10.93 inch center-to-center distance" between no more than 1324 spent fuel assemblies. Amendments No. 8 and 6 to Technical Specifications at 5-6, §§ 5.6.1.1.b and 5.6.3. Thus, the amendments allow increased density and capacity in Diablo Canyon's spent fuel storage. Neither of these two changes justifies a total stay of the ongoing reracking program.

Petitioners apparently do not challenge the Staff's May 30 Order on the basis that a significant hazards consideration exists solely as a result of closer spacing between spent fuel assemblies.⁵ Rather, it appears that petitioners' technical argument is that the closer spacing between the racks and the pool wall, when coupled with the use of nonbolted, free-standing racks of significantly greater weight, could result in earthquake-induced forces against the racks in excess of their design capabilities. If this occurs, they hypothesize, the consequences of the accident will be greater because the amount of fuel potentially in the pool will be greater and the separation between assemblies will be smaller. Application at 5-6.

In response to petitioners' intuitive argument that should an accident occur, the presence of up to five times more spent fuel must mean that the consequences of the accident would be significantly greater, the Staff argues that the fivefold increased storage capacity presents no significant

⁵ Even had petitioners challenged the amendments' assembly spacing aspects, we would find no basis to grant a stay. Such a challenge would ignore the fact that the possible danger of a criticality accident from the increased density allowed by these amendments is simply not a significant hazard consideration in view of the required Boraflex neutron absorber that surrounds each poisoned fuel cell in Region I racks, the required burnup of the fuel in Region II racks, and the borated content of the water surrounding all the spent fuel rods. Safety Evaluation by the Office of Nuclear Reactor Regulation Relating to the Rerackings of the Spent Fuel Pools at the Diablo Canyon Nuclear Power Plant, Units 1 and 2 as Related to Amendment No. 8 to Unit 1 Facility Operating License No. DPR-80 and Amendment No. 6 to Unit 2 Facility Operating License No. DPR-82, Pacific Gas and Electric Co., Docket Nos. 50-274 and 50-323 ("SER") at 3-6. Amendments No. 8 and 6 to Technical Specifications § 3/4.9.14 and 5.6.1.2. As with the original technical specifications, K_{eff} ("K_{eff}") remains no greater than 0.95. Compare amended Technical Specifications § 3/4.9.14 with Final Safety Analysis Report ("FSAR") for Units 1 and 2, Diablo Canyon Nuclear Power Plant, § 9.1.2.3. Indeed, the Staff criticality expert has noted that even in the absence of boron in the water K_{eff} would be less than 0.95 and with the required boron K_{eff} drops to less than 0.8. Brooks Affidavit, ¶ 4.

hazard consideration largely because the spent fuel loses 99% of its radioactivity within a year of storage and, therefore, the retention of older fuel permitted by this amendment will not add significantly to the inventory of radioactivity in the pool. SER at 17, 22. It is simply not necessary to resolve this issue in this stay request. As explained below, pending completion of the license amendment hearing, we stay the license amendments to the extent they authorize the storage of more than the originally authorized 270 spent fuel assemblies for each pool.⁶ Therefore, whatever the increase in radioactive fission products that may ultimately result from these amendments, that increase will not occur until long after the ongoing hearings in this matter are terminated.

Finally, petitioners argue that the change from bolted to freestanding racks is an amendment that presents a significant hazards consideration. Neither the license, the technical specifications, nor the amendments specify whether the racks must be bolted or freestanding. The original Final Safety Analysis Report ("FSAR") prepared in conjunction with the original operating license did specifically describe racks that were anchored to the floor and able to withstand postulated seismic events for Diablo Canyon (FSAR § 9.1.2.2), and we assume solely for purposes of discussion that a change from this design entails a license amendment. While not bolted, the new racks selected by PG&E to implement the re-racking program must meet and have been designed to meet the seismic force requirements previously applied to the originally intended bolted racks. Moreover, as explained in un rebutted detail in the Staff's technical response to petitioners' affiant, Dr. Ferguson, "free-standing spent fuel rack modules are not new to the nuclear power industry and continue to replace anchored fuel racks on an increased frequency concurrent with the industry's need to provide additional storage capacity for spent fuel at the plants." Herrick Affidavit at 7. Indeed, the NRC Staff has identified at least twelve power plant units which have been approved for re-racking with high-density freestanding fuel rack modules. *Id.*

Much of petitioners' concerns about freestanding racks stems from fears that, in the event of a significant earthquake, these racks will be severely damaged by sliding into each other and the walls of the pools. Petitioners' Motion at 5-6. These concerns are, in turn, based on an affidavit that calculates the force of a number of theoretical collisions based on fully loaded racks weighing 200,000 pounds. Ferguson Affidavit, ¶ 14. The Staff has concluded that petitioners' calculations are faulty or unwarranted for a number of reasons. Herrick Affidavit, ¶¶ 4-8. We agree.

⁶ We do so without reaching or resolving the question of whether these amendments will significantly increase the consequences of accidents. Our actions in this regard may not be taken as intimating a view on that question one way or the other.

For example, petitioners contend that the NRC has failed to assess the potential for collision of the racks with the walls of the storage pool. Ferguson Affidavit at 5. The Staff assessed this issue and addressed it in several places. Impact springs that simulate impact with adjacent rack modules and/or the pool walls and the fuel assembly in a rack storage cell were used in the modelling of the racks. SER at 11 and Appendix A, TER by Franklin Research Center at 43. Petitioners contend that the NRC has overemphasized the cushioning effect of water in collisions involving fuel racks. Ferguson Affidavit at 6. In fact, the method used to analyze hydrodynamic coupling between water and racks underestimates the coupling forces to yield higher impact forces with adjacent structures. In addition, fluid damping is conservatively neglected. Appendix A to SER at 24 and 25, respectively. In addition, Figures 1 and 2 of the Ferguson Affidavit appear to have been incorrectly derived. The major errors appear to have resulted from double integration of acceleration time history data without applying a baseline correction. Herrick Affidavit at 6. The petitioners also oversimplify the forcing functions in their calculations by assuming a constant forcing function applied suddenly, and then sustained, on a single-mass, elastic system. Ferguson Affidavit, Appendix A. This oversimplified approach cannot adequately describe the dynamic response of a rack module bearing against a pool wall that is accelerating according to the acceleration time histories developed for the analysis. Herrick Affidavit at 2. In their analysis, petitioners also totally ignore the damping and friction that might exist in the racks.

Thus, petitioners' calculations upon which their concerns of damage from colliding racks are based rest on faulty assumptions, errors, and oversimplifications. All of these mistakes greatly overstate the possible consequences of an earthquake accident. The Staff has found that the use of seismically qualified freestanding racks, as opposed to bolted racks, presents no significant hazards consideration for Diablo Canyon spent fuel pool reracking. Petitioners have not presented any technical evidence that calls that finding into question.

2. Petitioners' NWPA Claims

Petitioners allege violations of §§ 132 and 134 of the Nuclear Waste Policy Act ("NWPA") of 1982, 42 U.S.C. §§ 10,152, 10,154. They first argue that the Staff's actions are inconsistent with the protection of public health and safety and the environment, § 132(1), 42 U.S.C. § 10,152(1), and that the Staff did not act in a manner consistent with the "views of the population surrounding the reactor," § 132(5), 42 U.S.C. 10,152(5). While we do not prejudge the merits of the petitioners' public

health and safety claims which are before the Licensing Board as a part of the technical arguments over the amendments, for purposes of analyzing their stay request we do conclude that it is not likely that petitioners will prevail on these claims. The petitioners have not presented any credible health, safety, or environmental concerns that justify staying the immediate effectiveness of the reracking amendments. Furthermore, members of the public have had the opportunity to present their views on this matter during the notice and comment period following announcement of the proposed amendment in the *Federal Register*. Moreover, the public hearing on the amendment under § 189a of the AEA will allow the public an additional opportunity to present its views on the proposed expanded storage. The NWPA does not provide local populations a veto power over NRC licensing decisions. Such a reading of the NWPA would conflict directly with the Commission's statutory role as the national regulator of nuclear energy and render nugatory the principal directive in § 132 of the NWPA to "encourage and expedite the effective use of . . . necessary additional [spent fuel] storage."

Likewise, the petitioners do not raise valid claims under NWPA § 134. The NWPA does not require the Commission to grant the petitioners a pre-amendment hearing. Nothing in § 134 amends the *Sholly* amendment to § 189a of the Atomic Energy Act which allows the Staff to issue an immediately effective license amendment following a "no significant hazards consideration" finding. See 50 Fed. Reg. 41,662, 41,667 (Oct. 15, 1985). Therefore, we do not find a significant probability of success on the merits of the petitioners' NWPA claims.

Furthermore, the petitioners have not demonstrated any irreparable harm arising from the alleged NWPA violations. The petitioners are currently taking part in the hearing to which they are entitled by law. Additionally, as noted above, we have stayed any storage of spent fuel above the originally authorized spent fuel capacity at the Diablo Canyon pool pending the hearing which the petitioners requested under § 189a of the AEA. Therefore, the views of the surrounding population will be fully heard before the Commission actually authorizes the storage of spent fuel over and above that amount originally authorized by the initial Diablo Canyon license.

3. *Petitioners' NEPA Claims*

The petitioners allege that the Staff violated the National Environmental Policy Act ("NEPA") by performing an Environmental Assessment ("EA") and making a finding of "no significant impact" instead of issuing an Environmental Impact Statement ("EIS"). The Commission is not

automatically obligated to issue an EIS simply because the amendment at issue involves reracking. *See* 10 C.F.R. § 51.20 (1986). Instead, the Commission Staff must consider the matter on a case-by-case basis as required by NRC regulations implementing NEPA. 10 C.F.R. §§ 51.25-.35 (1986). Furthermore, in order to challenge the Staff's decision, the petitioners must allege some specific deficiency in the environmental evaluation itself, not just a generalized failure to prepare an EIS or a generalized disagreement with the Staff's conclusion that reracking does not pose a "significant impact" to the environment. *Township of Lower Alloways Creek v. Public Service Electric and Gas Co.*, 687 F.2d 732, 746-48 (3d Cir. 1982). In this case, petitioners vaguely allege that the Staff violated NEPA by relying on the onsite EA in conjunction with a generic EIS prepared for expanded onsite spent fuel storage. However, they make no specific reference to the EA itself or charge any specific errors. Therefore, the petitioners have not established any substantial probability of success on the merits of their NEPA claim and again have failed to show any irreparable harm.

B. Balancing the Harms and Equities

The fact that the Commission is not persuaded that petitioners have demonstrated error in the Staff's no significant hazards consideration or made a strong showing that they are likely to prevail on the merits of their other statutory claims does not necessarily end our inquiry. We will still balance the harms that might result to the parties or to the public should a stay be granted or denied.

The amendments allow the Licensee (1) to install freestanding spent fuel racks which allow high-density reracking, in turn, resulting in (2) the increase of the total authorized capacity of each pool from 270 spent fuel assemblies to 1324 spent fuel assemblies. The Licensee will have no need for this increased authorized capacity for another 5 years, i.e., until it is ready to exceed the rods' originally authorized capacity. Thus, the grant of a stay of the amendments to the extent they authorize the storage of more than 270 fuel assemblies in either pool at Diablo Canyon will result in no harm to PG&E or the public interest. Against this absence of harm, we must balance the asserted harm to petitioners (i.e., the denial of their right to a prior hearing). Notwithstanding our views on petitioners' likelihood of success on the merits, a balancing of these equities argues in favor of staying the second portion of the amendment, the actual fivefold spent fuel storage increase. Therefore, we stay, pending completion of the ongoing license amendment hearing and initial deci-

sion, that part of the license amendments which authorizes the storage of more than 270 spent fuel assemblies in either pool at Diablo Canyon.

A balancing of the harms results in a different result with respect to the remainder of PG&E's reracking program. The Diablo Canyon spent fuel pools are presently "dry," or empty, unlike the usual situation which confronts a utility embarking on a reracking program. Thus, the present reracking program at Diablo Canyon, which petitioners seek to stay, is being conducted with no radiological risk to workers and with much less expense to the utility and its ratepayers than is normally the case when reracking a "wet" pool. Obviously, this reracking procedure is preferable to one which would not only cost more, but would also expose the workers to more potential radiological harm. If we stay the action, PG&E will be faced with two practical options. A review of those options inevitably leads to the conclusion that granting petitioners' stay will not preserve the present reracking environment.

To continue the status quo of a dry, nonradiological reracking, PG&E could elect to shut down Diablo Canyon from the time of its scheduled refueling (for Unit 1, September 1986) until the completion of the hearing process which has just begun. However, PG&E asserts, without contradiction, that this option will cost it, and ultimately its ratepayers, an enormous sum. Indeed, if the costs are anywhere close to the one million dollars a day which PG&E asserts, this cost would quickly outweigh the economic savings accomplished by dry, nonradiological reracking.

To avoid or reduce this enormous economic burden, PG&E could elect a second option of reinstalling the old racks which were authorized prior to the amendments now at issue. However, this option itself entails great expense and dictates that PG&E ultimately accomplish any future reracking in a "wet" pool with the attendant radiological risks to the workers. Therefore, in our view, the present favorable reracking situation and the fact that, as a practical matter, this situation would be drastically altered were petitioners' stay granted, strongly tilts the equities in favor of denying the stay.

Petitioners have presented nothing which leads us to believe that Diablo Canyon must forever operate within the confines of its original spent fuel pool design. Moreover, we do not believe that any technological reason exists which precludes Diablo Canyon from ever being reracked and expanded in capacity beyond that originally authorized. Thus, granting petitioners' stay guarantees that any such future reracking will be done only at great costs to PG&E, increased radiological risks to its workers or, more likely, both. On the other hand, while we do not prejudge the merits of the ongoing license amendment hearings, the NRC Staff has presented a strong technical case in support of the rerack-

ing which has been proposed and which is under way. If the hearing process ultimately supports the Staff's position, the Diablo Canyon reracking program will have been accomplished far more safely and far less expensively than would be the case if we grant a stay now.

We recognize, since we do not prejudice the underlying merits of the ongoing hearing, that it is not impossible that the hearing process may reveal that additional measures are necessary to provide adequate protection to the public health and safety. If it does, those measures will be required regardless of the cost to PG&E. In such an event, the savings to be realized from denying petitioners' requested stay may not be as great as appear likely at this time. Likewise, PG&E accepts the risk that the Licensing Board may deny the requested amendment entirely, resulting in an order to return the pool to its original status. Nevertheless, avoiding a full stay at this time preserves a significant likelihood of substantial savings in radiological risk to workers and economic costs to ratepayers in any future reracking activity. Therefore, we decline to stay the reracking program to the extent that it permits the storage of up to 270 spent fuel assemblies in a high-density configuration.

Similarly, we will allow PG&E to continue installation of the free-standing spent fuel racks. As the Staff has noted, these racks are seismically qualified and represent an established technology. Thus, we see no need to stay PG&E's selection of freestanding racks as the preferred method of implementing its authority under the license amendments. This construction is best done at a time when the spent fuel pool is empty to avoid needless exposure of the construction workers to radiological hazards associated with reracking of a contaminated spent fuel pool and the needless additional risks entailed in handling and moving already stored fuel. Moreover, construction with an empty pool will result in a substantial saving of money both to the Licensee and, eventually, to the ratepayers. A stay of construction at this time would constitute a significant harm to all these parties.

IV. SUMMARY

In summary, we stay that part of the Staff's May 30 Order which allows, on an immediately effective basis, PG&E to store more than 270 spent fuel assemblies in either of the spent fuel pools at Diablo Canyon. This stay will remain in effect until the completion of the amendment hearings now before the Licensing Board and until that Board's initial decision. As far as we are concerned, PG&E should be allowed to continue with installation of the freestanding spent fuel racks and should be

permitted to insert spent fuel into those racks. The Licensee's authority to do this, however, is presently restrained by the conditions imposed by the United States Court of Appeals for the Ninth Circuit. See note 1, *supra*. Obviously, until that Court lifts or modifies its restrictions, PG&E is not free to act in violation of them.

Commissioner Asselstine disapproved this Order; his views are attached. The additional views of Chairman Zech and Commissioners Roberts and Bernthal are also attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated in Washington, D.C.,
this 22nd day of July 1986.

SEPARATE VIEWS OF COMMISSIONER ASSELSTINE

I cannot support the Commission's Order. The Commission should have issued a complete stay of the license amendment rather than a partial stay, for two very fundamental reasons. First, the legislative history of the *Sholly* amendment indicates that it was Congress' understanding that the *Sholly* provision would not be used to grant, without a prior hearing, a license amendment for reracking or other expansion of spent fuel pool storage capacity. Second, the Staff's "no significant hazards consideration" determination does not comply with the *Sholly* amendment.

It is clear to me from the legislative history of § 12 of Pub. L. No. 97-415 (the *Sholly* amendment) that Congress did not intend that the authority granted by § 12 be used to approve reracking amendments prior to the completion of any requested hearing. The following exchange on the House floor on November 5, 1981, illustrates this:

Mrs. Snowe. Would the gentleman anticipate this no significant hazards consideration would not apply to license amendments regarding the expansion of a nuclear reactor's spent fuel storage capacity or the reracking of spent fuel pools?

Mr. Ottinger. If the gentlewoman will yield, the expansion of spent fuel pool and the reracking of the spent fuel pools are clearly matters which raise significant hazards considerations, and thus amendments for such purposes could not, under section 11(a), be issued prior to the conduct or completion of any requested hearing or without advance notice.

127 Cong. Rec. 8156 (1981). In the Senate the following language in the Report of the Committee on Environment and Public Works recommending approval of S. 1207 clearly evidences the Committee's understanding that reracking would not be the subject of a no significant hazards consideration (NSHC) determination:

The Committee recognizes that reasonable persons may differ on whether a license amendment involves a significant hazards consideration. Therefore, the Committee expects the Commission to develop and promulgate standards that, to the maximum extent practicable, draw a clear distinction between license amendments that involve a significant hazards consideration and those that involve no significant hazards consideration. The Committee anticipates, for example, that, consistent with prior practice, the Commission's standards would not permit a "no significant hazards consideration" determination for license amendments to permit reracking of spent fuel pools.

S. Rep. No. 113, 97th Cong., 2d Sess. 15 (1981). Although not a part of the published legislative history, there was also the following exchange between Senator George J. Mitchell and then-Majority Counsel James Asselstine at the Committee's markup of the Senate bill:

Senator Mitchell: There is, as you know, an application for a license amendment pending on a nuclear facility in Maine which deals with the reracking storage question. And am I correct in my understanding that the NRC has already found that such applications do present significant hazards considerations and therefore that petition and similar petitions would be unaffected by the proposed amendment?

Mr. Asselstine: That is correct, Senator. The Commission has never been able to categorize the spent fuel storage as a no significant hazards consideration.

The Conference Report is silent on the matter of spent fuel pool reracking. Thus, while the legislative history in this particular issue is sparse, what does exist clearly reflects an understanding and an intention on the part of both the House and the Senate that reracking of spent fuel pools would not be the subject of a no significant hazards consideration determination.

Moreover, I believe that the use of the *Sholly* amendment authority to approve reracking amendments before the completion of any required hearing goes far beyond the justification offered by the Commission when it requested the *Sholly* amendment. In requesting the enactment of the *Sholly* amendment, the Commission described in some detail the situ-

ations in which it foresaw a need for this authority. The Commission emphasized the need for a large number of unforeseen and unanticipated changes to the detailed technical specifications in the operating licenses for nuclear power plants that arise each year through such activities as refueling of the plant. The Commission argued that the need to hold a hearing on each of these changes, if one is requested, would be burdensome to the Commission and could disrupt the operation of a number of plants. In order to avoid this problem, the Commission asked the Congress to reinstate the authority that the Commission had exercised in similar situations since 1962. A reracking amendment is substantially different from the situations described by the Commission in requesting the *Sholly* amendment because reracking involves a substantial physical modification to the plant and because the need for reracking can be anticipated.

Therefore, I do not believe that the use of the *Sholly* provision to grant an amendment to rerack a spent fuel pool was anticipated or approved by Congress. The Commission's regulations should not have allowed for a no significant hazards consideration determination for the reracking of spent fuel pools, and the Staff should not be permitted to issue an immediately effective amendment for reracking of the Diablo Canyon pool prior to the completion of the hearing requested in this case.¹

My second fundamental problem with the Staff's action in this case is that its NSHC determination does not comply with the *Sholly* amendment because it addresses the wrong issue. The Staff's determination is based on the *merits* of the amendment itself — i.e., on whether the amendment poses significant additional risk. Staff reviewed each of the three criteria in § 50.92 and found no significant increase in the probability and consequences of an accident, no possibility of a new or different accident, and no significant reduction in a margin of safety. Since Staff found no significant additional risk, it concluded that there were no significant hazards considerations.

¹ The Commission's stay removes some part of the problem by limiting the Licensee's authorization to the storing of 270 fuel assemblies. Thus, the Licensee may only store fuel assemblies in the number permitted in the technical specifications. However, the Licensee is permitted by the amendment to store the assemblies in a density of less than 21 inches apart, the density called for in the technical specifications. Further, under the Commission's Order, the Licensee may store the assemblies in racks which do not conform to those described in the Final Safety Analysis Report (FSAR). They are freestanding rather than bolted down. The Commission has not addressed the question of whether that change alone — freestanding racks as opposed to bolted racks — would require a license amendment. It appears that it may because it may involve an unreviewed safety question. See 10 C.F.R. § 50.59(c). Because there is a license amendment necessary for the change to freestanding racks and because the amendment permits a change in density of the fuel assemblies, the *Sholly* provision still must be used to avoid the necessity for a prior hearing. I do not believe Congress intended that the *Sholly* provision be used in cases such as this.

Unfortunately, that determination is not the determination called for by the *Sholly* amendment. Rather, as its legislative history makes abundantly clear, the *Sholly* provision requires the Commission to determine whether the amendment presents any significant safety questions, i.e., whether the amendment poses any significant new or unreviewed safety issues for consideration. The report of the Conference Committee on the legislation which enacted the *Sholly* amendment emphasizes that in making a determination of no significant hazards consideration, the Commission is not to prejudice the merits of the amendment — i.e., whether the plant could operate without significant additional risk as a result of the amendment. Instead, the Commission is merely to determine whether there are significant health or safety issues involved. H.R. Rep. No. 884, 97th Cong., 2d Sess. 37-38 (1982). The Commission is to examine the proposed amendment and determine whether the Commission, in making a decision on the amendment application, would have to consider and address significant health and safety questions. As the report of the Senate Committee which recommended the *Sholly* amendment states: "The determination of 'no significant hazards consideration' should represent a judgment on the nature of the issues raised by the license amendment rather than a conclusion about the merits of those issues." S. Rep. No. 113, 97th Cong., 1st Sess. 15 (1981). *See also* H. Rep. No. 884, 97th Cong., 2d Sess. 37-38 (1982); S. Rep. No. 113, 97th Cong., 1st Sess. 14-15 (1981).

In addition, in seeking the amendment, the Commission repeatedly presented the issue to various congressional committees as a question of significant issues, not as a question of significant risk. Then-Chairman Hendrie told the House Subcommittee on Energy and the Environment that whether there were significant hazards considerations was a question of whether there were "significant safety questions involved," whether there were "new safety issues raised, no new unreviewed hazards connected with an amendment," and whether the Commission saw "any safety-connected issues" in the amendment. *Nuclear Regulatory Commission Operating Licensing Process: Oversight Hearing Before the Subcommittee on Energy and the Environment of the House Committee on Interior and Insular Affairs*, 97th Cong., 1st Sess. 30, 32, 75 (1981) (statements of Joseph Hendrie, Chairman, NRC). Chairman Hendrie also explained the meaning of "no significant hazards consideration" to the Senate Subcommittee on Nuclear Regulation. He said, "[w]e are dealing here with a class of amendments that involve no safety questions in our view of any significance," and in answer to a question from Senator Hart explained that "[i]t means no significant questions of public health and safety." *Nuclear Powerplant Licensing Delays and the Impact of the Sholly Versus*

*NRC Decision: Hearings Before the Subcomm. on Nuclear Regulation of the Senate Comm. on Environment and Public Works, 97th Cong., 1st Sess. 138, 149, 156 (statements of Joseph Hendrie, Chairman, NRC). Based upon the Commission's testimony, Congress understood that the question of no significant hazards considerations was a question of significant safety issues, not a question of significant additional risk, and that the NSHC determination would not be a judgment on the merits of the amendment.*²

The NRC Staff has, in the past, argued that this interpretation of the *Sholly* amendment would have required them to ignore all of the technical information available which indicates that the proposed amendment creates no additional risk. The argument apparently is that in determining whether the issues raised are significant, the Staff should be able to consider all information available to it on the merits of the amendment application. This argument might have some validity if the no significant hazards consideration determination were to be made on whether there is "significant additional risk." But, the question is the significance of the questions raised by the application, not the significance of any additional risk. Further, to follow this argument to its logical extreme could result in the Commission almost never making a determination that there are significant hazards considerations. The Staff and Licensee need only complete all of their analysis before making a NSHC determination, and any amendment Staff would eventually approve would not contain any significant hazards considerations, regardless of the significance of the questions the Staff had to resolve in deciding whether to grant the amendment application or to attach conditions thereto. Since Staff rarely, if ever, approves a license amendment that involves significant additional risk, such an interpretation of the *Sholly* amendment would permit virtually all license amendments to be issued without a prior hearing. Such a result is manifestly inconsistent with the position taken by the Commission in requesting the legislation and with the intent of Congress in enacting the *Sholly* amendment.

Staff's Safety Evaluation Report (SER) and no significant hazards consideration determination in the Diablo Canyon reracking are totally devoid of any evidence that Staff considered whether there were significant new or unreviewed safety issues involved with granting the amendment. I cannot believe that there were not significant new safety issues

² Further, in 1978 the Congress failed, when specifically requested, to change the "no significant hazards consideration" language in § 189 of the Atomic Energy Act to "no significant additional risk to the public health and safety." See *Nuclear Siting and Licensing Act of 1978: Hearings Before the Subcomm. on Nuclear Regulation of the Senate Comm. on Environment and Public Works, 95th Cong., 2d Sess. 183-84 (1978).*

which had to be resolved. Given the fact that Diablo Canyon has the highest design basis earthquake in the country (0.75g), it is extremely unlikely that the Staff could merely have relied on analyses of racks similar to the new racks which were used at other plants. Actually, the review would have to be very closely tied to the suitability of the racks for the Diablo Canyon site. In fact, if one reads the Technical Evaluation Report, which is attached to Staff's SER, the extent of the analysis indicates that there were indeed significant safety issues the Staff had to resolve before approving the amendment.

Since there is no evidence that Staff considered whether there were new or unresolved safety issues involved with the Diablo Canyon reracking amendment and since the evidence of the SER suggests that there were indeed significant safety questions to be resolved, the record supports a conclusion that Staff's NSHC determination does not comply with the *Sholly* provision. Further, as I explained above, I do not believe that Congress intended the *Sholly* provision to be used to allow reracking prior to the completion of any requested hearing. I would, therefore, stay the Diablo Canyon reracking amendment completely.

ADDITIONAL VIEWS OF CHAIRMAN ZECH AND COMMISSIONERS ROBERTS AND BERNTHAL

Commissioner Asselstine in his separate views quotes several passages from the legislative history of the *Sholly* amendments that he interprets as expressing congressional intent to preclude the Commission as a matter of law from making a no significant hazards consideration finding for a reracking amendment. He also argues that the Staff's determination goes counter to the legislative history because, in his view, it addresses the merits of the amendment. The short answer to Commissioner Asselstine's concerns is that the Staff reached its determination only after a careful and proper application of the regulations that the Commission adopted, after a lengthy rulemaking, to implement the *Sholly* amendments. Commissioner Asselstine's quarrel is with the regulations themselves rather than with the Staff's conclusion that the criteria adopted by the Commission for a no significant hazards consideration finding were met by the Diablo Canyon reracking amendment.

The question whether the Commission's criteria complied with the intent of Congress was exhaustively considered during the rulemaking and resolved in the affirmative. It need not be revisited here. We would note, however, that during Congress' consideration of the *Sholly* amend-

ments the legislators had before them the criteria that the Commission proposed to adopt for a no significant hazards consideration finding and commented approvingly in both the Senate and House reports. *See* 51 Fed. Reg. at 7748, col. 2. Moreover, as Commissioner Asselstine admits, the Conference Report makes no mention of reracking amendments and affords no support whatever for the view that such amendments necessarily involve a significant hazards consideration.

Commissioner Asselstine also refers to an exchange between himself, as then-Majority Counsel of the Senate Committee on Environment and Public Works, and Senator Mitchell, in which he advised the Senator that "[t]he Commission has never been able to categorize the spent fuel storage as a no significant hazards consideration." This quotation suggests that the Commission had previously addressed the question whether a no significant hazards consideration finding could be made for a reracking and concluded as a general matter that it could not. In fact, the Commission had made no such determination and had not had occasion to confront the question as of that time. At that time, as a matter of policy, not law, the Commission had held hearings prior to the effectiveness of reracking amendments. Subsequently, the Commission conducted a detailed review and study of reracking procedures and concluded that this policy need no longer continue with regard to certain types of reracking, such as the one being conducted here. The record of the Commission rulemaking implementing the *Sholly* amendments sets out the support for the Commission's later conclusion that a no significant hazards consideration finding can in fact be made for certain types of rerackings, of which Diablo Canyon is one.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

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

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

July 24, 1986

In its review of ALAB-818, the Commission reverses and remands to the Licensing Board for further evidentiary hearings on (1) the adequacy of Applicant's offsite emergency response plan, assuming some "best effort" governmental response in the event of an emergency; and (2) the likely effect of the lack of State and local cooperation in emergency planning on emergency response.

EMERGENCY PLANS: STATE AND LOCAL GOVERNMENT
(UTILITY PLAN AS SUBSTITUTE)

The NRC is legally obligated to consider whether a utility plan, prepared without government cooperation, can pass muster. Commission regulations provide for licensing notwithstanding noncompliance with the NRC's detailed planning standards: (1) if the defects are "not significant"; (2) if there are "adequate interim compensating actions"; or (3) if there are "other compelling reasons." 10 C.F.R. § 50.47(c).

EMERGENCY PLANS: STATE AND LOCAL GOVERNMENT (UTILITY PLAN AS SUBSTITUTE)

Where State and local governments refuse to cooperate in emergency planning, and where license applicants are prohibited from performing some emergency functions usually performed by the governmental authorities, the plan is not necessarily fatally defective. Rather, the plan is to be assessed pursuant to 10 C.F.R. § 50.47(c)(1).

EMERGENCY PLANS: STATE AND LOCAL GOVERNMENT (UTILITY PLAN AS SUBSTITUTE)

The fundamental emergency planning licensing standard is the provision in 10 C.F.R. § 50.47(a) that "no operating license . . . will be issued unless a finding is made by NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." The significance of "defects" in emergency plans, and adequacy of interim compensating actions, are measured by this standard.

EMERGENCY PLANS: STATE AND LOCAL GOVERNMENT (UTILITY PLAN AS SUBSTITUTE)

State law prohibits applicants from performing some emergency planning functions which are fundamental to emergency planning, e.g., "making decisions and recommendations to the public concerning protective actions." However, in the event of a serious accident at Shoreham requiring consideration of protective actions for the public, State and County officials would be obligated to assist, both as a matter of law and as a matter of discharging their public trust. *See* N.Y. Exec. Law art. 2-B, § 25.1. *See also* H.R. Rep. No. 212, 99th Cong., 1st Sess., 131 Cong. Rec. 15,358 (1985).

EMERGENCY PLANS: STATE AND LOCAL GOVERNMENT (UTILITY PLAN AS SUBSTITUTE)

The adequacy of applicant's offsite emergency response plan should be measured against a standard that would require protective measures generally comparable to what might be accomplished, assuming a "best effort" governmental response.

EMERGENCY PLANS: STATE AND LOCAL GOVERNMENT (UTILITY PLAN AS SUBSTITUTE)

Although some emergency planning measures are not explicitly mentioned in NRC's emergency planning regulations, such measures may nevertheless be required in order to provide reasonable assurance of adequate protective measures in the event of a radiological emergency.

DECISION

Before us is Long Island Lighting Company's (LILCO) petition for review of the October 18, 1985 Appeal Board decision holding inadequate as a matter of law LILCO's emergency plan for the Shoreham Nuclear Power Plant. ALAB-818, 22 NRC 651. The Appeal Board based its decision largely on the refusal of New York State and Suffolk County to participate in the planning, and on LILCO's lack of legal authority to implement certain features of its plan. For the reasons explained below, we reverse and remand for further evidentiary hearings on issues raised by LILCO's so-called "realism" and "materiality" arguments. We do not address LILCO's preemption arguments at this time.

BACKGROUND

After having initially supported the licensing of Shoreham, Suffolk County later withdrew its support and moved the Shoreham Licensing Board to terminate the proceeding on the ground that the NRC could not grant a license for Shoreham in the absence of a government-sponsored emergency plan. The Board denied the motion, reasoning that the agency was required to afford LILCO an opportunity to show that its utility-only plan was an adequate one. The Commission affirmed, stating that the agency was *obligated* to consider a utility-only plan. CLI-83-13, 17 NRC 741, 743 (1983). In a later order we also observed that "[t]he emergency planning issues . . . do not appear to us to be categorically unresolvable." CLI-83-17, 17 NRC 1032, 1034 (1983).

Subsequently, LILCO submitted its plan for NRC consideration, and Suffolk County responded with its 97 contentions encompassing 174 pages. Contentions 1-10 asserted that LILCO lacked the legal authority to implement certain features of its radiological emergency plan, includ-

ing the authority to control traffic and to inform the public.¹ From December 1983 until August 1984, the parties and the Licensing Board operated under an agreement that no evidentiary hearings were required on these "legal contentions." Then, in August 1984, LILCO submitted a Motion for Summary Disposition on the legal authority contentions, arguing that it should prevail on these contentions for three reasons: first, that State and local law were preempted by federal law to the extent that the State and local laws deprived LILCO of authority to plan for and implement its radiological emergency plan ("Preemption"); second, 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 ("Realism");² and third, that some of the functions which LILCO purportedly lacked authority to implement were not NRC requirements in any event ("Immateriality").

The NRC Staff and Intervenors opposed the motion, and the Licensing Board denied it, concluding that LILCO did not gain *via* preemption the legal authority it otherwise lacked; that even assuming an emergency response by the State and the County, there was no assurance that the response would be other than *ad hoc* and uncoordinated with LILCO's actions, contrary to the very reason for the emergency planning regulations which require advance planning; that while few of the actions listed in Contentions 1-10 were explicitly required by the regulations, these actions were nonetheless necessary to comply with the explicit requirement in 10 C.F.R. § 50.47(b)(10) for plan features which will permit "a range of protective actions" in the event of an emergency;³ and that LILCO's plan couldn't be considered an "adequate interim compensating measure" under 10 C.F.R. § 50.47(c)(1) because there was nothing in the record to indicate that the State or local governments would ever participate in Shoreham emergency planning, and the Board couldn't speculate on what the governments might do if and when Shoreham began full-power operation. LBP-85-12, 21 NRC 644 (1985) (hereinafter cited as PID). In

¹ Contentions 1-10 are set forth in full in LBP-83-27, 17 NRC 949, 958-63 (1983).

² LILCO's basis for its realism argument before the Licensing Board was a December 1983 press release by Governor Cuomo stating that "if the plant were to operate and a misadventure were to occur, the State and County would help to the extent possible;" before the Appeal Board, the basis was the asserted "undeniable truth" that in an emergency the State and County would respond and would permit LILCO to implement its plan. Appeal Brief at 45 (June 3, 1985).

³ The Licensing Board found that an uncontrolled evacuation would take longer than a controlled evacuation (about 1½ hours more in good weather, about 3 hours in inclement weather). From this it concluded that the range of protective actions was impermissibly restricted because sheltering would have to be used in some fast-breaking events, when otherwise evacuation might have been possible,

every important respect, the Appeal Board in ALAB-818 agreed with the Licensing Board. 22 NRC 651 (1985).⁴

LILCO petitioned for Commission review of ALAB-818, and we granted the petition but deferred any further action until the Appeal Board rendered its decision on then-pending Intervenor appeals. Unpublished Order dated December 19, 1985. Recently, in ALAB-832, 23 NRC 135 (1986), the Appeal Board resolved all remaining Intervenor appeals, reversing and remanding a few issues to the Licensing Board but staying the remand until the Commission completed its review of ALAB-818 or directed otherwise. The Appeal Board also left undecided LILCO's appeals on three other emergency planning issues.

Below we analyze LILCO's petition for Commission review on the realism and immateriality decisions, leaving for a later time review of the legal authority preemption issues. In doing our review we have carefully reviewed both Boards' decisions, and all of the extensive briefs that have been filed with both Boards on the realism and materiality issues. While we did not request additional briefing, the parties nevertheless filed several additional papers with us, and we have considered all of them.⁵

REALISM

LILCO's Arguments

LILCO argues essentially that the Boards' holdings would approve only those utility plans which fill minor gaps in State and local govern-

⁴ The Appeal Board added that

[T]he Board properly rejected LILCO's "immateriality" argument. We recognize that the Commission's regulations do not spell out the precise manner in which an evacuation is to be conducted, if necessary. Nonetheless, the Commission has construed its emergency planning regulations to require "provisions for evacuating the public in times of radiological emergencies." We have likewise observed that the Commission's emergency planning scheme contemplates that emergency evacuation procedures be developed for the 10-mile [EPZ]. . . . LILCO included traffic control as part of its proposed evacuation procedures in light of such requirements. We believe that such inclusion was proper. In the context of this case, at least, something more is needed than an aspiration that the public will be able to fend for itself in the event an evacuation is required.

ALAB-818, *supra*, 22 NRC at 677 (footnotes omitted, emphasis added by the Appeal Board).

⁵ These pleadings are: Statement of Suffolk County Executive Peter F. Cohalan (June 23, 1986); LILCO's Reply to Unauthorized Pleading filed on June 23 by Suffolk County; LILCO's Motion to Strike Unauthorized Pleading filed on June 23 by Suffolk County (June 30, 1986); Statement by Governor Mario M. Cuomo (June 30, 1986); Response of Long Island Lighting Company to Governor Cuomo's June 30, 1986 "Statement"; Letter dated July 7, 1986, from Lawrence Coe Lanpher; Suffolk County's Answer to LILCO's "Motion to Strike Unauthorized Pleading Filed on June 23 by Suffolk County" (July 15, 1986); State of New York Response to "Response of Long Island Lighting Company to Governor Cuomo's June 30, 1986 'Statement'."

Intervenor also submitted two pleadings not directly related to the legal authority issues, and we do not consider them at this juncture. See Suffolk County, State of New York, and Town of Southampton Motion for Reconsideration of CLI-86-11 (July 21, 1986); Suffolk County, State of New York, and Town of Southampton Supplemental Answer to LILCO's Petition for Review of ALAB-832 (July 22, 1986).

ment participation, and that this cannot be correct in light of the Commission's denial of the County's 1983 motion to terminate the proceeding, a motion based on the absence of *any* local government participation in Shoreham planning. The Commission stated in its denial that it was "*obligated* to consider a utility plan submitted in the absence of State and local government-approved plans" CLI-83-13, *supra*, 17 NRC at 743 (emphasis added).

If only minor gap fillers are permitted, asks Licensee, then what was the purpose of the provisions in the NRC Authorization Acts beginning in 1980 permitting NRC consideration of utility plans? The answer, says LILCO, is that these statutes evidence Congress' intent to permit utility-only plans, and that no legislation would have been necessary to permit minor gap fillers.

LILCO also argues that the Board erred by failing to presume that State and local officials would fulfill their duties by responding in an emergency, citing New York Executive Law article 2-B which requires such response,⁶ and language in the Conference Report accompanying the FY 1985 HUD-Independent Agencies Appropriations Act favoring such a presumption.⁷

Moreover, says LILCO, the Board erred in deciding the summary disposition motion by raising *sua sponte* the question whether a State and local response, if there were one, would be *coordinated* with LILCO's. The only issue raised by Contentions 1-10 and by the motion was legal authority. The factual issue of coordination was not raised by the motion or by Contentions 1-10, but by Contention 92, which was not then before the Board. However, even if coordination were a proper question, the record shows that the plan is designed to accommodate previously uncooperative government personnel, according to LILCO.

Staff's and Intervenors' Arguments

Staff and Intervenors argue that even assuming that the State and local authorities might themselves respond in an emergency or delegate some functions to LILCO, the regulations require comprehensive, cooperative, and detailed preplanning which includes various governmental groups.

⁶ See, e.g., § 25 of the Executive Law, which provides that

[u]pon the threat or occurrence of a disaster, the chief executive of any political subdivision is hereby authorized and empowered to and shall use any and all facilities, equipment, supplies, personnel and other resources of his political subdivision in such manner as may be necessary or appropriate to cope with the disaster or any emergency resulting therefrom.

⁷ "[I]n its review [of emergency plans], FEMA should presume that Federal, State and local governments will abide by their legal duties to protect public health and safety in an actual emergency. . . ." H.R. Rep. No. 212, 99th Cong., 1st Sess., 131 Cong. Rec. 15,358 (1985).

The current evidentiary record does not reveal what the nature of a local governmental response might be, and thus the Board correctly denied the motion.

As to LILCO's argument that the Board shouldn't have considered the coordination issue in ruling on the summary disposition motion, Staff argues that LILCO's motion itself raised factual issues necessary for the Board to resolve, one of them being the coordination question.

Staff and Intervenor also argue that realism and immateriality could have been rejected on procedural grounds since LILCO and the other parties had litigated from December 1983 to August 1984 on the assumption that LILCO alone would implement its plan. Thus LILCO's assertion of the realism theory late in the game was an attempt to prosecute its case on a theory different from that which the parties had litigated, and it was necessary to offer those parties an opportunity to submit evidence on the new theory.

LILCO's Reply to Staff and Intervenor

First, the utility argues, the Governor's press release statement that the State and County would respond in an emergency supports a finding in LILCO's favor on the "realism" issue because the press release is in the evidentiary record, no one has attempted to refute it, there's a presumption that governmental officials will perform their legal duties, and an inference should be drawn against a party who fails to produce evidence in his control which could refute evidence in the record.

Second, LILCO asserts that the County's response in an emergency would not be *ad hoc* and uncoordinated because the County Executive has directed County employees to study the plan with an eye to giving advice and assistance to the County Legislature. Thus relevant County employees will be familiar with the plan.⁸

Third, LILCO asserts that it is not prosecuting its case on a theory different from that litigated initially. At the outset of the evidentiary hearing, Applicant sought to litigate several variations of its plan, including a "principle offsite plan" involving County implementation; at the same time, Applicant noted that the plan was flexible enough to incorporate County personnel after the onset of an emergency. Despite LILCO's

⁸ At oral argument before the Appeal Board on August 12, 1985, when the County Executive was at odds with the Legislature over Shoreham, counsel representing the Executive supported this LILCO argument, adding that County personnel were already familiar with plans to deal with natural disasters. Furthermore, despite Justice Geiler's opinion that police powers could not be delegated to private companies, Counsel noted as well that the County charter provides for the appointment of special patrolmen in emergencies, and that state law provides for the appointment in emergencies of special deputy sheriffs. Tr. 83-88.

request, the Board permitted LILCO to litigate only the LILCO-implemented variation.

Commission Decision

There is no doubt that the Commission's emergency planning regulations were generally intended to prevent a recurrence of the situation that arose shortly after the TMI-2 accident when, based on the facts as they then appeared, some emergency response was called for but the prior planning and coordination between the utility and local governments proved inadequate. The emergency planning standards in 10 C.F.R. § 50.47(b) and Part 50, Appendix E, are premised upon a high level of coordination between the utility and State and local governments. It should come as no surprise that without governmental cooperation LILCO has encountered great difficulty complying with all of these detailed planning standards.

However, we intended our rules to be flexible. As we have stated before, we are legally obligated to consider whether a utility plan, prepared without government cooperation, can pass muster. A utility plan might pass muster under 10 C.F.R. § 50.47(c). Section 50.47(c) provides for licensing notwithstanding noncompliance with the NRC's detailed planning standards: (1) if the defects are "not significant"; (2) if there are "adequate interim compensating actions"; or (3) if there are "other compelling reasons." The decisions below focus on (1) and (2) and we do likewise.

The measure of significance under (1) and adequacy under (2) is the fundamental emergency planning licensing standard of § 50.47(a) that "no operating license . . . will be issued unless a finding is made by NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." The root question becomes whether the LILCO plan can provide for "adequate protective measures . . . in the event of a radiological emergency."⁹

⁹ Under § 50.47(c) a compensating action should be "interim." We have no difficulty calling the LILCO plan "interim." Certainly LILCO intends it as such because it stands ready to cooperate with the governments in preparing a fully coordinated plan. But County Executive Cohalan and Governor Cuomo deny that they ever would or could cooperate with LILCO either before or even during an accident, citing both distrust of the utility company and Suffolk County's ordinance prohibiting implementation of LILCO's emergency plan. Statement of Peter F. Cohalan (June 23, 1986); Statement by Governor Mario M. Cuomo (June 30, 1986). We simply cannot accept these statements at face value, as we could not automatically accept earlier, similar statements by the County. See January 30, 1986 Commission Memorandum and Order, CLI-86-14, 24 NRC 36, 40 n.1. See also LILCO's Reply to Unauthorized Pleading filed on June 23 by Suffolk County at 10.

These statements by the Governor and the County Executive do not convince us that the LILCO plan is anything more than an interim plan which likely will be superseded or supplemented by the State and County if Shoreham is permitted to operate at full power. To conclude otherwise would require us to assume that the governments will not seek to improve the protection available for their citizens.

This root question cannot be answered without some discussion of what is meant by "adequate protective measures." Our emergency planning regulations are an important part of the regulatory framework for protecting the public health and safety. But they differ in character from most of our siting and engineering design requirements which are directed at achieving or maintaining a minimum level of public safety protection. See, e.g., 10 C.F.R. § 100.11. Our emergency planning requirements do not require that an adequate plan achieve a preset minimum radiation dose saving or a minimum evacuation time for the plume exposure pathway emergency planning zone in the event of a serious accident. Rather, they attempt to achieve reasonable and feasible dose reduction under the circumstances; what may be reasonable or feasible for one plant site may not be for another. And, in the past, what was reasonable and feasible in a given case depended on the cooperative planning efforts of the utility and State and local governments. But what should we regard as reasonable and feasible for Shoreham, where the governments refuse to cooperate?

In addressing this question the Boards below presumed that the LILCO plan must essentially achieve all that a fully coordinated plan can achieve. In essence, the Boards defined what is reasonable and feasible for Shoreham solely in terms of the nature of the site and environs without regard for the degree of possible government cooperation. This inexorably led the Boards to rejection of the LILCO plan on the ground that LILCO could not lawfully accomplish all that cooperating governments might in the event of an accident.

We believe that flexibility is called for by the legal requirement that we consider a utility emergency plan. It is very unlikely that *any* utility plan could ever pass such a strict test. We could conceivably define what is reasonable and feasible dose reduction for Shoreham solely in terms of what LILCO *itself* can reasonably and feasibly achieve, but we are not prepared to do so. Rather, we might look favorably on the LILCO plan if there was reasonable assurance that it was capable of achieving dose reductions in the event of an accident that are generally comparable to what might be accomplished with government cooperation. With this in mind, we turn to LILCO's realism argument.

We assume that LILCO is prohibited from performing the State or County roles in the following areas:

- (1) guiding traffic;
- (2) blocking roadways, erecting barriers in roadways, and channeling traffic;
- (3) posting traffic signs on roadways;

- (4) removing obstructions from public roadways, including towing private vehicles;
- (5) activating sirens and directing the broadcasting of emergency broadcast system messages;
- (6) making decisions and recommendations to the public concerning protective actions;
- (7) making decisions and recommendations to the public concerning protective actions for the ingestion exposure pathways;
- (8) making decisions and recommendations to the public concerning recovery and reentry;
- (9) dispensing fuel from tank trucks to automobiles along roadsides; and
- (10) performing access control at the Emergency Operations Center, the relocation centers, and the EPZ perimeters.

Some of these areas, such as making decisions and recommendations to the public on protective actions, are fundamental to emergency planning. However, if Shoreham were to go into operation and there were to be a serious accident requiring consideration of protective actions for the public, the State and County officials would be obligated to assist, both as a matter of law and as a matter of discharging their public trust. *See* N.Y. Exec. Law art. 2-B, § 25.1. *See also* H.R. Rep. No. 212, 99th Cong., 1st Sess. (1985), *quoted in part* in note 7, *supra*. Thus, in evaluating the LILCO plan we believe that we can reasonably assume some "best effort" State and County response in the event of an accident. We also believe that their "best effort" would utilize the LILCO plan as the best source for emergency planning information and options. After all, when faced with a serious accident, the State and County must recognize that the LILCO plan is clearly superior to no plan at all.

Nevertheless, we are unwilling to *assume*, as LILCO would have us, that this kind of best-effort government response would necessarily be adequate. In point of fact, there are questions about the familiarity of State and County officials with the LILCO plan, about how much delay can be expected in alerting the public and in making decisions and recommendations on protective actions, or in making decisions and recommendations on recovery and reentry, and in achieving effective access controls. The record tells us that an evacuation without traffic controls would be delayed from 1½ to 3 hours, but how important is this time delay? For which scenarios, if any, does it eliminate evacuation as a viable protective action?

To answer these questions, more information is needed about the shortcomings of the LILCO plan in terms of possible lesser dose savings and protective actions foreclosed, assuming a best-effort State and

County response using the LILCO plan as the source for basic emergency planning information and options. Accordingly, we remand LILCO's realism argument to the Licensing Board for further proceedings in accord with this Decision. The Board should use the existing evidentiary record to the maximum extent possible, but should take additional evidence where necessary.¹⁰

IMMATERIALITY

As noted above, Intervenors asserted in Contentions 1-10 that LILCO lacks legal authority to implement certain features of its plan, including controlling traffic. LILCO argues that with the exception of the alerting and broadcasting functions, the features mentioned in the legal authority contentions are not required by the regulations — it is immaterial that LILCO might lack authority to implement them.

Staff and Intervenors opposed the immateriality argument principally on the ground that the inability to impose traffic control would impermissibly restrict "the range of protective actions" available in an emergency. Intervenors also asserted that the immateriality theory was essentially factual in nature, and thus required further evidentiary hearings.

Commission Decision

While NRC regulations may make no explicit mention of some of these emergency planning measures, such measures may nevertheless be required in order that there be reasonable assurance of adequate protective measures. LILCO's materiality argument presents issues that are primarily factual rather than legal. The factual issues are subsumed within the scope of factual issues presented by LILCO's realism argument and can be considered by the Board in the remanded proceeding on realism.

CONCLUSION

In sum, we conclude that LILCO's plan should be measured against a standard that would require protective measures that are generally comparable to what might be accomplished with governmental cooperation.

¹⁰ Since LILCO raised factual issues in its summary disposition papers, it was entirely appropriate for the Board itself to have discussed them by addressing coordination issues in its ruling. However, given the pleadings that have been filed on realism, and the further proceedings directed by this Decision, there is no prejudice to the parties even assuming *arguendo* that LILCO's argument rested on some new "theory" not previously disclosed to the parties.

We also conclude that more information is needed in order to decide how the LILCO plan measures up to this standard. In applying additional information to the analysis of the LILCO plan, the Board should assume that the State and County would in fact respond to an accident at Shoreham on a best-effort basis that would use the LILCO plan as the only available comprehensive compendium of emergency planning information and options.

Finally, we direct the Appeal Board to reconsider its deferral of LILCO's other emergency planning appeals in light of this Decision.

Commissioner Asselstine dissents. His separate views are attached. It is so ORDERED.

For the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.,
this 24th day of July 1986.

DISSENTING VIEWS OF COMMISSIONER ASSELSTINE

The Commission's Decision today endorses the idea that a nuclear plant may be allowed to operate without State and local government participation in or cooperation with emergency planning. This Decision, in effect, takes the "planning" out of emergency planning and thereby undermines the foundation upon which our emergency planning regulations are based. The Commission's Decision is riddled with assumptions which seem to be supported by nothing more than wishful thinking.

The whole reason for the Commission's emergency planning regulations was the realization after the Three Mile Island accident that in the case of an emergency with the potential for significant offsite radiation releases there would be insufficient time to make arrangements to protect the people living around nuclear plants. For this reason, the Congress and the Commission felt it essential to require advance planning. This prior planning is designed to ensure that a variety of protective actions are available to respond to serious nuclear accidents and that whichever

protective actions are necessary can be implemented quickly and smoothly. In adopting its new emergency planning regulations, the Commission expressly recognized that participation in planning by State and local governments and coordination between the governments and the licensee was central to effective emergency planning.

Congress provided, however, that the Commission could consider, in the absence of an approved State or local plan, whether a State, local, or utility emergency preparedness plan, or some integration of these plans, provides reasonable assurance that public health and safety is not endangered by the operation of the plant. Thus, as a purely abstract legal matter, the Commission is correct in saying that we are authorized to consider a utility plan alone. However, that should not end the inquiry. The Commission must also consider whether the Commission should permit consideration of a utility plan where not only no State or local plan exists, but where the State and local governments refuse to participate in or cooperate with emergency planning.

This is not a case in which one local government or the State government alone has refused to participate in emergency planning and another governmental unit can take up the slack. *All* of the responsible governmental entities are refusing to participate in any way, shape, or form in emergency planning for the Shoreham plant. There will, therefore, be *no* governmental preplanning and *no* governmental coordination with LILCO. Moreover, according to the New York courts, LILCO does not have the legal authority to carry out certain governmental functions which are fundamental to an emergency response.¹ All governmental responses will, therefore, be *ad hoc* even if, as the Commission assumes, the State and local governments do respond in the case in an emergency, and even if, as the Commission assumes, the State and local governments decide to implement the LILCO plan.² Emergency plans are complicated. If an emergency plan is to work smoothly, everyone must be familiar with the plan and his or her responsibilities under the plan. As the Commission's regulations recognize, this requires governmental cooperation, training, and rehearsal. Given the positions of the State and local governments in this case, none of these fundamental preparatory steps will be taken.

¹ I also believe that we should have considered the preemption issues raised by ALAB-818 at the same time we considered the issues decided in this Order.

² The Commission also assumes that the LILCO plan is really only an interim compensating measure because once the Shoreham plant is licensed the State or County will see the light and begin to cooperate with LILCO and participate in emergency planning for Shoreham. The Commission's assumptions seem to be based on not much more than wishful thinking.

The question is, then, should the Commission under these circumstances consider a utility plan alone? I believe not. What the Commission decides today is that a completely *ad hoc* response by the State and local governments might be sufficient to provide reasonable assurance that there will be adequate protection of the public in the event of an emergency. I cannot conceive of circumstances in which that would be the case. The Commission's Decision amounts to a judgment that the core of emergency planning need not exist. The Commission's endorsement of such an idea undercuts the very foundation of emergency planning.

I am equally troubled by another aspect of the Commission's Order. The Commission says that LILCO ought to be given a chance to show that even if the State and local emergency response is *ad hoc* there will be reasonable assurance that the LILCO plan is, in the event of an accident, capable of achieving dose reductions "that are generally comparable to what might be accomplished with governmental cooperation." (Order, p. 32) Unfortunately, it is not clear exactly what that means. The Commission specifically rejects the Licensing Board and Appeal Board decisions which presumed that the LILCO plan must be capable of establishing the same level of assurance that a plan with governmental cooperation would achieve. Is the Commission permitting a lesser level of assurance for the LILCO plan? For example, if the *ad hoc* nature of governmental response would foreclose certain protective actions, would the Commission still find the LILCO plan acceptable as long as the dose reductions would be "generally comparable" to a plan with governmental cooperation? Unfortunately, the Commission does not clearly explain what it intends. The Commission certainly should not be permitting Shoreham to meet a lesser standard of protection for the public than other plants in the country have been required to meet.

I am not convinced that the Licensee could, in the absence of any governmental cooperation, establish the same level of assurance as if there were a plan coordinated with the State and local governments. Further, I do not believe that the Commission should establish a precedent which would allow for an *ad hoc* response on fundamental aspects of emergency planning — in this case the core of emergency planning.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Thomas M. Roberts
James K. Asselstine
Frederick M. Bernthal
Lando W. Zech, Jr.

In the Matter of

Docket No. 50-322-OL-3

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

January 30, 1986

The Commission denies intervenors' motion to cancel a scheduled exercise of the utility's emergency preparedness plan for Shoreham. The Commission recognizes that while the utility cannot lawfully implement all aspects of its emergency plan, conduct of the exercise is necessary because it is expected: (1) to provide information as to whether lack of cooperation in emergency planning by the State and local governments results in "significant" defects under NRC's emergency planning standards; and (2) to test the utility's ability to accommodate *ad hoc* governmental participation in the event of an actual emergency.

**EMERGENCY PLANS: STATE AND LOCAL GOVERNMENT
(UTILITY PLAN AS SUBSTITUTE)**

Even though it may not be possible to test all aspects of an emergency plan, an exercise is not necessarily useless. The exercise can assist in determining whether any defects that exist as a result of "limitations of [the

*CLI-86-14 was inadvertently omitted from the January 1986 issuances.

utility's] plan when executed under . . . state and county restrictions . . ." are significant under 10 C.F.R. § 50.47(c)(1).

EMERGENCY PLANS: STATE AND LOCAL GOVERNMENT (UTILITY PLAN AS SUBSTITUTE)

The Commission finds preposterous the implication that public employees would not use a utility plan even if they knew that use of the plan would best protect the public.

EMERGENCY PLANS: STATE AND LOCAL GOVERNMENT (UTILITY PLAN AS SUBSTITUTE)

A plan is not totally *ad hoc* merely because it is not known exactly what public officials will do in an emergency. A plan may be designed to accommodate an *ad hoc* response by public officials.

MEMORANDUM AND ORDER

BACKGROUND

Long Island Lighting Company's (LILCO) application for a full-power operating license for its Shoreham Nuclear Power Plant, located in Suffolk County, New York, is pending before the NRC. In order for there to be an adequate record for safety review of LILCO's full-power application, NRC regulations generally require, among other things, that an offsite emergency plan be developed, and that there be an exercise of the plan. See 10 C.F.R. § 50.47 and Part 50, Appendix E. The exercises are generally supervised and conducted by the Federal Emergency Management Agency (FEMA), with participation by relevant State and local governments. In this case, however, the emergency plan before us for review was developed and proposed by LILCO because the State and County refused to develop one. The LILCO plan for Shoreham provides for the lead role for offsite emergency response to be administered by the Local Emergency Response Organization (LERO), an organization comprised primarily of utility employees. In a December 26, 1985 motion, New York State, Suffolk County, and the Town of Southampton jointly moved the Commission to cancel a February 13, 1986 exercise of LILCO's emergency preparedness plan for Shoreham. LILCO and the

NRC Staff oppose the motion, and we deny it for the reasons explained below.

The movants have not identified any basis in NRC regulations for the filing of such a motion, which in effect attempts to interfere directly with the Commission's process for obtaining information necessary for its licensing decisions. Under NRC practice it is not clear that this type of motion is authorized or that we are obligated to respond in any formal way. On this basis alone the motion may be denied. Nevertheless, because we consider the upcoming exercise to be important in carrying out our safety responsibilities, we are responding to the motion in this Memorandum and Order.

THE NATURE OF THE EXERCISE

In the upcoming Shoreham exercise planned for February 13, 1986, FEMA intends to observe a number of LERO primary response capabilities. This observation will entail an examination of facilities, plans, and communications, but will not entail interaction with the public that would be affected in the event of an actual emergency. Specifically, FEMA plans to observe the following facilities and/or activities:

- LERO Emergency Operations Center
- Emergency Operations Facility
- Emergency News Center
- Reception Center
- Congregate Care Centers
- Emergency Worker Decontamination
- General Population Bus Routes
- School Evacuation
- Special Facilities Evacuation
- Mobility Impaired at Home
- Route Alerting
- Traffic Control Points
- Impediments to Evacuation
- Radiological Monitoring
- Accident Assessment.

THE MOTION

The State, County, and Town oppose the holding of this exercise of the LILCO plan for essentially two reasons: (1) they contend that various court decisions make clear that LILCO cannot implement its plan, so

an exercise of the plan would be useless; and (2) they contend that, if the exercise is designed to test the implementability of the LILCO plan using a simulated State and County response which was never litigated before any NRC Board, it would be irrelevant to the licensing process for Shoreham, and thus the results of the exercise would be worthless for that reason as well. We reject both reasons.

As to the first argument, it is true that a New York State Court has held that, in the event of an actual emergency, certain elements of LILCO's emergency plan can only be implemented by New York State or Suffolk County authorities. *Cuomo v. LILCO*, No. 84-4605 (N.Y. Sup. Ct., Feb. 20, 1985). The exercise does not flout that decision; to the contrary, it presumes the validity of the limits on LILCO's authority to implement its plan as set forth in that case; the only elements of LILCO's emergency plan which will be tested are those that LILCO may lawfully do on its own. The exercise of these elements of the LILCO plan will not, however, be useless. To the contrary, the exercise is expected to provide important and material information to the Commission. For example, as we noted when we directed the NRC Staff to request FEMA to schedule an exercise, the exercise will assist us in determining whether any defects that exist as a result of "the limitations of LILCO's plan when executed under the state and county restrictions" (Memorandum from S. Chilk to W. Dircks, dated June 4, 1985, at 1), are significant under our regulations. See 10 C.F.R. § 50.47(c)(1). Therefore, it is simply incorrect for the movants to argue that the exercise is useless because not all of the plan's elements will be tested.

As to the second argument, the LILCO plan in part states that:

The role of Suffolk County, should it decide to become involved in the response to a radiological emergency, either because the Governor orders it to do so or because the County Executive so chooses, will be for the various members to participate to the extent to which they are qualified by reason of prior training or experience.

Thus a fundamental factual premise for movants' second argument, i.e., that the plan litigated in the Shoreham licensing proceeding provides solely for a LILCO-only response, is incorrect. The plan provides for planned LILCO action in the event of an *ad hoc* State and County response to an actual emergency. Not only does the LILCO plan anticipate the possibility of such a response, such a response has been, in effect, promised by the State and County. The County Executive has stated that in the event of an actual radiological accident at Shoreham he would "respond to the best of [his] ability and in accordance with the duties and obligations placed upon [him] by Article 2-b of the Executive

Law" (Letter from P. Cohalan to T. Reveley dated June 26, 1985), and Governor Cuomo has stated that in a radiological emergency, "both the State and the County would help to the extent possible; no one suggests otherwise." Governor's Press Release dated December 20, 1983.

In order to test LILCO's planned response to *ad hoc* governmental participation in an actual emergency and to add more realism to the exercise, federal employees will play the roles of such officials during the exercise. Through this role playing, the NRC is attempting to evaluate LERO's capability (1) to accommodate the presence of State and local officials, (2) to support those officials using the resources available through LERO, and (3) to provide those officials with sufficient information to carry out their State and county responsibilities. These "actors," however, will be instructed not to play decisionmaking roles, not to assume any command and control authority, not to interact with members of the public so as to lead anyone to believe that they are actually County officials, and not to actually perform any State or local functions exclusively reserved to State or County officials by State or County laws. The basis for the number of actors to be used in this aspect of the exercise and the detailed instructions they will be provided are based, primarily, on New York State plans for other nuclear power plants and the manner in which New York State personnel and other counties have participated in other New York facility exercises.

Thus, contrary to movants' assertion, the simulation to be performed during the exercise will test an actual and important aspect of LILCO's plan. Indeed, the exercise currently scheduled, including the role playing, corresponds exactly with the current status of emergency planning for Shoreham.

CONCLUSION

In sum, we find that the motion presents no reason why the exercise should be cancelled.¹ We further find that the conduct of this exercise,

¹ The County appears to assert (Motion at 21) that, in the event of a radiological accident at Shoreham, County personnel could not lawfully make use of the LILCO plan, even if this was under the circumstances the best way to protect the safety of the citizens of Suffolk County. We find this assertion to be too preposterous an abrogation of the County's obligations to its citizens to be taken seriously.

The motion also states that NRC may not request an exercise at a plant "which has been denied an operating license." (See, e.g., Motion at 3). However, the Commission itself has not reviewed the evidentiary record on the adequacy of LILCO's plan, and consequently there is no final agency action denying LILCO an operating license.

Movants also seem to argue that the Commission erred by failing to conduct a formal Commission meeting when it decided to request the exercise. See Motion at 2. No law requires such a meeting.

which is permitted by our regulations, is under current circumstances both lawful and necessary to fulfill our responsibility under the Atomic Energy Act to protect the health and safety of the public.² The exercise will allow us to evaluate whether the LILCO plan, as described above, is as good as LILCO claims it is or, conversely, is as bad as the State, County, and Town assert.

Accordingly, we decline movants' invitation to cancel the exercise based on movants' assertion that the exercise is useless because it cannot prove that LILCO's emergency plan is sufficient to meet NRC requirements. While, for the reasons set forth herein, we believe that the exercise is very useful, we obviously take no position on whether the exercise will satisfy our emergency planning requirements. For the past several years the State, County, and Town have been claiming that no adequate plan can be developed for Shoreham, and that the LILCO plan is inadequate. They are entitled, as litigants before us, to advocate that position; they are not, however, entitled to obstruct our inquiry into the facts necessary to enable us to resolve that assertion.³

Chairman Palladino and Commissioner Asselstine disapprove this Order. Chairman Palladino provided dissenting views with which Commissioner Asselstine agreed. The additional views of the Commission majority are also attached.

² Section 103d, 42 U.S.C. § 2132(d), provides that:

no license may be issued to any person within the United States if, in the opinion of the Commission, the issuance of a license to such person would be inimical to the common defense and security or to the health and safety of the public.

Section 161c, 42 U.S.C. § 2201(c), authorizes the Commission to:

make such studies and investigations, obtain such information, and hold such meetings or hearings as the Commission may deem necessary or proper to assist it in exercising any authority provided in this Act, or in the administration or enforcement of this Act, or any regulations or orders issued thereunder.

³ The motion did not inform us of a pending development directly related to the motion: a County law, now in effect and under County consideration when its motion was filed, that is apparently intended to make NRC participation in the exercise a crime should the County legislature disapprove of it. Because it has not been raised by the movants as a basis for their motion, we do not deal with the new local law in this Order.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 30th day of January 1986.

DISSENTING VIEWS OF CHAIRMAN PALLADINO

I believe my position on the scheduling of an exercise at this time is well known. That position is as follows:

After thinking about this issue a great deal, I concluded that only a potentially workable plan should be exercised. Given the Licensing and Appeal Board decisions that LILCO did not have the legal authority to perform many of the required emergency response functions set out in the proposed plan, I questioned the usefulness of the drill being proposed. Further, the results of a drill of an inadequate plan might create new hearing issues which would need to be addressed and that might not arise if one were to exercise only an adequate plan.

I believe that an exercise at Shoreham which involves participation of the State, Suffolk County, and the utility could provide, on the other hand, useful information on the adequacies of emergency preparedness at Shoreham that would be of use and interest to all participants.

Until the Commission completes its review of the emergency planning legal authority issues and depending upon the outcome of that review, I will continue to hold the above-stated view, I would add that I have not prejudged, and do not intend to prejudge, any open issue in the Shoreham operating license proceeding.

ADDITIONAL VIEWS OF THE MAJORITY

While we share our colleagues' views that the February 13, 1986 exercise would be more useful to us in discharging our regulatory responsibilities were Suffolk County and New York State to participate (and indeed we would be inclined to postpone the exercise were State and local participation certain in the near future), we are aware of nothing which suggests that there is any realistic chance of that occurring. Given the intransigence of these governmental bodies we believe our responsibilities require that we proceed with an exercise without them.

For the reasons stated herein, we simply disagree with the view that this exercise will not provide useful information. Whether the LILCO plan adequately accounts for a promised, but *ad hoc*, governmental response (the "realism" argument) is a matter on which we express no opinion at this time. As noted in our opinion, however, we expect the upcoming exercise to provide us with important factual information to help us resolve this issue.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Gary J. Edles
Howard A. Wilber

In the Matter of

Docket Nos. 50-443-OL
50-444-OL
(Offsite Emergency Planning)

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

July 3, 1986

The Appeal Board grants an intervenor's petition for directed certification of the Licensing Board's denial of a motion to amend the transcript of a prehearing conference, vacates the ruling, and orders the transcript corrected.

RULES OF PRACTICE: DIRECTED CERTIFICATION

Appeal boards employ their directed certification authority only where a licensing board ruling either threatens the party adversely affected by it with immediate and serious irreparable impact that, as a practical matter, could not be alleviated by a later appeal, or affects the basic structure of the proceeding in a pervasive or unusual manner. ALAB-838, 23 NRC 585, 592 (1986) (*citing Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977)).

RULES OF PRACTICE: TRANSCRIPT OF PROCEEDINGS

The Commission's regulations and policy guidance mandate that a verbatim transcript of proceedings be prepared. 10 C.F.R. 2.750(a) and 10 C.F.R. Part 2, Appendix A, V(a)(1).

RULES OF PRACTICE: BRIEFS

The Rules of Practice require that any issues presented on appeal be supported by the precise portion of the record relied on. 10 C.F.R. 2.762(d)(1).

RULES OF PRACTICE: TRANSCRIPT OF PROCEEDINGS

It is the written transcript filed in the docket and available for inspection at the Public Document Room — not any underlying stenotype notes, tapes or other memorials — that constitutes the official record. *See* 10 C.F.R. 2.750. *See also* 5 U.S.C. 556(e).

RULES OF PRACTICE: INTERLOCUTORY REVIEW (RECORD CORRECTION ORDERS)

An incomplete or inaccurate transcript compromises later appellate review and is thus sufficient to justify interlocutory relief. *National Farmer's Organization, Inc. v. Oliver*, 530 F.2d 815, 816-17 (8th Cir. 1976).

RULES OF PRACTICE: TRANSCRIPT OF PROCEEDINGS (CORRECTION)

The Commission's regulations provide that a hearing will be reported by the official reporter under the supervision of the presiding officer and that "[t]he transcript prepared by the reporter shall be the sole official transcript of the proceeding." 10 C.F.R. 2.750(a). The regulations specifically authorize a presiding officer to order or approve correction of the official transcript. Corrections are to be made by the presiding officer in the manner provided in 10 C.F.R. 2.750(b), i.e., in a way that also preserves the transcript as originally recorded.

RULES OF PRACTICE: TRANSCRIPT OF PROCEEDINGS (MOTION TO CORRECT)

If confronted by a motion to correct the transcript, a licensing board is duty-bound to make some good faith effort to ascertain whether the transcript is accurate.

RULES OF PRACTICE: TRANSCRIPT OF PROCEEDINGS

The regulations permit, but do not require, the stenographic reporting of prehearing conferences. *See* 10 C.F.R. 2.751a(c) and 10 C.F.R. 2.752(b). When such reporting is used, the rules pertaining to stenographic transcripts apply to prehearing conferences. *See generally Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear 1), LBP-80-22, 12 NRC 191, 193-94, *aff'd*, ALAB-619, 12 NRC 558 (1980) (Licensing Board declines to approve or rely on transcript of prehearing conference because of its poor quality).

RULES OF PRACTICE: TRANSCRIPT OF PROCEEDINGS (MOTION TO CORRECT)

The requirement that a licensing board seriously entertain motions to correct in order to ensure an accurate transcript does not impinge upon a presiding officer's authority to regulate the conduct of a proceeding, including the authority to "strike" material from the record.

RULES OF PRACTICE: TRANSCRIPT OF PROCEEDINGS

A licensing board may properly "strike" material from the record during the course of a proceeding. Such "striking" is noted in the transcript and the material is not relied on for decisional purposes. As with a correction of the transcript, the record must nonetheless preserve what was stricken so that a reviewing tribunal can decide whether the board's action was proper. Except perhaps in highly unusual circumstances and with appropriate safeguards, the stricken material is not to be physically excluded or expunged from the record. *Cf. Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-807, 21 NRC 1195, 1214 (1985). Striking material from the record contrasts with an "off-the-record" discussion, which must be identified as such at the outset.

RULES OF PRACTICE: TRANSCRIPT OF PROCEEDINGS (MOTION TO CORRECT)

In ruling on a motion to correct the transcript, a licensing board may take into account its own recollections. *See generally United States v. Smith*, 562 F.2d 619, 620-21 (10th Cir. 1977).

APPEARANCES

Robert A. Backus, Manchester, New Hampshire, for the Seacoast Anti-Pollution League.

Thomas G. Dignan, Jr., and R.K. Gad, III, Boston, Massachusetts, for the applicants, Public Service Company of New Hampshire, *et al.*

Edwin J. Reis and Oreste Russ Pirfo for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

Before us is a petition for directed certification filed by the intervenor Seacoast Anti-Pollution League (SAPL) asking us to examine a Licensing Board ruling denying SAPL's motion to amend the transcript of a prehearing conference held on March 25, 1986. The applicants assert that the petition does not satisfy the test for directed certification but claim to lack sufficient information to address the merits of SAPL's request. The NRC staff supports SAPL's petition. Finding ourselves in agreement with SAPL and the staff, we grant the petition for directed certification, vacate the Board's ruling, and order the transcript to be corrected.

A. Background

SAPL's motion to the Licensing Board asserted that the official transcript was incomplete because it failed to contain a portion of an exchange between SAPL's counsel, Robert A. Backus, and the Licensing Board chairman.¹ SAPL noted, more specifically, that the transcript does not reflect "the chairman's direction that the reporter 'will strike that from the record' (referring to a prior statement by Attorney Backus) or the attempt made by Attorney Backus to preserve his rights on the record."² It alleged that "[a] substantial portion of this interchange was either deleted from the record or altered by order of Judge Hoyt to the official reporter."³ The motion appended a comparison of the exchange

¹ Seacoast Anti-Pollution League's Motion to Amend Record of Prehearing Conference of March 25, 1986 (April 10, 1986) (hereafter, SAPL Motion of April 10).

² *Id.* at 2.

³ *Id.* at 1.

in question, first, as set out in the official transcript and, second, as taken from a tape recording made by a reporter from one of the radio stations present in the room on the day of the prehearing conference. If the comparison is accurate, certain sentences do not appear in, and others differ from, the official version. SAPL told the Licensing Board that it had been informed that the official NRC reporter "has available for transcription the original stenographic notes of all proceedings in the hearing room that day, and can, if and when requested by the Board, prepare a full and complete transcript of the proceeding of that date, with particular reference to the materials omitted at page 2098-2099."⁴

In a brief order, the Licensing Board denied SAPL's request, noting simply that "[t]he sole official transcript of the proceeding is that prepared by the official reporter designated by the Commission (10 CFR § 2.750(a))."⁵ The petition for directed certification followed. To preserve our jurisdiction to decide the request for directed certification, we instructed the Licensing Board to ensure the preservation of all stenographic notes and other materials in connection with the prehearing conference.⁶ Thereafter, we directed the official reporter to provide us with a transcript of the stenotype notes of that portion of the March 25 prehearing conference that is the subject of SAPL's motion and to explain any discrepancies between the stenotype notes and the official transcript.⁷

By affidavit filed with us on June 27, 1986, the reporter advised us that her stenotype notes reveal various differences from the official transcript. Among other things, the reporter indicated:

The words which were omitted from the transcript of Mr. Backus' statement, and which are indicated above in the corrected version of the transcript, were deliberately omitted because of Judge Hoyt's direction to the reporter, also cited above: "The reporter is to strike that comment from the record."⁸

B. Directed Certification

As recently reemphasized in this proceeding, we employ our directed certification authority only where a licensing board ruling either threatens the party adversely affected by it with immediate and serious irrep-

⁴ *Id.* at 2.

⁵ Order of April 15, 1986 (unpublished).

⁶ See Appeal Board Orders of May 30, 1986 and June 2, 1986 (unpublished).

⁷ Appeal Board Order of June 24, 1986 (unpublished).

⁸ Letter of Wendy Cox to C. Jean Shoemaker, Secretary, Atomic Safety and Licensing Appeal Board (June 24, 1986) at 2. At our direction, a copy of Ms. Cox's letter was transmitted to the Docketing and Service Branch, Office of the Secretary, for service on all parties to the proceeding.

arable impact that, as a practical matter, could not be alleviated by a later appeal, or affects the basic structure of the proceeding in a pervasive or unusual manner.⁹ The first test is plainly met here.¹⁰

The Commission's regulations and policy guidance mandate that a verbatim transcript of proceedings be prepared.¹¹ As the staff points out, the Rules of Practice require that any issues presented on appeal be supported by the precise portion of the record relied on.¹² If SAPL is correct that the official transcript is incomplete or inaccurate, its ability to challenge the Licensing Board's decision by way of an appeal would be compromised.

It may be possible to correct errors in the transcript at the end of the case because the reporting company is apparently obliged under its contract with the Commission to retain stenotype notes and other material until the expiration of its contract, when they are turned over to the Commission.¹³ Nevertheless, it is the written transcript filed in the docket and available for inspection at the Public Document Room — not any underlying notes, tapes or other memorials — that constitutes the official record.¹⁴ As the Licensing Board pointed out, it does not receive or exercise control or custody over the underlying materials. Thus, we cannot assume that such materials will always be available at the end of a proceeding.¹⁵ Moreover, the recollections of the parties, the official reporter, and the Board, which could be critical to an accurate disposition of a motion to correct, will become far less reliable as time passes. It may well turn out that we will be unable to reconstruct the facts surrounding this incident if we await the end of the case. Thus, there is a strong likelihood that SAPL will be seriously and irreparably injured if we do not act now to determine whether the transcript is accurate.¹⁶

⁹ ALAB-838, 23 NRC 585, 592 (1986) (citing *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977)).

¹⁰ We need not decide whether the second test is satisfied as well.

¹¹ 10 C.F.R. 2.750(a) and 10 C.F.R. Part 2, Appendix A, V(a)(1).

¹² 10 C.F.R. 2.762(d)(1).

¹³ See Certification of Licensing Board (Regarding Reporting of Seabrook Prehearing Conference on March 25-26, 1986) (June 3, 1986) at 2 (hereafter, Licensing Board June 3 Order).

¹⁴ See 10 C.F.R. 2.750. See also 5 U.S.C. 556(e).

¹⁵ The retention of such materials by the reporting company is a matter of contract between that company and the Commission. We gather that it is standard practice, for example, to destroy the backup magnetic cassette tapes after verifying the stenotype notes. However, the Licensing Board in this proceeding has ordered all materials retained. See Licensing Board June 3 Order at 1-2. We directed the Licensing Board to ensure the preservation of stenographic notes and other memorials concerning the March 25-26 prehearing conference so that we would have ample information with which to rule on the pending petition. Now that we have done so, we dissolve any requirement we have imposed for the retention of underlying materials. Nothing in our prior orders should be taken as requiring the reporting company to retain materials in the future except as specifically provided in its contract with the NRC.

¹⁶ Cf. *National Farmers' Organization, Inc. v. Oliver*, 530 F.2d 815, 816-17 (8th Cir. 1976) (incomplete record compromises later appellate review and is sufficient to justify interlocutory relief).

The applicants contend that SAPL has not been seriously injured and that, in any event, any injury can be alleviated later. The gist of the applicants' argument is that the material purportedly not transcribed related to the Board's exclusion of SAPL Contention 13, and the reasons for such exclusion are set forth elsewhere in writing. In the applicants' view, "[i]f SAPL is arguing that it should have available to it on such an appeal a record which shows counsel was not permitted fair argument below, the official transcript shows where and on what basis he was cut off."¹⁷ It may be, as the applicants contend, that a particular line of argument will not be compromised even if the transcript is incomplete or inaccurate so that no prejudice to the intervenor will eventuate. But we cannot be certain of such result. SAPL may wish to present other or different arguments on appeal and an inaccurate or incomplete transcript could impair its ability to do so. In the absence of an accurate transcript, it may be difficult, if not impossible, to ascertain precisely what transpired at the prehearing conference and determine what bearing that had on the Board's ultimate decision to exclude Contention 13.

C. Correction of the Transcript

The Commission's regulations provide that the hearing will be reported by the official reporter under the supervision of the presiding officer and that "[t]he transcript prepared by the reporter shall be the sole official transcript of the proceeding."¹⁸ The regulations specifically authorize a presiding officer to order or approve correction of the official transcript. Corrections are to be made by the presiding officer in the manner provided in 10 C.F.R. 2.750(b), i.e., in a way that also preserves the transcript as originally recorded.¹⁹

If confronted by a motion to correct, a licensing board is duty-bound to make some good faith effort to ascertain whether the transcript is accurate.²⁰ The Licensing Board's April 15, 1986 order reveals no such

¹⁷ Applicants' Brief in Response to SAPL's Motion for Directed Certification (June 10, 1986) at 4.

¹⁸ 10 C.F.R. 2.750(a).

¹⁹ 10 C.F.R. 2.750(b) reads as follows:

Corrections of the official transcript may be made only in the manner provided by this paragraph. Corrections ordered or approved by the presiding officer shall be included in the record as an appendix, and when so incorporated the Secretary shall make the necessary physical corrections in the official transcript so that it will incorporate the changes ordered. In making corrections there shall be no substitution of pages but, to the extent practicable, corrections shall be made by running a line through the matter to be changed without obliteration and writing the matter as changed immediately above. Where the correction consists of an insertion, it shall be added by rider or interlineation as near as possible to the text which is intended to precede and follow it.

²⁰ The regulations permit, but do not require, the stenographic reporting of prehearing conferences. See 10 C.F.R. 2.751a(c) and 10 C.F.R. 2.752(b). When such reporting is used, the rules pertaining to steno-

Continued

effort. Although the Board noted that SAPL had submitted a recording purporting to show conflicts with the official transcript, it simply recited the self-evident proposition that the official transcript is the one prepared by the reporter. In response to a request to correct that transcript, such rationale is wholly inapposite and thus insufficient. It does not explain why the Board rejected the proposed corrections of the transcript or even whether the Board believed the transcript to be accurate or not.²¹

We do not suggest that the Board was obliged to undertake extensive investigation to rule on the motion. An examination commensurate with the need to ascertain the facts (if not already known to the Board) can be conducted promptly and efficiently, without elaborate procedures. Nor does the requirement that a licensing board seriously entertain motions to correct in order to ensure an accurate transcript impinge upon a presiding officer's authority to regulate the conduct of a proceeding, including the authority to "strike" material from the record.²²

In the instant case, the affidavit embodying a transcript of the reporter's stenotype notes and the reporter's recollections of the incident makes it clear that not all of what actually took place at the prehearing conference is included in the official transcript.²³ It is unclear from all the circumstances, including the reporter's affidavit, whether the presiding officer intended that a portion of the conversation literally be expunged from the transcript or whether the reporter simply assumed that the presiding officer's direction to her to "strike" material required physical excision. In either case, the exclusion of the material was improper and the transcript should have been corrected. We therefore order the transcript

graphic transcripts apply to prehearing conferences. See generally *Northern Indiana Public Service Co.* (Bailey Generating Station, Nuclear 1), LBP-80-22, 12 NRC 191, 193-94, *aff'd*, ALAB-619, 12 NRC 558 (1980) (Licensing Board declines to approve or rely on transcript of prehearing conference because of its poor quality).

²¹ *Cf. United States v. Carter*, 347 F.2d 220, 221 (2d Cir.), *cert. denied*, 382 U.S. 888 (1965) (statute providing that the transcript "shall be deemed prima facie a correct statement of the testimony taken and proceedings had" clearly implies that the transcript is subject to correction).

²² A licensing board may properly "strike" material from the record during the course of a proceeding. Such "striking" is noted in the transcript and the material is not relied on for decisional purposes. As with a correction of the transcript, the record must nonetheless preserve what was stricken so that a reviewing tribunal can decide whether the board's action was proper. Except perhaps in highly unusual circumstances and with appropriate safeguards, the stricken material is not to be physically excluded or expunged from the record. *Cf. Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-807, 21 NRC 1195, 1214 (1985) (transfer of testimony from public transcript to in camera portion of the record). Striking material from the record contrasts with an "off-the-record" discussion, which must be identified as such at the outset.

²³ On the day following the exchange, SAPL asked the Licensing Board orally to amend the transcript. The Board, as is its prerogative, declined to consider the matter at that time and, instead, insisted that the request be made in writing. Tr. 2308-09. As far as we can tell, the Board thereafter ruled on the request without either awaiting the receipt of answers from other parties or requesting the views of the official reporter.

corrected to reflect what actually transpired — as embodied in the reporter's stenotype notes — as follows:

Page 2099, lines 3-5 should read:²⁴

JUDGE HOYT: Mr. —

MR. BACKUS: Madame Reporter, would you please [indicate] the chairman is forbidding me to make a statement on the record. I will go on.

JUDGE HOYT: No, sir, you will not. You will continue, Mr. Backus. We will consider your argument. The reporter is to strike that comment from the record. Do you wish to continue or do you wish to cease at this point?

We have not made all the corrections requested by SAPL. As to the others, the reporter indicated that no further changes were warranted. Yet the transcript, as now corrected, differs from the radio station tape recording. As SAPL acknowledges, the tape recording cannot be assumed to be definitive,²⁵ and any differences between the versions may ultimately have to be resolved in favor of the official transcript. But, not having been present at the prehearing conference, we have no basis for determining whether any additional changes are justified. If SAPL wishes, it may promptly tender a motion to the Licensing Board to make the remaining changes. The Board shall thereafter rule on SAPL's request based on appropriate criteria, which may include its own recollections.²⁶

The petition for directed certification is *granted* and the Licensing Board's April 15, 1986 order is *vacated*. The transcript shall be *corrected* as provided in this opinion and, in accordance with 10 C.F.R. 2.750(b), the Secretary is requested to make the necessary physical corrections.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

²⁴ The reporter indicates that lines 2-5 of page 2099 should be changed. But the reporter's changes appear to be confined to lines 3-5.

²⁵ SAPL Motion of April 10 at 1.

²⁶ See generally *United States v. Smith*, 562 F.2d 619, 620-21 (10th Cir. 1977).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Christine N. Kohl, Chairman
Gary J. Edles
Dr. Reginald L. Gotchy

In the Matter of

Docket Nos. 50-352-OL
50-353-OL

PHILADELPHIA ELECTRIC
COMPANY
(Limerick Generating Station,
Units 1 and 2)

July 18, 1986

The Appeal Board denies joint intervenors' petition to reopen the record on offsite emergency planning and disqualify applicant's counsel and law firm concluding that, irrespective of whether applicant's counsel had, as alleged, made an ex parte communication, the requested relief is not warranted.

RULES OF PRACTICE: JURISDICTION OF BOARDS

"Every tribunal — whether judicial or administrative — possesses the inherent right (indeed, the duty) to determine in the first instance the bounds of its own jurisdiction." *Duke Power Co.* (Perkins Nuclear Station, Units 1, 2 and 3), ALAB-591, 11 NRC 741, 742 (1980) (citing *United States v. United Mine Workers*, 330 U.S. 258, 292 n.57 (1947)).

RULES OF PRACTICE: JURISDICTION OF BOARDS

In general, once petitions for review of an Appeal Board decision on certain issues have been filed with the Commission, the Appeal Board no longer has jurisdiction over those issues. *See* ALAB-823, 22 NRC 773, 775 (1985).

RULES OF PRACTICE: JURISDICTION OF BOARDS

Where a question has been raised about the integrity of the decision-making process, the decisionmaker necessarily retains residual power to address such matter when requested, notwithstanding that jurisdiction over the underlying substantive claims themselves now lies elsewhere. *Cf. Massachusetts Bay Telecasters, Inc. v. Federal Communications Commission*, 261 F.2d 55, 67 (D.C. Cir. 1958), *modified on other grounds*, 295 F.2d 131, *cert. denied*, 366 U.S. 918 (1961).

RULES OF PRACTICE: EX PARTE COMMUNICATIONS

The Commission's regulations prohibit any party to a proceeding for the issuance of a license or any representative, or any other person directly or indirectly acting in behalf thereof from submitting off the record to Commissioners or such staff members, officials, and employees, any evidence, explanation, analysis, or advice, whether written or oral, regarding any substantive matter at issue in a proceeding on the record then pending before the NRC for the issuance of a license. 10 C.F.R. § 2.780(a). *See also* Administrative Procedure Act (as amended in 1976 by the Government in the Sunshine Act) [hereafter, "APA"], 5 U.S.C. §§ 551(14), 557(d)(1).

RULES OF PRACTICE: EX PARTE COMMUNICATIONS

Commission regulations direct that any written ex parte communication be placed in the public document room and served by the Secretary "on the communicator and the parties to the proceeding involved." 10 C.F.R. § 2.780(b).

RULES OF PRACTICE: STANDARDS OF PRACTICE

Any party or its representative who fails to comply with an order or is "guilty of disorderly, disruptive, or contemptuous conduct" may be reprimanded, censured, or suspended from participation "if necessary for the orderly conduct of a proceeding." 10 C.F.R. § 2.713(c). *See also Profes-*

sional Air Traffic Controllers Organization v. Federal Labor Relations Authority, 685 F.2d 547, 564 n.30 (D.C. Cir. 1982) [hereafter, "*PATCO*"].

ADMINISTRATIVE PROCEDURE ACT: EX PARTE COMMUNICATIONS

The APA authorizes an adjudicator, to the extent consistent with the interests of justice and the policy of the underlying statutes, to require a party that has submitted an ex parte communication to show cause why its claim or interest in the proceeding should not be dismissed, denied, disregarded, or otherwise adversely affected on account of such violation. 5 U.S.C. § 557(d)(1)(D).

RULES OF PRACTICE: DISQUALIFICATION

Charges that raise questions about the ethics of counsel "should only be filed after careful research and deliberation." *Cincinnati Gas and Electric Co.* (William H. Zimmer Nuclear Power Station, Unit No. 1), CLI-82-36, 16 NRC 1512, 1513 n.1 (1982).

RULES OF PRACTICE: EX PARTE COMMUNICATIONS

Disqualification of the communicator is not the remedy specified in the Commission's regulations for a violation of the ex parte communication rule. For this penalty to be exacted, "disorderly, disruptive, or contemptuous" behavior that threatens the conduct of the proceeding must be demonstrated. 10 C.F.R. § 2.713(c).

RULES OF PRACTICE: EX PARTE COMMUNICATIONS

In deciding whether to void an agency decision that has been blemished by ex parte communications, a court must consider whether, as a result of the improper communication, the agency's decisionmaking process was irrevocably tainted so as to make the ultimate judgment of the agency unfair, either to an innocent party or to the public interest that the agency was obliged to protect. In making this determination, a number of considerations may be relevant: the gravity of the ex parte communication; whether the contact may have influenced the agency's ultimate decision; whether the party making the improper contact benefited from the agency's ultimate decision; whether the content of the communication was unknown to opposing parties, who therefore had no opportunity to respond; and whether vacation of the agency's decision and remand for new proceedings would serve a useful purpose. *PATCO*,

685 F.2d at 564-65. See also *Braniff Master Executive Council of the Air Line Pilots Association International v. Civil Aeronautics Board*, 693 F.2d 220, 227 (D.C. Cir. 1982).

APPEARANCES

Robert L. Anthony, Moylan, Pennsylvania, intervenor pro se and for intervenor Friends of the Earth.

Troy B. Conner, Jr., Mark J. Wetterhahn, and Nils N. Nichols, Washington, D.C., for applicant Philadelphia Electric Company.

Benjamin H. Vogler for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

In a pleading served June 25, 1986, joint intervenors Robert L. Anthony and Friends of the Earth (Anthony/FOE) have petitioned both us and the Commission concurrently to reopen the record on offsite emergency planning in this operating license proceeding. The basis for intervenors' request is the Washington Legal Foundation's (WLF) submission to the Commission and various NRC officials of an April 1986 "working paper" titled "Offsite Emergency Planning for Nuclear Power Plants: A Case of Governmental Gridlock" [hereafter, "WLF Working Paper"] and authored by Robert M. Rader, counsel for applicant Philadelphia Electric Company (PECo) in this proceeding.¹ Anthony/FOE contend that this filing, which expresses views critical of the NRC's emergency planning requirements for nuclear power plants, is an ex parte communication prohibited by 10 C.F.R. § 2.780(a). They claim that this constitutes unethical conduct by PECO's counsel and that it has prejudiced and discredited the agency's hearings on offsite emergency planning in connection with the Limerick facility. By way of relief, Anthony/FOE re-

¹ Among the NRC officials to whom WLF sent a copy of the working paper was Alan S. Rosenthal, Chairman of the Atomic Safety and Licensing Appeal Panel. Mr. Rosenthal received the document on or about May 15, 1986, notwithstanding PECO's belief that it was mailed May 1. See Licensee's Answer to Petition (July 9, 1986) at 13 n.26. The members of this Appeal Board, as well as all parties to this proceeding, were served with copies of the WLF paper on June 2, 1986, by memorandum from William L. Clements, Chief of the NRC's Docketing and Service Branch. This memorandum noted the NRC General Counsel's conclusion that the filing was an ex parte communication and should be placed in the public record and served on all parties to this proceeding pursuant to 10 C.F.R. § 2.780.

quest disqualification of Mr. Rader's law firm, Conner & Wetterhahn, P.C., and reopening of the record on emergency planning. PECO and the NRC staff oppose the petition. As explained below, we deny Anthony/FOE's request.

1. At the outset, we address the question, raised by PECO, whether we have jurisdiction to rule on Anthony/FOE's petition. We concluded our consideration of those offsite emergency planning issues contested by Anthony/FOE with the issuance on May 7, 1986, of ALAB-836, 23 NRC 479. PECO thus claims that only the Commission has jurisdiction over the petition because "no phase of the matter in question is now before the Appeal Board." Licensee's Answer and Suggestion of Lack of Jurisdiction (July 10, 1986) at 1.² The staff, on the other hand, implies that we do have jurisdiction because other offsite emergency planning issues remain before us. Response of the NRC Staff (July 15, 1986) at 1 n.1.³

PECO has too readily presumed away our jurisdiction in this instance. It is true that, in general, our jurisdiction over most offsite emergency planning issues passed to the Commission with the issuance of ALAB-836 and the subsequent filing of petitions for review of that decision. See ALAB-823, 22 NRC 773, 775 (1985).⁴ The gist of part of Anthony/FOE's latest motion to reopen, however, is that the *process* that led to our May 7 decision in ALAB-836 was somehow compromised by the prior publication of the WLF Working Paper on emergency planning. Where a question has been raised about the integrity of the decisionmaking process, the decisionmaker necessarily retains residual power to ad-

² Indeed, PECO is so certain of its views on the extent of our jurisdiction that initially it addressed its reply to Anthony/FOE's petition only to the Commission itself, favoring us with but one informational copy of this pleading. See Licensee's Answer to Petition, *supra* note 1. Having not received any reply directed to the Anthony/FOE petition pending before us, and finding it incredible that a party would not reply to a motion raising such serious issues as disqualification of its counsel and reopening of the proceeding, we asked the Board's secretary to inquire of PECO's counsel when we might expect to receive its reply. When it became clear that PECO intended to direct its reply solely to the Commission, our secretary advised its counsel that the Appeal Board would construe such action as a default. See 10 C.F.R. § 2.707. PECO then responded with a timely pleading to us, essentially incorporating by reference its earlier reply to the Commission.

We remind counsel that "[e]very tribunal — whether judicial or administrative — possesses the inherent right (indeed, the duty) to determine in the first instance the bounds of its own jurisdiction." *Duke Power Co. (Perkins Nuclear Station, Units 1, 2 and 3)*, ALAB-591, 11 NRC 741, 742 (1980) (citing *United States v. United Mine Workers*, 330 U.S. 258, 292 n.57 (1947)). The fact that Anthony/FOE directed their petition to both the Commission and us does not deprive us of the responsibility to rule on this matter pending on our docket. Even if such ruling were only a dismissal or referral of the petition, that action would be a matter for this board to undertake, not for a party to presume.

³ These other issues concern the evacuation plan for the State Correctional Institution at Graterford. In addition, we continue to have appellate jurisdiction over the disposition of an emergency planning issue remanded to the Licensing Board in ALAB-836. None of these remaining matters is the subject of an Anthony/FOE contention.

⁴ Both PECO and Anthony/FOE have petitioned for review of different aspects of ALAB-836. Their petitions remain pending before the Commission.

dress such matter when requested, notwithstanding that jurisdiction over the underlying substantive claims themselves now lies elsewhere. *Cf. Massachusetts Bay Telecasters, Inc. v. Federal Communications Commission*, 261 F.2d 55, 67 (D.C. Cir. 1958), *modified on other grounds*, 295 F.2d 131, *cert. denied*, 366 U.S. 918 (1961) (decisionmaker itself should determine initially questions concerning improper influence on its decisions). Hence, to the extent that Anthony/FOE's petition suggests a taint on the process that resulted in the issuance of ALAB-836, we do indeed have jurisdiction to address the petition.⁵

2. PECO devotes the major portion of its reply to an argument that the distribution of the WLF Working Paper was not an ex parte communication. *See generally* Licensee's Answer to Petition, *supra* note 1, at 4-11. It describes this document as "a generic analysis of basic emergency planning and preparedness issues common to all proceedings and . . . not, in its transmittal to certain NRC employees, associated with any particular proceeding." *Id.* at 4 (footnote omitted). PECO compares the WLF Working Paper to a law review article and contends that considering such material as ex parte would effectively preclude the NRC's adjudicators from reading (and even discussing with colleagues) similar trade publications or public statements. *Id.* at 5, 6.

PECO's comparison of the WLF Working Paper to law review articles and the like is not particularly convincing. For one thing, Mr. Rader's paper is not so generic as PECO's reply suggests. *See, e.g.,* WLF Working Paper at 29, 38-41, 52-55, 58-61 (discussing several substantive issues litigated in the *Limerick* proceeding, some of which — such as the emergency plan for the State Correctional Institution at Graterford — have not yet been finally resolved). Moreover, it is not simply the content of the document, but the manner in which it comes to the decisionmaker's attention that is relevant. The Commission's regulations prohibit

any party to a proceeding for the issuance . . . of a license . . . or any . . . representative, or any other person directly or indirectly acting in behalf thereof [from] *submit[ing]* off the record to Commissioners or such staff members, officials, and employees, any evidence, explanation, analysis, or advice, whether written or oral, regarding any substantive matter at issue in a proceeding on the record then pending before the NRC for the issuance . . . of a license

⁵ Insofar as Anthony/FOE's motion concerns the alleged influence of the WLF Working Paper on the Commission's consideration of the pending petitions for review of ALAB-836 (*see supra* note 4), only the Commission, of course, can respond on that score. Thus, the petition presents the rare circumstance where two adjudicatory bodies each must address different arguments within the same pleading. Anthony/FOE therefore properly directed their petition to both the Commission and to us.

10 C.F.R. § 2.780(a) (emphasis added).⁶ See also Administrative Procedure Act (as amended in 1976 by the Government in the Sunshine Act) [hereafter, "APA"], 5 U.S.C. §§ 551(14), 557(d)(1). It is one thing for a judge to go to the library and discover a law review article that discusses issues raised in a case then-pending before him or her, and that is authored by one of the attorneys in that case. But while it may not be the circumstance before us here, it is quite another matter for counsel in a case to submit to a judge, ex parte, counsel's own analysis of issues pending before that judge, as set forth in a law review article counsel has penned.

We need not decide, however, whether the WLF Working Paper was, in fact, an ex parte communication.⁷ Even if such were the case, the relief sought by Anthony/FOE's petition is clearly not warranted in the circumstances.

The explicit Commission remedy — placement of the written ex parte communication in the public document room and service by the Secretary "on the communicator and the parties to the proceeding involved" — has already been effected. 10 C.F.R. § 2.780(b). See *supra* note 1. It is clear, however, that regulatory and statutory authority exists for the particular additional relief sought by Anthony/FOE — i.e., disqualification of counsel and reopening the proceeding. Any party or its representative who fails to comply with an order or is "guilty of disorderly, disruptive, or contemptuous conduct" may be reprimanded, censured, or suspended from participation "if necessary for the orderly conduct of a proceeding." 10 C.F.R. § 2.713(c). The APA also authorizes an adjudicator

to the extent consistent with the interests of justice and the policy of the underlying statutes, [to] require the party to show cause why [its] claim or interest in the proceeding should not be dismissed, denied, disregarded, or otherwise adversely affected on account of such violation

5 U.S.C. § 557(d)(1)(D). See also *Professional Air Traffic Controllers Organization v. Federal Labor Relations Authority*, 685 F.2d 547, 564 n.30 (D.C. Cir. 1982) [hereafter, "*PATCO*"] (legislative history indicates that remedies provided in section 557(d) were intended to supplement an

⁶ As PECO notes, the Commission has pending a rulemaking that would modify its ex parte regulations. See 51 Fed. Reg. 10,393 (1986).

⁷ Curiously, PECO does *not* argue that the communication is permissible under the Commission's regulations because (1) the Washington Legal Foundation did not send the Working Paper to any of this Board's three members (see *supra* note 1); or (2) the WLF — an entity separate from PECO, its counsel, and anyone acting on its behalf — actually submitted the Working Paper to agency officials. But in view of the basis on which our decision here rests, we need not reach these threshold issues either.

agency's existing authority to prohibit an attorney who violates the section from practicing before the agency).

Anthony/FOE, however, have failed to provide any basis for invoking either of these authorities and imposing the additional penalties they seek in their petition. They complain generally that the offsite emergency planning hearings for Limerick have been "discredited" and "prejudiced hopelessly" by the "unethical pressure" and "destructive tactics" of PECO's counsel. Anthony/FOE Petition (June 25, 1986) at 1, 2. They assert that the WLF Working Paper is "an affront to the Commission and the NRC regulations." *Id.* at 2. They also cite to numerous excerpts from the document that are critical of public intervenors and their role in licensing proceedings. *Id.* at 2-3. But in no respect do Anthony/FOE support their generalized charges of improper or unethical conduct by PECO counsel with anything more specific than the ipse dixit that "counsel violated the ex parte rule, therefore counsel and his firm should be disqualified." See *Cincinnati Gas and Electric Co.* (William H. Zimmer Nuclear Power Station, Unit No. 1), CLI-82-36, 16 NRC 1512, 1513 n.1 (1982) (charges of ethics violations "should only be filed after careful research and deliberation").

As noted at *supra* p. 60, disqualification is not the remedy specified in the Commission's regulations for an ex parte violation. For this penalty to be exacted, "disorderly, disruptive, or contemptuous" behavior that threatens the conduct of the proceeding must be demonstrated. 10 C.F.R. § 2.713(c). No reasonable claim is or could be advanced here that the alleged ex parte communication was disorderly or disruptive to the proceedings before us. Anthony/FOE's arguments suggest an element of "contempt,"⁸ but the mere fact of the submission of the WLF Working Paper, albeit an intentional act, hardly provides a basis for finding "contemptuous conduct" threatening to the proceeding.⁹

Anthony/FOE's generalized complaints about the asserted ex parte violation also fail to establish a ground for reopening the record on off-site emergency planning. Such a remedy would be tantamount to voiding the extensive hearings and decisions already issued on this subject, and is not ordered lightly even by the courts when an ex parte communication has remained undisclosed throughout an agency proceeding. In *PATCO*, the court explained:

⁸ "Contempt" is defined as "willful disregard or disobedience of a public authority." *Black's Law Dictionary* 288 (5th ed. 1979).

⁹ Anthony/FOE also imply that — apart from the actual submission of the WLF Working Paper to the Commission — there is some independent impropriety in the fact that PECO's counsel, Mr. Rader, has expressed views critical of NRC regulation. But this is no more improper (or surprising) than is the fact that intervenor public interest groups — such as Friends of the Earth — frequently express equally critical views of the agency in their publications.

In enforcing this standard, a court must consider whether, as a result of improper ex parte communications, the agency's decisionmaking process was irrevocably tainted so as to make the ultimate judgment of the agency unfair, either to an innocent party or to the public interest that the agency was obliged to protect. In making this determination, a number of considerations may be relevant: the gravity of the ex parte communications; whether the contacts may have influenced the agency's ultimate decision; whether the party making the improper contacts benefited from the agency's ultimate decision; whether the contents of the communications were unknown to opposing parties, who therefore had no opportunity to respond; and whether vacation of the agency's decision and remand for new proceedings would serve a useful purpose. Since the principal concerns of the court are the integrity of the process and the fairness of the result, mechanical rules have little place in a judicial decision whether to vacate a voidable agency proceeding. Instead, any such decision must of necessity be an exercise of equitable discretion.

685 F.2d at 564-65 (footnotes omitted). *See also Braniff Master Executive Council of the Air Line Pilots Association International v. Civil Aeronautics Board*, 693 F.2d 220, 227 (D.C. Cir. 1982) (content and significance of ex parte communication to agency decision are relevant considerations).

We have little difficulty in answering each of the inquiries posed by the *PATCO* court in the negative. For, Anthony/FOE have not provided a single example of how ALAB-836 and our decisionmaking process were or might have been compromised by the WLF Working Paper. Nor could they: our decision was rendered on May 7, 1986, before any member of this Board saw or was aware of the WLF Working Paper. *See supra* note 1. Further evidence belying any suggestion of improper influence on our decision or benefit to PECO is found in that portion of ALAB-836 reversing and remanding the issue of school bus driver availability; the WLF Working Paper would eliminate this "human response" issue entirely from consideration in NRC proceedings. *Compare* ALAB-836, 23 NRC at 515-20, with WLF Working Paper at 52-55. *See PATCO*, 685 F.2d at 572 (no benefit to ex parte communicator and no showing of injury to complaining party). We therefore deny Anthony/FOE's request to reopen the record on offsite emergency planning. *Cf. Power Authority of New York v. Federal Energy Regulatory Commission*, 743 F.2d 93, 110 (2d Cir. 1984) (where opposing party was promptly made aware of ex parte communication and offered no rebuttal evidence, further evidentiary hearing and disqualification of decisionmakers were unnecessary).¹⁰

Finally, lest there be any doubt, we decide cases on the basis of the record and the law. Obviously, we cannot and should not be sheltered

¹⁰ The rationale for our decision here makes it unnecessary for us to decide (1) whether the usual criteria for reopening a record also apply where taint on the decisionmaking process (as opposed to a deficiency or discrepancy in the evidentiary record) is alleged, and (2) if so, whether those criteria have been satisfied. *See* 10 C.F.R. § 2.734, 51 Fed. Reg. 19,535, 19,539 (1986).

from the vast array of views on nuclear power, pro and con, expressed in all forms of the media. But that does not detract from our capability "of judging a particular controversy fairly on the basis of its own circumstances." *United States v. Morgan*, 313 U.S. 409, 421 (1941).

Anthony/FOE's June 25, 1986, petition to reopen is *denied*.
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Dr. W. Reed Johnson
Howard A. Wilber

In the Matter of

Docket Nos. 50-440-OL
50-441-OL

CLEVELAND ELECTRIC
ILLUMINATING COMPANY, *et al.*
(Perry Nuclear Power Plant,
Units 1 and 2)

July 25, 1986

The Appeal Board affirms, subject to two additional license conditions, the result reached in the Licensing Board's concluding partial initial decision authorizing the issuance of licenses for the operation of Units 1 and 2 of the Perry Nuclear Power Plant.

REGULATIONS: INTERPRETATION (10 C.F.R. 50.44)

To obtain a full-power operating license, the Commission's hydrogen rule, 10 C.F.R. 50.44, requires the utility to submit an analysis to the NRC staff that, among other things, provides an evaluation of the hydrogen generation and combustion during staff-accepted severe accident scenarios. This submittal need not, however, be a completed "final" analysis. Instead, all that is required at the operating license stage is "a preliminary analysis which the staff has determined provides a satisfactory basis for a decision to support interim operation at full power until the final analysis has been completed." 10 C.F.R. 50.44(c)(3)(vii)(B).

REGULATIONS: INTERPRETATION (10 C.F.R. 50.44)

It is plain from the terms of the hydrogen control rule, 10 C.F.R. 50.44, that the Commission was fully prepared to leave it to the staff to decide which of the vast number of possible hydrogen generation scenarios should be analyzed. Without deciding that the exercise of the staff's broad discretion in that regard is reviewable at all, an intervenor seeking to challenge the choice of scenarios must do much more than simply allege that there are other scenarios that the staff might appropriately have insisted be factored into the analysis: it must also allege and establish that, without the inclusion of the additional scenarios, the analysis could not fulfill its intended purpose.

REGULATIONS: INTERPRETATION (10 C.F.R. 50.44)

The Statement of Consideration accompanying the promulgation of the hydrogen control rule, 10 C.F.R. 50.44, indicates a Commission intent to allow a hydrogen burn analysis for one facility to make use of a previous and staff-accepted analysis for another similar facility. *See* 50 Fed. Reg. 3502 (1985).

REGULATIONS: INTERPRETATION (10 C.F.R. PART 50, APPENDIX A)

General Design Criterion 17, in 10 C.F.R. Part 50, Appendix A, requires a nuclear plant to include, *inter alia*, a reliable onsite electric power system to permit the functioning of equipment needed to maintain the plant in a safe condition in the event of the loss of other sources of power.

REGULATIONS: INTERPRETATION (10 C.F.R. PART 50, APPENDIX A)

The General Design Criteria for Nuclear Power Plants, contained in Appendix A to 10 C.F.R. Part 50, "establish minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design and location to plants for which construction permits have been issued by the Commission."

REGULATIONS: INTERPRETATION (10 C.F.R. PART 50, APPENDIX B)

There is nothing in Appendix B to 10 C.F.R. Part 50 (the quality assurance criteria for nuclear power plants) that places either an express or an implied limitation upon who may prepare a quality assurance plan. Rather, such a plan can be formulated by any entity or organization and then, irrespective of its source, is judged on its own merits.

OPERATING LICENSE: RESPONSIBILITY OF NRC STAFF

It is part of the staff's ongoing responsibility during operation of a nuclear power plant to review the success of various programs that are under way at the plant.

OPERATING LICENSE: RESPONSIBILITY OF NRC STAFF

One of the staff's major continuing responsibilities is to monitor the operation of all nuclear power facilities and, thus, to review all proposed changes in existing inspection, testing, and maintenance programs at such facilities.

RULES OF PRACTICE: MOTIONS FOR SUMMARY DISPOSITION

A party opposing a motion for summary disposition is obliged to set forth in its answer "specific facts," by affidavit or other appropriate means, to establish that "there is a genuine issue of fact." 10 C.F.R. 2.749(b).

RULES OF PRACTICE: MOTIONS FOR SUMMARY DISPOSITION

Unless properly controverted, the Commission's regulations specify that "[a]ll material facts set forth in the statement required to be served by the . . . party [moving for summary disposition] will be deemed to be admitted" 10 C.F.R. 2.749(a). *See Houston Lighting & Power Co.* (Allens Creek Nuclear Generating Station, Unit No. 1), ALAB-629, 13 NRC 75, 78 (1981).

REGULATORY GUIDES: STATUS

Regulatory guides and the Standard Review Plan do not have the status of Commission regulations and are subject to changes by the staff.

RULES OF PRACTICE: SCHEDULING OF HEARINGS

Inasmuch as scheduling is a matter of Licensing Board discretion, appeal boards do not inject themselves into scheduling controversies, absent a " 'truly exceptional situation.' More particularly, [appeal boards] 'enter the scheduling thicket cautiously' and then only 'to entertain a claim that a [licensing] board abused its discretion by setting a hearing schedule that deprives a party of its right to procedural due process.'" *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 467 (1980) (*quoting Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-293, 2 NRC 660, 662 (1975), and *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-459, 7 NRC 179, 188 (1978)).

RULES OF PRACTICE: MOTIONS FOR SUMMARY DISPOSITION

A party seeking summary disposition on a particular matter has the burden of establishing that no genuine issue of material fact exists on that matter. ALAB-443, 6 NRC 741, 753 (1977).

NUCLEAR REGULATORY COMMISSION: CONSIDERATION OF ECONOMIC MATTERS

"[J]udicial precedent and long-standing Commission practice confirm that, within the confines of carrying out its paramount responsibility to protect public health and safety, [the Commission] may consider economic factors in its decision making." 50 Fed. Reg. 50,764, 50,767 (1985).

TECHNICAL ISSUES DISCUSSED

- Hydrogen generation;
- hydrogen control system, non-inerted containment (10 C.F.R. 50.44);
- hydrogen control analysis accident scenarios;
- containment response to hydrogen combustion;
- CLASIX-3 computer code;
- release of combustible gases from heated electric cable insulation;
- equipment survivability.

- General Design Criterion 17, Appendix A, 10 C.F.R. Part 50 (onsite emergency power supply);
- diesel generator reliability;
- diesel generator foundation (chock plates);

cylinder block cracking (ligament and stud-to-stud cracks);
cylinder block inspection interval.

Standby Liquid Control System.

Turbine missiles;
critical crack size;
turbine inspection, testing, and maintenance program;
turbine inspection interval.

Degradation of polymers used in safety-related equipment;
surveillance and maintenance program for polymer degradation.

Containment air lock testing.

APPEARANCES

Susan L. Hiatt, Mentor, Ohio, for the intervenor Ohio Citizens for Responsible Energy.

Terry J. Lodge, Toledo, Ohio, for the intervenor Sunflower Alliance, Inc.

Jay E. Silberg, Harry H. Glasspiegel, Michael A. Swiger and Rose Ann C. Sullivan, Washington, D.C., for the applicants The Cleveland Electric Illuminating Co., *et al.*

Colleen P. Woodhead for the Nuclear Regulatory Commission staff.

DECISION

Before us are the appeals of intervenors Ohio Citizens for Responsible Energy (OCRE) and the Sunflower Alliance, Inc. (Sunflower) from the Licensing Board's September 1985 concluding partial initial decision and various earlier orders and rulings in this operating license proceeding involving Units 1 and 2 of the Perry Nuclear Power Plant.¹ That decision

¹ See LBP-85-35, 22 NRC 514 (1985). The Perry facility consists of two boiling water reactors, each rated at 1265 megawatts electric. The facility is located on the shores of Lake Erie, in Lake County, Ohio, approximately 35 miles northeast of Cleveland.

authorized the issuance of licenses for the operation of Units 1 and 2 of the Perry Nuclear Power Plant, subject to the applicants' fulfillment of certain specified conditions.

I. THE SUNFLOWER APPEAL

The Sunflower appeal need not long detain us. It seeks to challenge both (1) the rejection at the threshold of twenty Sunflower contentions relating to the Perry emergency response plan; and (2) the disposition on the merits of other contentions of that intervenor on the same subject. On neither score, however, is the challenge adequately briefed.

The twenty contentions were denied admission to the proceeding because, in the Licensing Board's view, their bases were not set forth with reasonable specificity as required by the Commission's Rules of Practice, 10 C.F.R. 2.714(b).² Sunflower has not favored us with an explanation as to why the Board was wrong in so concluding. Rather, its brief simply restates the contentions and their purported bases. Similarly, in disputing virtually all of the Board's findings on those of its contentions that were tried on the merits, Sunflower does no more than to repeat, essentially verbatim, proposed findings that had been submitted to and rejected by the Board.

In the circumstances, we have no hesitancy in summarily rejecting the Sunflower appeal in its entirety. In passing in March 1985 upon Sunflower's appeal from an earlier partial initial decision in this proceeding, we took note of the fact that, with respect to several of its appellate assertions, Sunflower had "failed to provide any explanation why its claim of error is correct."³ That being so, we announced, the assertions were being treated "as waived or abandoned."⁴ It is difficult to understand why Sunflower's counsel chose to attach no significance to that result in the subsequent preparation of his brief on the present appeal. Whatever may have been the reason, however, the same outcome is warranted here. The short of the matter is that, if Sunflower wished us to take seriously its insistence that the Licensing Board committed error, its counsel was duty-bound to illumine the foundation for that insistence.

² Memorandum and Order (Admissibility of Contentions on Emergency Plans and Motion to Dismiss) (January 10, 1985) (unpublished) at 8-10.

³ ALAB-802, 21 NRC 490, 496 n.30.

⁴ *Ibid.*

II. THE OCRE APPEAL

In its brief, OCRE expresses disagreement with the vast majority of the Licensing Board's substantive holdings on those issues litigated by that intervenor. Although each of its claims of error has been examined, we follow the course recently pursued in the *Shoreham* proceeding and specifically address in this opinion only those of sufficient possible merit or significance to require further discussion.⁵ The assertions meeting this test fall into six categories:

- (1) the adequacy of the plant's system for the control of hydrogen in severe accident situations;
- (2) the reliability of the existing emergency diesel generators;
- (3) the necessity for automatic initiation of the Standby Liquid Control System (SLCS) to aid in the rapid shutdown of the plant's reactors in the event of an anticipated transient without scram (ATWS);
- (4) the risk of damage to safety equipment from "turbine missiles";
- (5) the effect of radiation on polymers used in the plant's safety equipment; and
- (6) the need for the pressure testing of the containment personnel airlocks.

A. Hydrogen Control

In the event of a loss of coolant accident (LOCA) at a nuclear power plant, the temperature of the fuel and the fuel cladding will rise. Most water-cooled power reactors have cladding that consists primarily of zirconium, which, if it reaches a sufficiently high temperature, may react with water or steam to generate hydrogen. This hydrogen, in the improbable event that it were to accumulate to high concentrations,⁶ could ignite violently to threaten the integrity of the containment structure and the operability of components inside the containment.

During the 1979 accident at Three Mile Island, the deflagration of hydrogen resulted in significant pressure and temperature increases in the reactor containment building. Following that event, in order to accom-

⁵ See *Long Island Lighting Co. (Shoreham Nuclear Power Station)*, ALAB-832, 23 NRC 135, 143 (1986).

⁶ The generation of large quantities of hydrogen during the course of a reactor accident is not normally expected. Commission regulations (10 C.F.R. 50.46 and Part 50, Appendix K) governing the design, analysis and functioning of emergency core cooling systems (ECCS) in nuclear power plants were promulgated to limit, *inter alia*, the amount of hydrogen produced by the fuel cladding zirconium-water reaction to that resulting from oxidation of less than one percent of the cladding. 10 C.F.R. 50.46(b)(3).

moderate severe accidents in which hydrogen is generated in quantities greater than that allowed by the ECCS rule (*see supra* note 6), the Commission amended its regulations to require improved hydrogen controls.⁷ The nature of these controls is dependent on the design of the particular nuclear power facility.

For certain non-inerted reactor containments such as that at Perry (i.e., those with atmospheres that contain oxygen, a necessary ingredient for hydrogen combustion), the new hydrogen rule envisions a system that will provide for the controlled burning of hydrogen as it is generated during the course of an accident. This will prevent hydrogen build-up to concentrations at which violent deflagration or an explosion might take place.⁸ The rule requires that the hydrogen control system be able to burn safely the amount of hydrogen that would be generated if up to 75% of the fuel cladding in the active fuel region reacted with water.⁹ Further, the systems and components necessary to establish and to maintain safe shutdown, and to preserve containment integrity, must be capable of performing their functions during and after exposure to the environmental conditions created by the burning of hydrogen.¹⁰

In order to obtain a full-power operating license, the hydrogen rule requires the utility to submit an analysis to the staff that, among other things, provides an evaluation of the consequences of hydrogen generation and combustion during staff-accepted severe accident scenarios.¹¹ This submittal need not, however, be a completed "final" analysis. Instead, all that is required at the operating license stage is "a *preliminary* analysis which the staff has determined provides a satisfactory basis for a decision to support interim operation at full power until the final analysis has been completed."¹²

1. The Perry hydrogen control system consists of 102 igniter assemblies distributed throughout the containment. When activated during an accident, each igniter will exhibit a surface temperature high enough to cause the ignition of hydrogen as it reaches a combustible concentration. The electric power necessary for igniter operation is to be supplied by either normal offsite sources or the emergency diesel generators.¹³

⁷ 10 C.F.R. 50.44.

⁸ See generally 50 Fed. Reg. 3498 (1985) (Statement of Consideration for the hydrogen rule).

⁹ 10 C.F.R. 50.44(c)(3)(v)(B).

¹⁰ 10 C.F.R. 50.44(c)(3)(v)(A).

¹¹ 10 C.F.R. 50.44(c)(3)(vi)(B).

¹² 10 C.F.R. 50.44(c)(3)(vii)(B) (emphasis supplied).

¹³ Buzzelli, *et al.*, fol. Tr. 3241, at 32-34.

As required by the current hydrogen rule, the applicants conducted a preliminary analysis of this system and submitted the results to the staff. Using accident scenarios that had been approved by the staff in the context of the hydrogen control analysis for the Grand Gulf facility (a boiling water reactor recently licensed by the NRC with safety-related equipment identical or similar to that found in Perry),¹⁴ the applicants modeled the temperature and pressure response of the containment environment by means of the CLASIX-3 computer code.¹⁵ They then determined the capability of the containment to maintain its integrity despite the predicted pressures.¹⁶ With respect to the thermal survivability of necessary equipment, a comparison of the temperature response profiles of Perry and Grand Gulf revealed that lower equipment temperatures should result during hydrogen burning at Perry.¹⁷ As verification, a calculation was performed that showed that the maximum temperature of an igniter assembly would be lower at Perry than at Grand Gulf.¹⁸ For purposes of pressure survivability analysis, the qualification or design pressures of the equipment were compared to the peak pressure resulting from hydrogen burning during the hypothesized accident.¹⁹

Based on its review of the applicants' submittal, the staff found the preliminary analysis to be acceptable and in compliance with the regulations.²⁰ In so finding, the staff identified certain issues that the final analysis is to address.²¹

2. OCRE's Issue 8 put into question the effectiveness of the applicants' hydrogen control system:

¹⁴ The hydrogen igniter systems installed at Grand Gulf and Perry are similar. Applicants Exh. 8-1 at 22-23. In addition, the hydrogen control analysis conducted for Perry utilized the same accident scenarios and the same degree of cladding reaction with water (75%) as employed in the Grand Gulf analysis. *Id.* at 18-21, 28-30. However, as Grand Gulf has a larger reactor core, and thus more zirconium metal to react, a greater total amount of hydrogen would be released and available for combustion during a severe accident at that plant. Notafrancesco (Second Prepared Testimony (#2)), fol. Tr. 3676, at 2-3; Garg, fol. Tr. 3676.

¹⁵ Buzzelli, *et al.*, fol. Tr. 3241, at 41-43.

¹⁶ Applicants Exh. 8-1 at 13-17. *See generally* Applicants Exh. 8-4.

¹⁷ Applicants Exh. 8-1 at 21A-21D.

¹⁸ Buzzelli, *et al.*, fol. Tr. 3241, at 49-50.

¹⁹ Applicants Exh. 8-1 at 21D.

²⁰ Notafrancesco (#2), fol. Tr. 3676, at 6.

²¹ Staff Exh. 8, NUREG-0887, Safety Evaluation Report for Perry Nuclear Power Plant, Supplement No. 6 (April 1985) at 6-12 [hereafter cited as "Staff Exh. 8"]. Those issues include (1) mechanistic hydrogen-steam release histories that are representative of degraded core accident sequences; (2) containment diffusion flame environment; (3) containment environmental aspects related to deflagrations, such as heat transfer modeling; (4) drywell environmental analysis; (5) confirmation of equipment survivability; and (6) development of combustible gas control emergency procedures.

The Perry hydrogen control system is inadequate to assure that large amounts of hydrogen can be safely accommodated without a rupture of the containment and a release of substantial quantities of radioactivity to the environment.²²

In this regard, OCRE complained that the applicants' preliminary analysis was defective and thus should not have been accepted by the staff. According to OCRE, the applicants had failed to select for analysis the most severe accident scenarios. In addition, OCRE asserted that the analysis was flawed because of uncertainties in the CLASIX-3 computer code, inadequacies in the applicants' calculations of the structural capacity of the containment, and the applicants' reliance on the Grand Gulf analysis.²³

On the basis of its review of the record developed on the issue, the Licensing Board found reasonable assurance that the applicants' hydrogen control system at Perry will function as designed, that the containment will retain its integrity during the predicted hydrogen burn, and that the necessary systems and components can survive in the environment resulting from the burn.²⁴ Provided certain imposed conditions were met, the Board concluded, that system would be in compliance with the applicable regulations.²⁵ Those conditions require that, before operation in excess of five percent of rated power, the applicants must demonstrate to the staff that (1) written procedures for operation of the system are available, and (2) further confirmatory analysis of the pressure survivability of equipment not so qualified or with narrow qualification margins has been made.²⁶

3. On appeal, OCRE renews its claims raised below and asserts that the Licensing Board committed a wide variety of errors. Our discussion will be confined to those assertions of Licensing Board error that appear on the surface to have possible merit.²⁷

a. The applicants selected two scenarios to be analyzed in order to determine the temperature and pressure response of the containment to a postulated degraded core event with hydrogen generation, release and

²² See LBP-85-35, 22 NRC at 530.

²³ OCRE further maintained that the final analysis of the system had to be completed before full-power operation could be allowed. Its thesis appeared to be that, otherwise, there would be an improper delegation to the staff of the ultimate resolution of the hydrogen control issue. The Licensing Board correctly rejected that line of reasoning. *Id.* at 531. As we have seen, the hydrogen control rule now in effect plainly sanctions full-power operation on the strength of a satisfactory preliminary analysis. See *supra* p. 71.

²⁴ LBP-85-35, 22 NRC at 549-50.

²⁵ *Id.* at 551.

²⁶ *Id.* at 588-89. The conditions were incorporated into the operating license for Unit 1. See Perry Nuclear Power Plant, Unit No. 1 Facility Operating License (License No. NPF-45), March 18, 1986, section 2.C(10).

²⁷ See *supra* p. 70.

combustion.²⁸ One initiating event was the opening of a safety relief valve and its subsequent failure to close as expected. The other scenario started with a small steam-line break in the drywell. For each scenario, the emergency core cooling systems were assumed not to operate at the beginning of the accident. It was further assumed that only one of the two containment spray trains would be initiated after the first hydrogen burn.²⁹ According to the scenarios, just prior to reaching a metal-water reaction equivalent to 75% of the active fuel cladding, recovery of the cooling systems would occur and the hydrogen generation portion of the accident would be terminated.³⁰

At the hearing below, OCRE embarked upon cross-examination on subjects such as (1) the availability of containment sprays and the functioning of the Reactor Core Isolation Cooling (RCIC) system during a hydrogen release; (2) the use of containment venting in the event that the hydrogen control system could not be operated; and (3) the effect of station blackout on a hydrogen generation event. Although these issues were said to relate to the *functioning* of the hydrogen control system, in actuality they challenged the *accident scenarios* used by the applicants. The Licensing Board granted OCRE's representative a fair amount of leeway in conducting such cross-examination but ultimately concluded that these questions went beyond the scope of the hearing.³¹

On appeal, OCRE asserts that the preliminary analysis should have addressed issues beyond the selected accident scenarios, such as the availability of containment sprays and the effect of station blackout. We think otherwise. Section 50.44(c)(3)(vi)(B)(3) provides in terms that the evaluation of the hydrogen release is to "[u]se accident scenarios that are accepted by the NRC staff." As earlier noted, the scenarios selected by the applicants were approved by the staff. We need not decide here whether there are any circumstances in which staff action of this nature might be subject to challenge by an intervenor. For, be that as it may, the approval was not open to successful attack in this instance.

Given the complexity of a nuclear power plant, there is virtually no end to the sequences of failures and errors that might conceivably result in hydrogen production. But the likelihood of the occurrence of most of the sequences is extraordinarily remote: in order for them to materialize, there would have to be such unlikely developments as the concurrent failure of redundant safety-related equipment or an equipment mal-

²⁸ Buzzelli, *et al.*, fol. Tr. 3241, at 38.

²⁹ Applicants Exh. 8-1 at 28.

³⁰ Buzzelli, *et al.*, fol. Tr. 3241, at 38.

³¹ LBP-85-35, 22 NRC at 548-49.

function accompanied by improbable operator error. Manifestly, the Commission did not intend to require utilities to include in their analyses — preliminary or final — every one of these sequences, irrespective of how divorced from reality it might be. Moreover, it is plain from the terms of the rule itself that the Commission was fully prepared to leave it to the staff to decide which of the vast number of possible scenarios should be analyzed. Assuming, again without deciding, that the exercise of the staff's broad discretion in that regard is reviewable at all, the intervenor seeking to challenge the choice of scenarios must do much more than simply allege that there are other scenarios that the staff might appropriately have insisted be factored into the analysis: it must also allege and establish that, without the inclusion of the additional scenarios, the analysis could not fulfill its intended purpose. We are satisfied that no such demonstration was made here. Stated otherwise, this record does not establish that the staff acted capriciously in approving the use of the two chosen scenarios for preliminary assessment purposes.³²

b. We now turn to the applicants' use of the CLASIX-3 computer code to analyze the Perry containment response to hydrogen combustion during the selected scenarios. Using this code, the calculated peak temperature and pressure in the containment would be 1760° Fahrenheit (F) and 21 pounds per square inch gage (psig).³³ Before the Licensing Board, and again before us, OCRE challenges the validity of this outcome. The primary basis for its attack is a report prepared for the NRC by Sandia National Laboratories in which CLASIX-3, as it was used in analyzing the hydrogen control system for the Grand Gulf nuclear facility, is evaluated by comparison with results obtained from a Sandia code, HECTR.³⁴ That document takes issue with many of the assumptions

³² The staff may require additional scenarios to be included in the final analysis yet to be performed.

³³ Buzzelli, *et al.*, fol. Tr. 3241, at 48. Pressure is ordinarily discussed in terms of pounds per square inch gage, which is the pressure measured above or below atmospheric pressure so that the measurement is independent of variations in atmospheric pressure. We note that the figures that depict the time dependence of temperature and pressure in the Perry containment during the course of a hydrogen generation event indicate that these peaks are of very brief duration (less than a minute), apparently lasting only during the periods of intermittent hydrogen burning. See Applicants Exh. 8-1, Appendix A, Figures 3-8, 22-27.

³⁴ OCRE Exh. 21 (NUREG/CR-2530). This document was admitted into evidence over the objection of the staff. See Tr. 3691. It was not the basis for any direct testimony and was used very sparingly in cross-examination (e.g., Tr. 3688-91, 3744-46). The document was, however, liberally cited in OCRE's proposed findings of fact, and in its appellate brief. The Board should not have admitted such a large (226 pages) unsponsored document without clearly limiting the evidentiary purpose to which it could be put.

We normally decline to address procedural matters not raised on the appeal. We have made an exception in this instance because the treatment given the document by the Licensing Board placed an undue burden on our review of the hydrogen control issue.

used in CLASIX-3, such as hydrogen ignition limits, flame propagation speeds, and combustion completeness. Further, the use of HECTR generally yields higher temperatures and pressures in the containment than the results from CLASIX-3. OCRE asserts that the Licensing Board ignored this evidence contained in the Sandia report.

Contrary to OCRE's claim, the Licensing Board's decision contains a full discussion of the containment response models, and the uncertainties and assumptions associated with both CLASIX-3 and HECTR.³⁵ At bottom, the Board accepted the CLASIX-3 analysis because the temperatures and pressures predicted by that code were higher than those produced during large-scale experiments; i.e., the code predictions were conservative.³⁶ Our review of OCRE's Exhibit 21 and the rest of the record gives us no reason to quarrel with the Board's approach on this issue.³⁷ The presented evidence indicates that the response model used by the applicants provides reasonable values of containment pressure and temperature as a result of a hydrogen burn.

c. The dual-train Residual Heat Removal (RHR) system at Perry is designed to remove decay heat from the suppression pool and to provide containment spray in the event of an accident.³⁸ The combustion of hydrogen would produce additional heat that must be removed from the containment atmosphere. However, because hydrogen combustion would occur early in the accident and the maximum temperature would not be reached in the suppression pool until much later, applicants' witness John D. Richardson concluded that the heat from hydrogen combustion would not have a significant effect on the suppression pool temperature.³⁹ Accepting this evidence, the Licensing Board determined that an adequate method existed to remove heat from the containment if a degraded core accident occurred at Perry.⁴⁰

³⁵ See LBP-85-35, 22 NRC at 538-42.

³⁶ *Id.* at 539, 577. See also Tr. 3621, 3733-34.

³⁷ In opposing OCRE's Motion to Compel the Appearance of Dr. Marshall Berman (March 18, 1985), the staff provided an affidavit by Dr. Berman, who directed the Sandia study which led to NUREG/CR-2530. See NRC Staff Response to OCRE's Motions for Continuance and to Compel the Appearance of Dr. Berman (March 27, 1985). Dr. Berman noted that much experimental work had been done since the document was published; in particular, experiments confirming hydrogen ignition at mixtures of 6-8% by volume (CLASIX-3 assumed 8%, HECTR 10%). He also stated that he had no objection to the staff's position regarding the acceptance of CLASIX-3 results at Perry, if it were the same as that at Grand Gulf. The Licensing Board quoted Dr. Berman's affidavit in denying OCRE's motion, concluding that it could not find genuine scientific disagreement between the NRC staff and Sandia. Memorandum and Order of March 29, 1985 (unpublished) at 4. See also Tr. 3724-26.

³⁸ Tr. 3453; Applicants Exh. 8-1 at 25-26. The water in the suppression pool within the containment serves primarily to quench the steam release during a LOCA.

³⁹ Tr. 3611.

⁴⁰ LBP-85-35, 22 NRC at 547.

According to OCRE, the Licensing Board should not have accepted the adequacy of the heat removal system on the basis of this testimony but, instead, should have insisted upon an analysis of Perry's heat removal capability. We disagree. For purposes of the *preliminary* analysis, there is no reason to reject the applicants' thesis: i.e., the heat from hydrogen combustion would not cause the containment heat removal capability to be exceeded because the combustion would occur early in the accident, before the maximum suppression pool temperature would be reached.⁴¹ In connection with the final analysis, however, the staff should ensure that the applicants have performed a more detailed review of containment heat removal capability.

d. OCRE asserts that the Licensing Board failed to address the potential for release of combustible gases from electrical cable insulation that becomes heated during a hydrogen burn. The intervenor refers to a paper in evidence that suggests that such gases, if they also burned, could affect the pressure-temperature response during a hydrogen combustion event.⁴² A staff witness, who was a co-author of the paper, testi-

⁴¹ It is not entirely clear from the Board's opinion why it believed that the fact that heat from hydrogen burning comes early in the accident scenario had a bearing on the question of the ultimate capability to remove heat from the containment. But, while not considered explicitly in the testimony, the record does provide the answer.

The Mark III suppression pool contains a large amount of water, which has the capacity to store a great deal of heat (7.35 million pounds of water with a heat capacity of 1.0 Btu/lb °F). See Applicants Exh. 8-1, Appendix A, Table 8. The worst case degraded core scenario results in the burning of 2290 pounds of hydrogen. *Id.* at 30. If all of the energy resulting from the hydrogen burning were added suddenly to the suppression pool, the pool's temperature would rise only 19°F. (This computation employs the heat-of-combustion value for hydrogen of 6.096×10^4 Btu/lb. Hence, the hydrogen burn yields a total of 1.40×10^8 Btu. See *Chemical Engineers' Handbook* at 3-145 (R.H. Perry & C.H. Chilton editors, 5th ed. 1973).) Heat is removed from the suppression pool by the RHR system, whether by the containment spray mode or the pool cooling mode, although the cooling capacity is somewhat reduced (by perhaps 15%) when in the spray mode. See Tr. 3453, 3455, 3476, 3481-82. As one might expect, however, the heat removal rate due to RHR system operation increases as the suppression pool temperature increases, and, at the suppression pool temperature design limit of 185°F, one of the two loops of the RHR system operating in the containment spray mode (assuming a 15% reduction in heat removal rate) will remove heat from the suppression pool at a rate of 1.41×10^8 Btu/hour. Perry Final Safety Analysis Report [FSAR], Amendment 15 (December 31, 1984), Table 6.2-3, Figures 6.2-8 and 6.2-9; Applicants Exh. 8-1, Table 5.4-3. Thus, the entire amount of heat added to the pool due to hydrogen combustion would be removed in about one hour. The peak suppression pool temperature (185°) due to reactor decay heat does not occur until about three hours after an accident if only a single RHR loop is in operation. Perry FSAR, Figure 6.2-8.

In summary, the suppression pool has the capacity to accept the heat resulting from hydrogen burning with only a modest increase in pool temperature. Assuming the operation of only one, of two, RHR cooling loops, this heat will be removed well before the onset of peak pool temperature. In fact, the evidence establishes that, even if the hydrogen combustion heat were added to the pool at the time of peak pool temperature ($185^\circ + 19^\circ = 204^\circ$), the heat removal system will still function. Tr. 3459-60, 3606-07. As shown above, the system would bring the pool temperature back to its design value in about an hour.

⁴² See OCRE Exh. 24 at 1205.

fied, however, that the relevance of the paper was not clear.⁴³ Because, from a review of the paper, it appears that for the conditions at Perry the combustion of gases released from heated insulation would not be a significant factor in the overall consequences of a hydrogen burn, its omission from the applicants' preliminary analysis was acceptable. But the possible effects of this phenomenon are to be included in the final analysis.

e. The regulations allow the structural integrity of the containment to be demonstrated by an analysis showing that the Service Level C stress limits of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) have been met.⁴⁴ Using these limits, the applicants performed an analysis to determine the location in the Perry containment with the lowest pressure-retaining capacity. This analysis showed that Containment Penetration 414 has the lowest capacity with a value of 50 psig.⁴⁵ Thus, the applicants concluded, the containment would retain its integrity so long as that pressure was not exceeded.

The capacity of Penetration 414 had been determined by utilizing specified minimum material strength values for steel of the type surrounding the penetration — values that were derived from the ASME Code.⁴⁶ Had the same values been employed in the case of Penetration 205, for example, pressure capacity lower than 50 psig would have been obtained. Instead, Penetration 205 was analyzed on the basis of the actual physical properties of the material surrounding it, as ascertained from material certification data furnished by the supplier. That procedure produced a pressure capacity in excess of 50 psig.⁴⁷

The regulations specifically permit the use of actual material properties for analytical purposes.⁴⁸ We therefore cannot subscribe to OCRE's insistence that the applicants were required to appraise the pressure-retaining capacity of Penetration 205 on the same basis as Penetration 414 was examined.

⁴³ Tr. 3730-31. The subject paper dealt with a dry containment building of a pressurized water reactor, while Perry is a boiling water reactor with a Mark III containment.

⁴⁴ 10 C.F.R. 50.44(c)(3)(iv)(B)(1), (vi)(B)(5)(i).

Under the ASME Code, the Service Level C stress limit for simple loadings, such as the membrane stress in a steel containment shell, is the yield stress of the material. This ensures that, for such loadings, material behavior will remain in the elastic range; hence, though the object may deform under loading, it will return to its original shape upon removal of the load. For more complex loading, higher stresses are allowed under Service Level C. See Tr. 3584-85; Applicants Exh. 8-4, Table 8; ASME Code, section III, NCA-2142.2 (1983 edition).

⁴⁵ Buzzelli, *et al.*, fol. Tr. 3241, at 28.

⁴⁶ Tr. 3285.

⁴⁷ Applicants Exh. 8-4 at 16-17.

⁴⁸ See 10 C.F.R. 50.44(c)(3)(iv)(B).

OCRE also asserts that the analysis erroneously failed to consider the effects of dead load and elevated temperature. Had they been included in the analysis, OCRE claims, a lower value would have been given to the pressure capacity of Penetration 414 and thus to that of the containment. Although that may be so, it is of no consequence here. For, the record establishes that the dead load and elevated temperature factors would reduce the allowable stress by approximately five and ten percent, respectively.⁴⁹ Thus, even if those factors were assumed to have a cumulative impact, Penetration 414 would still have a pressure capacity well in excess of the hydrogen burn pressure of 21 psig.⁵⁰

f. As earlier noted, the Licensing Board imposed a condition that required, prior to operation at levels above five percent of rated power, "confirmatory analyses" of the pressure survivability of certain components that either had not been qualified or had "inadequate margins" of survivability.⁵¹ On appeal, OCRE complains that the additional analyses of pressure survivability required by the Board will not be simply confirmatory but, rather, will require an evaluation of sufficiency by the staff. OCRE takes this to represent the delegation of a contested issue to the staff for post-hearing resolution. In this regard, OCRE condemns as "illogical" the Board's finding that the Perry containment has the capability to cope with a vacuum (i.e., "negative pressure").⁵² OCRE notes that this finding was predicated on the operability of the vacuum breakers, yet the Board found the same vacuum breakers to be insufficiently qualified to withstand the hydrogen burn pressure.

We agree with OCRE that, having concluded that the staff should not have accepted the applicants' evaluation of the pressure survivability of those components with design pressures below the burn peak pressure,⁵³

⁴⁹ Tr. 3286, 3586-87; Applicants Exh. 8-4 at 16. OCRE also claimed that containment vessel out-of-tolerance, had it been considered, would have resulted in a lower pressure capacity value. But containment vessel out-of-tolerance only affects the steel shell and not the penetrations. Tr. 3596-97. The pressure capacities of the cylindrical and dome regions of the Perry containment are 79 and 78 psig, respectively, which are well above the 50 psig limiting penetration capacity. *Ibid.*

⁵⁰ For low probability loading events the ASME Code permits the use of higher, Service Level D stress limits. Using these limits, the applicants calculated a containment capacity of 57 psig, which they characterized as "more realistic." Buzzelli, *et al.*, fol. Tr. 3241, at 28. Although the Licensing Board took note of this calculation (LBP-85-35, 22 NRC at 536), there is no merit to OCRE's claim that the Board placed crucial reliance upon it. Appellate Brief of Ohio Citizens for Responsible Energy (October 21, 1985) at 24. In any event, the 50 psig containment capacity was demonstrated using the required Service Level C limits, notwithstanding the applicants' additional Level D analyses or the Licensing Board's nondispositive opinion of those analyses.

⁵¹ LBP-85-35, 22 NRC at 544. Of those components for which a preliminary evaluation of pressure survivability had been completed, only the containment vacuum breakers, the hydrogen mixing compressors, and the hydrogen mixing compressor check valves did not have qualification or design pressures that exceeded the calculated peak pressure from a hydrogen burn. Applicants Exh. 8-1 at 21D.

⁵² OCRE Brief at 21. See LBP-85-35, 22 NRC at 536.

⁵³ *Id.* at 578. See Staff Exh. 8 at 6-11.

the Licensing Board was required to retain jurisdiction over the matter until a satisfactory evaluation was produced. The error on that score, however, has turned out to be harmless. Contrary to the view of the Licensing Board, the applicants' preliminary evaluation of the pressure qualification of this equipment is acceptable.⁵⁴ Insofar as concerns the containment vacuum breakers and hydrogen mixing compressor discharge check valves, the record shows that only the external design pressure is exceeded by the hydrogen burn peak pressure.⁵⁵ Because the active components of the vacuum breakers and check valves are not exposed to the hydrogen burn pressure, at this preliminary stage it is reasonable to proceed on the basis that this equipment would survive a hydrogen event. With respect to the hydrogen mixing compressor, identical equipment at Grand Gulf has been shown to survive pressures exceeding the hydrogen burn peak pressure.⁵⁶ Again, at least in the context of a preliminary evaluation (which is all the Commission's hydrogen rule requires at this point), this allows the conclusion that the compressors will function through a hydrogen event at Perry.⁵⁷

g. Finally, OCRE urges that 10 C.F.R. 50.44(c)(3)(vii)(B) precluded the applicants' reference to the equipment survivability analysis conducted for the Grand Gulf facility. While the provisions of that section may be open to different interpretations, the Statement of Consideration accompanying its promulgation indicates a Commission intent to allow a hydrogen burn analysis for one facility to make use of a previous and staff-accepted analysis for another similar facility.⁵⁸

The question remains, of course, whether, as a matter of fact, the Grand Gulf analysis was appropriately employed in the Perry analysis. We conclude that it was. As previously indicated, not only are the two facilities including their hydrogen igniter systems similar, but also the hydrogen control analysis performed for each was essentially identical.⁵⁹ In fact, because of the larger reactor core at Grand Gulf and the additional hydrogen that would be generated, more severe equipment temperatures are predicted to occur during a hydrogen burn event at that plant.⁶⁰

⁵⁴ The staff will require equipment survivability to be confirmed in the final analysis. *Id.* at 6-12.

⁵⁵ Applicants Exh. 8-1 at 21D.

⁵⁶ *Ibid.*

⁵⁷ See *supra* note 14.

⁵⁸ As the Commission stated:

Previously approved generic or reference analyses may be employed in lieu of plant specific analyses where the generic analyses can be shown to be applicable. It is believed that the adoption of the above approach will eliminate the need for repetitive calculation of accident scenarios.
50 Fed. Reg. 3502.

⁵⁹ See *supra* note 14.

⁶⁰ Applicants Exh. 8-1 at 21B-21C.

B. Diesel Generators

General Design Criterion (GDC) 17 requires a nuclear plant to include, *inter alia*, a reliable onsite electric power system to permit the functioning of equipment needed to maintain the plant in a safe condition in the event of the loss of other sources of power.⁶¹ To meet this requirement at Perry, the applicants installed four diesel generators manufactured by Transamerica Delaval, Inc. (TDI), two for each Perry unit.

The reliability of TDI diesel generators in general came into question as a result of the identification of deficiencies in these units at other nuclear power facilities.⁶² On this apparent basis, OCRE submitted a contention that the applicants had not demonstrated that Perry's diesel generators could be relied on to generate the necessary power in an emergency.

At the hearing, the applicants and the staff submitted a plan that had been prepared jointly by the twelve or so owners of nuclear plants with TDI diesel generators. The Owners Group plan provided for an in-depth assessment of each facility's TDI diesel generators through a combination of design reviews, quality revalidations, engine tests and component inspections.⁶³ The Board found that the plan was "a well-thought-out program which, if implemented properly, provides reasonable assurance that TDI diesels will reliably carry out their intended function."⁶⁴ On the strength of the applicants' commitment to follow the plan, the Board concluded that emergency onsite power will be available when needed and that the applicants met the regulatory requirements.⁶⁵

OCRE challenges this conclusion on three grounds. First, it claims that, in view of its source, the Board's reliance on the Owners Group plan was improper and in violation of the Commission's quality assurance requirements. Second, according to OCRE, many of the Board's findings respecting the sufficiency of the plan were contrary to the weight of the evidence and based upon the application of erroneous evidentiary standards. Third, the Board is said to have violated the Atomic Energy Act in delegating to the staff the responsibility for monitoring the applicants' implementation of the plan. As a separate matter, OCRE argues that the

⁶¹ The General Design Criteria for Nuclear Power Plants are found in Appendix A to 10 C.F.R. Part 50. As the Introduction to the Appendix states, these standards "establish minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design and location to plants for which construction permits have been issued by the Commission."

⁶² Staff Exh. 1, Safety Evaluation Report on Transamerica Delaval, Inc., at 1. See also *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 79 (1985).

⁶³ Kammeyer, fol. Tr. 2179, at 8.

⁶⁴ LBP-85-35, 22 NRC at 561.

⁶⁵ *Ibid.*

Board improperly denied its motion to reopen the record to consider the implications of defective check valves associated with the TDI diesel generators at the Grand Gulf facility. We consider these claims *seriatim*.

1. There is no merit to OCRE's insistence that, in relying upon the Owners Group plan, the Licensing Board erroneously failed to attach significance to the fact that the plan was devised by the interested utilities themselves rather than by an independent technical organization. Contrary to OCRE's apparent belief, there is nothing in Appendix B to 10 C.F.R. Part 50 (the quality assurance criteria for nuclear power plants) that places either an express or an implied limitation upon who may prepare a quality assurance plan. Rather, such a plan can be formulated by any entity or organization and then, irrespective of its source, is judged on its own merits. The plan in question was so assessed by the staff, which found upon an extensive review that (if properly carried out) the plan was adequate to provide reasonable assurance that the diesel generators at Perry would function when needed. Unless that ultimate finding was shown to be crucially flawed, the Board could rely upon the plan in making its own reasonable assurance finding.

2. OCRE attacks the adequacy of the Owners Group plan on a variety of grounds. We address here only those of its arguments that pertain to a genuine safety concern.⁶⁶

a. Each TDI diesel generator is supported by chock plates that rest on the concrete floor. The amount of surface contact between the diesel engine base and the chock plates is important in determining the stress that will be exerted on each plate. OCRE claimed that the Owners Group plan did not provide assurance of sufficient surface contact.⁶⁷ The staff agreed and required the applicants to establish that the chock plates would withstand the stresses placed upon them.⁶⁸

To satisfy the staff's requirement, the applicants presented an engineering evaluation outside of the Owners Group plan.⁶⁹ On the basis of the ascertained surface contact between the engine base and the chock plates, the evaluation concluded that the plates would withstand the stresses.⁷⁰ The Licensing Board considered this conclusion and other

⁶⁶ OCRE asserts that the burden of proof was not placed on the applicants as required. We have reviewed those instances cited by the intervenor and conclude that the Board's treatment of each was proper.

⁶⁷ OCRE Response to Applicants' Motion for Summary Disposition of Issue 16 (February 27, 1985) at 47-49.

⁶⁸ Berlinger, *et al.*, fol. Tr. 2281, at 54-55.

⁶⁹ Tr. 2496-97.

⁷⁰ *Ibid.* See OCRE Response to Applicants' Motion for Summary Disposition of Issue 16 (February 27, 1985), Exhibit 56.

evidence, and determined that the foundations of the diesel generators were acceptable.⁷¹

On appeal, OCRE does not directly attack the evaluation but claims that it had been rejected by a staff witness. In actuality, however, that witness did not reject the evaluation but stated that, before taking a position, he would require additional information regarding the minimum amount of surface contact specified by the generator manufacturer.⁷² The applicants thereafter supplied a witness who testified that, as the evaluation that had been conducted by the manufacturer had determined, the surface contact was sufficient in this instance.

In the circumstances, we are satisfied that the concern for adequate stability of the Perry diesel generators has been properly resolved even though the Owners Group plan did not fully consider this matter.⁷³

b. The Owners Group plan provided for a detailed design review of the cylinder block.⁷⁴ This was prompted by the development of stud-to-stud and ligament cracks in the blocks of TDI diesel generators.⁷⁵ On the basis of this review, the Owners Group recommended a certain allowable depth for stud-to-stud cracks that develop in the cylinder block. A staff witness disagreed with the recommendation. On the assumption that ligament cracks would also be present, he opined that a lower limit should be imposed upon the allowable depth for stud-to-stud cracking.⁷⁶

For its part, the Licensing Board noted that no ligament cracks had as yet been identified at Perry.⁷⁷ That being so, the Board concluded, the disagreement was "irrelevant" and, therefore, the Owners Group recommendation should be accepted.⁷⁸

Challenging this outcome, OCRE points to staff testimony that indicated that, with the small amount of operating time accumulated by the diesel generators, there had been little opportunity for ligament cracks to

⁷¹ LBP-85-35, 22 NRC at 560.

⁷² Tr. 2417-19.

⁷³ Tr. 2496-97. Given OCRE's total reliance upon the staff's asserted misgivings, it is worthy of passing note that, since the Licensing Board issued its decision, the staff has accepted the applicants' evaluation of the diesel generator foundation. See NUREG-0887, Safety Evaluation Report for Perry Nuclear Power Plant, Supplement No. 8 (January 1986) at 9-10.

⁷⁴ Kammeyer, fol. Tr. 2179, at 11-12.

⁷⁵ See Wood, fol. Tr. 2179, at 55-62. As discussed at the *Shoreham* hearing on TDI diesel generators, a stud-to-stud crack extends from one stud counterbore to a stud counterbore of an adjacent cylinder, while a ligament crack extends from the cylinder head stud counterbore to the cylinder liner counterbore. See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-85-18, 21 NRC 1637, 1646 (1985).

⁷⁶ Tr. 2372-74.

⁷⁷ LBP-85-35, 22 NRC at 559.

⁷⁸ *Id.* at 559, 561.

develop.⁷⁹ Given this limited operating experience, we agree that the Licensing Board erred in dismissing the concern regarding the acceptable depth of stud-to-stud cracks in the presence of ligament cracks.

Subsequent developments, however, have rendered the error harmless. Earlier this year, the staff imposed a condition upon the Perry Unit 1 license requiring that, in the event of the identification of stud-to-stud cracks, the affected diesel generator be considered inoperable and the NRC staff be notified.⁸⁰ Under the condition, the diesel generator may not be returned to an operable status until corrective actions have been approved by the staff. This stringent license condition obviously satisfies any concern pertaining to the minimum acceptable depth of a stud-to-stud crack in the cylinder block.⁸¹

c. On the basis of its evaluation, the Owners Group concluded that the Perry diesel generators are capable of supplying continuous power during an emergency, in satisfaction of the specifications set forth in the Final Safety Analysis Report.⁸² In the interest of ensuring adequate maintenance of the generators, however, the Group suggested that the cylinder block of each generator be inspected after 572 hours of operation.⁸³ Seizing upon this recommendation, OCRE argued below that it established that the TDI generators failed to meet the requirement for a continuous emergency power supply.⁸⁴ Citing testimony that was withdrawn later, the Licensing Board rejected the argument and found that the diesel generators could "fulfill their basic purpose even with the 572-hour inspection limit."⁸⁵

On appeal, OCRE charges that, inasmuch as it rested on withdrawn testimony, that finding must be set aside. We think otherwise. To be sure, the Licensing Board erred in relying on withdrawn testimony. But there is sufficient evidence in the record to establish that the recommendation for cylinder block inspections at periodic intervals does not cast doubt on the ability of the Perry diesel generators to provide needed power during an emergency.

⁷⁹ Tr. 2413.

⁸⁰ See Perry Nuclear Power Plant, Unit No. 1 Facility Operating License (License No. NPF-45), March 18, 1986, Attachment 4 at 1. As the license condition does not mention ligament cracks, we assume the condition holds regardless of the presence or absence of that type of cracking.

⁸¹ The diesel generator requirements imposed upon Unit 1 will also be made applicable to Unit 2. Tr. 2483.

⁸² Tr. 2194-95.

⁸³ Wood, fol. Tr. 2179, at 62; Kammeyer, fol. Tr. 2179, Exhibit A at 3.

⁸⁴ See LBP-85-35, 22 NRC at 558.

⁸⁵ *Id.* at 559. The testimony in question was to the effect that emergency power is needed for core cooling purposes for no more than one week (168 hours). Tr. 2221-22. The witness later repudiated that testimony. Tr. 2274.

For example, a detailed review of the cylinder block to establish the adequacy of its design was conducted by the Owners Group and approved by the applicants' consultants and the NRC staff.⁸⁶ Further, TDI diesel generators of the same model as those at Perry have been operated at the Catawba nuclear facility for 1600 hours.⁸⁷ In this connection, notwithstanding the inspection interval recommendation, the Owners Group explicitly noted its belief that, should it prove necessary because of an ongoing emergency, the generators could be counted upon to continue to operate properly well beyond the 572-hour period.⁸⁸

d. Following a full appraisal, the staff concluded that the actions already undertaken or planned by the applicants are adequate to ensure that the Perry Unit 1 diesel generators can reliably generate emergency power.⁸⁹ Nevertheless, the staff indicated that it would reassess the Owners Group program, and its own review of that program, after the first refueling outage.⁹⁰ OCRE charges on appeal that the Licensing Board erred in relying on staff approval of the diesel generators when (according to OCRE) that approval was "preliminary" and for an "interim duration."⁹¹

It is clear, however, that the staff's approval of the use of the Perry diesel generators was not preliminary but involved an extensive review of their adequacy.⁹² With respect to the planned reassessment of the Owners Group program, it is part of the staff's ongoing responsibility during operation of a nuclear power plant to review the success of various programs that are under way at the plant. There is thus no merit to the argument that the staff's planned reassessment program undermines its approval of the adequacy of the Perry diesel generators.

3. In Supplement 6 (April 1985) to its Safety Evaluation Report (SER) at 9-6 to 9-7, the staff informed the applicants that they would be required to take certain actions with regard to the diesel generators before an operating license would be issued for Unit 1. For reasons that

⁸⁶ Christiansen, fol. Tr. 2179, at 34-35; Kammeyer, fol. Tr. 2179, at 12; Berlinger, *et al.*, fol. Tr. 2281, at 12-16.

⁸⁷ Christiansen, fol. Tr. 2179, at 27.

⁸⁸ Tr. 2194-95, 2268-72. The probability of offsite power being unavailable, hence the need for diesel generator operation, for more than 168 hours (one week) is very low. Tr. 2273. Thus, in all likelihood, no difficulty will be encountered in maintaining the recommended 572-hour inspection intervals for the diesel generators.

⁸⁹ Berlinger, *et al.*, fol. Tr. 2281, at 12-13. As earlier noted, the Unit 2 diesel generators also will have to satisfy the requirements imposed upon the Unit 1 generators.

⁹⁰ Tr. 2305.

⁹¹ OCRE Brief at 29.

⁹² Berlinger, *et al.*, fol. Tr. 2281, at 12-13. See generally Staff Exh. 1, Safety Evaluation Report on Transamerica Delaval, Inc.

are not entirely clear, the Licensing Board imposed a license condition that obligated the applicants to complete those actions.⁹³

On appeal, OCRE insists that the license condition violated section 189a. of the Atomic Energy Act of 1954, as amended,⁹⁴ in that it delegated a contested issue to the staff for post-hearing resolution.⁹⁵ As is manifest, however, no such delegation took place. OCRE had a full opportunity at the hearing to litigate the merits of any or all of the actions that the staff thought should be taken (many of which had, in fact, already been completed, albeit not yet reviewed by the staff).⁹⁶ The condition here in question mandated simply that the staff confirm that the SER requirements had been fulfilled — a step that the staff undoubtedly would have taken even in the absence of the condition.⁹⁷

4. On the basis of a staff report that disclosed defects in check valves in the air start system of a TDI diesel generator at the Grand Gulf nuclear facility, OCRE moved to reopen the record on the diesel generator issue.⁹⁸ The motion contended that the defects demonstrated a failure of the Owners Group plan to ensure the adequacy of the TDI diesel generators. In denying the motion, the Licensing Board concluded that there was “no conceivable circumstance by which this Board’s decision on [the diesel generator issue] — whatever its decision may ultimately be — could be affected by the proffered evidence.”⁹⁹

As explained at the hearing below, the Owners Group gave priority attention to those diesel generator components with known problems.¹⁰⁰ Other components were subjected to a design review or a quality revalidation (or both), based on their importance, past operational experience, and the engineering judgment of the Owners Group.¹⁰¹ At Grand

⁹³ LBP-85-35, 22 NRC at 588.

⁹⁴ 42 U.S.C. 2239(a).

⁹⁵ In this connection, OCRE cites *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), *cert. denied*, 105 S. Ct. 815 (1985). There the court overturned a Commission rule that foreclosed litigation of the results of emergency preparedness exercises.

⁹⁶ See LBP-85-35, 22 NRC at 554, 556-58, 560. See also, e.g., Christiansen, fol. Tr. 2179, at 12-16, 19, 34-35; Wood, fol. Tr. 2179, at 78-81; Berlinger, *et al.*, fol. Tr. 2281, at 8-10, 12-13; Tr. 2265, 2302-03, 2324-26, 2415-19, 2422-26, 2496-97, 2511; Staff Exh. 1 at 10-11, 18.

⁹⁷ It is worthy of note that the staff has accepted the applicants’ submittal regarding each of the matters in question. See Perry Safety Evaluation Report, Supplement No. 8 (January 1986) at 9-7 to 9-11.

⁹⁸ Motion to Reopen the Record on Issue #16 (April 30, 1985). In addition, the staff indicated in its response to the motion that cracks had been identified in similar check valves in TDI diesel generators at the Shoreham nuclear power plant. NRC Staff Response to OCRE Motion to Reopen the Record (May 15, 1985), Affidavit of Drew Persinko at 3.

⁹⁹ Memorandum and Order of May 28, 1985 (unpublished) at 2. See *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit No. 1), ALAB-462, 7 NRC 320, 338 (1978).

¹⁰⁰ Kammeyer, fol. Tr. 2179, at 11.

¹⁰¹ *Id.* at 16.

Gulf, although an engineering application review was performed, the air start check valves were not subjected to a quality revalidation because they were not manufactured by TDI nor had there been evidence of past failure of this type of valve.¹⁰² In the circumstances, we agree with the Licensing Board that the new information brought forward by OCRE would not have affected its decision on the adequacy of the Owners Group plan at the Perry facility.

C. Standby Liquid Control System

Nuclear power facilities utilize control rods containing neutron-absorbing material to help regulate the fission rate in the reactor core. Emergency shutdown of the reactor (referred to as a reactor "trip" or "scram") is achieved by the fast insertion of the control rods into the core. To provide the capability to terminate the fission process in the event the control rods fail to be inserted, many (if not all) reactors are equipped with a supplementary method for injection of neutron-absorbing material on an emergency basis.

Early in this proceeding, the applicants indicated that they would install a standby liquid control system (SLCS) as that supplementary method.¹⁰³ It was unclear, however, whether the system would be automatically or manually initiated.¹⁰⁴ Thereafter, Sunflower submitted a contention to the effect that the applicants should install an automatic SLCS.¹⁰⁵

Following the publication of a Commission rule on June 26, 1984, requiring an automatic SLCS for boiling water reactors "granted a construction permit prior to July 26, 1984, that have already been designed and built to include this feature,"¹⁰⁶ OCRE moved for summary disposition of the contention and an order directing the applicants to automate the SLCS prior to exceeding five percent of full power.¹⁰⁷ According to OCRE, the Perry SLCS came within the scope of the rule even though, at the time of its issuance, the SLCS was being constructed for manual, rather than automatic, initiation.¹⁰⁸ OCRE claimed that the SLCS was

¹⁰² Applicants' Answer to OCRE Motion to Reopen the Record on Issue #16 (May 9, 1985), Affidavit of Edward C. Christiansen at 4-5. At Perry, the TDI diesel generators do not employ air start check valves such as those that were found to be defective. *Id.* at 3.

¹⁰³ The SLCS supplies a highly-concentrated boron solution to the reactor core.

¹⁰⁴ LBP-81-24, 14 NRC 175, 220 (1981).

¹⁰⁵ *Id.* at 219-20.

¹⁰⁶ This rule is codified as 10 C.F.R. 50.62 and became effective July 26, 1984. See 49 Fed. Reg. 26,036 (1984).

¹⁰⁷ OCRE Motion for Summary Disposition of Issue No. 6 (July 6, 1984).

¹⁰⁸ *Id.* at 2.

designed with the capability for automatic initiation and that, by the applicants' own admission, the SLCS could be converted to automatic at a cost of only about \$100,000.¹⁰⁹ In OCRE's view, as read in light of its legislative history, the rule applied to a facility that has "the capability to be automated at low cost (i.e., before commercial operation)."¹¹⁰

The Licensing Board rejected this interpretation of the rule. Over the dissent of its then chairman, who thought that the rule should not be read "so inflexibly" as to exclude consideration of the relatively small cost of conversion,¹¹¹ the other two members of the Board concluded that a "literal interpretation" of the rule compelled denial of the motion.¹¹² As the majority saw it, the rule exempted from its requirement a SLCS that was not fully completed for automatic initiation at the time the rule became effective. To the majority, it was immaterial that the incremental cost of completing the conversion of the SLCS to automatic was relatively low.¹¹³ In its view, the significant factor was that the Commission had decided to exempt from backfitting those plants "in an advanced stage of construction for which an automated SLCS has not been designed and built."¹¹⁴ The majority found that to be the case at Perry and, accordingly, denied OCRE's motion and dismissed the contention.

On appeal, OCRE admits that the plant would require further construction work before its SLCS could become operational in an automatic initiation mode. Nonetheless, it maintains that the Licensing Board erred in finding the plant exempt from the rule's requirement for an automatic SLCS. According to OCRE, the Board should not have applied the rule literally but, instead, should have given it a flexible interpretation consistent with its legislative history, as advocated by the dissenting Board member.¹¹⁵

¹⁰⁹ *Ibid.* As the construction status of Unit 2 of the Perry plant was substantially behind that of Unit 1, the discussion of the Board and parties focused on the first unit.

¹¹⁰ OCRE Brief on the History and Intent of the ATWS Rule (September 7, 1984) at 11-12.

¹¹¹ LBP-84-40, 20 NRC 1181, 1193 (1984).

¹¹² *Id.* at 1188.

¹¹³ In this connection, the majority was unwilling to accept, without further analysis, \$100,000 as the cost of conversion as maintained by the dissenting Board member and OCRE. According to the majority, this figure did not take into consideration other costs such as "sunk costs" and "costs of delay." *Id.* at 1189-90.

¹¹⁴ *Id.* at 1188. The majority also saw no "important unconsidered or unresolved issue of reactor safety" in deciding that the Perry plant was not required to convert its SLCS to an automatic initiated system. It assumed that in deciding to exempt certain plants from the requirement for automatic initiation, the Commission had found either type of SLCS to be safe.

¹¹⁵ OCRE also argues that a literal interpretation would allow plants such as Perry to escape the rule's requirement for an automatic SLCS. A short answer to the argument is that the Commission did not see that as a safety problem, for it could have required backfitting of all plants without an automatic SLCS. We need add in this connection only that OCRE does not attempt to explain why the Commission should have deemed the absence of an automatic SLCS to constitute a threat to safety.

We disagree. Unlike OCRE, we find no clear legislative history indicating that, in issuing the rule, the Commission intended the words "already designed and built" to have any other than its ordinary meaning. Those words plainly refer to an SLCS that is *already* completed for automatic initiation — i.e., an SLCS that is "wholly ready" for operation at the time the rule became effective.¹¹⁶ That this is so is clearly evident not only from the Commission's use of the past tense of the words "design" and "build," but also from its addition of the word "already."

At the time of promulgation of the rule, the SLCS for each Perry unit was not "already designed and built" for automatic operation. In fact, the installation of the SLCS with a manual initiation feature at Perry Unit 1 was nearing completion at that time¹¹⁷ and, according to unchallenged evidence, conversion to automatic initiation for the Perry Unit 1 SLCS would have required at least "the additional installation, modification or deletion of approximately forty cables, ten relays and numerous wires, switches, indicating lights and annunciators."¹¹⁸ In the circumstances, we are satisfied that the Board's decision is amply supported by the record and fully in accord with the Commission's rule.¹¹⁹ We, therefore, affirm the Licensing Board's decision on this score.¹²⁰

D. Turbine Missiles

Another issue raised below concerned the potential danger to safe operation of the Perry facility due to the placement and orientation of the plant's General Electric turbine generators. According to OCRE, while in operation parts of the turbine might break off and form missiles that, because of the turbine's orientation, could strike and damage structures, systems and components of the plant essential to its safe operation.¹²¹

¹¹⁶ See *Webster's New Collegiate Dictionary* 34 (1977).

¹¹⁷ LBP-84-40, 20 NRC at 1185. See Applicants' Response to ASLB Request for Information on ATWS Rule and the Perry SLCS (September 7, 1984), Affidavit of Gary R. Leidich.

¹¹⁸ LBP-84-40, 20 NRC at 1187. See also Applicants' Response (September 7, 1984), Affidavit of Gary R. Leidich.

¹¹⁹ To reach this conclusion, we need not and do not decide whether the estimated \$100,000 cost of conversion relied on by OCRE and the dissenting Licensing Board member accurately reflects the entire cost or, if accurate, is so small that it can be considered incidental to an "already designed and built" SLCS.

¹²⁰ OCRE also complains that the Licensing Board improperly assigned to the staff the responsibility for determining whether the SLCS at Unit 2 should be automatic. There was no evidence, however, indicating that the SLCS for that unit, which received its construction permit prior to July 1, 1984, was any more designed and built for automatic initiation than the SLCS for Unit 1. Given the Board's decision for Unit 1, it was clear that the SLCS for Unit 2 was also exempted from the rule's requirement for automatic initiation. Thus, in reality, there was no question to be deferred to the staff for resolution.

¹²¹ The breakup of the turbine could generally be caused by either (1) the running of the turbine at excessive speeds due to a sudden loss of its electric load (i.e., "overspeed"); or (2) stress corrosion crack-

Continued

Pursuant to 10 C.F.R. 2.749(a), the staff moved for summary disposition of the issue in its favor.¹²² While admitting that the turbines were unfavorably oriented, the staff asserted that the risk of possible turbine missile damage at Perry is acceptably low.¹²³ According to the staff, no General Electric turbines have broken as a result of crack propagation within a period of three years of startup. Further, during the same time interval, no cracks of greater than one-half the critical size have been observed in such turbines.¹²⁴ In light of that prior history, the staff maintained that a turbine testing, inspection, and maintenance program will prove effective in protecting against missile damage. In this connection, the applicants were said to have agreed to carry out, on at least an interim basis, a staff-developed program along such lines. Within three years of commencement of plant operation, and following the completion of a General Electric study on missile generation probabilities in relation to time intervals for conducting inspections, the applicants are to submit their own testing, inspection, and maintenance program.

The applicants' response in support of the motion was accompanied by two affidavits. One was executed by two General Electric employees, D.P. Timo and L.H. Johnson, and the other by an applicant employee, Edward J. Turk.¹²⁵ The Timo-Johnson affidavit described in detail the turbine-generator's overspeed protection system and the program for testing and inspecting it, as well as the evaluation procedure for developing inspection intervals for the detection of stress corrosion cracking. That affidavit also declared that the inspection interval selected will be such that no existing crack might reach the critical size before the next inspection.

The Turk affidavit confirmed that, in Supplement 3 to the SER, the staff had established requirements for a turbine maintenance program for Perry. In particular, the program was said to require turbine inspection for stress corrosion cracking at intervals not to exceed approximately

ing (which can result from a combination of corrosive elements and the relatively high stresses occurring not only at startup but during normal operation as well.) See *Virginia Electric and Power Co. (North Anna Nuclear Power Station, Units 1 and 2)*, ALAB-676, 15 NRC 1117, 1118-20, 1130 (1982).

¹²² NRC Staff's Motion for Summary Disposition of Issue No. 13 (May 31, 1983). The required statement of material facts incorporated pertinent provisions of the SER, Supplement 3 (April 1983). In a supporting affidavit, a staff expert assumed as his own the statements contained in the Supplement concerning turbine missiles. This SER Supplement was admitted into the proceeding as Staff Exhibit 5. See Tr. 1224-25.

¹²³ Staff's Motion, Statement of Material Facts, at 2-3; Perry Safety Evaluation Report, Supplement No. 3 (April 1983) at 3-7.

¹²⁴ Staff's Motion, Statement of Material Facts, at 3.

A crack reaches critical size at that point when it might cause the turbine to fail. See *North Anna*, 15 NRC at 1123.

¹²⁵ Applicants' Answer in Support of NRC Staff Motion for Summary Disposition of Issue No. 13 (June 27, 1983).

three years, or two refueling cycles. According to the affidavit, the applicants had also committed themselves to periodic testing of the overspeed protection system and testing and inspection of the turbine steam valves.

In opposing the motion, OCRE relied on a paper presented at a seminar on turbine missiles by Patrick G. Heasler of Battelle Pacific Northwest Laboratories, in which the author estimated a greater probability of turbine failure during the first year of operation than had been estimated by the staff.¹²⁶ OCRE did not, however, supply a supporting affidavit of Mr. Heasler. Rather, the sole affidavit attached to OCRE's response was that of its representative, Susan L. Hiatt. In it, she did not address the merits of the motion but, rather, simply set out a claimed need for additional time to conduct further discovery and to study materials OCRE had recently received from the NRC and the applicants.

Concluding that there was no good reason to withhold action on it, the Licensing Board granted the staff's motion. In doing so, the Board noted that the Heasler paper was not supported by an affidavit that would "establish its admissibility."¹²⁷ Nonetheless, the Board decided to consider its content "because of the significance of granting a motion for summary disposition,"¹²⁸ and the importance of the safety question involved. Focusing on cracking due to stress corrosion,¹²⁹ the Board compared the findings in the Heasler paper with those in an earlier article on the subject written by S.H. Bush, then also of the Battelle Pacific Northwest Laboratories.¹³⁰ For the reasons explained, it thought the Bush article "more credible."¹³¹ In addition, the Board observed that the Timo-

¹²⁶ OCRE Response to NRC Staff's Motion for Summary Disposition of Issue #13 (June 23, 1983), at 3. We have considered the other documents referred to by OCRE in opposing the summary disposition motion and conclude that none has significance concerning this issue.

¹²⁷ LBP-83-46, 18 NRC 218, 222 (1983).

¹²⁸ *Ibid.*

¹²⁹ According to the Licensing Board, OCRE was not challenging the overspeed aspect of the inspection program; it was challenging only that part of the program dealing with stress corrosion. *Id.* at 219-20. On appeal, OCRE does not dispute this Board conclusion, but explains that its limited challenge was due to the unavailability of information on the overspeed protection program until the information was presented by the applicants' June 27, 1983 response supporting the staff's motion. Because OCRE does not challenge the Board's view of the scope of the contention, we thus confine our review to the stress corrosion aspect of the contention.

¹³⁰ *Id.* at 222-25. The Bush article was first mentioned in an applicants' filing. It was later furnished to the Licensing Board and the parties by the applicants at the Board's request. *Id.* at 221 n.13.

¹³¹ These reasons included the fact that the Bush article was published in a "refereed journal" while the Heasler paper was "in the nature of a draft" and was not similarly published. *Id.* at 224. The Board also noted that:

Bush was a member of the Advisory Committee on Reactor Safeguards from 1966 to 1977 and was its chair in 1971. Bush presents a variety of assumptions in carefully presented statistical form. His article contains "comments" that in two instances indicate that at least two events could not properly be considered by Heasler as reflecting adversely on operating experience with turbines. These

Continued

Johnson affidavit filed by the applicants in support of the staff's motion corroborated Bush's article. According to the Board:

In [that] affidavit[], D.P. Timo and L.H. Johnson present the detailed, empirically based analysis of turbine missile failures that this Board relied on at the outset of this opinion. We note that this affidavit, which has not been controverted, postdates Bush and Heasler and derives support from research results that were not available to them. Given its later date, there may well be other data available to its authors that were not previously available. In this instance, we need not prefer the Timo-Johnson analysis to Bush's. We merely accept their analysis as additional corroboration for Bush.¹³²

On this basis, the Licensing Board decided that the Heasler paper was insufficient to raise a genuine issue of material fact concerning any possible danger to the facility from turbine missiles.

Before us, OCRE claims that the Licensing Board's dismissal of the issue was in error for a number of reasons. According to OCRE, the Board (1) decided the turbine missile issue with respect to only the first three years of plant operation, while improperly referring the long-term aspects of the issue to the staff for post-hearing resolution and thus depriving it of a right to a hearing under section 189a. of the Atomic Energy Act; (2) did not base its decision on reliable evidence in the record; (3) applied the wrong legal standards for adjudging summary disposition motions; and (4) improperly denied its request for a delay in deciding the motion to allow it time for further discovery and study of the issue.

We find each of these claims to be without merit.¹³³

1. Contrary to OCRE's assertion, the Licensing Board did not decide the turbine missile issue with respect to only the initial three years of plant operation. Upon its consideration of the evidence presented by the parties, the Board concluded that there was no reason to question the adequacy, over the long term, of the inspection, testing, and maintenance program established by the staff for the Perry facility.¹³⁴ That program, as the Board indicated, will not necessarily lapse at the end of the three-year period, but will remain in effect unless and until the applicants put

events occurred during a "factory test" or were "preoperational." Heasler's article does not explain why it was appropriate to include these events in his analysis.

Ibid. (footnotes omitted).

¹³² *Id.* at 225.

¹³³ In opposing OCRE's appeal, the applicants maintain that the turbine missile issue was improvidently admitted by the Licensing Board, thereby implying that OCRE's appeal was moot. Applicants' Brief in Opposition to Intervenor's Appeals from the Concluding Partial Initial Decision (December 2, 1985) at 80-82. We need not address this claim in view of our disposition of OCRE's appeal.

¹³⁴ LBP-83-46, 18 NRC at 220.

forth a revised program which is found satisfactory by the staff.¹³⁵ (Although, as earlier noted, the applicants are obliged to submit a program at the end of three years, nothing precludes them from adopting the staff's program as their own if experience has shown that course to be warranted.¹³⁶)

The fact that the staff may be called upon to approve a revised program does not mean, however, that there has been an improper delegation of adjudicatory functions to it. One of the staff's major continuing responsibilities is to monitor the operation of all nuclear power facilities and, thus, to review all proposed changes in existing inspection, testing, and maintenance programs at such facilities.¹³⁷ If OCRE becomes concerned with any modification to the turbine program that should be suggested by the applicants, it may raise those concerns by means of a petition for action under 10 C.F.R. 2.206.¹³⁸ In that petition, OCRE can advance any reasons it might have for believing that a hearing should be held to consider the appropriateness of the applicants' revisions.

2. The affidavit-supported statement of material facts upon which the staff's summary disposition motion rested brought to light the staff's determination that its testing, inspection, and maintenance program would avoid the generation of turbine missiles. To oppose the motion, OCRE was obliged to set forth "specific facts," by affidavit or other appropriate means, to establish that "there is a genuine issue of fact."¹³⁹ While citing the Heasler paper, however, OCRE failed to support it with a suitable affidavit or otherwise.¹⁴⁰

¹³⁵ See *supra* p. 90.

¹³⁶ *Ibid.*

¹³⁷ See, e.g., 10 C.F.R. 50.59.

¹³⁸ We assume that, should they be asked to do so, the applicants will agree to advise OCRE of any proposed modification to the current program.

¹³⁹ 10 C.F.R. 2.749(b). More completely, the relevant portion of this paragraph reads:

When a motion for summary decision is made and supported as provided in this section, a party opposing the motion may not rest upon the mere allegations or denials of [its] answer; [its] answer by affidavit or as otherwise provided in this section must set forth specific facts showing that there is a genuine issue of fact. If no such answer is filed, the decision sought, if appropriate, shall be rendered.

Unless properly controverted, the regulations specify that "[a]ll material facts set forth in the statement required to be served by the moving party will be deemed to be admitted . . ." 10 C.F.R. 2.749(a). See *Houston Lighting & Power Co. (Allens Creek Nuclear Generating Station, Unit No. 1)*, ALAB-629, 13 NRC 75, 78 (1981).

¹⁴⁰ We note in passing that there is no room for lingering doubt that a properly designed and implemented testing, inspection, and maintenance program is effective in assuring the safety of plants from turbine missiles. As observed in *North Anna*, "it is possible, utilizing empirical data, to determine with reasonable certainty the length of time that will elapse before an initiated stress corrosion-induced crack might reach critical size." 15 NRC at 1132. While the Perry turbines were manufactured by a company different from that responsible for those at North Anna, we know of no reason why this observation on the value of empirical data is inapplicable here. Moreover, the Heasler paper contains nothing that would prompt a reexamination of our *North Anna* conclusion.

OCRE points out that the Licensing Board cited the Bush article in granting summary disposition, even though it too was not supported by an affidavit. We agree that, in common with the Heasler paper, Dr. Bush's article could not serve as a basis for deciding whether a genuine issue of material fact existed. But we are totally persuaded that the content of the staff's and applicants' affidavits alone was sufficient to justify the conclusion that no issue of material fact was present. Accordingly, the Board's reference to the Bush article was unnecessary and, at most, constituted harmless error.¹⁴¹

3. OCRE's next complaint is that the Licensing Board erred in placing the burden of proof for summary disposition on it rather than on the staff as the movant. It did so, according to OCRE, by requiring a supporting affidavit for the Heasler paper and by accepting the staff's and applicants' statements "without a moment's hesitation" while subjecting those of OCRE "to the most exacting scrutiny."¹⁴² As explained earlier, however, the staff's motion and the applicants' response were supported by a statement of material facts and appropriate affidavits as called for by the rules; OCRE's response in opposition consisted of arguments only, without proper evidentiary support. In the circumstances, the staff's and applicants' statements were entitled to be considered by the Licensing Board while those of OCRE were not.

4. Finally, OCRE complains about the Licensing Board's rejection of its request for additional time to respond to the staff's summary disposition motion. Citing 10 C.F.R. 2.749(c),¹⁴³ OCRE insists that the Board failed to apply the rules liberally in accordance with comparable federal judicial practice and thus erred in refusing to allow it to conduct further discovery and to provide it with time for further study of the contention.

In her affidavit in support of the postponement request, OCRE's representative, Ms. Hiatt, alluded to the need for time to analyze documents she had recently received from the applicants and the NRC. She also

¹⁴¹ In SER Supplement 3 (January 1986), the staff discusses its shift in emphasis from the calculation of the probability that generated missiles will strike important structures, systems, and components to the potential for turbine failure and its prevention. See Staff Exh. 5 at 3-1 to 3-7. OCRE claims that the Licensing Board erred in relying on this assertedly "preliminary and unapproved" staff position. OCRE Brief at 46. While correctly noting that the staff's position in the SER differs from that in a regulatory guide and a section of the Standard Review Plan, OCRE does not suggest any deficiency in the new position and we see none. Further, regulatory guides and the Standard Review Plan do not have the status of Commission regulations and are subject to changes by the staff. In the circumstances, we conclude that the Licensing Board did not err in its reliance on the staff position in SER Supplement 3.

¹⁴² OCRE Brief at 44-45.

¹⁴³ That section reads:

Should it appear from the affidavits of a party opposing the motion that [it] cannot, for reasons stated, present by affidavit facts essential to justify [its] opposition, the presiding officer may refuse the application for summary decision or may order a continuance to permit affidavits to be obtained or make such other order as is appropriate and a determination to that effect shall be made a matter of record.

cited the need to obtain further data, including the ultimate results of the ongoing General Electric study then in progress. In rejecting the request, the Licensing Board pointed out that "[w]hatever that study may say, applicant[s] [are] bound to an inspection and maintenance program as to which there is no genuine issue of material fact."¹⁴⁴ As to the asserted need for further time to analyze the documents, the Board concluded that OCRE's insistence upon an additional six months was unjustified. In addition, the Board determined that OCRE had had adequate time for discovery.¹⁴⁵

Inasmuch as scheduling is a matter of Licensing Board discretion, we do not inject ourselves into scheduling controversies, absent a "truly exceptional situation." More particularly, we 'enter the scheduling thicket cautiously' and then only 'to entertain a claim that a [licensing] board abused its discretion by setting a hearing schedule that deprives a party of its right to procedural due process.'¹⁴⁶ OCRE has not demonstrated that it was denied due process by the Board's action, nor even claims such injury.¹⁴⁷ In the circumstances, we find no basis for disturbing the Licensing Board's rejection of OCRE's postponement request.

E. Polymer Degradation

Nuclear power plants use polymers (material generally having the characteristics of plastics or rubber) in various applications, at least some of which have a bearing upon safe operation.¹⁴⁸ When exposed to radiation over an extended period of time, the molecular structure of polymers can be affected in a manner that results in changes in specified properties, such as embrittlement or reduced electrical resistance. In order to ensure that electric cables and other equipment utilizing polymers will function properly in their radiation environment, utilities test the radiation-resistance of these polymers to determine at what point their replacement would be necessary.

¹⁴⁴ LBP-83-46, 18 NRC at 226.

¹⁴⁵ *Ibid.*

¹⁴⁶ *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 467 (1980) (*quoting Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-293, 2 NRC 660, 662 (1975), and *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-439, 7 NRC 179, 188 (1978)).

¹⁴⁷ It should be noted that, according to our information, the General Electric report that OCRE desired had still not been submitted to the staff as of early this year. Therefore, a six-month delay beginning in June 1983 (as requested by OCRE) would not have yielded any additional information regarding that report.

¹⁴⁸ For example, polymers serve as insulation for safety-related electrical wiring and are also found in the seals and gaskets of safety-related pumps and valves.

During the course of the proceeding below, at the behest of OCRE, the Licensing Board admitted a late-filed contention that provided:

Applicant[s] ha[ve] not demonstrated that the exposure of polymers to radiation during the prolonged operating history of Perry would not cause unsafe conditions to occur.¹⁴⁹

Subsequently, the staff filed a motion for summary disposition of the contention.¹⁵⁰ One of the assigned grounds was that the applicants had committed themselves to carry out a surveillance and maintenance program that would allow replacement of significantly degraded equipment before it could become a problem and that, therefore, exposure of polymers to radiation during operation of Perry will not bring about an unsafe condition.

For a variety of reasons, the Licensing Board granted the staff's motion. None of those reasons invoked, however, the applicants' commitment to maintain the surveillance and maintenance program.¹⁵¹

It may well be, as OCRE insists, that the Licensing Board's rationale will not withstand analysis.¹⁵² Nonetheless, we are satisfied that the Board's result on the staff's motion was correct — i.e., that there is no genuine issue of material fact respecting whether a significant safety problem might arise from polymer degradation.

The record establishes without contradiction that serious polymer degradation does not develop overnight. To the contrary, it affirmatively appears that the material would have to be subjected to a radiation envi-

¹⁴⁹ LBP-82-53, 16 NRC 196, 202 (1982). The contention was prompted by research performed at Sandia National Laboratories, which suggested that polymers in use at nuclear plants (such as Perry) might degrade more rapidly than previously thought. In this connection, the Sandia studies found that when different samples received equal doses of radiation, the polymers that received the dose at a lower rate experienced greater degradation than those that received the dose more rapidly. *See id.* at 200; LBP-83-18, 17 NRC 501, 502-04 (1983).

¹⁵⁰ NRC Staff Motion for Summary Disposition of Issue #9 (January 14, 1983).

¹⁵¹ LBP-83-18, 17 NRC at 512, *as orally modified* at Tr. 810-28.

¹⁵² For example, we encounter difficulty in accepting the Board's basis for disposing of the question concerning polymers used in mechanical equipment. The Board determined that OCRE had "not demonstrated the existence of a genuine issue of fact concerning the relationship between more rapid degradation of polymers (that are not used for electric insulation) and the safety of the Perry plant." *Id.* at 507. As we previously stated in the construction permit proceeding, the party seeking summary disposition on a particular matter has the burden of establishing that no genuine issue of material fact exists on that matter. ALAB-443, 6 NRC 741, 753 (1977). It was thus the obligation of the NRC staff and the applicants to show that degradation of mechanical polymers would *not* cause a safety problem. Without finding that the staff and the applicants had made such a showing, however, the Board disposed of this issue on the strength of the intervenor's failure to make a contrary showing.

Further, in reaching its conclusion on this issue, the Board stated that there is a "natural inference" that degradation of polymers used in electrical systems would cause safety problems (although, curiously, the Board was unwilling to assume, "without evidence," that degradation in "[s]eals, gaskets and the like" would give rise to similar concerns). LBP-83-18, 17 NRC at 507 n.16. We do not endorse the Licensing Board's view respecting what inferences, if any, exist with regard to the relationship between safety problems and polymer degradation.

ronment for a number of years before becoming degraded to such an extent that a safety problem might arise.¹⁵³ Thus, the existence of a reliable inspection and maintenance program should suffice to provide timely detection and correction of such a problem.

With their answer in support of the staff's motion for summary disposition, the applicants submitted an affidavit that discussed a surveillance and maintenance program for Perry designed to "provide assurance that radiation degradation of polymers in safety related equipment will either be prevented, or discovered and corrected, before it can cause unsafe conditions to exist."¹⁵⁴ The affidavit indicated that the program would be completed prior to fuel loading of Unit 1.¹⁵⁵ According to the affidavit, "[o]ne function of the program will be to detect equipment degradation, including degradation to polymeric materials from radiation,"¹⁵⁶ and that periodic performance tests will be "performed to monitor system and/or component . . . operation, and determine unacceptable component degradation."¹⁵⁷

Hence there is no dispute that, as the staff asserted in its motion for summary disposition, the applicants have committed themselves to a program of inspection and maintenance.¹⁵⁸ OCRE has not endeavored to explain why the program might not accomplish its intended purpose. Further, no deficiencies appear to us. In the circumstances, the record provides a sufficient foundation for the conclusion that polymer degradation does not pose a threat to safe facility operation.

¹⁵³ Using figures found in the Sandia reports upon which OCRE relied, together with the maximum dose rate at Perry supplied by the applicants, the Licensing Board calculated that "50% degradation" in some of the properties of the polymer materials will not occur for approximately nine years. *Id.* at 509. The Board also estimated that it would require six years of continuous exposure at 357 rads/hour before "significant" radiation effects would appear. *Id.* at 508. More recently, the applicants supplied an affidavit to the effect that the highest radiation dose rate to which polymers in Perry will be exposed is now considered to be 160 rads/hour rather than the 357 rads/hour earlier reported to the Licensing Board. Applicants' Response to Licensing Board's May 9, 1983 Order Concerning Issue No. 9 (August 4, 1983), Affidavit of David R. Green at 2 & n.1. Thus, the time intervals before degradation would occur are even longer than those estimated by the Licensing Board.

¹⁵⁴ Applicants' Answer in Support of NRC Staff Motion for Summary Disposition (February 8, 1983) at 4. Although the staff's motion had referred to the program as involving electrical equipment, the applicants' description indicated that it covers all safety-related equipment.

¹⁵⁵ *Id.*, Affidavit of David R. Green at 1.

¹⁵⁶ *Id.* at 2.

¹⁵⁷ *Id.* at 3.

¹⁵⁸ The program has, in fact, been fully developed and is now in place. In a letter dated April 25, 1986, responding to our inquiry regarding the status of the program, counsel for the applicants stated that "[t]he development of the surveillance and maintenance program [described in an affidavit of David R. Green] was completed prior to fuel loading of Unit 1. Implementation of the program is underway and will continue throughout the life of the plant." Letter from Jay E. Silberg to Appeal Board (April 25, 1986) at 2.

F. Air Lock Testing

To protect against the uncontrolled release of radioactivity, the reactor containment of a facility such as Perry must be essentially leakproof.¹⁵⁹ To this end, access to the containment is achieved through the means of an "air lock" — i.e., a compartment with two airtight doors, the outer one of which is closed and sealed before the inner one is opened to allow entry.¹⁶⁰ If the air lock is opened during a period when containment integrity is required (e.g., during power operation or hot shutdown conditions), it must be tested within three days thereafter. If, however, the opening occurs when containment integrity is not required (e.g., the reactor is in a cold shutdown condition with no fuel movement), the test may be deferred until such time as that integrity is once again necessary.¹⁶¹

There are two recognized means of testing air locks.¹⁶² The simpler, and thus less time-consuming, procedure involves the application of pressure only to the air lock seals themselves for the purpose of ascertaining whether those seals are tight (seal testing). The more elaborate procedure calls for the pressurization of the entire chamber between the two air lock doors, followed by the measurement of any leakage from the chamber.

In terms, the regulations allow seal testing in circumstances where the three-day test requirement applies (i.e., when containment integrity is then-mandated). For some unexplained reason, however, that explicit permission does not cover the case where the test need not be conducted within three days (i.e., when containment integrity was not required at the time of the air lock opening). As to that situation, the regulations are wholly silent respecting whether seal testing would be sufficient.

Desirous of utilizing seal testing in connection with *all* air lock openings, the applicants requested, under 10 C.F.R. 50.12(a), an exemption from so much of the regulations as might be construed as implicitly directing pressurization of the entire air lock chamber where the three-day testing requirement does not come into play.¹⁶³ In support of the re-

¹⁵⁹ The reactor containment is the structure that encloses all those pressure-containing components of boiling and pressurized water nuclear power reactors (such as the reactor pressure vessel, piping, pumps, and valves) that are part of the reactor coolant system or connected to that system to some extent. 10 C.F.R. Part 50, Appendix J, section II.A.

¹⁶⁰ See Perry Final Safety Analysis Report [FSAR], Amendment 14 (August 22, 1984), at 6.2-67.

¹⁶¹ 10 C.F.R. Part 50, Appendix J, section III.D.2(b).

¹⁶² Perry FSAR (Amendment 14, August 22, 1984) at 6.2-101 to 6.2-102.

¹⁶³ See letter from Murray R. Edelman, Vice President-Nuclear Group, The Cleveland Electric Illuminating Company, to B.J. Youngblood, Chief-Licensing Branch No. 1, Division of Licensing, U.S. Nu-

Continued

quest, the applicants in essence maintained that no safety consideration dictates full chamber pressurization simply because the test need not be performed within three days of the air lock opening but, rather, can be postponed to such date as containment integrity once again is necessary.

Through the vehicle of a motion to reopen the record to allow it to introduce a new contention, OCRE sought to challenge the exemption request as unauthorized by law.¹⁶⁴ The Licensing Board denied the motion.¹⁶⁵ We concur in that result.

Contrary to OCRE's insistence, we find nothing in the Atomic Energy Act that might preclude the grant of the sought exemption. More specifically, OCRE points to no provision in that Act that could possibly be construed as forbidding the Commission to allow these applicants to use seal testing in all instances of air lock opening. Nor is there any merit to the intervenor's argument that the exemption request is tainted because it rests, at least in part, on a desire to reduce the cost of testing. In recently revising section 50.12,¹⁶⁶ the Commission recorded its belief that

judicial precedent and long-standing Commission practice confirm that, within the confines of carrying out its paramount responsibility to protect public health and safety, it may consider economic factors in its decision making.¹⁶⁷

The result reached in LBP-85-35, 22 NRC 514 (1985), is *affirmed*.¹⁶⁸ The staff shall ensure, however, that the final analysis of the hydrogen control system includes both (1) a more detailed review of containment heat removal capability; and (2) a further consideration of the potential

clear Regulatory Commission (April 8, 1985), attached to OCRE's Motion to Reopen the Record and to Submit a New Contention (July 5, 1985).

At the time of the applicants' request, section 50.12(a), provided in pertinent part:

The Commission may, upon application by any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

Effective January 13, 1986, section 50.12 was amended in several respects. The above-quoted portion of subsection (a) now reads:

(a) The Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of this part, which are —

(1) Authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security.

50 Fed. Reg. 50,764, 50,777 (1985).

¹⁶⁴ OCRE's Motion to Reopen at 2-4.

¹⁶⁵ LBP-85-33, 22 NRC 442 (1985).

¹⁶⁶ See *supra* note 163.

¹⁶⁷ 50 Fed. Reg. at 50,767.

¹⁶⁸ The substantial majority of the issues raised before and decided by the Licensing Board were encompassed by the appeals. Our examination of the relatively few substantive determinations not appealed has disclosed no error requiring corrective action.

for and effects of the release of combustible gases from heated cable insulation. *See supra* pp. 77, 78.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

Concurring Opinion of Dr. Johnson:

Although joining in substantially all of the foregoing opinion, as well as in the result, I part company with my colleagues on one point. They have reserved decision on whether an intervenor may challenge the staff's approval of the accident scenarios used in the analysis of an applicant's hydrogen control system (*see supra* p. 74). I would, however, decide the issue now, for it is clear to me that the Commission intended to preclude from exploration in licensing hearings the details of those scenarios that lead to the generation of large quantities of hydrogen. 10 C.F.R. 50.44(c)(3)(vi)(B)(3) states that the evaluation of the hydrogen release must "[u]se accident scenarios that are accepted by the NRC staff." An interpretation of this statement that would foreclose intervenor challenges to hydrogen generation scenarios is not only reasonable, but compelled by the unusual circumstances that the rule itself addresses.¹

In any consideration of the hydrogen rule, one must bear in mind that the rule was promulgated to provide a mitigating capability, beyond the safety systems already required, for unlikely and unexpected nuclear power plant accidents that could lead to the generation of large quantities of hydrogen. In the rule's most significant provision, the Commission adopted as an upper bound that amount of hydrogen generated by the oxidation of 75% of the fuel cladding. In order to establish a framework for an analytical evaluation of the functioning of the hydrogen control system and the survivability of the safety-related equipment exposed to a hydrogen burning environment, the Commission further directed that

¹ Under my interpretation of the hydrogen rule, OCRE's claims on appeal that relate to the hydrogen generation scenarios (e.g., functioning of the RCIC, station blackout, and containment spray operability) or to the consequences of a failure or delayed operation of the hydrogen control system would necessarily be denied. *See OCRE Brief* at 15, 17, 18, 20.

staff-accepted accident scenarios be considered. Following a mechanistic scenario enables the analyst to determine the time dependence of hydrogen generation in the reactor core and the time-and-spatial dependence of its subsequent release and buildup in various locations within the containment — input information necessary for the analysis.

The emergency core cooling system (ECCS) of a nuclear power plant is designed pursuant to the requirements of 10 C.F.R. 50.46 to cool the reactor core in the event of a LOCA and, in particular, to limit the hydrogen produced to that resulting from oxidation of less than 1% of the fuel cladding. But the hydrogen rule specifies a hydrogen yield amounting to oxidation of 75% of the cladding. Hence any accident scenario considered under the rule envisions failures of emergency core cooling equipment well beyond those that would be expected for redundant systems and could ordinarily be litigated in licensing proceedings. A contention proposed by an intervenor that postulated such failures would be deemed to challenge the ECCS rule and thus would not be allowed under 10 C.F.R. 2.758(a).² It is therefore unlikely that the Commission intended to permit intervenors, on the one hand, to propose their own hydrogen generation scenarios under the hydrogen rule while, on the other, prohibiting the postulation of such scenarios as a challenge to the ECCS rule.

As a practical matter, there are many scenarios that could lead to hydrogen generation. But their sole purpose is to provide the basis for a severe analytical test of the hydrogen control system and the survivability of safety systems. The NRC staff is best qualified to determine which scenarios provide this severe test.³

Finally, as noted, the rule sets a conservative upper limit on hydrogen production — that due to 75% cladding oxidation. In order to meet this provision, however, an accident scenario must generally include the arbitrary assumption that the ECCS recover in time to terminate the metal-water reaction at this point. It is understandable that the rule would require the postulation of scenarios that assume arbitrary (and unlikely) failures and recovery of equipment in order to set up the mechanistic framework for an analysis of the hydrogen control system. I believe the Commission recognized, however, that this is an exercise wholly depend-

² 10 C.F.R. 2.758(b) and (d) provide the route by which an intervenor may challenge an NRC rule. With regard to the hydrogen rule, if an intervenor can make a prima facie case that some accident scenario other than one "accepted by the staff" would provide a more severe test for the hydrogen control system, hence the rule is not serving its intended purpose, section 2.758(d) provides that the question be put before the Commission for a possible waiver (i.e., that the *intervenor-proposed* scenario be considered rather than, or in addition to, the *staff-accepted* scenarios).

³ And, as pointed out in the footnote above, there exists a mechanism for considering an intervenor's scenario if it can be shown to provide a more severe test of the hydrogen control system.

ent upon technical and scientific expertise, not amenable to an adjudicatory hearing, conducted under the rules of evidence.

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. 82-471-02-OL)
(Onsite Emergency Planning
and Safety Issues)**

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

July 21, 1986

In this Memorandum and Order, the Licensing Board grants an intervenor's motion to withdraw its contention, but permits a joint intervenor to have the withdrawn contention replaced by its own identical contention.

MEMORANDUM AND ORDER

(Ruling on NH's Motion to Withdraw Contention NH-10, and on Applicants' Motion to Strike SAPL's Objection to Motion to Withdraw)

Memorandum

On June 12, 1986, the State of New Hampshire filed a motion to withdraw Contention NH-10, because, "[a]fter considering all the materials submitted by the Applicant and the NRC Staff, the State has concluded that the issues raised by the State regarding the DCRDR [Detailed Control Room Design Review] and the SPDS [Safety Parameter Display System] have been satisfactorily addressed."¹

On June 19, 1986, Seacoast Anti-Pollution League (SAPL) filed an objection to the motion to withdraw Contention NH-10. It urged that this contention cannot be withdrawn without SAPL's assent since the Board's Memorandum and Order of September 13, 1982,² in noting that SAPL Supplemental Contention 6 incorporated by reference Contention NH-10, permitted SAPL to participate with NH as a joint intervenor. SAPL set forth reasons why it did not believe that the results of the DCRDR and the design of the SPDS were adequate.

On June 27, 1986, the Applicants filed a motion to strike SAPL's objection. Thereafter, the Staff filed a response on July 2, 1986, which did not object to the State's withdrawal of its sponsorship of this contention. On July 3, NH responded to SAPL's objection, and SAPL objected to Applicants' motion to strike. On July 17, the Staff responded to Applicants' motion to strike.

DISCUSSION

SAPL opposes the withdrawal of Contention NH-10 upon two grounds. First, it argues that the withdrawal is premature because several parameter displays ought to be installed before fuel loading, because station operators should be thoroughly trained in their use prior to any operation of the plant, and because there is no good reason why a preliminary evaluation and identification of Human Engineering Discrepancies (HEDs), including those which may be identified from an evaluation of the control room environment, cannot be undertaken prior to fuel load-

¹ NH Contention 10 reads as follows:

The Seabrook Station control room design does not comply with general design criteria 19 through 22 and 10 C.F.R. Part 50, Appendix A, and NUREG-0737, Items I.D.1 and I.D.2.

² LBP-82-76, 16 NRC 1029, 1040-41, 1083.

ing. We do not consider this argument because SAPL did not inform the Board whether the alleged inadequacies in § 18 of SSER 4 are within the scope of the contention.³ While we do not consider SAPL's first argument, we do consider its second argument.

Second, since the Board permitted SAPL to participate with NH as a Joint Intervenor, SAPL argues that Contention NH-10 cannot be withdrawn without its assent. In their motion to strike, Applicants urge that SAPL relinquished any rights it may have had to object to the motion to withdraw because, early on, during discovery, SAPL informed the Staff and the Applicants that it would not "litigate" this contention, leaving the "litigation" thereof to New Hampshire.⁴ However, in its responses to Applicants' interrogatories which were received by the Board on January 21, 1983, SAPL specifically stated that it did not waive its right to cross-examine witnesses — that, pursuant to the *Prairie Island Rule*,⁵ it had the right to cross-examine on a witness' testimony which related to matters placed into controversy by another party, and that it had a discernible interest in all the admitted contentions. Again, in its objection to Applicants' motion to compel answers to interrogatories which was filed on February 4, 1983, SAPL stated that, in responses to Applicants' interrogatories, it had made clear that it would not present direct evidence upon other parties' contentions, that it did not waive its right of cross-examination, and cited another Board's order which directed that "no party need answer questions with respect to contentions, or portions of contentions, which it is not sponsoring."⁶ Further, while Applicants' imply that Board had ordered that SAPL did not have to respond to interrogatories because SAPL had stated it would not litigate NH-10, in a Memorandum and Order of March 1, 1983,⁷ the Board granted a protec-

³ SAPL, as well as any other intervening party, certainly should be aware that late-filed contentions, as well as late-filed amendments, are admissible only if they meet all of the five factors in 10 C.F.R. § 2.714(a)(1), including the Appeal Board's three-part test for good cause. *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1045 (1983). Such a submission requesting leave to file contentions or amendments out-of-time must address these factors and affirmatively demonstrate that on balance the factors favor the granting of the request. *Duke Power Co.* (Perkins Nuclear Station, Units 1, 2, and 3), ALAB-615, 12 NRC 350, 352 (1980).

⁴ In passing, we note that Applicants argue that such a motion to withdraw is not a motion but rather is a notification of withdrawal which, being immediately self-executing, limits the Board's authority to simply dismissing the contention. Applicants are wrong. All motions properly filed with this Board in this reopened hearing are within our authority to allow or deny after receiving answers from interested parties. See 10 C.F.R. §§ 2.718(f), 2.730. Since NH's motion is contested, we must review SAPL's objection and other answers and proceed to rule.

⁵ *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-288, 2 NRC 390, 392 n.6 (1975).

⁶ *Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-79-31, 10 NRC 597, 606 (1979).

⁷ LBP-83-9, 17 NRC 403, 406 (1983).

tive order because Applicants' numerous and complex interrogatories, addressing contentions not sponsored by or to be the subject of direct testimony proffered by SAPL, did impose an undue burden.⁸ However, despite the protective order, on March 10, 1983, SAPL filed supplemental answers to Applicants' interrogatories directed to two NECNP contentions and to SAPL's Supplemental Contention 3, and noted that it had "decided to include responses related to those issues it may seek to litigate in this proceeding." SAPL did not state why it did not answer interrogatories directed to Contention NH-10. Finally, in denying as interlocutory SAPL's appeal from the Licensing Board's granting of summary disposition against it on SAPL's Supplemental Contention 3, the Appeal Board found that although the dismissal left no other contentions originated by it, SAPL itself noted that it had joined in a contention (Contention NH-10) filed by New Hampshire that remained before the Licensing Board.⁹ The Appeal Board concluded that thus SAPL's participational rights (with regard to Contention NH-10) were not affected by the Licensing Board's summary disposition of Supplemental Contention 3.¹⁰

On balance, we conclude that overall SAPL has preserved its rights as a joint intervenor, and that Applicants' motion to strike is without merit and is denied. However, in order to prevent confusion and to proceed with a clear record in this reopened proceeding, we grant New Hampshire's motion to withdraw its Contention 10 despite SAPL's objection that this contention cannot be withdrawn without its assent since it is a joint intervenor. SAPL, as the joint intervenor, is not prejudiced by this ruling because we also rule that Contention NH-10 is now converted to and replaced by SAPL's Supplemental Contention 6, which will reflect the identical wording and basis of former Contention NH-10.

Order

1. The State of New Hampshire's motion to withdraw its Contention 10 is granted,
2. Applicants' motion to strike SAPL's objection to motion to withdraw Contention NH-10 is denied, and

⁸ At page 406 n.3 of the Memorandum and Order of March 1, the Board assumed that SAPL had "dropped" Contention NH-10, which it had previously adopted in its Supplemental Contention 6.

⁹ Indeed, in its response of June 8, 1983, to SAPL's appeal, the Applicants stated that SAPL had joined and adopted Contention NH-10 and thus was still a party. In its response of June 15, 1983, the Staff also argued that an appeal as of right did not lie, in part, because SAPL remained as a co-sponsor of NH-10.

¹⁰ ALAB-731, 17 NRC 1073 (1983).

3. Contention NH-10, permitted to be withdrawn by the State of New Hampshire, is now converted to and replaced by SAPL Supplemental Contention 6, which will reflect the identical wording and basis of former Contention NH-10.

**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 21st day of July 1986.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Dr. Robert M. Lazo, Chairman
Dr. Richard F. Cole
Dr. Emmeth A. Luebke

In the Matter of

Docket Nos. 50-250-OLA-1
50-251-OLA-1
(ASLBP No. 84-496-03-LA)
(Vessel Flux Reduction)

FLORIDA POWER AND LIGHT
COMPANY
(Turkey Point Nuclear Generating
Plant, Units 3 and 4)

July 24, 1986

In this Initial Decision, the Board resolves the one remaining contention in Licensee's favor and orders that license amendments issued by the Office of Nuclear Reactor Regulation on December 23, 1983, remain in full force and effect without modification. The Board finds that the Licensee's analysis of DNBR performed using NRC Staff-approved methodology and compensating for appropriate uncertainties demonstrates at a 95% probability at a 95% confidence level that the hottest rod will not undergo DNB, and contrary to Intervenors' assertion, the margin of safety for the operation of the Turkey Point Plant has not been reduced by the issuance of the contested amendments.

In view of the information provided to the Board in Board Notification BN-86-17, dated June 30, 1986, regarding Intervenors' Contention (b) as to which the Board in an earlier Order had granted Licensee's

Motion for Summary Disposition, the Board retains jurisdiction in this matter pending receipt of information of any further actions by the Staff.

APPEARANCES

Martin H. Hodder, Miami, Florida, for the Intervenor, Center for Nuclear Responsibility and Joette Lorion.

Norman A. Coll, Miami, Florida, and **Michael A. Bauser**, Washington, D.C., for the Applicant, Florida Power and Light Company.

Mitzi A. Young and **Mary E. Wagner** for the United States Nuclear Regulatory Commission Staff.

INITIAL DECISION (Operating License Amendment)

I. INTRODUCTION AND BACKGROUND

By letters dated August 19, 1983, and September 9, 1983, Florida Power and Light Company (Licensee) requested amendments to the technical specifications of Facility Operating Licenses DPR-31 and DPR-41 for its Turkey Point Nuclear Generating Plant, Units 3 and 4, two pressurized water nuclear reactors located in Dade County, Florida. The amendments were to support the Licensee's program for reduction of neutron bombardment (vessel flux), and consequent embrittlement, of the pressure vessel walls, and to remove restrictions imposed when the Licensee was operating with the old steam generators having a greater number of plugged tubes than the new steam generators now in use.¹

Notice that the Commission was considering issuance of the amendments, of their proposed content, and of the fact that the Commission had made a proposed determination of no significant hazards consideration in conformance with the standards contained in 10 C.F.R. § 50.92 was published in the *Federal Register* on October 7, 1983. 48 Fed. Reg.

¹ Specifically, the Licensee requested (1) to increase the hot channel factor limit from 1.55 to 1.62; (2) to increase the total peaking factor limit from 2.30 to 2.32; (3) to change the overpower delta-T trip set points and thermal hydraulic limit curves; and (4) to delete restrictions and limits which allowed the old steam generators to operate with tubes plugged in excess of 5%. NRC Safety Evaluation, December 23, 1983 (Staff Exhibit 1) at 1.

45,862. The notice sought public comments on the proposed determination and advised the public of its right to seek a hearing and intervene in the proceedings.

On November 4, 1983, in response to the notice, the Center for Nuclear Responsibility and Joette Lorion jointly petitioned for leave to intervene and requested a hearing. They also filed comments, contending that the amendments did involve a significant hazards consideration. Nevertheless, on December 23, 1983, the Commission issued the requested amendments pursuant to a final determination of no significant hazards consideration and the Commission's finding, among other things, that the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public. *See* Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 99 to Facility Operating License No. DPR-31 and Amendment No. 93 to Facility Operating License No. DPR-41, Florida Power and Light Company (Dec. 23, 1983) (SER), Staff Exhibit 1; 49 Fed. Reg. 3364, January 28, 1984. Under 10 C.F.R. § 50.91(a)(4) the amendments became effective when issued, with any required hearing to be held thereafter.

Intervenors filed an amended petition on January 25, 1984. A prehearing conference was held in Homestead, Florida, on February 28, 1984. During that conference all parties were provided an opportunity to file briefs concerning Intervenors' request to consolidate the consideration of another set of amendments,² issued earlier for the Turkey Point units, with those actually the subject of the instant proceeding. The earlier issued amendments provided for, among other things, the replacement, during the course of subsequent refuelings of the two units, of Westinghouse 15 x 15 Low Parasitic (LOPAR) fuel and borosilicate glass burnable absorber rods with Westinghouse 15 x 15 Optimized Fuel Assembly (OFA) fuel and Wet Annular Burnable Absorber (WABA) rods. These amendments (subsequently referred to by this Board as the "core design change" amendments, as opposed to the instant "vessel flux reduction" amendments) were publicly noticed on July 20, 1983, 48 Fed. Reg. 33,080, and were issued on December 9, 1983, 48 Fed. Reg. 56,518 (Dec. 21, 1983). *See generally* SER, Staff Exhibit 1, at 3 (Dec. 23, 1983). In our May 16, 1984 Prehearing Conference Order (unpublished), we denied combined consideration of the two separate sets of amendments noting, among other things, that: (1) no petitions to intervene had been filed in connection with the core design change amendments; (2) no Licensing

² Amendment No. 98 to Facility Operating License No. DPR-31 and Amendment No. 92 to Facility Operating License No. DPR-41.

Board had been convened to address those amendments; and (3) those amendments were not within the jurisdiction of this Board to decide. For present purposes, however, one result of the core design change amendments is that the Turkey Point units will operate with both LOPAR and OFA fuel (i.e., with mixed, rather than homogeneous, fuel in the core) until, as a result of future refuelings, the LOPAR fuel has been entirely replaced with OFA fuel.

The Prehearing Conference Order dated May 16, 1984, also granted the Intervenor standing to intervene in this proceeding, and ruled on Intervenor contentions and other matters. Only Contention (b) and Contention (d) were admitted. Contention (b) alleged shortcomings in one of the computer models which is involved in the prediction of the temperature of the hottest fuel rod in the reactor core as part of the analysis of loss-of-coolant accidents. Contention (d) alleged, in effect, that, under the amendments, it is significantly more probable that a steam film will form around a fuel rod during normal and anticipated operational occurrences, resulting in a significant reduction in safety. In full, Contention (d) reads as follows:

The proposed decrease in the departure in the nucleate boiling ratio (DNBR) would significantly and adversely affect the margin of safety for the operation of the reactors. The restriction of the DNBR safety limit is intended to prevent overheating of the fuel and possible cladding perforation, which would result in the release of fission products from the fuel. If the minimum allowable DNBR is reduced from 1.3 to 1.7 [sic: 1.17] as proposed, this would authorize operation of the fuel much closer to the upper boundary of the nucleate boiling regime. Thus, the safety margin will be significantly reduced. Operation above the boundary of the nucleate boiling regime could result in excessive cladding temperatures because of the departure from the nucleate boiling (DNB) and the resultant sharp reduction in heat transfer coefficient. Thus, the proposed amendment will both significantly reduce the safety margin and significantly increase the probability of serious consequences from an accident.

Licensee filed motions for summary disposition of the two contentions on August 10, 1984, which were supported by the Staff and opposed by Intervenor. Because we found the pleadings and the balance of the written record incomplete for reaching a decision, we held a prehearing conference in Coral Gables, Florida, on March 26, 1985, during which the Licensee made a "didactic presentation" as ordered by this Board concerning issues raised in the parties' summary disposition papers. See LBP-85-29, 22 NRC 300, 306-10 (1985). The Intervenor and Staff were given the opportunity to cross-examine the Licensee's witnesses during the conference and were afforded the opportunity to respond or rebut. *Id.*

By Order dated August 16, 1985, we granted Licensee's motion for summary disposition of Contention (b), but denied the motion for summary disposition of Contention (d) and limited the scope of the litigation on Contention (d) to the following three issues:

1. Whether the DNBR [departure from nucleate boiling ratio] of 1.17 which the amendments impose on the OFA [Optimized Fuel Assembly] fuel in Units 3 and 4 compensates for the three uncertainties outlined by the Staff in its December 23, 1983 SER on the amendments, at 4.
2. Whether, if the DNBR of 1.17 does not compensate for those uncertainties, the SRP's [Standard Review Plan's] 95/95 standard, or a comparable one, is somehow satisfied.
3. Whether, if that standard is not being satisfied, the reduction in the margin of safety has been significant.

22 NRC at 330. Accordingly, we scheduled an evidentiary hearing on these issues to commence on December 10, 1985, and directed the parties to file written testimony to be in hand by November 26, 1985. Order Scheduling Hearing, September 18, 1985 (unpublished). Subsequently, the Licensee filed a second motion for summary disposition of Contention (d) on September 20, 1985, which was again supported by the Staff and opposed by Intervenors. By Order of November 8, 1985 (unpublished), we denied Licensees' second motion for summary disposition for the reason set forth in a later Order, dated November 18, 1985 (unpublished). Evidentiary hearings were held in Miami, Florida, from December 10 through December 12, 1985.

As noted above, the record on summary disposition led this Board to question whether a DNBR of 1.17 accounts for the three uncertainties, as outlined in the Staff's SER, associated with rod bowing, the transitional core containing OFA and LOPAR fuel, and the application of the WRB-1 correlation to 15 x 15 array OFA fuel. If a DNBR of 1.17 did not account for the three uncertainties, we pondered whether that DNBR failed to meet the 95/95 standard and thus resulted in a significant reduction in the margin of safety. LBP-85-29, *supra*, 22 NRC at 329-30. We turn now to a discussion of the evidence on three questions we posed.

This Opinion is based upon, and incorporates, the Findings of Fact and Conclusions of Law that follow. Any proposed findings or conclusions submitted by the parties that are not incorporated directly or inferentially in this Initial Decision are rejected as being unsupportable in law or in fact or as being unnecessary to the rendering of this Decision.³

³ Intervenors' February 17, 1986 Motion to File Intervenors' Proposed Findings of Fact and Conclusions of Law Out of Time (one working day), is for good cause shown, *granted*.

II. FINDINGS

1. The Licensee's direct case consisted of testimony by Edward A. Dzenis (ff. Tr. 302), Manager of Core Operations in the Nuclear Fuel Division of Westinghouse Electric Corporation. Mr. Dzenis has a Bachelor of Science degree and a Master of Science degree in Mechanical Engineering. He has taken undergraduate courses involving calculus, differential equations, mathematical statistics, and statistical evaluation of experimental data, and graduate courses in thermodynamic power conversion cycles, and the environmental and economic aspects of nuclear power. Since joining Westinghouse in 1974, his work has included analyses of heat transfer and the fluid flow aspects of reactor fuel assemblies and related components for pressurized water reactors (PWRs), the determination of core operating limits to ensure margin for the prevention of DNB, and analyses of other safety criteria. Mr. Dzenis has also been involved in modifications of the THINC Code to incorporate new correlations such as the WRB-1 critical heat flux correlation. Professional Qualifications and Experience of Edward A. Dzenis, ff. Tr. 302; Tr. 293-302. At the completion of voir dire, Mr. Dzenis' testimony, prefiled on November 26, 1985, was received in evidence without objection and bound into the transcript.

2. The Staff's direct case consisted of testimony by Dr. Yi-Hsiung Hsui, a nuclear engineer in the Reactor Systems Branch of the Division of PWR Licensing-A in the Office of Nuclear Reactor Regulation and formerly in the Core Performance Branch of the Division of Systems Integration. Dr. Hsui has Bachelor's, Master's, and Doctoral degrees in Mechanical Engineering. He has taken undergraduate courses in hydrodynamics, thermodynamics, heat transfer, calculus, differential equations, and graduate courses in hydrodynamics, heat transfer, thermodynamics, advanced calculus, and complex variables. Since he joined the NRC in 1981, he has reviewed safety evaluation reports and fuel reload methodology topical reports on core thermal hydraulics, including critical heat flux (CHF) correlations, submitted by applicants and licensees. Dr. Hsui worked for Babcock & Wilcox from 1967 to 1981 where he performed core thermal-hydraulic design analyses for reactors, and developed computer codes in the areas of containment systems, reactor system transients, fuel pin thermal performance analysis and heat transfer. Dr. Hsui also developed a computer program to calculate core performance and DNBRs. Hsui Professional Qualifications, ff. Tr. 733; Tr. 715.⁴ In ad-

⁴ Intervenor's withdrew their objection to the admission of Dr. Hsui's prefiled testimony and statement of professional qualifications after conducting a voir dire examination.

dition, pursuant to 10 C.F.R. § 2.743(g), the Board received Staff Exhibit 1, the NRC Safety Evaluation supporting the amendments, dated December 23, 1983, for the purpose of documenting the NRC's review of the thermal hydraulics associated with the amendments. Tr. 735-36.

3. The Intervenor's direct case consisted of testimony by Dr. Gordon D.J. Edwards (ff. Tr. 606), President of the Canadian Coalition for Nuclear Responsibility and Professor of Mathematics and Science at Vanier College, Montreal, Canada. Dr. Edwards holds a Ph.D. in Mathematics, has taught university-level mathematics for several years and has limited experience teaching biology and chemistry. Tr. 254-57, 505. He has acted as a consultant to a number of Canadian governmental studies concerning reactor safety, and in that regard has both cross-examined witnesses and testified as an expert in his field of expertise, which he considers to be mathematical analysis, calculations of probabilities, and use of mathematical models. Tr. 261-62, 272-73, 282-83. However, as Dr. Edwards himself acknowledged, he generally has no knowledge, skill, experience, training, or education in the field of engineering (Tr. 538) nor does he consider himself to be an expert in the areas of heat transfer, departure from nucleate boiling testing, critical heat flux correlation, determination of operational limits, or evaluation of DNBR. Tr. 283.

4. Dr. Edwards was unfamiliar with the term "subchannel analysis," has never conducted DNB tests or DNBR acceptance limits or developed a DNB correlation, and has never designed or used computer models to do thermal-hydraulic analysis of heat transfer and fluid flow aspects of a pressurized water reactor. Tr. 278, 506. Finally, Dr. Edwards acknowledged that he was not familiar with the mathematical equations or computer models used to evaluate and analyze the DNB and DNBR at Turkey Point. Tr. 506-07.

5. The expert qualifications of Dr. Edwards and the admissibility of his written testimony were challenged by Staff and Licensee. At the outset of the proceeding, Licensee, and Staff to a limited extent, objected to Intervenor's request that Dr. Edwards be allowed to act as an expert interrogator, as is permissible under 10 C.F.R. § 2.733.

6. Licensee objected to Dr. Edwards' interrogation as an expert in that by his own admission he was not qualified by training or experience in thermodynamics, heat transfer, fluid mechanics, or thermal hydraulic analysis, all of which topics were central to the narrow issues at the hearing. The Staff did not object to Dr. Edwards' conducting cross-examination as an expert provided that he examined only in those areas of his admitted expertise, that is, mathematics, including mathematical analysis, calculations of probabilities, and the use of mathematical models.

The Staff objected to any interrogation beyond those areas, because the Commission's rules specify that any cross-examination by an expert interrogator "shall be limited to areas within the expertise of the individual conducting the examination or cross-examination." 10 C.F.R. § 2.733. The Board found Dr. Edwards to be qualified as an expert interrogator pursuant to 10 C.F.R. § 2.733. Not having the benefit of a cross-examination plan, we declined in advance of hearing his questions, to define the limits of Dr. Edwards' expertise for the purpose of examination and permitted Dr. Edwards to conduct cross-examination of both Licensee's and Staff's witnesses.

7. The Board also ruled on the limits of Intervenor's direct case. On November 25, 1985, in accordance with our September 18, 1985 Order setting the deadline for prefiled testimony, Intervenor served upon the Board and the parties a document entitled "Outline of Testimony by Gordon Edwards" (Edwards Outline), together with a copy of Dr. Edwards' professional qualifications. On the second day of the hearing at the commencement of their direct case, Intervenor sought to expand the Outline by eliciting oral testimony concerning Dr. Edwards' "response and explanation" to the three Board questions. Tr. 446.

8. Staff and Licensee objected to this procedure as falling outside the Commission's Rules of Practice, 10 C.F.R. § 2.743(b), which requires all parties to file written direct testimony in advance of any hearing. We too observed that there had been time to prepare an expanded version of Dr. Edwards' testimony and serve it on the parties before the hearing and sustained the objections of Staff and Licensee to the oral supplementation of Dr. Edwards' written testimony on grounds that it would contravene 10 C.F.R. § 2.743 and be unfair to opposing parties.

9. The Staff and Licensee objected to Intervenor's subsequent proffer of written direct testimony, which consisted of two affidavits previously prepared by Dr. Edwards in response to motions for summary disposition, claiming surprise and prejudice to the preparation of their cases and lack of good cause for Intervenor's failure to meet the deadline for filing written testimony. We ruled that the August 30, 1984 affidavit was stale and its introduction contained an element of surprise. However, the Staff and Licensee had had reasonable opportunity to examine the later affidavit, dated November 5, 1985 ("November 5 Affidavit" or "Edwards Affidavit"). Thus, pursuant to 10 C.F.R. § 2.743, which provides for the admission of additional written testimony upon a board ruling and if the parties have had a reasonable opportunity to examine it, we determined that the November Affidavit would be received in evidence provided it withstood voir dire and any motions to strike.

10. Based on the evidence adduced through the voir dire examination of Dr. Edwards as a proposed expert witness, Licensee moved to strike Dr. Edwards' testimony in its entirety and the Staff objected to a large part of Dr. Edwards' proposed testimony, on the grounds that: (1) the witness had shown he was not competent to testify generally as to the matters at issue in the proceeding other than Dr. Edwards' statements concerning areas of applied mathematics, including statistics and statistical analysis; (2) portions of the November 5 Affidavit were virtually identical to, or unduly repetitious of, statements in the Outline; and (3) portions of the testimony purportedly were irrelevant and lacking in probative value.

11. Despite these objections, we found Dr. Edwards was qualified as an expert witness in view of the "limited scope and the qualified language" of his testimony and admitted the Outline and the November 5 Affidavit into evidence.

12. In so doing, the Board recognized that the weight to be accorded to Dr. Edwards' testimony is influenced by the fact that he is a mathematician with little knowledge, education, skill, training, or experience in engineering. While Dr. Edwards' familiarity with reactor concepts is impressive for a layman, the depth of his knowledge of engineering problems and ability to evaluate engineering judgments is understandably quite limited. Moreover, by his own admission, his disagreement with the testimony presented by Licensee and Staff is not based on a complete knowledge, or even reading, of all the documents underlying the review that has been performed. However, Dr. Edwards was candid and forthright in presenting his testimony as that of a mathematician and not an engineer, and his participation in this proceeding has aided in sharpening the issues in controversy.

13. We have carefully considered all of the testimony, opinions, and evidence adduced at the hearing and have accorded the appropriate weight to the comparative knowledge, skill, and experience of the three witnesses. We will now set forth our resolution of each of the questions at issue in this proceeding, seriatim. In addition, in the course of our discussion we will consider the matters of concern to the Intervenors as we understand them.

14. As we have indicated, the three questions arose during our consideration of Licensee's first motion for summary disposition of Contention (d). More specifically, as we discussed in considerable detail in our August 16, 1985 Order addressing that motion, it was clear to us how a 1.17 DNBR acceptance limit for a certain type of fuel utilizing one critical heat flux (CHF) correlation (in this case, OFA fuel with the WRB-1 correlation), could provide the same degree of assurance that departure

from nucleate boiling would not occur as with a higher, 1.3 DNBR acceptance limit for another type of fuel utilizing a different CHF correlation (again, in this case, LOPAR fuel with the W-3 correlation). See LBP-85-29, *supra*, 22 NRC at 323-28. What was not clear to us, however, was how three particular uncertainties mentioned in the NRC Staff's December 23, 1983 SER (i.e., those related to rod bowing, the use of new OFA fuel assemblies mixed together with LOPAR fuel assemblies during a transition period on the way to a full OFA core, and the application of the WRB-1 correlation to 15 x 15 array OFA fuel) were accounted for. *Id.* at 328-31. Accordingly, we stated:

The Licensee has the burden of showing in hearing either that the application of a DNBR of 1.17 to the OFA fuel in Units 3 and 4 satisfies the 95/95 [NRC Staff] standard, or that if such application does not, the reduction in the margin of safety is not significant.

Id. at 330.

First Board Question

Whether the DNBR (departure from nucleate boiling ratio) of 1.17 which the amendments impose on the OFA (Optimized Fuel Assembly) fuel in Units 3 and 4 compensates for the three uncertainties outlined by the Staff in its December 23, 1983 SER on the amendments, at 4.

15. All the parties agree and the Board concludes that the answer to the first question is that the DNBR of 1.17 does not compensate for the uncertainties associated with rod bow, the mixed core, and the application of WRB-1 correlation. Dzenis, ff. Tr. 302, at 3; Hsii, ff. Tr. 733, at 22; Edwards Outline, ff. Tr. 606, at 1.

16. It will be helpful to review certain aspects of PWR operation. Heat is removed from the core of a nuclear reactor by water flowing around the outside of the fuel rods. If the temperature of the fuel rods is sufficiently high, bubbles of steam will form on the fuel rod surfaces. These bubbles are then swept away from the rods by the flow of water around them. Once in the bulk flow, the bubbles of steam either condense and disappear or, at a higher temperature, survive in equilibrium with the liquid coolant. The stage of boiling at which bubbles of steam form and leave the surfaces of the fuel rods is called nucleate boiling. During nucleate boiling, the transfer of heat from the rods is efficient and increases in approximate proportion to increasing fuel rod temperature. The measure of heat transferred in a given time from a unit of rod surface area is called heat flux.

17. If the fuel rods reach a sufficiently high temperature, some of the steam bubbles will remain on the rod surfaces and begin to combine. This results in the formation of a steam film. The point at which a film appears is called departure from nucleate boiling (DNB). Such a film insulates the fuel rod causing heat that would otherwise be given up to the coolant to be retained in the rod. The heat flux begins to decline. The heat flux at the beginning of this decline is called the critical heat flux, or CHF. To avoid DNB, during normal operation or anticipated operational occurrences, a proper relationship is maintained between what the CHF would be for a given set of conditions, and the actual heat flux (AHF) under those same conditions. DNB does not necessarily result in a failure of cladding, and even if a breach were to occur, any release would only be to the primary coolant system, which is a closed system. This, in turn, is enclosed by the reactor containment building which is designed to avoid release of radioactivity to the environment. The public is kept at a distance by an exclusion area. In spite of all these protective measures, it is prudent that DNB, and transition to a less desirable heat transfer regime, be avoided.

18. It is impossible to predict with complete certainty what the CHF for a particular fuel in a reactor will be under a given set of conditions. Different experimentally determined correlations give varying degrees of assurance with respect to predictions of CHF. The ratio of CHF to AHF is called the DNB ratio or DNBR. In the NRC Staff Standard Review Plan (SRP), NUREG-0800 § 4.4, Thermal and Hydraulic Design, a minimum ratio between the CHF and the AHF is established such that there is at least a 95% confidence level that there is a 95% probability that DNB will not be reached by the hottest rod in the core during either normal operation or anticipated operational occurrences. This statistical measure of conservatism in the selection of a minimum DNBR is referred to as the 95/95 condition or standard.

19. If the true CHF value could be calculated and the actual heat flux were precisely known, the exact DNBR could be determined and a design DNBR limit of 1.0 would ensure DNB would be avoided. However, because CHF is calculated using an empirical correlation based on experimental CHF data and because of random variations in the data upon which the correlation is based, the exact CHF cannot be predicted. A DNBR limit greater than 1.0 is therefore imposed to account for this uncertainty and represents a degree of conservatism or margin of safety. The DNBR is referred to in a number of ways, including "DNBR design limit," "design DNBR," and "DNBR limit." It is also referred to as a DNBR acceptance limit. The DNBR acceptance limit of 1.17 is generic to all Westinghouse plants utilizing OFA fuel. The "safety analysis mini-

imum DNBR," or "calculated minimum DNBR," is to be distinguished from the DNBR acceptance limit. It is calculated on a plant-specific basis.

20. A DNBR limit for a particular fuel type is the quantity imposed on a CHF correlation as the specified acceptable fuel design limit to ensure at a 95/95 level that the hottest fuel rod in the core will not experience DNB during normal operation and anticipated operational occurrences. 10 C.F.R. Part 50, Appendix A, Criterion 10, Reactor Design states:

The reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences.

21. The DNBR acceptance limit of 1.17 for the WRB-1 correlation used in connection with the analysis of all Westinghouse OFA fuel is the 95/95 bounding value for experimental data. The 95/95 standard in § 4.4 of the SRP will be satisfied by assuring that calculated minimum DNBR values for all normal and anticipated operational occurrences, after accounting for uncertainties, are greater than or equal to the 1.17 DNBR acceptance limit.

22. The 1.17 DNBR acceptance limit does not and is not intended to compensate for the three uncertainties referred to in the Board's question, namely, the rod bow, the mixed LOPAR/OFA fueled core, and the application of the WRB-1 correlation to the 15 x 15 OFA array fuel. Dzenis, ff. Tr. 302, at 4. The DNBR acceptance limit for a correlation, including the WRB-1 correlation, depends upon the ability of that correlation to predict CHF data. For every CHF test data point, a CHF prediction is made using the correlation, and a comparison performed between the measured and predicted CHF values. A probability distribution of the measured-to-predicted CHF ratios is obtained for all of the CHF data points. A statistical analysis is then performed to obtain the estimated mean and standard deviation of the measured-to-predicted CHF ratios. The DNBR limit is derived from statistical analysis applying the acceptance criterion of 95% probability at 95% confidence, as specified in the SRP. Hsii, ff. Tr. 733, at 3-4. The uncertainties are taken into account in the evaluations of normal and anticipated operational occurrences performed for specific plants. This is done in connection with the Board's second question that follows.

Second Board Question

Whether, if the DNBR of 1.17 does not compensate for those uncertainties, the SRP's 95/95 standard, or a comparable one, is somehow satisfied.

23. Licensee and NRC Staff have answered the second question in the affirmative (Dzenis, ff. Tr. 302, at 4; Hsii, ff. Tr. 733, at 22). Intervenor respond in the negative, arguing that the proposed DNBR limit of 1.17 does not compensate for the uncertainties identified in the NRC Staff's SER (Edwards Outline, ff. Tr. 606, unnumbered p. 1).

24. The three uncertainties of concern as outlined by the NRC Staff in its December 23, 1983 SER are:

1. Effects of rod bow phenomena.
2. Thermal hydraulic behavior of a mixed core of OFA and LOPAR fuel.
3. Applicability of the WRB-1 critical heat flux correlation to the 15 x 15 OFA fuel configuration.

Gordon Edwards, ff. Tr. 606, at 2; Dzenis, ff. Tr. 302, at 4; Hsii, ff. Tr. 733, at 16. Uncertainties, which were not included in the calculational method, i.e., input in the THINC computer calculations, are treated as penalties.

The Assigned Penalties

Rod Bow Penalty

25. At Turkey Point, fuel rods are placed in the reactor core in assemblies consisting of a 15 x 15 array of fuel rods. These fuel rods are supported in the assembly by spacer grids located approximately every 2 feet of axial elevation. As the fuel is irradiated, some random horizontal displacement of the fuel rods from their normal position occurs. This displacement is called "rod bow." Rod bowing can result in a reduction in CHF and, therefore, a reduction in the DNBR. Tr. 320-22. *See also* Dzenis, ff. Tr. 7-8; Hsii, ff. Tr. 733, at 16. The effect of rod bow on DNBR is applied as a penalty. *E.g.*, Dzenis, ff. Tr. 302, at 4-8; Tr. 322, 436.

26. The rod bow penalty is based on direct measurements of fuel assemblies from operating reactors representing a wide range of burnups and other conditions. Tr. 323. A value of 5.5% for the rod bow penalty for OFA fuel was derived based on an approved method described in a Westinghouse topical report. WCAP-8691, Rev. 1, Fuel Rod Bow Evaluation. This method has been used for most plants of Westinghouse

design. The penalty derived using this method is a 95/95 tolerance limit as was statistically demonstrated in WCAP-8691. Hsui, ff. Tr. 733, at 16-17; Tr. 822, 823.

27. The value of a 5.5% DNBR corresponds to the highest burnup at which DNB is a concern. This is because, at higher burnups, heat generation rates in PWR fuel decrease due to a decrease in the concentration of fissionable isotopes and the buildup of fission product inventory. Dzenis, ff. Tr. 302, at 8. For the purpose of calculating the rod bow penalty, the maximum burnup used is 33,000 MWD/MTU. By the time a fuel rod exceeds a burnup of 33,000 MWD/MTU it is not capable of achieving limiting peaking factors (becoming the hottest rod). SER, Staff Exhibit 1, at 3. Therefore, the value of 5.5% DNBR represents a conservative upper bound to a range of rod bow effects.

28. Intervenor's witness questioned whether the rod bow penalty meets the 95/95 criterion. Edwards, Tr. 634-37. Dr. Edwards testified that the lack of data for 15 x 15 OFA fuel would add uncertainty to the value chosen. *Id.*, Tr. 638. The Intervenor also question the use of a 5.5% rod bow penalty for the instant amendments instead of the 14.9% penalty applied in a previous Safety Evaluation (December 9, 1983) issued in connection with the earlier core design amendments.

29. During their cross-examination of the Staff's witness, Intervenor offered into evidence the December 9, 1983 Safety Evaluation (SE) supporting the amendments authorizing the use of OFA fuel and WABA rods at Turkey Point, which were issued prior to the instant amendments. *See, e.g.*, Tr. 764-82. Through the introduction of the December 9, 1983 SE, Intervenor sought, in part, to establish that the safety margin for the two Turkey Point reactors had been significantly reduced since the 1.56 calculated DNBR under the previous amendments provided a 25% margin over the 1.17 acceptance limit for OFA fuel, whereas the 1.34 calculated minimum DNBR for the amendments contested here allows only a 12.7% margin above the acceptance limit. *See* Tr. 775, 812. Although we declined to receive the December 9, 1983 SE as an exhibit, we allowed Intervenor to ask limited questions on the Safety Evaluation to probe whether any inconsistency existed. Tr. 781.

30. The Staff testified that there are no rod bow data for 15 x 15 array OFA fuel, but there are extensive data on 15 x 15 LOPAR fuel which has a geometry similar to 15 x 15 OFA fuel, but has a stronger Inconel spacer grid and therefore a greater rod bow magnitude than OFA fuel. Thus, using this data base for the rod bow penalty is conservative. Hsui, Tr. 818. In addition, the use of a 5.5% rod bow penalty instead of the 14.9% penalty was appropriate since the 5.5% penalty was

based on an improved calculational method which was approved by the NRC Staff. Hsii, Tr. 813-16.

31. Testimony by the Staff and Licensee persuades us that the reduction in the operating margin above the safety margin DNBR acceptance limit of 1.17 is not significant. The Staff and Licensee testified that the calculated DNBR for these amendments was lower due to the increase in peaking factors ($F_{\Delta H}$, $F_{\Delta Q}$) which makes the hottest channel in the core hotter and thus lowers DNBR. Hsii, Tr. 810-11; Dzenis, Tr. 341. Further, the Staff testified that the lower operating DNBR margin of 12.7% is not a reduction in a safety margin because the safety margin is provided by the 95/95 DNBR limit of 1.17. Hsii, Tr. 901-02.

32. The evidence establishes that the rod bow penalty meets the 95/95 criterion of the SRP. The assumptions regarding burnup and rod bow location and the use of data for fuel of similar geometry, but which has greater rod bow magnitude due to its grid design, were appropriate conservatisms. Accordingly, based on the evidence adduced by Licensee and Staff, the Board finds that the rod bow penalty meets the 95/95 criterion.

Mixed-Core Penalty

33. The Licensee used a homogeneous core model to calculate DNBR for a transitional mixed core containing LOPAR and OFA fuel and accounted for the effects of the mixed core by applying a penalty to the homogeneous core model results. The homogeneous core model safety analysis calculations produced a minimum DNBR value of 1.34 to which any penalties must be applied. The mixed-core penalty accounts for the fact that coexistence of two different fuel designs having different hydraulic resistance characteristics affects the cross flow between the different fuel bundles in such a way that the fuel design having the higher grid resistance will have less flow. Since the OFA fuel has higher grid resistance, more flow would be diverted to the LOPAR fuel. Since the plant-specific safety analysis was performed with the assumption of either a whole core of OFA or a whole core of LOPAR fuel, a penalty was applied to the OFA analysis results to account for this decreased flow, i.e., the DNBR calculated for a whole core of OFA fuel is reduced by the mixed-core penalty. No penalty was applied to the LOPAR fuel since a mixed-core configuration is advantageous to LOPAR fuel in that more flow is diverted to the LOPAR fuel. (Hsii, ff. Tr. 733, at 13-14).

34. The reduction in flow through the OFA fuel was quantified through experiments on the hydraulic characteristics of both the OFA and LOPAR fuel assemblies. Dzenis, Tr. 312. The hydraulic characteristics established by these experiments were used to determine the percent

difference in the DNBR between a homogeneous core and a mixed core for various reactor conditions. These calculations indicated that a 3% DNBR reduction, applied to the OFA fuel, was sufficient to bound all effects for the transition (mixed) core geometry. Hsii, ff. Tr. 733, at 13, 14, 17-18; Dzenis, ff. Tr. 302, at 7.

35. The 3% mixed-core penalty is based on a sensitivity study using NRC-approved methods performed specifically for the 15 x 15 OFA and 15 x 15 LOPAR fuel mixed core. The sensitivity study was performed with the THINC Code by using a homogeneous core model and various mixed-core models, including the worst mixed-core configuration where one OFA assembly is completely surrounded by LOPAR assemblies. The difference in the DNBR calculated with a homogeneous OFA model and mixed-core models is calculated for the cases analyzed at various reactor operating conditions. The results showed the maximum difference is less than 3%. Thus, a 3% mixed-core penalty is used as a bounding value. Hsii, ff. Tr. 733, at 17-18; Dzenis, ff. Tr. 302, at 7; Tr. 318.

36. Intervenors maintained at the hearing, as they do in their Proposed Findings (§§ 25, 32), that the mixed-core penalty does not meet the 95/95 criterion (Edwards, Tr. 634-35) and that studies on the mixed core were "hypothetical" because they were mathematical, unconfirmed by physical measurements and derived from testing that was not reflective of large-scale or full-core measurements. *Id.*, Tr. 573-74. Based on the evidence presented and the proper weight to be accorded the testimony of the witnesses, the Board concludes that the 3% penalty appropriately bounds the effects of the transitional core.

37. The mixed-core penalty of 3% was chosen as the absolute upper bound of mixed-core effects based on three core geometries which were chosen to envelope the range of possible geometries during the transitional core: an OFA assembly surrounded by LOPAR fuel, a checkerboard configuration, and a row of OFA assemblies adjacent to a row of LOPAR. All other configurations are subsets of these three. Dzenis, ff. Tr. 302, at 7; Tr. 382-85.

38. The least favorable configuration from a thermal-hydraulic and mixed-core-penalty viewpoint was the case where a single OFA assembly was surrounded by eight LOPAR assemblies. The conservatism of the 3% bounding estimate for mixed-core effects derives in part, at least, from the fact that fuel loadings are planned to proceed in one-third core increments. Such large increments would virtually preclude the likelihood that the above-described least favorable configuration (a 1 of 9 ratio) would result. The 3% penalty is reported to bound all of the fuel assembly configurations studied, including the unlikely geometry of an

OFA assembly completely surrounded by LOPAR fuel assemblies. Dzenis, Tr. 382-85; Hsii, Tr. 877-78.

39. The THINC Code, which has been approved for use for about 10 years, has been verified by data which show the code can perform thermal-hydraulic analysis. In accordance with the SRP, empirical data were used to verify the code's capability to predict core flow distribution. The code has not been empirically tested against the mixed-core geometry, but as a matter of engineering judgment, it was concluded that the 4.5% difference in the flow resistance between a mixed and a homogeneous core is too small to affect the THINC Code's capability. Hsii, Tr. 855-59.

40. The hydraulics of the mixed core are simple to model using the code if the resistance of every channel at every location and the total flow rate are known. A resistance network can be developed and the flow distribution through the core can be calculated. Hsii, Tr. 754. The Staff also performed an independent calculation using codes similar to the THINC Code and verified that Westinghouse's 3% mixed-core penalty was the right magnitude. *Id.*, Tr. 729-30.

41. The Staff testified that a more precise approach to calculate the minimum DNBR for a mixed core would be to perform the calculations with a model representing the mixed core. However, using a homogeneous core model to calculate the mixed-core minimum DNBR is also acceptable as long as the effect of a mixed core on DNBR is accurately accounted for by a suitable quantity for the mixed-core penalty. Hsii, ff. Tr. 733, at 13.

42. Staff and Licensee testified that applying the mixed-core penalty to the DNBR calculated with a homogeneous core configuration results in a more conservative DNBR than that calculated with a mixed-core model. (Hsii, ff. Tr. 733, at 14; Dzenis, Tr. 384-85). The Intervenor offered no evidence to the contrary.

43. The NRC has approved the homogeneous core approach and mixed-core penalty for Westinghouse plants on a generic basis. This approach is not unique to Turkey Point, but has also been used at various plants having transitional mixed cores. Hsii, ff. Tr. 733, at 14.

44. Dr. Edwards' insistence that the mixed-core penalty be verified against measured data may be misplaced. Even measured data have uncertainties associated with them. Hsii, Tr. 748. The prevailing concern is whether the penalty is conservative. In light of the relatively simple process of analyzing the hydraulics of the mixed core, the analysis and results of the worst-case configuration, and the small difference in the hydraulic resistance, we are confident that the calculated penalty bounds the effects of the transitional core.

45. The Board finds that the 3% mixed-core penalty is sufficiently conservative, that it is not unreasonable to presume that it meets the 95/95 standard.

Applicability of WRB-1 Correlation

46. At the time the amendments which are the subject of this proceeding were being evaluated by the NRC Staff, the WRB-1 CHF correlation had been approved for application to

- 15 x 15 R-grid LOPAR fuel,
- 17 x 17 R-grid LOPAR fuel, and
- 17 x 17 OFA fuel,

with a DNBR safety margin acceptance limit of 1.17. Information demonstrating applicability of the WRB-1 correlation to both 14 x 14 and 15 x 15 OFA fuel, including actual test data specifically representative of 14 x 14 OFA fuel, had been submitted to the NRC Staff for review. In the absence of either a completed generic review or particular test data specifically representative of 15 x 15 OFA fuel, however, the NRC Staff imposed a 2% penalty for the evaluation of the Turkey Point amendments as a conservative measure. Hsii, ff. Tr. 733, at 6-7, 18-19; SER, Staff Exhibit 1, at 4.

47. Staff review of the additional information has now been completed. As a result, the Staff has concluded that the WRB-1 correlation is also applicable to both 14 x 14 and 15 x 15 OFA fuel with a DNBR safety margin acceptance limit of 1.17. Hsii, ff. Tr. 733, at 18-19. Accordingly, there is properly no penalty for application of the WRB-1 correlation to 15 x 15 OFA fuel, and the 2% uncertainty previously assigned — even though it can be accommodated within the 12.7% margin between the 1.34 safety analysis minimum DNBR and 1.17 DNBR acceptance limit — is correctly 0.0%. *See, e.g.,* Dzenis, ff. Tr. 302, at 8.

48. During the hearing, the Intervenors, while not identifying any deficiencies in the analysis employed, expressed some surprise that the WRB-1 correlation should be applicable to 15 x 15 OFA fuel. *E.g.,* Tr. 325-26. To the contrary, however, based on a consideration of test results and the geometries involved, such a result is not all unexpected. Actual test results have demonstrated that the WRB-1 correlation is applicable to

- 15 x 15 R-grid LOPAR fuel,
- 14 x 14 OFA fuel, and
- 17 x 17 OFA fuel.

Hsii, ff. Tr. 733, at 5-7. The 15 x 15 OFA fuel has the same fuel diameter, rod pitch, heated length, and grid spacing as the 15 x 15 R-grid LOPAR

fuel; the only difference is in the grid designs. *Id.* at 18. On the other hand, 14 x 14 and 17 x 17 OFA fuel have mixing grid designs similar to 15 x 15 OFA fuel, but differ in rod diameter. *Id.* at 6, 18. Accordingly, test results demonstrating applicability of the WRB-1 correlation to the three types of fuel listed immediately above essentially encompass all of the physical aspects of 15 x 15 OFA fuel. Thus, it is not surprising — but, rather, to be expected — that the geometry of 15 x 15 OFA fuel is within the applicability range of the WRB-1 correlation.

Independence of Mixed-Fuel Core Hydraulic and Rod Bow Effects and the WRB-1 Correlation Penalty

49. Intervenor argues that “[i]t is entirely likely that the rod bow phenomenon might interact in a fairly complicated way with the already complicated non-uniform hydraulic resistance phenomenon.” Edwards Affidavit, ff. Tr. 606, at 5. Intervenor presented no evidence to support their claim. *See* Edwards, Tr. 593-94. Both the Staff and Licensee witnesses, however, indicated that the rod bow phenomenon and the differential resistance of the OFA and LOPAR fuels to flow in the mixed core are independent phenomena, which are subject to separate modeling and the application of independent penalties. *E.g.*, Dzenis, ff. Tr. 302, at 8; Hsii, ff. Tr. 733, at 19-21.

50. The Staff testified that the penalty for the application of WRB-1 to the 15 x 15 OFA was independent of the rod bow penalty and mixed-core penalty because the correlation was developed without the consideration of, and was not influenced by, rod bowing or the mixed-core configuration. Hsii, ff. Tr. 733, at 19. The Licensee agreed that there was no interaction between the mixed core and WRB-1 and testified that the WRB-1 was applicable to a mixed core since the flow reduction was within the range of applicability of the correlation. Dzenis, Tr. 389-91.

51. A mixed-core configuration does not increase fuel rod bowing or the rod bow penalty on DNBR. (Hsii, ff. Tr. 733, at 19; Dzenis, Tr. 388-89). Fuel rod bowing reduces the subchannel rod-to-rod gap (gap closure). Test data show that there is no noticeable effect on CHF when the gap closure is less than 54% (gap closure is defined as the percent of reduction from the straight rod-to-rod gap due to rod bowing). However, greater gap closure results in a reduction in CHF. The exact mechanism of the adverse rod bow effect on CHF is not known but the evidence from the bow-to-contact test data suggests that the reduction in CHF due to rod bow is a highly localized phenomenon caused by the starvation of coolant in the vicinity of the point of contact. Even though the fuel bundle coolant flow rate has an effect on the subchannel CHF

without rod bowing, the test data show that the "bow effect parameter" (a measure of the difference between the unbowed CHF and bowed CHF) is not noticeably affected by the coolant flow rate. Hsii, ff. Tr. 733, at 19-20.

52. It is also apparent that rod bow has no significant effect on the hydraulic characteristics of the mixed core. A fuel rod is over 12 feet long. It is supported about every 2 feet by a grid structure which serves as the structural element of the fuel assembly. Dzenis, Tr. 328. The distances between adjacent fuel rods are approximately an eighth of an inch, with the vast majority of the area of a fuel assembly occupied by the fuel rods. *Id.*, Tr. 328-29. The deflections that occur with rod bowing are, in most cases, only a few hundredths of an inch over an axial distance of approximately 2 feet. The total localized change in flow area is very gradual and very small. The total flow area of the fuel assembly is essentially unchanged. *Id.*, Tr. 329. There are numerous engineering studies concerning the effects of changes in flow area on flow regime. This change in local flow area is far too gradual and insignificant to cause any hydraulic characteristic change or resulting effect on mixed-core DNBR penalty. *Id.*, Tr. 328-29. For a mixed core with OFA and LOPAR fuel, the flow reduction through the OFA is approximately 2 to 3%. The reduction of flow rate of this magnitude would not affect the localized phenomenon of CHF reduction due to rod bow. Thus, although there may be a physical relationship between the reduction in DNBR due to rod bowing and the flow reduction due to fuel bundle hydraulic resistance, the effect is of a lower order and, as a valid engineering approximation, can be neglected. It is the Staff's technical judgment that it is acceptable to assume that there is no interaction between the effects of fuel rod bowing on CHF and the flow change caused by a mixed-core configuration for calculations to determine DNBR. Therefore, the rod bow penalty and the mixed-core penalty are independent of each other. Hsii, ff. Tr. 733, at 20-21.

53. Based on the evidence presented by Staff and Licensee that the penalties are or can be considered independent and the failure of Intervenor to present any evidence to the contrary, the Board concludes that it is reasonable to assume that the penalties do not interact with each other and no additional penalties for interactions are required.

Summary

54. We agree that the SRP's 95/95 standard is met by assuring that the minimum DNBR calculated for all normal operation and anticipated operational occurrences, after accounting for uncertainties, is greater

than the 95/95 DNBR safety margin design limit. The total penalty for rod bow (5.5%), the mixed core (3%), and the application of the WRB-1 correlation to the 15 x 15 OFA fuel (2%) is obtained from simple summation and is 10.5%. The calculated minimum DNBR for Turkey Point OFA fuel is 1.34. The design DNBR safety margin limit for the WRB-1 CHF correlation is 1.17, and the reduction in DNBR margin from 1.34 to 1.17 is 12.7%, which is greater than the 10.5% total penalty calculated for the plant. Intervenors offered no evidence that the penalties did not bound the phenomena, nor did their questioning persuade us that the quantities were not conservative. Therefore the SRP's 95/95 standard is met. *Id.* at 21-22; Dzenis, ff. Tr. 302, at 4-6.

55. The Board is confident that the witnesses for the Staff and Licensee were competent to offer expert opinions on this subject. Dr. Edwards' perceived role as a "troubleshooter" regarding mathematical modeling (Tr. 707) assisted the Board in sharpening the issues. On the other hand, Dr. Edwards' lack of expertise in DNBR analysis and failure to review all the documentation supporting the values of the penalties lead us to reject his claim that they are not 95/95 values.

56. While conservative engineering approximations may not satisfy the rigors of an applied mathematician's academic discipline, the Board finds no evidence that the three penalties either significantly interact with each other or do not meet the 95/95 standard. The Board concludes that the Licensee's analysis of DNBR and calculated DNBR for all normal and anticipated operational occurrences was performed using NRC-approved methods, the three penalties assessed were either a 95/95 value or a bounding value, which equalled or exceeded an equivalent 95/95 standard and the calculated minimum DNBR of 1.34, after accounting for uncertainties, is greater than the DNBR acceptance limit for OFA fuel. Thus, the SRP's 95/95 standard is met.

Third Board Question

Whether, if that standard is not being satisfied, the reduction in the margin of safety has been significant.

57. With regard to question 2, the Board found that the SRP's 95/95 standard is met by assuring that the minimum DNBR calculated for all normal operation and anticipated operational occurrences, after accounting for uncertainties, is greater than the 95/95 DNBR design limit. The total penalty for rod bow (5.5%), the mixed core (3%), and the application of the WRB-1 correlation to the 15 x 15 OFA fuel (2%) is obtained from simple summation and is 10.5%. The calculated minimum DNBR

for Turkey Point OFA fuel is 1.34. Since the design DNBR safety margin limit for the WRB-1 CHF correlation is 1.17, the DNBR margin between 1.34 and 1.17 is 12.7%, which is greater than the 10.5% total penalty calculated for the plant. (See ¶ 52, *supra*). This resulted from a thorough review of all of the evidence and the Board concludes that there is no reduction in the margin of safety for the Turkey Point units as a result of the license amendments at issue in this proceeding.

58. In sum, the evidence clearly shows that while there may be a reduction in the "operating margin" for the plant, there is no reduction in the margin of safety as a result of the amendments in this proceeding. The 95/95 DNBR limit of 1.17 provides the margin of safety and the 1.34 calculated DNBR for the amendments, after accounting for uncertainties, is greater than the 95/95 limit.⁵

III. CONCLUSION

Based upon the entire evidentiary record in this proceeding, and upon the foregoing findings of fact, the Board concludes the following:

1. The Licensee's analysis of DNBR performed using NRC Staff-approved methodology and compensating for appropriate uncertainties demonstrates at a 95% probability at a 95% confidence level that the hottest rod will not undergo DNB.

2. Contrary to Intervenor's assertion in Contention (d), the margin of safety for the operation of the Turkey Point Plant has not been reduced by the issuance of the contested amendments.

IV. BOARD NOTIFICATION REGARDING CONTENTION (b)

The record in this proceeding was closed on December 12, 1985. Tr. 913.

On August 16, 1985, the Board granted the Licensee's Motion for Summary Disposition of Intervenor's Contention (b), which states:

Whether the entirely new computer model used by the utility, for calculating re-flood portions of accidents meets the Commission's ECCS Acceptance Criteria: specifically, whether a 2.2% reduction in re-flood rate is misleading because for a small decrease in re-flood rate, there results a large increase in fuel temperature. Re-flood rates are critical if below 1 or 2 inches per minute.

⁵ Because we conclude that there has been no reduction in the margin of safety provided by the 95/95 standard, we reject Intervenor's suggestion that we delete the amendments. See Intervenor's Proposed Findings at 25-28.

On June 30, 1986, the NRC Staff, through Board Notification BN-86-17, provided the Board with a copy of a June 2, 1986 Westinghouse Electric Corporation letter and nonproprietary Topical Report which informed the Staff of the need to make some additions and corrections to the Westinghouse 1981 Emergency Core Cooling System (ECCS) evaluation model using the FLECHT correlation and the 1981 ECCS evaluation model using the BART computer code. Although the Licensing Board's grant of summary disposition of Contention (d) was based primarily upon the former, we considered both in connection with the matter. LBP-85-29, 22 NRC 300 (1985).

The notification stated:

[T]he staff believes that the rationale underlying the Board's summary disposition order will not be adversely affected by the new information. First, the Board's dismissal of Contention (b) was based primarily on the ECCS evaluation model calculation using the FLECHT correlation and there is only, at most, a 12°F estimated increase in the previously calculated PCT (i.e., 2152°F). Second, the staff expects that the PCT calculation using the corrected ECCS evaluation model using BART would be below 2200°F. Thus, the staff expects that a corrected analysis with both models would satisfy 10 C.F.R. Part 50, Appendix K, and 10 C.F.R. 50.46.

However, the Board Notification also states that, "given the maximum increase resulting from the errors," the Staff is considering the actions necessary for interim and continued operation with respect to both Westinghouse plants which will remain within the 2200°F acceptance criterion specified in 10 C.F.R. § 50.46(b) and plants which may exceed the criterion. The Staff stated it would keep the Board informed of its actions with respect to the matter.

In view of the information provided in Board Notification BN-86-17, the Licensing Board will retain jurisdiction in this matter pending further actions by the Staff with respect thereto.

V. ORDER

WHEREFORE, in accordance with the Atomic Energy Act of 1954, as amended, and the Rules of Practice of the Commission, and based on the foregoing findings of fact and conclusions of law, IT IS ORDERED THAT License Amendments No. 99 and 93 to Licenses No. DPR-31 and DPR-41, respectively, issued by the Office of Nuclear Reactor Regulation on December 23, 1983, shall remain in full force and effect without modification.

IT IS FURTHER ORDERED that the Licensing Board shall retain jurisdiction in this matter pending receipt of information of any further

actions by the Staff in regard to Board Notification BN-86-17 dated June 30, 1986.

IT IS FURTHER ORDERED, pursuant to 10 C.F.R. § 2.760, that this Initial Decision shall constitute the final decision of the Commission thirty (30) days from its date of issuance, unless an appeal is taken in accordance with 10 C.F.R. § 2.762 or the Commission directs otherwise. *See also* 10 C.F.R. §§ 2.785 and 2.786. Any party may take an appeal from this Decision by filing a Notice of Appeal within ten (10) days after service of this Decision. A brief in support of such appeal shall be filed within thirty (30) days after the filing of the Notice of Appeal (forty (40) days if the appellant is the Staff). Within thirty (30) days after the period has expired for the filing and service of the briefs of all appellants (forty (40) days in the case of the Staff), any party who is not an appellant may file a brief in support of, or in opposition to, the appeal of any other party. A responding party shall file a single responsive brief, regardless of the number of appellants' briefs filed.

THE ATOMIC SAFETY AND
LICENSING BOARD

Robert M. Lazo, Chairman
ADMINISTRATIVE JUDGE

Richard F. Cole
ADMINISTRATIVE JUDGE

Emmeth A. Luebke
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 24th day of July 1986.

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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. 82-471-02-OL)
(Onsite Emergency Planning
and Safety Issues)

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

July 25, 1986

In this Memorandum and Order, the Licensing Board partially grants Applicants' motion by that, in a partial initial decision, it will decide, *inter alia*, whether or not to authorize issuance of a low-power operating license up to 5% of rated power. The Board proceeds to set a schedule for discovery and for the hearing.

GOVERNMENT ENTITIES: PARTICIPATION IN HEARINGS

Having status under 10 C.F.R. § 2.715(c) does not make an interested municipality the spokesman for other parties or participants in this proceeding. *See Puget Sound Power and Light Co.* (Skagit Nuclear Power Project, Units 1 and 2), ALAB-556, 10 NRC 30, 33 (1979); *Houston*

Lighting and Power Co. (Allens Creek Nuclear Generating Station, Unit 1), ALAB-544, 9 NRC 630, 632 (1979).

RULES OF PRACTICE: CHALLENGE TO COMMISSION REGULATIONS

The Board is not the proper forum because it has neither the jurisdiction nor authority either to consider challenges to the Commission's interpretation of its own regulations or to consider challenges to a Commission regulation on the ground that it is contrary to the Atomic Energy Act. 10 C.F.R. § 2.758(a); *see Potomac Electric Power Co. (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 89 (1974).*

MEMORANDUM AND ORDER

(Rulings on Applicants' Motion of June 17, 1986, on TH's Motion of June 23, 1986, and on Hearing Matters)

Memorandum

I. BACKGROUND

During the hearing held in August 1983, the then-presiding Board heard evidence upon, among others, three contentions which related to onsite emergency planning and safety issues.¹ On August 23, 1983, the Board closed the record and, in an Order of September 15, 1983 (unpublished), directed that all parties file proposed findings. The Applicants, the NRC Staff and the Intervenor, New England Coalition on Nuclear Pollution (NECNP) filed proposed findings with respect to NECNP Contention I.B.2. The Applicants, the Staff, and NECNP filed proposed findings with respect to Contentions NECNP III.1 and NH-20, and the State of New Hampshire filed proposed findings with respect to NH-20. Applicants' reply findings were ultimately filed on November 23, 1983.

¹ NECNP Contention I.B.2 asserted that Applicants had not satisfied the requirements of GDC 4 that all equipment important to safety be environmentally qualified because Applicants had failed to specify the time duration over which the equipment was qualified.

Similar Contentions NECNP III.1 and NH-20 asserted, in substance, that the emergency plans did not contain an adequate emergency classification scheme as required by 10 C.F.R. § 50.47 and Part 50, Appendix E, and by NUREG-0654.

The present Board was appointed on September 9, 1985, to preside over all safety and onsite emergency planning issues. In an Order of October 4, 1985 (unpublished), noting that during the 1983 hearing certain documents relied upon by the parties were to be updated, revised, or completed within a short time thereafter, the Board directed that the Staff inform it whether certain documents identified in the Order had been submitted by the Applicants and whether the Staff's evaluations of these submissions had been completed. Upon being advised by the Staff that one of the documents had not been submitted by the Applicants in final form and that the Staff had not completed its reviews of other submissions, our Order of November 4, 1985 (unpublished) stated as follows:

We have reviewed the record and have concluded that the record needs to be reopened for the limited purpose of supplementation. It is not our intention, and we will not permit the retrying of issues heard before the closing of the record on August 23, 1983. After a prehearing conference, and after discovery, if any, a supplementary hearing will be ordered to take evidence on the above-identified matters pertaining to Contentions NECNP I.B.2, NECNP III.1 and NH 20,² which involve significant health and safety issues, and which were not previously ripe for hearing.

²If NH Contention 10 is not informally resolved, evidence will be taken on that contention as well during the supplementary hearing.

Thereafter, in the Order of January 8, 1986 (unpublished), the Staff was requested to furnish reports upon the status of its revisions to certain documents identified in the Order of November 4, 1985. Ultimately, on June 4, 1986, the Staff appended to its fifth monthly status report copies of § 13.3 and § 18, which will appear in Supplement 4 to the Safety Evaluation Report (SSER 4) when published. Section 13.3 reflects the Staff's completed review of the Seabrook emergency classification and action level schemes (the focus of NECNP Contention III.1 and New Hampshire Contention 20). Section 18 reflects the Staff's review of the Seabrook control room design (the focus of NH Contention 10).² On June 11, 1986, the Staff submitted copies of § 3.11, which will appear in SSER 5, when published. Section 3.11 reflects the Staff's completed review of the Applicants' environmental qualification of electrical equipment (the focus of NECNP Contention I.B.2).

On June 17, 1986, Applicants filed a motion requesting that the Board take the following actions:

² During prehearing proceedings in 1982, the Board had permitted the Seacoast Anti-Pollution League (SAPL) to participate as a joint intervenor with respect to NH-10. See Memorandum and Order of September 13, 1982, LBP-82-76, 16 NRC 1029, 1083. In the Memorandum and Order of July 21, 1986, among other things, the Board granted New Hampshire's motion to withdraw its Contention 10, and ruled that said contention was converted to and replaced by SAPL Supplemental Contention 6, which would reflect the identical wording and basis of former Contention NH-10. See LBP-86-22, 24 NRC 103.

1. To incorporate into the hearing record as evidence therein Section 13.3 of SSER No. 4 and the environmental qualification review submitted by the Staff under date of June 11, 1986 as Section 3.11 of SSER Supp. No. 5.

2. To issue an order directing NECNP (with respect to NECNP Contentions I.B.2 and III.1) and the State of New Hampshire (with respect to NH 20) and, if the Board deems them entitled thereto, SAPL and Mass AG to state whether they desire any cross-examination with respect to the materials incorporated into the record and, if so, to state with particularity the reasons why such cross-examination is necessary to develop a sound record.

3. In the event further proceedings are requested and allowed, to schedule and hold the same as soon as possible consistent with the Board members' convenience and availability.

4. To close the record and thereafter issue a partial initial decision authorizing operation of Seabrook Unit No. 1 up to and including 5% of rated power.

II. DISCUSSION OF SUBMISSIONS OPPOSING, IN PART, THE APPLICANTS' MOTION OF JUNE 17, 1986

1. *The Town of Hampton (TH)*

On June 23, 1986, in a submission in the form of a motion, TH partially excepted to the Applicants' motion of June 17, 1986, apparently because Applicants' motion sought to prevent interested parties and participants (other than those named in Applicants' motion) from fully participating in this proceeding. Applicants filed an opposing response on June 27, 1986, and the NRC Staff objected in a response of July 11, 1986.

We consider TH's exceptions only to the extent that, in requesting a hearing and permission to participate, they are advanced on its own behalf and to protect its own interests.³ As Applicants point out, the Board's Order of December 20, 1982 (unpublished), had directed TH to indicate with reasonable specificity the subject matters on which it desired to participate but that TH did not comply. Applicants also point out that TH failed to file proposed findings with respect to the onsite emergency planning and safety issues. The Staff points out that TH does no more than assert a general desire to have a hearing and vaguely allude to the Chernobyl accident — i.e., TH fails to specify the deficiencies in the relevant sections of SSERs 4 and 5 that relate to NECNP Contentions I.B.2 and III.1 and to NH-20. Finally, we note that at no time during the August 1983 evidentiary hearing did a representative of

³ TH's status as a 10 C.F.R. § 2.715(c) interested municipality does not make it a spokesman for other parties or participants in this proceeding. See *Puget Sound Power and Light Co.* (Skagit Nuclear Power Project, Units 1 and 2), ALAB-556, 10 NRC 30, 33 (1979); *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-544, 9 NRC 630, 632 (1979).

TH even appear. Clearly § 2.715(c) of our Rules of Practice does not mandate that an interested municipality *must* file proposed findings. However, TH's failure to file proposed findings of fact, its failure to comply with the Order of December 20, 1982, its failure to appear at the evidentiary hearing upon onsite emergency planning and safety issues, and its current failure to specify the deficiencies in the pertinent sections of SSERs 4 and 5, compel us to conclude that TH has no genuine interest in participating in this case wherein the record has been reopened for the limited purpose of supplementing the evidence pertaining to the aforementioned NECNP and NH contentions. Accordingly, TH's motion is denied, and it may not participate.

2. Seacoast Anti-Pollution League (SAPL)

In a response of June 27, 1986, SAPL does not oppose Applicants' motion of June 17, provided all parties to this proceeding are allowed to participate in the hearing with respect to the issues allegedly resolved by § 13.3 of SSER 4 and by § 3.11 of SSER 5, and provided that the Board's partial initial decision will not authorize operation of Seabrook Unit No. 1 up to 5% of rated power. As reflected in the cases cited in note 3, above, an intervenor's status as a party does not make it the spokesman for other parties and participants. Thus, we consider only whether SAPL has a right to participate in the hearing. Further, we reject SAPL's second condition since 10 C.F.R. § 2.758(a) precludes a licensing board from considering attacks upon or challenges to the Commission's rules or regulations and since SAPL, in any event, has not complied with § 2.758 procedures for petitioning that the application of §§ 50.47(d) and 50.57(c) be waived or an exception be made in this proceeding.

However, in its response SAPL, unlike TH, specifies what it deems to be deficiencies in §§ 13.3 and 18 of SSER 4⁴ and § 3.11 of SSER 5, and states that it is entitled to participate via cross-examination in the reopened hearing.⁵ We also take note of the fact that SAPL, unlike TH, did attend the 1983 hearing sessions. Finally, there can be no question but that SAPL has the right to present evidence upon and to cross-examine upon its Supplemental Contention 6 (*see* Memorandum and Order of July 21, 1986, LBP-86-22, *supra*). Thus, although SAPL did not file pro-

⁴ With respect to § 18 of SSER 4, SAPL incorporates by reference the reasons why it deems the Staff's review was inadequate, which were set forth in its objection of June 19, 1986, to New Hampshire's motion to withdraw Contention NH-10.

⁵ We are not told and we do not decide at this time whether the alleged deficiencies are within the scope of Contentions NECNP I.B.2, NECNP III.1, NH-20, and SAPL Supplemental Contention 6 (formerly NH-10). *See especially* note 3 of the Memorandum and Order of July 21, 1986 (LBP-86-22, *supra*).

posed findings of fact after the closing of the record with regard to Contentions NECNP I.B.2, NECNP III.1, and NH-20, we conclude that SAPL has shown a genuine interest in participating in the reopened hearing and may participate therein.

3. *Commonwealth of Massachusetts (Mass.)*

In its answer of July 2, 1986, Mass. objects to the Applicants' motion of June 17 only insofar as the motion requests the issuance of an operating license for operation not in excess of 5% rated power. Standing alone, the objection (like SAPL's) is denied as being a challenge to the Commission's regulations which is barred by § 2.758(a). However, Mass. relies upon and incorporates by reference the Petition of Attorney General Francis X. Bellotti to Revoke Regulation 50.47(d) or in the Alternative to Suspend Its Application in the Seabrook Licensing Proceeding, which cites 10 C.F.R. § 2.758. We have reviewed the Mass. Petition, which had also been filed on July 2, 1986, and have reviewed the Applicants' response of July 8 and the Staff's response of July 22, 1986. As will be reflected in a Memorandum and Order to be issued as soon as is possible, the Board has determined that Mass., as the petitioning party, has failed to comply with § 2.758(b) and moreover has raised issues that have been previously rejected by the Commission. Thus, the petition is being denied since Mass. has not made a prima facie showing that the application of § 50.47(d) in this proceeding would not serve the purpose for which the regulation was adopted and that the application of the regulation should be waived or an exception granted.

No purpose would be served by delaying the issuance of the instant Memorandum and Order until after the formal issuance of our determination with respect to the Mass. § 2.758 petition. Accordingly, we deny the objection to the granting of Applicants' motion. Mass. attended the August 1983 evidentiary hearings and, as an Interested State, it may continue to participate in the reopened hearing.

4. *New England Coalition on Nuclear Pollution (NECNP)*

On July 2, 1986, NECNP filed an opposition to Applicants' motion for issuance of partial initial decision authorizing low-power operation. Therein, NECNP concedes that it challenges the Commission's interpretation of 10 C.F.R. § 50.57(c) and challenges 10 C.F.R. § 50.47(d). It argues that § 50.57(c) "may only be interpreted to require the completion of all hearings relevant to full power operation before any license, including a license authorizing low power operation, is issued." With re-

spect to § 50.47(d), it argues that it is neither necessary nor appropriate to request a waiver pursuant to § 2.758 because § 50.47(d) is "contrary to the requirements of the Atomic Energy Act." The short of it is that this Board is not the proper forum for consideration of such matters because it has neither the jurisdiction nor authority either to consider challenges to the Commission's interpretation of its own regulations or to consider challenges to a Commission regulation on the ground that it is contrary to the Atomic Energy Act.⁶

NECNP does not otherwise oppose Applicants' motion. It requests that it be permitted to participate in the reopened hearing with respect to its Contention I.B.2 (duration of environmental qualification). Since NECNP participated in the 1983 hearing, cross-examined and filed proposed findings of fact with respect to Contention I.B.2, and specifies what it deems to be deficient in the Applicants' reports and in § 3.11 of SSER 5,⁷ its request is granted.

Order

1. TH's motion of June 23, 1986, is denied.
2. Applicant's motion of June 17, 1986, is granted to the extent that, as set forth below in ¶ 3, the Board schedules a hearing. Other parts of the motion have been granted, as modified below, in the Board's rulings on hearing matters. We grant the final part of the motion (Applicants' requested action 4) but only to the extent that the Board, in its partial initial decision, will decide, inter alia, whether or not to authorize issuance of an operating license for operation of Seabrook Unit 1 up to and including 5% of rated power.
3. With respect to hearing matters:
 - a. During the reopened hearing, the Board will receive supplementary evidence upon NECNP Contention I.B.2 and upon NECNP III.1 and NH-20. The Board will also receive evidence upon SAPL Supplemental Contention 6 (formerly NH-10).
 - b. Since the Staff has advised in a letter of July 23, 1986, that copies of SSER 4 were served on June 11, 1986, and that it expected that SSER 5 would be published and served within the next 2 weeks, the Staff should offer these two documents into

⁶ 10 C.F.R. § 2.758(a); see *Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 89 (1974).

⁷ We are not told and we do not decide at this time whether the alleged deficiencies are within the scope of NECNP Contention I.B.2. See especially note 3 of the Memorandum and Order of July 21, 1986 (LBP-86-22, *supra*).

evidence as exhibits in order to comply with 10 C.F.R. § 2.743(g).

- c. SAPL, NECNP, the State of New Hampshire, and the Commonwealth of Massachusetts, and, of course, the Applicants and the Staff may participate in this reopened but limited hearing with respect to NECNP I.B.2, NECNP III.1, and NH-20. NECNP, however, indicates that it wishes to participate only with respect to NECNP Contention I.B.2. The above-named parties and States, as well as any admitted interested municipality, which has expressly shown a genuine, specific interest in the subject matter of SAPL's Supplemental Contention 6 (formerly NH-10), may participate with respect to this contention.
- d. Discovery shall begin immediately. With respect to written interrogatories and requests for production of documents, August 8, 1986, is the final due date for the serving thereof by express mail. Answers to interrogatories shall be served by express mail by August 25, 1986, and documents shall be produced for inspection and copying by that same date. Depositions shall be completed by August 25, 1986.
- e. Written direct testimony shall be served by express mail by September 12, 1986.
- f. The reopened hearing will be held in a 4-day session sometime between September 29 and October 10. As soon as hearing room accommodations are secured, an Order will be issued specifying the date, time, and location of the hearing.
- g. At the beginning of the reopened hearing, the parties (including any § 2.715(c) entity allowed to participate in 3.c, *supra*) will submit only to the Board three copies of their cross-examination plans. A party (including any § 2.715(c) entity) will not be permitted to cross-examine if it fails to submit a cross-examination plan. These plans must set forth the cross-examination questions to be asked, and explain what is being attempted to be established through asking a discrete question or pursuing a series of questions. Each plan will be incorporated into the record upon completion of a party's cross-examination.
- h. In light of the rulings on hearing matters, *supra*, a conference prior to the hearing will not be necessary. The parties are expected to confer informally and resolve any procedural contro-

versies. If there are any unresolved procedural controversies, a telephone conference call to the Board may be utilized.

**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 25th day of July 1986.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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

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

July 30, 1986

In this Memorandum and Order, the Licensing Board denies an Interested State's petition requesting that the application of 10 C.F.R. § 50.47(d) be waived or an exception be made in this proceeding. The Licensing Board denies the petition because the Interested State had not made a prima facie showing that the application of the regulation in this proceeding would not serve the purpose for which it was adopted.

LICENSING BOARDS: CONSIDERATION OF GENERIC ISSUES

With respect to all of its arguments, the Interested State failed to comply with 10 C.F.R. § 2.758(b) — it did not specify the special circumstances with respect to the subject matter of this particular proceeding, which are such that application of the regulation would not serve

the purpose for which the regulation was adopted. The circumstances adverted to in these arguments were generic in nature and were not unique to this proceeding.

OPERATING LICENSE PROCEEDINGS: LOW-POWER LICENSES

The Interested State's second argument, which asserted that low-power testing would significantly and irreversibly affect the environment, was rejected by the Commission in *Long Island Lighting Co.* (Shoreham Nuclear Power Station), CLI-85-12, 21 NRC 1587, 1590 (1985). With respect to the Interested State's third argument, which asserted that low-power testing raised the risk of offsite consequences, in *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-83-17, 17 NRC 1032, 1034 (1983), the Commission indicated that it had adopted § 50.47(d) because it had determined that fuel loading and low-power operation do not pose significant risks to public health and safety.

MEMORANDUM AND ORDER (Denying Massachusetts' 10 C.F.R. § 2.758 Petition)

Memorandum

On July 2, 1986, the Interested State of Massachusetts filed a Petition to Revoke Regulation 50.47(d) or in the Alternative to Suspend Its Application in the Seabrook Licensing Proceeding. The Applicants filed an opposing response on July 8 and the NRC Staff filed its opposing response on July 22, 1986. On July 23, 1986, New England Coalition on Nuclear Pollution and Seacoast Anti-Pollution League filed an untimely motion to join in support of the Massachusetts petition. Since they merely adopt the arguments advanced in the Massachusetts petition, the motion to join is granted.

The petition is based upon 10 C.F.R. § 2.758.¹ We note that Massachusetts seeks to revoke or to suspend the application of regulation 10

¹ 10 C.F.R. § 2.758 provides in pertinent part:

(a) Except as provided in paragraphs (b), (c), and (d) of this section, any rule or regulation of the Commission, or any provision thereof, . . . shall not be subject to attack by way of discovery, proof, argument, or other means in any adjudicatory proceeding

(b) A party to an adjudicatory proceeding involving initial licensing subject to this subpart may petition that the application of a specified Commission rule or regulation or any provision thereof,

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C.F.R. § 50.47(d).² Since licensing boards have only limited jurisdiction, we are not authorized to revoke or to suspend the Commission's rules or regulations, and thus we could summarily deny the instant petition.³ However, the body of the petition (except with respect to Massachusetts' first argument) reflects and we assume that Massachusetts is actually requesting that the application of § 50.47(d) be waived or an exception be made in this proceeding. Accordingly, we proceed to discuss and rule upon the petition.

The Massachusetts petition, accompanied by affidavits,⁴ presents four arguments. First, Massachusetts argues that, in permitting the issuance of

of the type described in paragraph (a) of this section, be waived or an exception made for the particular proceeding. The sole ground for petition for waiver or exception 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. The petition shall be accompanied by an affidavit that identifies the specific aspect or aspects of the subject matter of the proceeding as to which application of the rule or regulation (or provision thereof) would not serve the purposes for which the rule or regulation was adopted. The petition shall be accompanied by an affidavit that identifies the specific aspect or aspects of the subject matter of the proceeding as to which application of the rule or regulation (or provision thereof) would not serve the purposes for which the rule or regulation was adopted, and shall set forth with particularity the special circumstances alleged to justify the waiver or exception requested. Any other party may file a response thereto, by counter-affidavit or otherwise.

(c) If, on the basis of the petition, affidavit and any response thereto provided for in paragraph (b) of this section, the presiding officer determines that the petitioning party has not made a prima facie showing that the application of the specific Commission rule or regulation or provision thereof to a particular aspect or aspects of the subject matter of the proceeding would not serve the purposes for which the rule or regulation was adopted and that application of the rule or regulation should be waived or an exception granted, no evidence may be received on that matter and no discovery, cross-examination or argument directed to the matter will be permitted, and the presiding officer may not further consider the matter.

² 10 C.F.R. § 50.47(d) provides:

(d) Notwithstanding the requirements of paragraphs (a) and (b) of this section, no NRC or FEMA review, findings, or determinations concerning the state of offsite emergency preparedness or the adequacy of and capability to implement State and local offsite emergency plans are required prior to issuance of an operating license authorizing only fuel loading and/or low power operations (up to 5% of the rated power). Insofar as emergency planning and preparedness requirements are concerned, a license authorizing fuel loading and/or low power operation may be issued after a finding is made by the NRC that the state of onsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. The NRC will base this finding on its assessment of the applicant's emergency plans against the pertinent standards in paragraph (b) of this section and Appendix E of this part.

³ Pursuant to 10 C.F.R. § 2.802, Massachusetts' recourse would be to file a petition for rulemaking with the Commission requesting that § 50.47(d) be amended or rescinded.

⁴ The first affidavit dated July 2, 1986, is that of Dr. Albert Carnesale, Professor of Public Policy and Academic Dean of the John F. Kennedy School of Government, Harvard University. Dr. Carnesale asserts in substance (a) that low-power testing creates an irreversible accumulation within the fuel elements of radioactive materials, which would affect the severity of potential accidents that might occur during the testing program, (b) that even if a full-power license was not granted, radioactivity induced during the low-power testing would increase the risks and costs associated with disassembly or entombment of the reactor, and (c) that, over time, low-power testing would render the fuel elements more susceptible to leaking, which would further complicate disassembly or entombment even if an operating license were not to be granted.

The second affidavit, unsigned, undated, and prepared for use in the Shoreham proceeding, is that of Messrs. Dale G. Bridenbaugh and Gregory C. Manor, the president and vice-president, respectively, of

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an operating license authorizing fuel loading and/or low-power operation at up to 5% of rated power before any findings or determinations are made "concerning the state of offsite emergency preparedness or the adequacy of and capability to implement State and local offsite emergency plans," § 50.47(d) violates § 189a of the Atomic Energy Act, 42 U.S.C. § 2239(a) (1982) which provides a right to a prior hearing on all issues material to issuance of an operating license. Thus, Massachusetts urges that § 50.47(d) must be held invalid. (Petition, ¶¶ 1-5, at 1-3). As noted above, as a Board with limited jurisdiction, we have no authority to determine that § 50.47(d) violates the Atomic Energy Act and is thus invalid. However, we will assume that Massachusetts is arguing that, since this regulation violates the Atomic Energy Act, the application of this regulation should be waived or excepted with respect to the subject matter of this proceeding.

Second, Massachusetts asserts that five of the six Massachusetts communities within the plume exposure pathway have voted not to participate in emergency response planning and that, after the Chernobyl accident, the Governor of Massachusetts has suspended the Commonwealth's emergency response planning process. Massachusetts argues that, since there is a "strong likelihood" that the Seabrook plant may not receive a full-power license until after several years of litigation, if ever, any possible benefits to be attained from beginning low-power testing at this time would be far outweighed by the significant and irreversible environmental consequences of such operation.⁵ (Petition, ¶¶ 1-11 at 3-6). Third,

MHB Technical Associates, San Jose, California. They assert, in substance, (a) that none of the benefits assumed in the NRC's 1977 Environmental Impact Statement for the Shoreham plant in New York State would be achieved by low-power testing because low-power operation would result in environmental impacts, such as plant contamination with radioactive material, the likely loss of the resale value of the fuel and other components once they become irradiated, the cost of decontamination, decommissioning, and disposal, and worker exposure, and (b) that low-power testing can be rationally justified only where there is no substantial doubt that the plant will be granted an operating license.

The third affidavit, dated July 2, 1986, is that of Mr. Charles V. Barry, who is Secretary of Public Safety for the Commonwealth of Massachusetts. He asserts, in substance, (a) that, after the Chernobyl accident, Governor Dukakis directed that the radiological emergency response plans be put on hold until federal agencies such as the NRC have thoroughly assessed nuclear power in light of that accident, and (b) that five of the six Massachusetts communities within the plume exposure pathway have voted not to participate in radiological emergency response planning.

The fourth affidavit, dated July 2, 1986, is that of Dr. Gordon R. Thompson, executive director, Institute for Resource and Security Studies, Cambridge, Massachusetts. He asserts (a) that prolonged operation at 5% of rated power may create the potential for core damage and release of radioactive material to the environment, and (b) that, regarding the particular circumstances at Seabrook, it is important to determine the duration of operation at the 5% level because there could be a long delay, perhaps a year or more, which could, in the event of an accident, lead to excess offsite doses.

⁵ At page 4 of the Petition, in citing § 50.47(a)(1), Massachusetts deleted the words "[e]xcept as provided in paragraph (d) of this section." The Board has the right to expect that a party will not selectively delete important wording from a regulation in an effort to advance an argument.

Massachusetts argues that, if a low-power license is issued, such *operation* would very likely continue for a period of time much longer than that contemplated by the Commission in promulgating § 50.47(d) and thereby raise a risk of offsite consequences not intended in adopting this regulation (Petition, §§ 12-14, at 6). Fourth, Massachusetts argues that § 50.47(d) should be waived pending a full investigation and assessment of the Chernobyl accident (Petition, § 16, at 7).⁶

With respect to all four arguments, Massachusetts has failed to comply with § 2.758(b) — it does not specify the special circumstances with respect to the subject matter of this particular proceeding, which are such that application of the regulation would not serve the purpose for which the regulation was adopted. We conclude that the circumstances adverted to in these arguments are generic in nature and are not unique to this Seabrook proceeding.

With respect to both its second and third arguments, we note that Massachusetts apparently equates the duration of *operation* at low power with the length of time postulated between receipt of the low-power and full-power licenses rather than with the Applicants' low-power testing plans. The statement that "such operation [at low-power] is very likely to continue for a period of time much longer than that contemplated by the Commission in promulgating Regulation 50.47(d)" (Petition, § 14, at 6) is nowhere present in the Thompson affidavit cited to support it. That affidavit postulates potential accident effects that might occur "after prolonged operation at the 5 percent level," but neither the affidavit nor the argument suggest why the Seabrook low-power testing would be prolonged or significantly different from any other low-power testing program. Thus, we adhere to our conclusion that the circumstances adverted to in all four arguments are generic in nature and are not unique to this proceeding.

Moreover, we also conclude that the second and third arguments raise issues that have been rejected by the Commission. With respect to the second argument which asserts that the low-power testing will significantly and irreversibly affect the environment, in *Long Island Lighting Co. (Shoreham Nuclear Power Station)*, CLI-85-12, 21 NRC 1587, 1590 (1985), the Commission observed that "[t]he primary benefit of early low-power operation is that it will allow the early discovery and correction of unforeseen but possible problems which may prevent or delay full-power operation at an enormous expense to LILCO and/or its customers." This being so, the Commission concluded that:

⁶ There is no numbered paragraph 15 in the petition.

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.

Id. With respect to the third argument which asserts that the low-power testing raises the risk of offsite consequences, the Commission has indicated that it had adopted § 50.47(d) because it had determined that fuel loading and low-power operation do not pose significant risks to public health and safety. In *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-83-17, 17 NRC 1032, 1034 (1983), the Commission stated:

Section 50.47(d) gives unqualified authorization to issue a low-power license in the absence of NRC or FEMA approval of an offsite emergency plan so long as other prerequisites, including an adequate state of onsite emergency preparedness, are met. The language of the regulation requires no predictive finding of "reasonable assurance" with regard to offsite emergency planning prior to low-power operation and none was intended by implication or otherwise. In issuing section 50.47(d), the Commission did not implicitly make any generic findings about the likelihood that emergency preparedness could be developed. Rather, our position was simply (1) not all of the emergency planning requirements were necessary for fuel loading and low-power operation because of the nature of the risks, and (2) we would not grant a full-power license until the emergency planning requirements for full power had been met. (The Board recognized this was a reasonable interpretation of the Commission's statements accompanying the rule. [LBP-83-21, 17 NRC 599, 601-02 n.8 (1983)].) Moreover, it seems apparent that the Licensing Board's preliminary doubt about whether there is reasonable assurance that a sufficient offsite emergency plan can and will be developed is no different from preliminary doubt about whether a safety issue can be adequately resolved which has significance for full-power operation but not for low-power activities. Interjection of such doubts into the low-power proceeding could create a limited full-power hearing, before authorization of the low-power license. Such a procedure would have little to commend it.

Thus, Massachusetts' petition fails to set forth special circumstances with respect to the subject matter of this particular proceeding which are such that application of the regulation would not serve the purposes for which the regulation was adopted and moreover has raised issues which have been previously rejected by the Commission.

Order

In light of the discussion, *supra*, the 10 C.F.R. § 2.758 petition is denied since Massachusetts has not made a prima facie showing that the application of § 50.47(d) in this proceeding would not serve the purpose for which the regulation was adopted and that the application of the regulation should be waived or an exception granted.

THE ATOMIC SAFETY AND LICENSING BOARD

Sheldon J. Wolfe, Chairman
ADMINISTRATIVE JUDGE

Emmeth A. Luebke
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 30th day of July 1986.

SEPARATE OPINION OF JUDGE JERRY HARBOUR

I concur in the denial of the "Petition of Attorney General Francis X. Bellotti to Revoke Regulation 50.47(d)," but I would have dealt differently with this pleading. I would have dismissed the petition because of its obstructionist positions.

In the petition, filed pursuant to 10 C.F.R. § 2.758, the Attorney General would have us "revoke" 10 C.F.R. § 50.47(d) in this proceeding and not conduct low-power license hearings on the grounds that, inter alia, Massachusetts will either delay or halt production of necessary emergency response plans, with the result that the full-power license for Seabrook will be delayed for a year or more, or may never issue at all. Hence, via this bootstrap argument, the Attorney General urges that a low-power license should not be issued. Petition at 3-6, ¶¶ 3-6, 8-11, Carnesale, Barry, and Thompson affidavits.

Thus, by its own admitted action (or inaction), the Attorney General intends to obtain the relief it would seek, and petitions the Licensing Board to sanction this action under the guise of adjudication. This is an affront to the judicial process, and, in my view, grounds for dismissal of the petition.

Further, the Attorney General makes the point that five of the six Massachusetts communities involved have voted not to participate in any exercise of emergency response plans for Seabrook (Petition at 3, ¶ 2) followed by the position that the Governor has not indicated any intention to submit, or to implement *in the event of an emergency* (emphasis added), compensatory plans for the five recalcitrant Massachusetts communities (*id.*, ¶ 3, *citing* Barry affidavit). The Attorney General indicates here that even if the Seabrook plant were to operate, the Commonwealth would not prepare or implement emergency plans to protect its citizens in the event of an emergency. I find this statement by the Attorney General appalling, and in direct contradiction of stated concerns for protection of the public health and safety expressed elsewhere in the petition. The statement is *not* supported by the Barry affidavit so cited.

Jerry Harbour
ADMINISTRATIVE JUDGE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

**Sheldon J. Wolfe, Chairman
Frederick J. Shon
Dr. Oscar H. Paris**

In the Matter of

**Docket Nos. 50-289-OLA-1
50-289-OLA-2
(Steam Generator
Plugging Criteria)**

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

July 30, 1986

In an Order, absent objections, the Licensing Board grants the Licensee's motion to defer the hearing schedule.

ORDER
(Granting Licensee's Motion to Defer Hearing Schedule)

On July 17, 1986, the Licensee filed a motion for deferral of hearing schedule. It requested that the schedule set forth in the Board's Memo-

random and Order of May 19, 1986 (LBP-86-14, 23 NRC 553)* be modified to provide that on:

March 2, 1987	Discovery begins
May 11, 1987	Discovery ends
June 1, 1987	Motions for summary disposition to be filed
June 26, 1987	Answers to motions for summary disposition to be filed
August 7, 1987	Written testimony to be filed
August 25, 1987	Hearing to commence

Licensee advised that TMIA concurred. Mr. Au, attorney for the Commonwealth of Pennsylvania, advised the Board's secretary that he has no objection to the granting of the motion. On July 28, 1986, the Staff responded that it had no objection.

Absent objections, Licensee's motion for deferral of hearing schedule is granted, and the schedule in the Memorandum and Order of May 19, 1986, is accordingly modified.

It is so ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Sheldon J. Wolfe, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 30th day of July 1986.

*The Memorandum and Order of May 19, 1986, was clarified in a Memorandum and Order of June 18, 1986 (LBP-86-17, 23 NRC 792).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-529

ARIZONA PUBLIC SERVICE
COMPANY, *et al.*
(Palo Verde Nuclear Generating
Station, Unit 2)

July 1, 1986

The Director of the Office of Nuclear Reactor Regulation denies the Petition submitted by Barbara S. Bush and Myron L. Scott on behalf of the Coalition for Responsible Energy Education asserting that there exists at Palo Verde Nuclear Generating Station (PVNGS) a continuing pattern of managerial incompetence and administrative failures that will adversely affect safe conduct of the operation of PVNGS Unit 2.

SALP REPORTS

SALP reports routinely identify deficiencies in the performance of construction, pre-operations, and operations activities at nuclear power plants and the mere identification of a need for increased attention to specific deficiencies does not necessarily give rise to significant safety concerns. Licensees do not have bad SALP ratings and the SALP report deficiencies relied upon by Petitioner accordingly do not provide a basis for establishing management incompetence by Licensees.

SCHEDULAR AND ECONOMIC PRESSURES

There is insufficient evidence to support Petitioner's claim that the various rate proceedings, audits, reviews, and lawsuits currently affecting

PVNGS will produce unsafe conditions. Utilities are typically involved in proceedings of this nature.

MANAGEMENT COMPETENCE

Given the magnitude of construction, pre-operations, and operations activities associated with completing, testing, and operating three nuclear power plants (one in construction, one in startup, and one in operation), the limited number of deficiencies cited by Petitioner does not give rise to significant safety concerns.

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

Introduction

By a petition dated January 12, 1986, an Addendum to the Petition dated January 21, 1986, a filing with the Commission dated February 1, 1986, and a letter to D.F. Kirsch (Region V) dated April 22, 1986, Barbara S. Bush and Myron L. Scott, on behalf of the Coalition for Responsible Energy Education (Petitioner), allege that there exists considerable evidence of management incompetence due to an alleged continuing pattern of managerial and administrative failures in the Palo Verde Nuclear Generating Station (PVNGS) of the Arizona Public Service Company, *et. al.* (Licensees). According to Petitioner, the management problem will be exacerbated by the startup and operation of Unit 2 which may overburden management and by significant economic and schedular pressures present at PVNGS.¹ Petitioner is concerned that these matters will affect safe conduct of low-power operation and power ascension of PVNGS Unit 2.²

The Petitioner requests suspension of nuclear operation and the low-power operating license for PVNGS Unit 2 and that further licensing activity for Unit 2 be deferred pending completion of hearings on the issues raised in the Petition. Additionally, Petitioner requests that a Special Management Inspection Oversight Team be constituted by the NRC to

¹ The Licensees' Project Manager for PVNGS is the Arizona Nuclear Power Project (ANPP).

² A second Petition was filed by Petitioner on February 3, 1986, which requested an immediate suspension of PVNGS Unit 1 operation based on allegedly inadequate containment leak rate testing. Petitioner sought retesting of the facility and the public release of all containment leak rate test data including that for PVNGS Unit 2. This Petition will be addressed at a later date. As stated in my February 18, 1986 letter to Petitioner, immediate action with respect to these allegations is not deemed necessary.

confirm that the Licensees have demonstrated improvements in the area of management competence and administrative controls sufficient to assure that issues raised in the Petition have been satisfactorily resolved. Also requested is a systems interaction and reliability study and such organizational studies and procedure changes as may be deemed appropriate.

On February 18, 1986, I acknowledged receipt of this Petition and informed the Petitioner that action will be taken within a reasonable time. I also informed the Petitioner of the reasons I did not believe any immediate actions were needed with regard to this Petition. On February 5, 1986, I requested the views of the Licensees on the issues raised in the Petition. The Licensees responded on February 11, 1986. My Decision in this matter follows.

Background

Arizona Public Service Company (APS) was issued Construction Permits Nos. CPPR-141, CPPR-142, and CPPR-143 for Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, respectively, by the Nuclear Regulatory Commission on May 25, 1976, which authorized construction of these units. The Palo Verde plant is located near Phoenix, Arizona, and consists of three essentially identical 1300-MWE pressurized water reactors of Combustion Engineering System-80 design and related facilities for use in the commercial generation of electric power.

The early construction and NRC inspection activities at Palo Verde were routine. A formal licensee performance appraisal program began in 1980, and an NRC Regional Evaluation of Licensee Performance in August 1980, found generally satisfactory performance by APS. This appraisal program later became the Systematic Assessment of Licensee Performance (SALP).

An NRC Regional Construction Assessment Team inspection was conducted during January to February 1981. The team found strength in construction management and the QA/QC program and weakness in maintenance and storage. Inspection Report 50-528/8102 (April 6, 1981).

A SALP for the period June 1980 to June 1981 was conducted in September 1981 which concluded that the Licensees had achieved improvements in previously identified areas of weakness and, in general, had good performance in design and construction activities. A second SALP was performed in April 1983 for the period of July 1981 to February 1983. The assessment determined that the Licensees' activities at PVNGS were conducted in a cooperative, professional, and safety-conscious

manner during that period, and that Licensees had obtained satisfactory SALP ratings.³

A special Construction Appraisal Team (CAT) inspection was conducted during September and October 1983 which identified problems in the areas of pre-operational testing, a lack of fully effective final inspection by QC, and control of component work after construction. At about the same time period, the NRC investigated an allegation for improper signing of electrical termination cards. As a result of the CAT inspection and the investigation of the allegation, a civil penalty was imposed on APS.

In response to the deficiencies identified by the CAT inspection and an APS QA/QC audit, APS management temporarily suspended all pre-requisite and pre-operational testing in November 1983. Problems prompting the suspension mostly involved the control of equipment status and the quality of test documentation. A major reexamination of test documentation was conducted to provide increased confidence in test results. Testing was resumed in a gradual way, beginning in February 1984, after changes in organizational procedural controls had been implemented and a confirmation of the quality level of previously completed testing work had been established.

A third SALP was conducted in May 1984 for the period of March 1983 to March 1984.⁴ The weaknesses found in the September 1983 CAT inspection were reflected in this SALP, and the SALP Board noted that appropriate corrective action had been implemented.

A special team inspection was conducted during August to September 1984 to follow up on the previous CAT inspection findings and to assess APS actions to increase the level of management control and improvement in QA by the operations and startup groups. The team found the startup work controls associated with maintenance and testing activities to be generally satisfactory and the corrective actions to the CAT findings appeared to have been effective.

On December 31, 1984, a Unit 1 Low-Power License was issued after the readiness review was completed by NRC. Initial criticality was achieved on May 25, 1985. A special NRC inspection team was present to conduct an intensive continuous surveillance of shift operations before, during, and subsequent to initial criticality. The team found the initial criticality was conducted by Licensees in a cautious and professional fashion. The Unit 1 full-power license was issued on June 11, 1985.

³ In the 1983 SALP Report, Licensees had five Category 1 ratings, six Category 2 ratings, and no Category 3 ratings. See note 6, *infra*, for a description of these ratings.

⁴ During this SALP period, Licensees had two Category 1 ratings, ten Category 2 ratings, and two Category 3 ratings. See note 6, *infra*, for a description of these ratings.

An enforcement conference was held in August 1985 as a result of deficiencies identified in the Post-Accident Sampling System (PASS). The Licensees' failure to fully comply with the technical specification regarding PASS was also discussed. A civil penalty in the amount of \$50,000 was assessed for the PASS violation. NRC Enforcement Action 85-87 (Oct. 8, 1985).

In September 1985, a Confirmatory Action Letter was issued to ensure that Unit 1 would remain shut down until the auxiliary spray system reliability issue was resolved with NRR. This problem was remedied during a September 20, 1985 meeting between Licensees and NRR in which Licensees presented satisfactory corrective actions and compensatory measures to return to power. (PVNGS Unit 1 Meeting Minutes of January 1, 1986).

During October to November 1985, a special team inspection was conducted on Unit 1. The team found the Licensees' organization to be competently staffed and functioning in an acceptable manner. Weaknesses were identified in the areas of design change and control of temporary modifications.

On December 9, 1985, a Unit 2 low-power license was issued after the readiness review was completed by the NRC. On December 19, 1985, a fourth SALP was issued (as later partially amended by letter of April 11, 1986, from Kirsch to Van Brunt) for the period of April 1984 to September 1985. The Board found the overall performance to be satisfactory.⁵ On February 13, 1986, Unit 1 was declared to be in commercial operation by the Licensees after the completion of the power ascension test program.

On April 24, 1986, a full-power license was issued for Unit 2. At the time of this issuance, we had fully reviewed Petitioner's claims and had concluded that the operation of Unit 2 would not jeopardize the public health and safety. The reasons for our conclusion are set forth herein.

Principal Issues Raised by Petitioner

Before discussing each of the major areas identified in the Petition, it is important to recognize that the Petition provides little, if any, new information. The Petition consists primarily of excerpts taken from NRC SALP reports (essentially the 1985 Report) and from NRC findings documented in NRC Inspection Reports. These SALP reports include summaries of these inspection findings which resulted in violations. Correc-

⁵ During this SALP period, Licensees had four Category 1 ratings, fifteen Category 2 ratings, and no Category 3 ratings. See note 6, *infra*, for a description of these ratings.

tive action is required for every violation of NRC requirements. See 10 C.F.R. § 2.201. Consequently, all of the contentions in the Petition which stem from inspection findings have been the subject of corrective action and have been or will be resolved.

Rather than attempting a detailed discussion of each of the many contentions contained in the Petition, they are categorized into seven principal areas which are examined below in order to permit their reasoned consideration.

I. LICENSEES' MANAGEMENT COMPETENCE IDENTIFIED IN SALP REPORTS

In support of the Petitioner's claim of management incompetence, the Petitioner lists a number of issues which the NRC had identified in previous SALP reports as being potential problems at the Palo Verde facility. Since the Petition relies heavily on the SALP reports as a basis for its claim of management incompetence, a description of this process will be helpful to place the Petitioner's concerns in perspective. The SALP process is the mechanism by which the NRC on a periodic basis systematically assesses the overall performance of a licensee. For each assessment period (generally 12 to 18 months) a Board of NRC officials evaluates, in accordance with preestablished attributes and rating guidance, the licensee's performance for each of the various, preestablished functional areas and rates the licensee's performance in each area. The Board also compares the licensee's performance for the current period with that of the previous assessment period and identifies, for further followup and inspection, any areas where the licensee's corrective action to improve performance has not been fully effective. The Board assesses trends, if any, observed in the licensee's performance within the reporting period. Each functional SALP area is rated as Category 1, 2, or 3.⁶ Problems

⁶ The SALP program is described in NRC Draft Manual Chap. 0516. The ratings are defined as follows:

Category 1: Reduced NRC attention may be appropriate. Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used so that a high level of performance with respect to operational safety and construction quality is being achieved.

Category 2: NRC attention should be maintained at normal levels. Licensee management attention and involvement are evident and are concerned with nuclear safety; licensee resources are adequate and are reasonably effective such that satisfactory performance with respect to operational safety and construction quality is being achieved.

Category 3: Both NRC and licensee attention should be increased. Licensee management attention or involvement is acceptable and considers nuclear safety, but weaknesses are evident; licensee resources appeared to be strained or not effectively used so that minimally satisfactory performance with respect to operational safety and construction quality is being achieved.

more severe than Category 3 would have had immediate attention which could have included a shutdown of the facility.

It is important to keep in focus that NRC inspection activities routinely identify deficiencies in the performance of construction, pre-operations, and operations activities at nuclear power plants. Deficiencies are summarized in the SALP reports. Discussing previously identified deficiencies in the SALP report is normal agency practice in order to provide examples of the Board's assessment bases. It is also normal for the SALP Board to characterize the area in which these deficiencies are found as needing additional management attention. Most functional areas do identify selected issues that require additional or continuing management attention, even when the functional area is rated as a Category 2, indicating that management attention to the area is generally sufficient. The mere identification of a need for increased management attention to specific deficiencies within functional areas does not necessarily undermine the program to such an extent as to give rise to a significant safety concern. In each case where the SALP Board identifies an area needing additional management attention, the concern is resolved in the SALP report or a subsequent inspection report.

The specific issues that Petitioner claims to have been identified in the SALP reports which establish management incompetence include: (a) poor SALP performance in the functional area of Quality Program and Administrative Controls; (b) the lack of improvement in performance based upon the SALP process; and (c) a lack of integrated assessment of all SALP functional areas.

A. Poor SALP Performance Ratings in the Area of Quality Program and Administrative Controls

The Petitioner contends that since this functional area received the lowest rating (a marginal Category 2) in the 1985 SALP Report, the Licensees have marginal quality performance that reflects adversely on management competence. Petition at 19-20.

This assessment is incorrect. The rating of Category 2, even a marginal Category 2, indicates that, in general, the management attention and effectiveness in this functional area was satisfactory. Moreover, although the SALP Board stated that several weaknesses existed in this functional area, it found that improvement had already been made for some of them at the time the weaknesses were found.⁷ In addition, several areas of

⁷ For example, the details of LERs had been improved and corrective action had been taken to ensure timely fire watch tours and to minimize the number of technical specification violations. Report at 11, 17.

positive Licensee actions and improving conditions in this functional area were also found, as noted in the following excerpts from the 1985 SALP Report:

- "Corrective actions taken by APS management in response to NRC concerns in the preoperational test program have resulted in a substantial increase in quality, through direct management involvement." Report at 15.
- "In general the onsite review committee has carried out its responsibilities in an acceptable manner and appeared to be improving throughout the SALP period as an efficient working body as experience was gained with a plant in the operational phase." *Id.* at 16.
- "Licensee actions to improve compliance have been aggressive, and involved continuous corporate management involvement." *Id.*

The 1985 SALP Report thus establishes that, while the NRC had some continuing concerns in the functional area of Quality Program and Administrative Controls which would be addressed within the established NRC regulations to obtain acceptable corrective action, there had also been effective management involvement in resolving concerns. On balance, Licensees' management response in this area, while not as effective or aggressive as it has been in other areas, does not provide sufficient basis to conclude incompetence.

B. Lack of Improvement in Licensees' Performance as Reflected by the SALP Reports

Petitioner asserts that there has been little measurable improvement from the previous SALP reporting period, and that the lack of an improving trend is indicative of an overall failure by Licensees' management to ensure correction of previously identified weaknesses. Petition at 17-18, 24. The Staff disagrees since there in fact has been an improving trend in Licensees' SALP ratings. A comparison of the rating for the functional areas for SALP 1984 and 1985 shows that: (1) SALP 1985 had four Category 1 areas while SALP 1984 had only three; (2) SALP 1984 had two areas rated as Category 3 while SALP 1985 had no Category 3 areas; and (3) the 1984 SALP Report had six areas with a declining trend and one area with an improving trend, while SALP 1985 had only one area with a declining trend and four areas with an improving trend. 1985 SALP Report at 3; 1984 SALP Report at 3.

To support its claim of a lack of improvement by Licensees, Petitioner has listed a number of excerpts from the 1984 and 1985 Reports which it

contends establish a pattern of errors affecting a wide range of functional areas and is rooted in inadequate or unresponsive management. Petition at 20-23. However, a review of these excerpts establishes that the list is not as long as Petitioner suggests.⁸ Although some concerns in this list remain, this is not unusual since NRC SALP reports traditionally have had long lists of criticisms. The purpose for the thoroughness of SALP is to evaluate a licensee's performance and identify areas where additional management attention is needed to ensure that improved performance is effected. The system appears to be working at PVNGS since Licensees have already taken corrective action on most of the concerns identified in the 1985 SALP Report and the balance will be assessed and completed during continuing NRC inspections. Moreover, the areas reported in SALP that are in need of additional or continued management attention are offset, at least in part, by several other areas where the Licensees have exhibited good management practices or aggressive corrective action.⁹

For these reasons, an overview of both the positive and negative comments included in Licensees' SALP reports does not establish inadequate or unresponsive management, or a lack of improvement in Licensees' performance.

C. Lack of Integrated Assessment of All SALP Functional Areas

Although the Petitioner appears to concede that the specific issues identified individually are not of great concern, it insists that when taken together they show cause for concern by forming a pattern that reflects directly on Licensees' management competence. Petition at 6, 28, 41, 45. As part of this claim, Petitioner contends that the NRC's oversight activities are piecemeal and fail to take into account this pattern of recurring deficiencies. Petition at 3, 10, 20, and 21.

This theory is directly refuted, however, by the SALP reports for PVNGS which do not establish a pattern adversely reflecting on management competence at PVNGS. An overview of the activities within each functional area and an overview of all the functional areas taken together are precisely the purpose of the SALP process. Concerns that are common to more than one SALP period would be noted in subse-

⁸ Five of these excerpts (the first, third, sixth, seventh, and fourteenth) were taken out of context in that the NRC comments are not critical of Licensees' management and, in some instances, describe management improvements; three of the excerpts (the twenty-first, twenty-fourth, and twenty-fifth) are repeated concerns included in prior excerpts; and in seven of the excerpts (the second, fifth, eighth, ninth, twelfth, thirteenth, and seventeenth), the SALP Report stated that corrective action had already been taken by the Licensees.

⁹ For example, see 1985 SALP Report at 4-5, 8-10, 12, 15-17, 20-21, 28.

quent SALP reports, and any trends would be specifically addressed in the overall review of Licensees' performance and be included in the Summary of Results section in each report.¹⁰

The SALP process therefore provides an integrated assessment for judging Licensees' management competence.

II. COMMUNICATIONS DIFFICULTIES

To further support its claim of management incompetence, the Petitioner contends that Licensees have displayed a pattern of inadequate communications, both internally within their organization, and with the NRC, which has adversely affected all of the SALP functional areas. Petition at 44-45 and February 1, 1986 filing at 4-5.¹¹ To substantiate this claim, the Petitioner cites the following instances of communication failure:

- (1) A notification of a possible tampering event that occurred on the morning of August 15, 1985, which was not made to site management until the afternoon of August 16, 1985. The NRC did not consider the notification to be timely. Reference: Inspection Report 50-528/85-26.
- (2) LER 50-528/85-24 was not fully accurate in that the procedure for surveillances on fire doors had not been permanently revised to include the missing doors. A procedure change notice was issued, but was not included in the revision number 2 of the procedure. Reference: Inspection Report 50-528/85-26.
- (3) The PASS for PVNGS Unit 1 was not operational as stated in the June 13, 1985 letter from ANPP to NRC. Reference: Letter to E.E. Van Brunt from John B. Martin, dated October 8, 1985 (PASS Civil Penalty).
- (4) Incomplete and late LER submittals. Reference: SALP 1985 and NRC Enforcement Conference Minutes, August 28, 1985.

These instances of alleged poor communication are too few in number to show pervasive and significant weaknesses in communications at PVNGS.¹² Moreover, they are offset by other activities reported in the

¹⁰ For example, for SALP 1985, subcontractor quality assurance was noted as a recurring issue from previous SALPs and was specifically listed in the overall review comments. 1985 SALP Report at 3.

¹¹ Petitioner criticizes the NRC for not viewing these instances together in their total perspective. Petition at 44-45 and February 1, 1986 filing at 4-5. However, the Petitioner again has failed to recognize that the overall perspective is gained from the SALP process and that each of the instances it cites regarding communication lapses were considered individually and from an overall perspective in that document.

¹² Additional apparent indications of communication lapses listed in the 1985 SALP Report not cited by the Petitioner include a report of a September 12, 1985 auxiliary spray system problem where Licensees'

Continued

1985 SALP Report reflective of good communications. For example, as reported in the 1985 SALP Report: management had initiated daily interdepartmental planning meetings which were effective in improving overall communications (Report at 5); a common work control center had been implemented to coordinate activities among maintenance work groups (*id.* at 7); unit superintendent meetings for maintenance had been conducted daily (*id.*); and the frequent presence of management at the site had provided effective communications to Licensees' staff (*id.* at 5, 15).

In their totality, therefore, the SALP reports do not reflect poor communications at PVNGS. Furthermore, what must be appreciated regarding this issue is that the Palo Verde nuclear project incorporates efforts to build and operate three nuclear plants. This involves thousands of people doing thousands of tasks. Under these circumstances, there obviously will be isolated incidents of communication difficulties, but in the absence of a pervasive breakdown in communications that adversely affects control of licensed activities, initiation of show-cause proceedings and the other relief requested by Petitioner are clearly inappropriate.

III. ACRS CONCERN ON AUXILIARY PRESSURIZER SPRAY SYSTEM AND SYSTEM RELIABILITY STUDY

In another issue raised by the Petitioner, Licensees are accused of willfully disregarding recommendations by the NRC Advisory Committee on Reactor Safeguards (ACRS) concerning: (1) the Auxiliary Pressurizer Spray System (APSS) at PVNGS and (2) the need for a systems' reliability study. Petitioner bases this information on a November 10, 1985 newspaper article. Petition at 35.

A review of what occurred, however, reveals that the ACRS' recommendations were not disregarded. The APSS issue arose during a discussion at the November 5, 1985 ACRS subcommittee meeting about single failures and improper functioning of the APSS at Unit 1. Several members of the subcommittee stated that they had concerns regarding the APSS and the rapid depressurization capability of Palo Verde Units 1, 2, and 3. Two ACRS members subsequently set forth these concerns in a January 13, 1986 memorandum to the Commission. Staff responded in a memo dated March 11, 1986, to Chairman Palladino that reasonable assurance of rapid depressurization capability had been established for

report to the NRC lacked information (Report at 19) and a statement concerning the plant operations area that "communications between the Operations and other plant departments such as Chemistry and Radiation Protection Departments, still needs improvement" (*id.* at 5).

PVNGS by a reanalysis performed by Licensees of a steam generator tube rupture (SGTR) accident. For that accident scenario, Licensees had assumed that the APSS was not available and that the pressurizer vent would be used for accident mitigation. March 11, 1986 Memo at 1. *See also* Supplement 9 to Staff's SER at 5-9. The Staff reviewed this analysis, performed its own independent evaluation, and determined that the consequences of the SGTR accident are within acceptable limits and that the pressurizer vent system meets safety-grade standards. *Id.* In addition to evaluating Licensees' reanalysis of an SGTR accident, Staff reviewed the enhancements at Palo Verde Units 1, 2, and 3 to the APSS (e.g., a redundant-level instrumentation, assured power to motor-operated valves, and automatic realignment of charging pump flow), and concluded that reasonable assurance exists that the APSS would perform its function of achieving plant cold shutdown in accordance with the guidelines of Branch Technical Position RSB 5-1. SSER 9 at 5-8, 5-9, and 5-13.

Based upon these evaluations, Staff is able to conclude that the Palo Verde design for achieving reactor coolant system depressurization meets current regulatory requirements. A decision regarding the need for power-operated relief valves at Combustion Engineering plants is being deferred and incorporated into the technical resolution of USI A-45. March 11, 1986 Staff Memo to Chairman Palladino at 2, 3, and 5.

The issue of a systems reliability study arose during the full ACRS committee meeting on November 7, 1985. A committee member asked whether the Licensees had expanded their studies of systems interaction and systems reliability as the ACRS had recommended in their letter to the Commission of December 15, 1981, supporting licensing of Palo Verde Units 1, 2, and 3. Staff responded that this issue had already been dealt with in Supplement No. 1 of the Palo Verde SER (February 1982) which stated:

Item A-17 in Appendix C to the SER discusses the ongoing staff efforts to reach a generic resolution to the issue of systems interactions in nuclear power plants. It is expected that the development of systematic ways to identify, rank and evaluate systems interactions will go further to reduce the likelihood of inter-system failures resulting in the loss of plant safety functions, and hence, improve systems reliability. After resolution of this generic issue, the staff will determine where additional studies by Arizona Public Service Company are required.

SSER 1 at 18-2.

Because the generic resolution is still in process, the Staff has not yet been able to define the appropriate studies and their scope for the Palo Verde facility. The ACRS has not modified its December 1981 letter

supporting licensing of Palo Verde Units 1, 2, and 3, nor has it made any additional recommendations conditioning its support.

IV. THE POST-ACCIDENT SAMPLING SYSTEM PROBLEM

The Petitioner contends that an NRC enforcement action (EA 85-87, Oct. 8, 1985) involving PVNGS's Post-Accident Sampling System (PASS) demonstrates a tendency toward inadequate or incompetent performance by management to worsen an otherwise minor plant problem. Petition at 28-30.

The PASS experience is an example of poor management by the Licensees. As documented in the 1985 SALP Report, Inspection Report 50-528/85-22, and a letter to E.E. Van Brunt from John B. Martin dated October 8, 1985 (Notice of Violation and Proposed Imposition of Civil Penalty), ANPP management failed to establish a system to ensure that the PASS work was appropriately performed, reviewed, and documented. As a result of these deficiencies, the PASS was not operable under certain limited conditions and did not meet the requirements of the operating license, and a civil penalty for \$50,000 was imposed. October 8, 1985 Letter from J.B. Martin to E.E. Van Brunt.

Nevertheless, the PASS problem was adequately remedied and the NRC effectively utilized its enforcement powers for this matter to have the Licensees address broader issues in performance, including treatment of design changes, management of task force activities and accuracy of reports to the NRC. *See* Letter to the Director, Office of Inspection and Enforcement, from E.E. Van Brunt, dated November 7, 1985. Moreover, Licensees' PASS problems were not atypical since similar inspection findings have been observed at Southern California Edison Company, Baltimore Gas and Electric, Northeast Nuclear Energy Company, and Sacramento Municipal Utility District. The installation and successful testing of PASS has proven to be a significant challenge for most of the nuclear industry.

Under these circumstances, it cannot be said that the PASS problem establishes Licensees' incompetence or demonstrates a trend of managerial error.

V. SCHEDULAR AND ECONOMIC PRESSURES

The Petitioner also contends that there are various economic and schedular pressures at PVNGS currently being caused by several lawsuits and various rate proceedings, audits, and reviews before regulatory

agencies.¹³ Petition at 50-52; January 21, 1986 Addendum at 2-4. Included in these reviews is an incentive program initiated by the Arizona Corporation Commission (ACC) which could subject Licensees to a delay penalty dependent upon PVNGS's commercial operation, a total project construction cost ceiling, and an operating efficiency performance. Petition at 50-51; January 21, 1986 Addendum at 4.

Our response to Petitioner is that the ACC incentive plan has already been ruled upon in an earlier § 2.206 decision in response to this same Petitioner. In that decision the Director found, based in part upon an enhanced inspection effort at PVNGS by the NRC Region V Staff, that the ACC plan was not likely to adversely affect health and safety. DD-85-12, 22 NRC 449, 451-52 (1985). The other legal proceedings and regulatory actions in which Licensees are currently involved are also not believed to create a safety concern since utilities are typically involved in proceedings of this nature.

To the extent that the few specific problems cited by the Petitioner (i.e., the PASS and tampering incidents, excessive overtime, and failure to return unused weld rods) may have been caused by schedular and economic pressures, the efficacy of the regulatory program was demonstrated by the detection of these problems. Based on Licensees' testing programs, quality assurance programs, and NRC Staff reviews and inspections which establish that there is reasonable assurance that the Palo Verde facility has been properly constructed, the Staff concludes that schedular pressures have not adversely affected construction or caused undue risk to the public health and safety.

VI. THE OVERBURDENING OF MANAGEMENT

Petitioner also contends that Licensees' management is strained and may become further overburdened when Unit 2 becomes operational. Petition at 27; Addendum at 8.

The NRC Staff has reviewed the Licensees' managerial qualifications and manpower requirements during the operating license review and concluded that Licensees' management is qualified and competent, and that there is adequate manpower to simultaneously operate PVNGS Units 1 and 2. This review was made in accordance with the requirements of 10 C.F.R. § 50.40(b) and under the guidance of the Standard

¹³ Petitioner also cites several safety problems which it alleges were caused by schedular pressures. These include: the PASS incident, discussed *supra*; incidents of excessive overtime by workers in violation of procedures; an alleged failure by Licensees to respond quickly to possible tampering; and an allegation that schedular pressure caused an HVAC subcontractor's failure to return unused weld rods. Petition at 47; January 21, 1986 Addendum at 4-5.

Review Plan (NUREG-0800), § 13.1. The results are reported in Staff's SER (NUREG-0857) at 13-17 and SSER 1 at 13-3. Staff later also addressed this management issue in SSER 9 at 13-1 in response to NRC Generic Letter 84-16 (Staff Operating Experience).

VII. THE ALLEGED TAMPERING INCIDENTS

Petitioner contends that there were several deliberate and concerted sabotage efforts at PVNGS which require further investigation by Licensees. January 21, 1986 Addendum at 9-10; Petition at 43.

Our review of this matter reveals that there were sixteen incidents at PVNGS during the years 1984-1986 that potentially could have involved deliberate acts or vandalism. However, for two of these incidents, NRC investigations had concluded that tampering was not involved.¹⁴ For ten other incidents, it was inconclusive whether there was tampering or merely accidents or mistakes.¹⁵ In none of these incidents was a clear or convincing causal connection established between it and the other incidents, and all incidents except one (the misposition of the D battery switch) had occurred prior to plant operations when security would have been in place to control access to vital areas.

There were also two incidents which were referred to the FBI and the local Sheriff's Office involving the unauthorized cutting on February 7, 1984, of nonsafety-related cables in the cable shack for Unit 3 (Inspection Report 50-529/85-22) and the unauthorized repositioning of switches on July 8, 1985, on the remote shutdown panel for Unit 2 (Inspection Reports 50-529/85-22 and 50-529/86-09).¹⁶ Both incidents were thoroughly

¹⁴ These included a July 31, 1985 incident at Unit 2 involving an ammonia supply tank valve out of position for operational mode (Inspection Report 50-529/85-27) and an April 23, 1986 incident at Unit 3 involving the unauthorized cutting of wire for the S/G sample line isolation valve in the cabinet outside of the control room (Inspection Report 50-530/86-07).

¹⁵ These included: a July 26, 1985 incident at Unit 2 involving an unauthorized operation of the "remote/local" switch for the "D" battery supply breaker in the "D" battery charger/inverter room (Inspection Report 50-529/85-27); an August 5, 1985 incident at Unit 2 involving five power breaker switches on the control element drive mechanism panels in a closed rather than an open position; an August 8, 1985 incident at Unit 2 involving possible repositioning of 21 power breaker switches on the CEDM panels (Inspection Report 50-529/85-27); an August 15, 1985 incident at Unit 1 involving a repositioning of the 125 VDC "D" battery charger disconnect switch (Inspection Report 50-528/85-26); a January 18, 1986 event at Unit 3 involving the cutting of condenser cables in the lower cable spreading room (Inspection Report 50-530/86-07); a January 16, 1986 event at Unit 3 involving the cutting of wires in the control room for the essential spray pond (Inspection Report 50-530/86-07); a March 22, 1984 incident at Unit 3 involving the cutting of three wires in the control building (Inspection Report 50-530/86-07); a May 3, 1984 incident at Unit 1 involving the cutting of a temporary wire in the containment building (Inspection Report 50-528/86-09); an April 13, 1985 incident at Unit 3 involving oil missing from a turbine cooling water pump (Inspection Report 50-530/86-07); and a November 18, 1985 incident at Unit 3 involving a cut wire on a disassembled motor operator for a valve in the auxiliary feedwater pump room (Inspection Report 50-530/86-07).

¹⁶ Another incident, which involved disruption of some offsite power lines at PVNGS on May 14, 1986, is currently being investigated by the FBI. This incident did not threaten public health and safety.

investigated (including the use of polygraph tests), and the FBI files were closed due to lack of data. As was the case with the other potential tampering incidents, plant security for vital areas was not in place when these incidents occurred.

The only other reported incidents during this period possibly involving tampering were the discovery at Unit 3 on July 31, 1985, of rags in a reactor coolant pump breaker cabinet and on August 5, 1985, of paper towels in a charging pump breaker mechanism. Inspection Report 50-530/86-07. Although these incidents may have been caused by inadvertence or accident, they were characterized by the inspection as "construction mischief." *Id.*

Based upon this limited number of incidents and the fact that in few of these was it established that tampering actually took place, we conclude that, contrary to the assertion of the Petitioner, there is no basis for contending that there has been a concerted sabotage effort at PVNGS which threatens public health and safety.

Conclusion

The issues raised by the Petitioner have been reviewed both by my Staff and the Staff of Region V. These reviews have established the lack of any reasonable basis for concluding that Licensees' management is incompetent or incapable of properly operating PVNGS. When the Licensees' activities are viewed in their total perspective, as was done in the 1985 SALP Report, with all activities necessary to build and operate three nuclear plants taken into account, their performance has been satisfactory. Given the magnitude of construction, pre-operations, and operations activities associated with completing, testing, and operating three nuclear power plants (one in construction, one in startup, and one in operation), the limited number of deficiencies cited by Petitioner does not give rise to a significant safety concern. *See Union Electric Co. (Callaway Plant, Unit 1), ALAB-740, 18 NRC 343, 346 (1983); Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), DD-85-11, 22 NRC 149, 161 n.7 (1985).* Under these circumstances, the Petitioner has failed to raise issues which would warrant the relief requested.

Accordingly, the Petitioner's request for action pursuant to 10 C.F.R. § 2.206 is 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 for the Commission's review.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland,
this 1st day of July 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Richard H. Vollmer, Acting Director

In the Matter of

Docket Nos. 50-266
50-301

WISCONSIN ELECTRIC POWER
COMPANY

(Point Beach Nuclear Plant,
Units 1 and 2)

July 14, 1986

The Acting Director of the Office of Nuclear Reactor Regulation denies the petition of the Wisconsin Environmental Decade asserting that there were a number of alleged deficiencies at the Point Beach Nuclear Plant of the Wisconsin Electric Power Company associated with environmental qualification of electrical equipment that represented a hazard to continued safe operation of the facility.

**TECHNICAL ISSUE DISCUSSED: ENVIRONMENTAL
QUALIFICATION OF ELECTRICAL EQUIPMENT**

The Licensee's program for environmental qualification of electrical equipment complies with the requirements of 10 C.F.R. § 50.49. Proposed resolutions for each of the environmental deficiencies identified are acceptable. The Licensee has completed implementation of its program and followup inspections have confirmed this finding.

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

INTRODUCTION

On November 19, 1984, the Nuclear Regulatory Commission (NRC) promulgated its final rule on environmental qualification of electric equipment (49 Fed. Reg. 45,571). The rule requires licensees of operating power plants to meet the schedule for environmental qualification set out in the rule, specifically in 10 C.F.R. § 50.49(g). In adopting the final rule, the Commission directed the Director of the Office of Nuclear Reactor Regulation to consider, pursuant to 10 C.F.R. § 2.206, four comments filed in response to the Notice of Proposed Rulemaking issued on March 7, 1984 (49 Fed. Reg. 8445). Each of the four comments alleged equipment qualification deficiencies at specific plants. The Commission's action had the effect of requiring the Director of the Office of Nuclear Reactor Regulation to issue a formal decision pursuant to § 2.206 considering the plant-specific comments filed in the rulemaking noted above. The comments filed by Wisconsin's Environmental Decade, Inc. (hereinafter referred to as Petitioner) dated August 10, 1984, were among those identified by the Commission for consideration. On January 4, 1985, I advised the Petitioner by letter that I would issue a formal decision regarding the Petitioner's comments concerning the Point Beach Nuclear Plant, Units 1 and 2. My Decision in this matter follows.

DISCUSSION

Petitioner's comments mainly relate to alleged inadequacies in a number of equipment qualification items identified by the Franklin Research Center (FRC) and set out in its Technical Evaluation Report (TER) for the Point Beach Nuclear Plant, Units 1 and 2 (PBNP) of the Wisconsin Electric Power Company (Licensee). It is important to recognize that the FRC study to which the Petitioner refers was one initiated by the Nuclear Regulatory Commission itself to assist it in assessing the adequacy of the Licensee's equipment qualification program for the PBNP. The TER provided by FRC has been available to the NRC Staff since September 28, 1982, and has been specifically addressed by both the Licensee and the NRC Staff.¹

¹ The background associated with the NRC Staff's review of the Licensee's equipment qualification program for the Point Beach Nuclear Plant, Units 1 and 2, is provided in Attachment 1, Safety Evaluation by the Office of Nuclear Reactor Regulation, Point Beach Nuclear Plant, Units 1 and 2, Docket Nos. 50-266 and 50-301, issued August 30, 1984, as amended November 28, 1984 (hereinafter referred to as the PBNP SE) (not published).

On February 8, 1979, the NRC Office of Inspection and Enforcement issued IE Bulletin 79-01, "Environmental Qualification of Class IE Equipment." This Bulletin, together with IE Circular 78-08 (issued on May 31, 1978) requested affected licensees to perform reviews to assess the adequacy of their environmental qualification programs. The NRC Staff's review of this area is discussed in a Safety Evaluation (SE) dated May 21, 1981, and resulted in further requests for information from the Licensee. Following submittal by the Licensee of additional information on September 11 and October 8, 1981, and January 29, and February 22, 1982, the NRC Staff asked FRC to evaluate that information in order to (1) identify all cases where the Licensee's response did not resolve the significant qualification issues, (2) evaluate the Licensee's qualification documentation in accordance with established criteria to determine which equipment had adequate documentation and which did not, and (3) evaluate the Licensee's qualification documentation for safety-related electrical equipment located in harsh environments consistent with TMI "Lessons Learned" implementation. A TER was issued by FRC on September 28, 1982, to document its evaluation. It is this document to which the Petition makes reference. A second SE was subsequently prepared by the NRC Staff and issued to the Licensee December 22, 1982, with the FRC TER as an attachment.²

This TER identified a number of electrical equipment environmental qualification deficiencies and the SE concurred with the bases and findings of the TER. Based on these findings, the Staff requested the Licensee to provide its plans for qualification or replacement of certain items and justification for continued operation in the near term.

A meeting was held on October 13, 1983, to discuss the Licensee's proposed method to resolve the environmental qualification deficiencies identified in the 1982 Safety Evaluation and the FRC TER. During the 1983 meeting with the Licensee, the NRC Staff discussed a proposed resolution for each deficiency identified in the FRC TER and found the Licensee's approach for resolving the identified environmental qualification deficiencies acceptable. The approach described by the Licensee for addressing and resolving the identified deficiencies includes replacing equipment, performing additional analyses, utilizing additional qualification documentation beyond that reviewed by FRC, obtaining additional qualification documentation, or determining that some equipment is out-

² Safety Evaluation for Environmental Qualification of Safety-Related Electrical Equipment, Docket Nos. 50-266 and 50-301, December 22, 1982, with Technical Evaluation Report entitled "Review of Licensee's Resolution of Outstanding Issues from NRC Equipment Environmental Qualification Safety Evaluation Reports (F-11 and B-60)," Wisconsin Electric Power Company, Point Beach Nuclear Plant Units 1 and 2, Franklin Research Center, September 28, 1982.

side the scope of 10 C.F.R. § 50.49 and, therefore, not required to be environmentally qualified, e.g., that which is located in a mild environment. We discussed the proposed resolutions in detail on an item-by-item basis with the Licensee during the meeting of October 13, 1983. Replacing or exempting equipment, for an acceptable reason, is clearly an acceptable method for resolving environmental qualification deficiencies. The more lengthy discussions with the Licensee concerned the use of additional analyses or documentation. Discussions also included the Licensee's general methodology for compliance with § 50.49, and justification for continued operation for those equipment items for which environmental qualification was not yet complete.³

Subsequent to the October 13, 1983 meeting, the Licensee provided further information for resolution of the identified deficiencies by its letter of November 23, 1983. With its review of this submittal, the NRC Staff completed its evaluation of the acceptability of the Licensee's electrical equipment environmental qualification program. The Staff's findings are found in the attached PBNP SE dated August 30, 1984, as amended November 28, 1984 (not published). The Staff's review included explicit consideration of each of the items raised in the FRC TER for the Point Beach Nuclear Plant, Units 1 and 2, and referred to by the Petitioner in its comments. The resolution of Petitioner's comments for specific items of equipment identified by FRC and discussed in the TER is contained in Attachment 2. Resolution is complete for all items identified in the FRC TER. Therefore, justifications for continued operation (JCOs) are not required for any TER items.

The Licensee's equipment environmental qualification files were inspected by the Staff on July 22-26, 1985. Followup inspections will be performed by Region 3, with assistance from IE Headquarters and NRR Staff, as necessary. Since a significant amount of documentation had already been reviewed by the Staff and Franklin Research Center, the primary objective of the inspection was to verify that the files contain the appropriate analyses and other necessary documentation to support the Licensee's conclusion that the equipment is qualified. The inspection included evaluations of the implementation of equipment qualification commitments made as a result of the December 22, 1982 SE and September

³ The final rule on environmental qualification of electric equipment important to safety became effective on February 22, 1983 (48 Fed. Reg. 2729). This rule, § 50.49, specifies the requirements of electrical equipment important to safety in a harsh environment. Effective November 19, 1984, this rule was amended to remove the June 30, 1982 deadline for environmental qualification of electric equipment imposed by previous Commission order and established a new date for final environmental qualification of electrical equipment (49 Fed. Reg. 45,571). Accordingly, March 31, 1985, was established as the new deadline for equipment qualification absent a request for extension. The Licensee was granted extensions for certain items of equipment. Presently, no extensions are outstanding and the Licensee considers all equipment qualified.

28, 1982 TER. The Staff also verified the adequacy and accuracy of the Licensee's equipment list, definitions of mild and harsh environments, corporate and site policies, and procedures for establishing and maintaining the environmental qualification of safety-related electrical equipment. Physical inspection of selected equipment was also conducted. The Staff reviewed the adequacy of the Licensee's program for surveillance and maintenance of environmentally qualified equipment to ensure that this equipment is maintained in the as-analyzed or tested condition. The method used for tracking periodic replacement parts and implementation of commitments, e.g., regarding replacement of equipment, also was reviewed. The results of the inspection were issued in Inspection Reports No. 50-266/85013 and 50-301/85013 on November 1, 1985. Some deficiencies were noted. A Notice of Violation was issued to the Licensee on May 14, 1986, for two of the deficiencies significant enough to warrant enforcement action. Nonetheless, the Staff concluded, as a result of the inspection, that the Licensee has implemented a program that meets the requirements of § 50.49 and the corrective action commitments relative to SE/TER deficiencies. The Licensee has informed the NRC that corrective action for all deficiencies identified in the November 1, 1985 Inspection Report has been completed. A followup inspection will determine whether these corrective actions have been adequately completed.

CONCLUSION

In summary, the NRC Staff has reviewed each one of the specific items raised by the Petitioner in its comments. A variety of resolutions with respect to the deficiencies identified by FRC have been offered by the Licensee and found to be acceptable by the NRC Staff. The PBNP SE documents the Staff review which concludes that the Licensee's electrical equipment qualification program complies with the requirements of § 50.49 and that the proposed resolutions for each of the environmental qualification deficiencies identified in the FRC TER are acceptable. The Licensee has completed implementation of its program, and followup inspections have confirmed the Staff findings. Consequently, I conclude that the overall state of equipment qualification at the Point Beach Nuclear Plant, Units 1 and 2, is adequate to ensure public health and safety. Accordingly, I decline to take any action based upon the comments filed by the Petitioner.

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

twenty-five (25) days after issuance, unless the Commission elects to review this Decision on its own motion within that time.

Richard H. Vollmer, Acting
Director
Office of Nuclear Reactor
Regulation

Dated in Bethesda, Maryland,
this 14th day of July 1986.

Attachments:

- (1) Safety Evaluation of August 30, 1984, as amended November 28, 1984
- (2) Resolution of Petitioner's Comments

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

James M. Taylor, Director

In the Matter of

Docket No. 50-341

THE DETROIT EDISON
COMPANY, *et al.*
(Enrico Fermi Atomic Power
Plant, Unit 2)

July 29, 1986

The Director of the Office of Inspection and Enforcement denies a petition filed by Jennifer Puntenney on behalf of the Safe Energy Coalition of Michigan. The petition requested that the Commission take immediate action to require Licensee to show cause why its license should not be revoked in light of the allegations set forth in the petition.

ENFORCEMENT POLICY

The choice of remedies for dealing with violations of regulations and license requirements rests within the sound discretion of the Nuclear Regulatory Commission.

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

Introduction

By petition dated February 15, 1986, supplemented by letter dated March 28, 1986, Ms. Jennifer Puntenney, on behalf of the Safe Energy Coalition of Michigan (SECOM or Petitioner), filed a request pursuant

to 10 C.F.R. § 2.206 and 10 C.F.R. § 2.202 with the Director, Office of Inspection and Enforcement, the Director, Office of Nuclear Reactor Regulation, and the Regional Administrator, Region III. SECOM requested that the Commission take immediate action to require Detroit Edison Company (DECo or Licensee) to show cause why its license to operate Fermi-2 should not be revoked on the basis of five allegations contained in the petition. See Petition at 2. Notice of receipt of the request was published in the *Federal Register*. 51 Fed. Reg. 11,372 (Apr. 2, 1986). The request was referred to the Office of Inspection and Enforcement for response since the information presented by SECOM as the basis for its request relates principally to matters normally handled by that office. By letter dated March 26, 1986, I advised SECOM that while I had determined that immediate action was not warranted, I would respond to the petition within a reasonable time. I acknowledged receipt of SECOM's March 28, 1986 supplement to the petition in a letter dated April 29, 1986. By letter dated March 28, 1986, the Licensee responded to the SECOM petition. For the reasons set forth below, I have determined that the petition should be denied.

Background

Fermi-2 is a 3292-MWT (1154-MWE) boiling water reactor located in Newport, Michigan. The Licensee received a construction permit from the Atomic Energy Commission (AEC) in 1972 in accordance with the Atomic Energy Act and AEC regulations. Following the completion of construction, the Licensee was authorized on March 20, 1985, to operate the facility at power levels not to exceed 165 megawatts (5%) and a full-power license was issued by the NRC on July 15, 1985. However, on July 16, 1985, as a result of the rod pull error in the control room that occurred on July 1-2, 1985, the Region III NRC Staff (Region III) issued a Confirmatory Action Letter specifying that DECo would obtain verbal concurrence from the Region III Administrator or his designee prior to exceeding 5% power.¹

The NRC had considered the Licensee and its management team to be good performers in most areas of regulatory significance during the construction phase of the project and the Fermi-2 management team was thought to be ready to operate the facility adequately at the time of low-power licensing (see Systematic Assessment of Licensee Performance (SALP) Reports: 50-341/82003, March 3, 1982; 50-341/83013, June 29,

¹ Since October 1985 the facility has been shut down for the purpose, in part, of making the improvements and conducting the reviews described in this Decision.

1983; 50-341/83032, February 6, 1984; 50-341/84023, December 26, 1984; and 50-341/85027, September 11, 1985.) Since issuance of the low-power license, however, the Licensee's performance, particularly the adequacy of its management controls, became a matter of increased concern to the NRC. The Licensee's deficient regulatory performance is documented in NRC Inspection Reports 50-341/85040, January 7, 1986; 50-341/85042, December 31, 1985; and 50-341/85047, February 11, 1986, and in numerous Licensee reports submitted to the Commission pursuant to 10 C.F.R. § 50.73 (Licensee Event Reports or LERs).

The NRC recognized the significance of its Fermi-2 inspection findings and the pattern and significance of the LER root causes and in addition to its routine inspection activities, took other regulatory actions intended to bring about improvements in DECo's performance. Problems continued to surface in other areas and the NRC issued a letter pursuant to 10 C.F.R. § 50.54(f) on December 24, 1985, which required the Licensee to address significant NRC concerns about the adequacy of Licensee management systems controls in the areas of engineering, operations, security, and maintenance. The purpose of the letter was to require the Licensee to submit information to the NRC to determine whether action to modify, suspend, or revoke the operating license was necessary. The Licensee responded to the § 50.54(f) letter on January 29, 1986. Thereafter, the petition was filed.

The petition primarily relied on the § 50.54(f) letter, inspection reports, and the LERs described above. Other than the information associated with the Michigan Public Service Commission Staff Report, 1984, the information presented in the petition was known by the Staff. The information forming the basis for the petition is essentially the same information which formed the basis for the NRC Staff's actions in this matter.

With this background in mind, it is now appropriate to address each of the Petitioner's allegations.

Principal Allegations Raised by Petitioner

I. THE ATOMIC ENERGY ACT AND NRC REGULATIONS MANDATE LICENSE REVOCATION

SECOM's first allegation concerns a perceived inadequacy of the NRC's enforcement actions to date regarding Fermi-2. In particular, Petitioner asserts that the NRC has not elevated the enforcement actions against the Licensee to the levels mandated by the Atomic Energy Act of 1954, as amended (Act), particularly § 186, and the Commission's General Statement of Policy and Procedure for NRC Enforcement Ac-

tions, 10 C.F.R. Part 2, Appendix C (Enforcement Policy). The Petitioner quotes § 186a. of the Act, 42 U.S.C. § 2236(a), which authorizes the Commission to revoke licenses under certain circumstances, as well as language in the Enforcement Policy which describes the Commission's broad and extensive enforcement options. Based on its reading of the Act, the NRC Enforcement Policy, and its assessment of Fermi-2's performance, SECOM argues that it is necessary to revoke Fermi-2's operating license. See Petition at 2, 4, and 5.

I agree with the Petitioner's general assessment of the scope of enforcement options available to the Commission in the exercise of its regulatory responsibilities. However, it must be recognized that the bare legal authority to revoke licenses does not mandate that this authority be used indiscriminately; appropriate enforcement action in a given situation requires careful consideration of the particular facts and circumstances involved.

The Commission has long recognized that both the Atomic Energy Act and the NRC regulations support the conclusion that the choice of remedy for a regulatory violation is within the sound judgment of the Commission, and not preordained. *Petition for Emergency and Remedial Action*, CLI-78-6, 7 NRC 400, 406-07 (1978). As the Commission stated in that decision:

It goes without saying that a violation posing an undue risk to public health and safety will, of course, result in prompt remedial action, including shutdown if necessary. In other instances, however, the Commission has a wide spectrum of remedies for dealing with violations of regulations. These include show cause proceedings and proceedings for civil monetary penalties. The choice of appropriate mechanism for correction of an assumed violation rests within the sound discretion of this agency. In exercising this discretion, our paramount concern is with the public health and safety.

Ibid. (citation omitted). Accordingly, to the extent SECOM suggests that the Commission must apply its enforcement policy in a mechanical fashion, the allegation is without merit. The particular issue raised by the Petitioner is whether license revocation is appropriate in this case. Thus, I must consider whether the other bases SECOM asserts mandate license revocation. These bases are addressed below.

II. INADEQUATE MANAGEMENT CONTROLS

SECOM's second allegation is that a continuing lack of management controls has resulted in ineffective programs and incompetence in the Licensee's operations, maintenance, security, and engineering activities. Pe-

tition at 2. SECOM cites three principal bases for the allegation: (1) twenty-six violations identified in Inspection Report 50-341/85040; (2) eighty LERs submitted since March 1985; and (3) NRC's December 24, 1985, § 50.54(f) letter. Petition at 6, 7.

SECOM's basis for this allegation rests entirely on matters that have surfaced as a result of NRC's inspection and regulatory programs. The findings from these programs indicated unacceptable performance by the Licensee and have resulted in the need for comprehensive Licensee action. This was emphasized by the NRC in Mr. Keppler's December 24, 1985, § 50.54(f) letter to the Licensee, quoted in pertinent part by the Petitioner. *See* Petition at 6. However, since the issuance of the § 50.54(f) letter, NRC Staff concerns with operations, maintenance, security, and engineering activities have been adequately addressed by this Licensee, and actions have been taken such that I have reasonable assurance that the regulatory concerns have been satisfactorily resolved. In the NRC Staff's view, operation of Fermi-2 will not create a substantial safety issue meriting license revocation.

Each of these concerns is discussed below.

A. Operations

The NRC's concerns with the Licensee's management system and control of its operations activities are documented principally in Inspection Report 50-341/85040. That report identified twenty-six potential violations of NRC requirements occurring between June 20, 1985, and September 2, 1985. Several of the potential violations concerned an event involving a rod pull error which occurred in the control room on July 1-2, 1985, and which was of significant concern because it demonstrated a lack of management control and attention to detail by control room personnel. This event resulted when a reactor operator improperly positioned eleven control rods to the full out position rather than to an intermediate position as required. He had not been supervised or observed properly by several management, supervisory, and operations advisory personnel who were in the control room area at the time.

On July 3, 1986, after consultation with the Commission and consideration of the report of the Office of Investigations regarding this matter, I issued a Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$300,000 based on three violations that reflected the breakdown of management controls and discipline in the control room for that event. I also issued an immediately effective Order Modifying the License which requires (1) that the Licensee demonstrate that the Nuclear Shift Supervisor involved in the incident has been retrained and

reexamined before he is allowed to resume licensed responsibilities in the control room and (2) that the Licensee develop and implement a control room audit program to further ensure that activities in the control room are conscientiously carried out. These as well as the Licensee's other actions should provide reasonable assurance that control room operations will be in compliance with Commission requirements.

The remaining potential violations, although falling short of involving high actual or potential impact on the public, are a cause for significant concern. The root cause of many of these potential violations appears to be inadequate work control measures. The issues were also symptomatic of the management weaknesses that led to the July 1-2, 1985 rod pull error. The NRC has taken appropriate enforcement action regarding the remaining potential violations. In a separate action today, a Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$75,000 was issued based on violations involving (1) the failure to provide a flow path during the period July 23-29, 1985, for the Emergency Equipment Service Water system; (2) breaches of containment integrity during the period June 21 to September 2, 1985, involving a containment monitoring system valve and failure to perform leakage tests on the hydrogen recombiner; and (3) inoperability of a room cooler for the Reactor Core Isolation Cooling/Core Spray System from July 23 to 24, 1985. Because these violations were symptomatic of the management weaknesses that led to the July 1-2, 1985 rod pull error, occurred during the same time period, and the Licensee has taken extensive actions to correct the causes of the violations, some of which are described below, the possible base civil penalty of \$150,000 for the three violations was mitigated 50%. I am satisfied that the corrective actions described below properly address the concerns raised by these violations.

As a result of the inspection findings and subsequent meetings with the NRC, the Licensee agreed to develop a corrective action program, called a Reactor Operations Improvement Plan (ROIP), to minimize further operational problems. The ROIP was formally transmitted to the NRC on October 10, 1985. The NRC findings indicated that a significant weakness existed in the Licensee's overall management of control room operations. Therefore, the corrective actions formalized in the ROIP focus in large part on improving control room operating conditions and communications. Sixty-two of the sixty-four commitments that flowed from these corrective actions are now complete. (The remaining two commitments, neither of which is a significant safety concern, are ongoing and involve long-term efforts to further improve, clarify, and refine administrative procedures.) The plan also contains six parameters which are tracked as indicators of plant performance. These parameters contain

"trigger points" called Management Attention Levels (MALs) which, if exceeded, will alert management to the need for further attention in the particular area of the increase. Region III has reviewed the ROIP and in a letter dated November 8, 1985, informed the Licensee that it was acceptable.

SECOM also notes that the Licensee submitted more than eighty LERs since low-power licensing. There actually were a total of eighty-three LERs submitted by Fermi-2 in calendar year 1985. LERs are not necessarily an indication of the performance of a licensee or the condition of a facility. However, the Licensee appears to have made progress in reducing the number of events requiring LERs. From January 1, 1986, to June 30, 1986, the Licensee issued sixteen LERs. Even though the plant has been shut down during that time period and one would expect fewer LERs, the trend may be improving.

The Licensee's January 29, 1986 response to the § 50.54(f) letter provides additional support for the conclusion that the Licensee has improved and will further improve operations activities. Among other things, the Licensee has formed an Independent Overview Committee (IOC) comprised of nuclear industry consultants with a broad range of management and operating experience. The IOC meets approximately monthly and provides DECo management with a critique of the Fermi-2 management and operations. On January 30, 1986, the IOC made six recommendations which, in its opinion, would improve the organization and management of Fermi-2. The six recommendations were: (1) hire an experienced senior manager, (2) provide an advisor with operations experience to the Vice President, (3) emphasize the need to support the Plant Manager, (4) establish performance goals with yardsticks, (5) reorganize the Nuclear Engineering Department, and (6) hire an experienced senior security manager. DECo committed to adopting all of the recommendations and has completed the first five. With regard to the sixth recommendation, an oral offer has been made to and accepted by a qualified person for the senior security manager position.

In addition, since January 1, 1986, more than fifty new employees have been added to Nuclear Operations. Fifteen of these new employees have had commercial operating experience including a Group Vice President.

The IOC also will monitor plant operations activities including implementation of the new Nuclear Operations Improvement Plan. This Nuclear Operations Improvement Plan was submitted to Region III on May 9, 1986, and is in addition to and broader than the Reactor Operations Improvement Plan submitted on October 10, 1985. It was developed to

address planning, accountability, attitude, communications, teamwork, followup, and training in the entire organization.

In addition, the IOC has conducted a review of the readiness of Fermi-2 to restart and met with the NRC on June 3, 1986, to discuss its review and conclusions regarding the restart. Another such meeting is scheduled prior to restart. Finally, the committee will review and provide any necessary advice to DECo management concerning startup tests and up to and including full-power operation.

Since implementation of the ROIP, Region III has issued at least six inspection reports covering Fermi-2 operations activities since October 1, 1985. Even though Fermi-2 was shut down for nearly all of this period, work activities and surveillances still were performed which required adherence to procedures. Only three violations regarding operations-type activities, none of which were significant, were identified during these inspections. This further demonstrates that the corrective actions taken in response to the issues raised in Inspection Report 50-341/85040 have been effective to date.

Based on the above, I conclude there is reasonable assurance that Fermi-2 management is adequately controlling operations activities such that the activities will not present an undue risk to the public health and safety after the plant is restarted.

B. Maintenance

NRC concerns with the Licensee's management system and control of its maintenance activities also arose from the potential violations identified in Inspection Report 50-341/85040. The concern, though less substantial than the concern with operations activities, was that in several instances the NRC believed that inadequate maintenance was a contributing cause to some of the potential violations.

In its response to the § 50.54(f) letter, DECo also addressed the maintenance problems and stated that two areas of maintenance needed improvement: post-maintenance test requirements, and techniques for removing and placing into service critical plant equipment. The NRC has described examples of these problems in Inspection Report 50-341/85040. In one case described in the report, a post-maintenance leakage test was not completed on the hydrogen recombiner. In another case, a containment monitoring system valve, which is a primary containment boundary, was found in the open position and uncapped. It apparently had been that way for several months. *See* Inspection Report 50-341/85040 at 12, 13. As discussed above, the NRC has taken appropriate enforcement action for these violations.

To correct these problems the Licensee has modified the work order process to state more clearly the post-maintenance requirements. Additional documentation requirements also have been added which must be met before the shift operating authority can accept a component or system for service. Instrument and repair technicians have been provided additional training and have received specific on-the-job instructions regarding proper techniques to be used.² Inspections by resident inspectors into these problem areas subsequent to the implementation of the corrective actions have not identified any recurring problems.

Based on the above, I conclude that there is reasonable assurance the Fermi-2 management is adequately controlling maintenance activities such that the activities will not present an undue risk to the public health and safety after the plant is restarted.

C. Security

NRC concerns with security were documented in Inspection Report 50-341/85047 which concerned an NRC team inspection which identified thirteen potential violations of the NRC-approved security plan as well as several findings that did not amount to violations. The team identified a lack of management effectiveness in a number of areas, such as lack of a detailed understanding of the security plan by security managers, lack of effectiveness or aggressiveness by them in resolving adverse trends, and a lack of general management support for the security program.

The findings in Inspection Report 50-341/85047 resulted in issuance of a proposed civil penalty of \$50,000 against the Licensee on May 20, 1986. In a letter dated June 19, 1986, the Licensee paid the proposed civil penalty and submitted a written explanation and corrective actions regarding the violations.

The findings in Inspection Report 50-341/85047 made it apparent that DECo had difficulty in identifying and resolving security concerns, although in the past DECo had demonstrated the ability to take appropriate and prompt corrective actions once problems were identified. As a result, DECo was directed in the § 50.54(f) letter to respond to the security concerns. Formal corrective action has been addressed in a security Performance Improvement Plan (PIP) submitted by the Licensee on May 1, 1986, and approved by Region III. The PIP, in addition to other items, addresses the following: (1) actions to improve understanding of

² The utility also has elected to monitor two items as indications of maintenance workload. These are the number of open work orders and the number of improperly annunciating alarms in the control room. Trigger points have been established in each of these areas which, if exceeded, will alert upper management to the need for further attention in the problem area.

the security plan and procedural requirements by security personnel, (2) actions to improve monitoring systems to ensure compliance with security requirements, (3) actions to increase management effectiveness/aggressiveness in reducing adverse trends, and (4) actions to more clearly define security responsibilities. The Licensee's implementation of the security PIP has been monitored during inspections in May, June, and July, and the Licensee's performance is adequate. Additionally, DECo has taken the following actions to improve its security organization.

1. The Licensee has reorganized the primary security staff and effected changes in the uniformed force to improve the level of supervision and management attention provided to the security program. To address the recommendation by the IOC regarding security experience, several experienced candidates have been interviewed for a senior security management position and an oral offer has been made to and accepted by a qualified person for the senior security manager position. The position of Chief, Nuclear Security, already has been filled on a permanent basis by a qualified person.
2. The Licensee is initiating a comprehensive and aggressive audit/surveillance program to ensure that the site security program is being implemented properly and that the security program meets an acceptable level of protection as defined in the security plan. This program will audit all phases of the security program. The initial program surveillance was completed in early July 1986. Followup surveillances are scheduled and the Licensee's Nuclear Quality Assurance department has scheduled an audit of the security program by September 1986.

The NRC inspection program has also evaluated the ability of the security force to implement effectively the security plan. Since October 1984, our inspection efforts have shown, despite the identified management weaknesses, that the security force has continued to provide an adequate level of protection to the facility even though some violations involving the uniformed guard force have been noted.

NRC Staff evaluation, based on the most recent security inspections, verified that the Licensee's uniformed guard force has sufficient staffing levels and resources to adequately implement the site security program. The Licensee's site security management staff provides additional support to the uniformed guard force to implement the security program. While additional improvements are still needed, inspection results verified that the Licensee had addressed identified violations and taken appropriate compensatory actions.

Based on the above, I conclude that there is reasonable assurance that Fermi-2 management is implementing adequately the NRC-approved security program such that the security activities will not present an undue risk to the public health and safety after the plant is restarted.

D. Engineering

NRC's concerns with DECo's management system and control of its engineering activities developed as a result of two issues identified prior to issuance of the § 50.54(f) letter regarding questionable or incomplete engineering reviews performed by DECo engineering and its Architect-Engineer (AE) contractors. The first issue was that seismic reviews had not been performed on Nuclear Engineering (NE) change documents (see Inspection Reports 50-341/85048 and 50-341/85052 dated January 28, 1986, and April 8, 1986). The Licensee's evaluation of this problem concluded that all NE change documents which had been issued should be reviewed again because a DECo Engineering quality assurance audit revealed that no documented evidence of seismic reviews existed for twenty-seven Engineering Change Requests. The second issue involved forty-five embedded plates in the Reactor/Auxiliary Buildings that were potentially overstressed.

With regard to the first issue, the Licensee determined that 1995 NE change documents were affected by the lack of documentation and adequacy of seismic review. Of these changes, the Licensee determined that 133 design changes on safety-related systems required further review. A seismic review then was performed and documented by the Licensee. No hardware modifications were required to be made as a result of this review of the change documents. To prevent this from happening again, the Licensee revised its design change control procedures to require a specific documented review by a Seismic System Engineer. To confirm the adequacy of the Licensee's handling of this issue, Region III conducted a special safety inspection on December 2-5 and 17, 1985, January 13-16 and 21-23, 1986, February 4-6, 1986, and March 13, 1986. Region III reviewed a selected sample of the Seismic Design/Qualification Reports and concluded that the Licensee's engineering judgments and analyses were properly verified. The results of this evaluation are documented in Inspection Report 50-341/85052, April 8, 1986.

With regard to the second issue, the Licensee had Stone and Webster (S&W) reevaluate the hanger loads imposed on the embedded plates. The Licensee also had Sargent & Lundy reevaluate and, where appropriate, reanalyze the embedments and supporting structural concrete using the redefined loads developed by S&W. All of the embedded plates have

now been analyzed by the Licensee and found to meet the allowable stresses for the latest system support loads. The Licensee notified Region III on January 30, 1986, that no hardware modifications were required to be made as a result of the reevaluations or reanalyses. The S&W reevaluations of the hanger loads imposed on the embedded plates were reviewed by the NRC during the special safety inspection noted above and were determined to have been performed in a controlled and correct manner and were properly verified. The results of this evaluation also are documented in Inspection Report 50-341/85052 and in Inspection Report 50-341/86012 which will be issued soon.

Following the issuance of the § 50.54(f) letter, two additional engineering concerns developed. The first concern arose on January 31, 1986, when the Licensee informed Region III that certain changes to the documented design that affected hanger design calculations and pipe stress reports issued after September 1, 1984, were completed without proper verification or without an adequate level of review. The Licensee documented this problem in LER 86-002, dated March 1, 1986. The affected calculations were reviewed and updated to reflect design documents and the plant as-built conditions. Procedures were implemented to ensure calculations are updated/completed at the time of plant modifications. Seven Deviation Event Reports were written as a result of this review and calculation update and the resulting corrective actions/modifications are in process and will be resolved before Fermi-2 restart.

The Licensee retained S&W to perform an overview of the process for determining whether Fermi-2 design documents are complete and current. The effort included audits of the reverification of Engineering Design Packages and associated design change documentation and an evaluation of the Core Spray System to determine if required design documents exist and are current. S&W concluded that engineering and design activities of Fermi-2 were satisfactory in that they were conducted in a conventional manner and that the criteria and design requirements were appropriately addressed for the engineering activities reviewed.

Region III reviewed the DECo Design Calculation Reconciliation Program (DCRP) and pertinent procedures, a sample of small-bore and large-bore piping and pipe support and mechanical system calculations, and the S&W overview of engineering and design activities. The review concluded that the DECo DCRP and procedures were adequate, effectively implemented, and that the S&W conclusion was justified with the exception of the small-bore piping design. Regarding this issue, DECo conducted a detailed review of the small-bore design calculations versus the actual as-built configurations. Although extensive upgrading of the

base calculations were necessary, no hardware modifications were required. The results of this review will be documented in Inspection Report 50-341/86012.

The second concern resulted from an allegation that an embedded plate supporting a portion of a nonsafety-related system pulled away from the structural concrete when the anchor bolts failed. The Licensee's investigation revealed that the embedment which failed did not use anchor bolts but was attached to the structural concrete using studs welded to the embedment. The Licensee's investigation also revealed that the major cause of this failure was defective stud welds. Further review by the Licensee revealed that 251 of these nonsafety-related embedments were manufactured by the same vendor. Of this total, 234 of these embedments support safety-related cable trays and are installed in safety-related areas of the Reactor/Auxiliary Buildings.

The Licensee's evaluation included ultrasonic examination of portions of fifty-nine of the embedments in question. A sample of twenty-one embedments was chosen for load testing. The embedments were selected based on stress levels and the presence of significant ultrasonic reflections. The embedments in the sample were tested with a static load equivalent to the Operating Basis Earthquake. All embedments passed the static load test and no modifications were required.

Region III reviewed the embedment testing program, observed selected testing, examined certain of the test data, and concluded that the program had been adequately and effectively implemented. The results of this review will be documented in Inspection Report 50-341/86012. Based on this test program, the NRC Staff has reasonable assurance that the embedments are acceptable.

The NRC believes that the engineering problems described above resulted from a lack of proper management controls, lack of attention to details, and inappropriate management decisions. The DECo IOC Report dated January 30, 1986, confirmed this view. To correct the problem, DECo currently is seeking a senior individual with extensive nuclear experience to fill the newly created position of Vice President-Nuclear Engineering. The Company also has replaced or is in the process of replacing some key management personnel in the engineering organization. These changes should improve the overall performance of the engineering organization. In addition, it is important to recognize that although some of these problems were the result of questionable or incomplete engineering analyses/evaluations, only a few hardware changes had to be made as a result of these reverifications. Region III will continue to monitor these activities closely until final resolution.

Based on the above, I conclude that the past problems related to design changes and modifications have been identified and adequately resolved and that there is reasonable assurance that Fermi-2 management is adequately controlling engineering activities such that the activities will not present an undue risk to the public health and safety after the plant is restarted.

E. Key Elements of Licensee's Corrective Action Program

The Licensee's corrective action program is comprehensive, consisting of at least six key elements which are summarized below.

1. Nuclear Operations Improvement Plan (NOIP) — this is a plan, broader than the ROIP, developed to address planning, accountability, attitude, communications, teamwork, followup, and training in the entire organization. The plan was reviewed by the IOC, initially implemented on May 1, 1986, and fully implemented on July 1, 1986.
2. Management changes — a new Vice President of Nuclear Operations was appointed February 1, 1986, and a Group Vice President with nuclear operating experience was hired from outside the company to provide additional nuclear experience.
3. Independent Overview Committee — the company retained a group of nuclear industry experts with management and operating experience to provide DECo corporate management with an evaluation of the Fermi-2 operation. The committee provides advice concerning management and operation of the plant, will monitor the actions required for the Licensee to meet the NOIP, and will recommend modifications as appropriate. It initially made six recommendations which DECo adopted. In essence, the committee will provide an oversight function at Fermi-2.
4. Performance Improvement Plan — this was developed to address the security plan violations which occurred in the last quarter of 1985. The plan includes elements for both short-term and long-term corrective actions.
5. Maintenance activities — an evaluation of this area indicated two areas for improvement, post-maintenance test requirements and techniques for removing and placing into service critical plant equipment. Procedures have been modified to improve these areas. Also, in the ROIP the Licensee has committed to tracking parameters, such as open work orders and problem alarms, which can be indicators of maintenance problems.

6. Readiness for restart — specific actions have been or will be taken before restart including: the IOC will review readiness of personnel and equipment; the operators responsible for reactor startup will have recently conducted reactor startup evolutions on the simulator; a list of specific tasks which must be completed before restart has been identified and is being tracked by DECo and the NRC. All of these actions are being done to ensure that plant equipment is operable and personnel are ready to operate the plant.

F. Other Considerations

NRC Region III will conduct an augmented onsite inspection at Fermi-2 during reactor restart. The inspectors will verify that there are no outstanding items which would prevent restart and there will be an increased NRC presence in the control room during reactor startup and during critical startup phase tests. The inspectors will directly observe performance of the operators to confirm that procedures are properly followed; that shift turnovers are thorough; and, in general, that control room discipline is maintained and focused on the management of all control room activities.

Prior to the startup the NRC Staff will focus on plant equipment to verify that systems required for operation have been checked out and declared operational by the Licensee using proper and approved procedures, that all important modifications have been completed and proper training conducted, that all applicable Licensee commitments have been satisfied (for example, that the reactor operators actually performing control rod manipulations will recently have completed similar startups on the reactor simulator), and, in general, that the plant physically is ready to operate. The recommendation for restart will be made by the Restart Team Director, who will be an NRC manager, to the Region III Regional Administrator. Additionally, the resident inspectors will conduct daily followup of any significant observations. This effort will also include verification that the Licensee has completed all of the actions stated in Attachment 4, "Actions to Insure Readiness for Reactor Restart," to its January 29, 1986 letter to Mr. Keppler.

G. Summary

SECOM has alleged that lack of management controls at Fermi-2 has resulted in ineffective programs in operations, maintenance, security, and engineering activities. The NRC agrees that problems existed in these

areas. In fact, as SECOM notes in its petition, the Regional Administrator, Region III, was quite explicit in his criticism of Fermi-2 management. Petition at 6, 8.

The NRC assessment of the Licensee's resolution of the concerns has been discussed above. The Licensee's plan addresses the NRC Staff's concerns and provides solutions and comprehensive corrective actions. Furthermore, Region III will continue to monitor the progress of DECo in implementing the plan. In addition the NRC Staff has taken the extraordinary measure of establishing an NRC team to augment onsite inspection at Fermi-2, including increased NRC presence in the Fermi-2 control room during reactor startup. I conclude, therefore, that there is reasonable assurance that Fermi-2 management is adequately controlling operations, maintenance, security, and engineering activities such that the activities will not present an undue risk to the public health and safety after the plant is restarted.

III. THE VIOLATIONS IDENTIFIED IN INSPECTION REPORT 85-040 SHOWED CARELESS DISREGARD FOR REQUIREMENTS

SECOM's third allegation is that the twenty-six potential violations identified in Inspection Report 50-341/85040 were willful within the meaning of the Enforcement Policy in that they showed careless disregard for requirements. Petition at 3. Petitioner claims further support for its contention that the violations showed careless disregard in Mr. DuPont's January 3, 1986 memorandum concerning his review of Fermi-2 LERs. *Id.* at 13. However, SECOM articulates no basis for its view beyond its conclusionary assertion that these potential violations evidence careless disregard.

In response to this allegation, as discussed elsewhere in this Decision (§§ II and IV), NRC has evaluated the violations identified in Inspection Report 50-341/85040 and the matters discussed in the memorandum from Mr. S. DuPont, Reactor Inspector, Test Programs Section, Division of Reactor Safety, Region III, dated January 3, 1986 (DuPont Memorandum) cited in the SECOM petition. As discussed previously in my response, the Licensee's performance, particularly the adequacy of its management controls in certain areas of regulatory importance, was a matter of serious concern to the NRC. The NRC recognized the significance of its Fermi-2 inspection findings and the LERs and in addition to its routine inspection activities, took other regulatory actions, including enforcement action, intended to bring about improvements in DECo's performance. In the NRC Staff's view, the Licensee's actions described in the petition were unacceptable. However, they do not establish that the

Licensee acted with careless disregard. The NRC Staff does not agree that the number of violations in this case demonstrates a careless disregard for NRC requirements.

IV. THE LICENSEE HAS BEEN UNABLE TO COMPLY WITH CERTAIN NRC REQUIREMENTS

SECOM's fourth allegation is that the Licensee has been unable to comply with NRC requirements, and asserts as its basis the potential violations identified in Inspection Report 50-341/85040, the eighty LERs reported since March 1985, and the January 3, 1986 NRC memorandum from Mr. DuPont noted in § III, above.

The significance of the potential violations identified in Inspection Report 50-341/85040 and the numerous LERs has been discussed previously in my response to the Petitioner's second allegation and need not be discussed further here.

The thrust of the DuPont memorandum is that improvements were needed by DECo in analyzing, reporting, and determining the root cause of LERs. This is similar to the concerns expressed in Inspection Report 50-341/85042 by other inspectors. The Licensee agrees with these concerns and has instituted a system to trend and track LERs to identify specific problems and to correct them. The system not only identifies primary causes, but also identifies secondary or contributing causes. This represents a positive step on the part of the Licensee.

The DuPont memorandum also mentions three additional concerns in the area of operations: Licensee knowledge of status of equipment or systems, Licensee control of operations and evolutions, and Licensee failure to follow procedures. The Licensee generally is in agreement with these concerns and has taken appropriate steps to resolve these concerns. As discussed in § II of this Decision, I have concluded that the Licensee has appropriately improved its control of licensed activities.

Accordingly, I conclude that there is reasonable assurance that Fermi-2 management is able to comply with NRC requirements such that their activities will not present an undue risk to the public health and safety after the plant is restarted.

V. REACTOR OPERATIONS IMPROVEMENT PLAN

SECOM's fifth allegation is that the Licensee's ROIP will not provide the substantive changes needed to correct the breakdown of operations at the plant. No particulars are provided, however. The Petitioner fur-

ther asserts that the breakdown has been an ongoing problem since the early 1970's, and cites several excerpts from a Michigan Public Service Commission Staff Report, 1984 (MPSC), as supporting this position.

I have previously discussed in this Decision the Licensee's response to the problems identified at Fermi-2 and the basis for my conclusion that the ROIP, as well as the broader-based NOIP, in combination with other Licensee actions, will provide the requisite reasonable assurance such that license revocation is unwarranted. With respect to the MPSC Report, it is clear that its focus is on the management of the Fermi-2 project during the construction phase and from the perspective of whether costs were reasonably incurred. Accordingly, this report does not appear to be relevant to DECo's ability to safely operate the facility and, therefore, the specific points raised in the report will not be addressed here.

As I stated at the beginning of the Decision, the NRC considered the Licensee and its management team to be good performers in most areas of regulatory significance during the construction phase of the project, and the Fermi-2 management team was thought to be ready to operate the facility adequately at the time of low-power licensing. The findings identified by the NRC appear to be primarily related to Licensee's management system and control of its operations activities in moving from the construction phase to the operations phase. The management and other changes discussed in this Decision provide a reasonable basis for concluding that the Licensee is addressing the problems at Fermi-2, both NRC and self-identified, and that the Licensee is able to safely operate Fermi-2 in compliance with the Commission's regulations.

Conclusion

Based upon the foregoing discussion and the information contained in the referenced documentation, I have concluded that there is reasonable assurance that operation of Fermi-2 will not present an undue risk to the public health and safety. Accordingly, the Petitioner's request is denied.

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

James M. Taylor, Director
Office of Inspection and
Enforcement

Dated at Bethesda, Maryland,
this 29th day of July 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Lando W. Zech, Jr.
Frederick M. Bernthal
Thomas M. Roberts
James K. Asselstine

In the Matter of

Docket No. PRM-51-6

**POLLUTION AND ENVIRONMENTAL
PROBLEMS, INC.**

June 20, 1986

The Commission denies a petition for rulemaking which requested that the Commission amend its environmental protection regulations for domestic licensing and related regulatory functions to require the preparation of an environmental impact statement on the generic environmental impacts of high-burnup nuclear fuel as used in commercial nuclear reactors, stored in spent fuel pools or cooling racks, or potentially as processed in reprocessing plants or disposed of in permanent waste disposal sites. The petition is denied because the requested amendment is unnecessary since the regulations already provide an adequate basis for the preparation of an environmental impact statement.

TECHNICAL ISSUE DISCUSSED

High-burnup nuclear fuel.

DENIAL OF PETITION FOR RULEMAKING

I. BACKGROUND

On March 17, 1980, Ms. Catherine Quigg filed a petition for rulemaking with the NRC (Docket No. PRM-51-6) on behalf of Pollution and Environmental Problems, Inc. Notice of receipt of this petition and a request for comments were published in the *Federal Register* on April 15, 1980 (45 Fed. Reg. 25,557).

The Petitioner contends that the use of high-burnup fuel* could have the following significant effects upon the human environment:

1. Greater fission gas releases from nuclear reactors.
2. Increased fission gas releases from spent fuel pools.
3. Production of "Inferior grade" spent fuel which can lead to long-term environmental hazards.
4. Potential for greater radiological impact from reactor and spent fuel pool accidents.
5. Increased radiological material releases during reprocessing.

The petitioner requests that 10 C.F.R. Part 51 be amended to require that a full environmental impact statement be prepared covering the generic environmental impacts of high-burnup nuclear fuel.

Fourteen public comment letters have been received relative to the subject petition for rulemaking. These may be examined in the NRC Public Document Room. Three commenters were in favor of the petition and eleven commenters opposed the petition. All comment letters have been evaluated by the NRC Staff.

II. DISCUSSION

The request of the petitioner was that the Commission amend 10 C.F.R. Part 51, "Licensing and Regulatory Policy and Procedures for Environmental Protection," of its regulations to require the preparation of an environmental impact statement (EIS) on the subject covered by the petition. At the time the petition was submitted there already existed a requirement (§ 51.5(a)(10)) that mandated an EIS under certain condi-

*The length of use, or total energy generated, or "burnup" of fuel in a reactor is measured in terms of megawatt days per metric ton of uranium (MWD/MTU) or GWD/MTU where 1 GWD/MTU = 1000 MWD/MTU. Typically, fuel has been removed from reactors after 3 to 5 years with burnup levels of 28 GWD/MTU for boiling water reactors and 33 GWD/MTU for pressurized water reactors. "High" or "extended" burnup nuclear fuel is considered, for the purpose of this discussion, to be fuel that is left in the reactor long enough to achieve a burnup of greater than 40 GWD/MTU. Burnup levels of up to about 60 GWD/MTU are being considered.

tions. Furthermore, § 51.5(c) required that a negative declaration and environmental impact appraisal be prepared if it is determined that an EIS is not needed. During 1984, 10 C.F.R. Part 51 was almost completely rewritten and reorganized. New § 51.20(a)(1) and § 51.20(b)(13) include language similar to that in the old § 51.5(a)(10), and new § 51.21 requires an environmental assessment (EA) be made for certain regulatory actions. The Commission concludes that an amendment to the regulations, as requested by the petition, is unnecessary because § 51.20 already provides an adequate basis for the preparation of an EIS with regard to high-burnup fuel on a commercial scale by requiring an EIS for "any . . . action which the Commission determines is a major Commission action significantly affecting the quality of the human environment." Furthermore, § 51.21 requires that an EA be performed for all licensing and regulatory actions applicable to NRC's domestic licensing and related regulatory functions. The EA is to "provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact." Finally, the NRC regulations are already in compliance with the Commission on Environmental Quality (CEQ) guidelines for preparing environmental impact statements. The Commission, therefore, denies the petition.

However, indications from the nuclear utility industry are that there will be an increasing number of applications for license amendments permitting the use of high-burnup fuel. The trend is expected to be cautious at first, but if the fuel performs satisfactorily and if current economic parameters remain constant, the trend is expected to continue so that within the next 10 or 12 years most licensees will plan for burnups of 45 GWD/MTU or more. In view of this trend, the Commission thinks that the petitioner's concern about the environmental impact has merit. The Commission believes that it is both prudent and timely to evaluate the significance of this effect. Therefore, the Commission has initiated preparation of an EA on the potential use of high-burnup fuel to provide the information necessary to determine whether a more detailed EIS is warranted. We expect the assessment to be completed by mid-1986.

For the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.,
this 20th day of June 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Thomas S. Moore

In the Matter of

Docket Nos. 50-329-CP, OM&OL
50-330-CP, OM&OL

CONSUMERS POWER COMPANY
(Midland Plant, Units 1
and 2)

August 1, 1986

Upon information from the applicant that it wishes to withdraw its application for an extension of the Midland construction permits and for operating licenses for the facility, the Appeal Board, on mootness grounds, withdraws its jurisdiction, retained in the construction permit proceeding, over the issue of the environmental significance of the radon-222 emissions occasioned by the mining and milling of uranium fuel. The Board also vacates the Licensing Board's partial initial decision on remedial soils issues in the consolidated construction permit modification and operating license proceeding, the *sua sponte* review of which the Appeal Board had been holding in abeyance.

APPEARANCES

Frederick C. Williams, Washington, D.C., for the applicant Consumers Power Company.

Joseph Rutberg for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

The Consumers Power Company (Consumers) recently advised us that its Board of Directors has recognized that there is "no reasonable possibility that the Midland Project could be completed as a nuclear power plant" and, accordingly, has "authorized the abandonment of the nuclear steam supply systems and other unusable components of [that] Project."¹ Given this development, Consumers has informed the Director of Nuclear Reactor Regulation that it wishes to withdraw its applications for an extension of the Midland construction permits and for operating licenses for the facility.² It also seeks the termination of all pending NRC adjudicatory proceedings concerned with those permits and licenses.³

For our part, we have before us two matters involving the Midland facility. First, in an opinion issued several years ago in connection with the construction permit proceeding, we retained jurisdiction over the issue of the environmental significance of the radon-222 emissions occasioned by the mining and milling of uranium fuel.⁴ Second, because some time ago Consumers halted construction of the Midland facility and presaged the abandonment determination that it has now made, we have been holding in abeyance our review *sua sponte* of the Licensing Board's partial initial decision last year on remedial soils issues, which were raised in the consolidated construction permit modification and operating license proceeding.⁵

We agree with the NRC staff that the appropriate course of action in the present circumstances is apparent. On mootness grounds, we now *withdraw* our retention of jurisdiction over the radon issue presented in the construction permit proceeding.⁶ On the same basis, we *vacate* the

¹ Motion for Termination of Appeal Board Jurisdiction (July 11, 1986) at 1. We are told that Consumers contemplates converting Unit 1 to a combined cycle gas-fired generating station. *Ibid.*

² *Id.* at 1-2.

³ *Id.* at 2.

⁴ ALAB-691, 16 NRC 897, 909 (1982). As there observed, the radon issue was then being actively litigated in proceedings involving other nuclear facilities. Later that year, we decided in those proceedings that the effects on human health of the annual fuel cycle radon releases attributable to the operation of the facilities in question were insufficient to tip the National Environmental Policy Act cost-benefit balance against such operation. *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-701, 16 NRC 1517 (1982). In CLI-83-14, 17 NRC 745 (1983), the Commission announced that it was deferring action on a petition seeking its review of ALAB-701 to await the outcome of a generic assessment of certain uranium mill tailings regulations. As of this date, the petition remains pending before the Commission, with the consequence that we have continued to retain jurisdiction over the radon issue in the *Midland* proceeding (among others).

⁵ See LBP-85-2, 21 NRC 24 (1985).

⁶ See *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A and 2A), ALAB-783, 20 NRC 843 (1984); *Toledo Edison Co.* (Davis-Besse Nuclear Power Station, Units 2 and 3), ALAB-622, 12 NRC 667 (1980).

Licensing Board's partial initial decision on remedial soils in the consolidated construction permit modification and operating license proceeding.⁷ This step leaves the Licensing Board free to act upon Consumers' request that it authorize withdrawal of the operating license application and then dismiss the consolidated proceeding.⁸ Before doing so, however, the Board is to determine whether any conditions should be imposed upon such an authorization and dismissal.⁹

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

⁷ See *United States Department of Energy* (Clinch River Breeder Reactor Plant), ALAB-755, 18 NRC 1337 (1983); *Long Island Lighting Co.* (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-628, 13 NRC 24 (1981).

⁸ Because portions of that proceeding are still before the Licensing Board, Consumers quite properly has called upon that Board to terminate it.

⁹ See *Clinch River*, *supra* note 7; *Davis-Besse*, *supra* note 6. Needless to say, if dissatisfied with it, any party may appeal the Licensing Board's determination on the question of the need for conditions.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Thomas S. Moore, Chairman
Dr. Reginald L. Gotchy
Howard A. Wilber

In the Matter of

Docket No. 50-400-OL

CAROLINA POWER & LIGHT
COMPANY and
NORTH CAROLINA EASTERN
MUNICIPAL POWER AGENCY
(Shearon Harris Nuclear Power
Plant)

August 15, 1986

The Appeal Board affirms the Licensing Board's third partial initial decision in this operating license proceeding, LBP-85-49, 22 NRC 899 (1985).

RULES OF PRACTICE: REPRESENTATION

A person who is not an attorney cannot represent in NRC licensing proceedings any other individual or any organization in which he does not hold membership. 10 C.F.R. § 2.713(b).

RULES OF PRACTICE: STANDING TO APPEAL

A party has no standing to raise on appeal possible grievances of other parties that have not perfected their appeals. See ALAB-837, 23 NRC 525, 543 n.58 (1986); *Houston Lighting & Power Co.* (Allens Creek Nuclear Generating Station, Unit No. 1), ALAB-631, 13 NRC 87, 89 (1981);

Puget Sound Power and Light Co. (Skagit Nuclear Power Project, Units 1 and 2), ALAB-556, 10 NRC 30, 33 (1979). *Cf. Houston Lighting & Power Co.* (South Texas Project, Units 1 and 2), ALAB-799, 21 NRC 360, 383 (1985).

RULES OF PRACTICE: BRIEFS

The Commission's Rules of Practice require that an appellant's brief clearly identify the errors of fact or law that are the subject of the appeal, and that for each issue appealed, the precise portion of the record relied upon in support of the assertion of error be set out. 10 C.F.R. § 2.762(d)(1). Moreover, the brief must contain sufficient information and cogent argument to alert the other parties and the appellate tribunal to the precise nature of and support for the appellant's claims. *See Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775, 805 (1979), *vacated in part and remanded*, CLI-80-8, 11 NRC 433 (1980).

RULES OF PRACTICE: BRIEFS

In appealing a particular Board ruling, it is not enough for an appellant simply to declare flatly that the ruling was in error. Rather, it is incumbent on the appellant to confront directly the reasons assigned for the challenged ruling and to identify with particularity the infirmities purportedly inherent in those reasons. *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 84 n.128 (1985).

RULES OF PRACTICE: BRIEFS

An appeal that is inadequately briefed is subject to dismissal. *See Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-841, 24 NRC 64, 69 (1986); *Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-693, 16 NRC 952, 956-57 (1982).

RULES OF PRACTICE: BRIEFS

Issues on appeal that are inadequately briefed are considered waived. *See Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-802, 21 NRC 490, 496 n.30 (1985); *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 1), ALAB-696, 16 NRC 1245, 1255 (1982); *Susquehanna*, 16 NRC at 954-57; *Duke Power Co.* (Ca-

tawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 413-14, *reconsideration denied*, ALAB-359, 4 NRC 619 (1976).

EMERGENCY PLANS: CONTENT (PROTECTIVE MEASURES)

The Commission's regulations dictate that a range of protective actions be developed for the plume exposure pathway emergency planning zone. 10 C.F.R. § 50.47(b)(10).

REGULATORY GUIDES: APPLICATION

The Commission's basic guidance document on emergency planning, NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," (Rev. 1, November 1980), like the Regulatory Guides, serves as guidance and does not prescribe regulatory requirements. It simply serves as a method of meeting the applicable regulatory requirements. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 710 (1985), *review denied*, CLI-86-5, 23 NRC 125 (1986); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-698, 16 NRC 1290, 1298-99 (1982), *rev'd in part on other grounds*, CLI-83-22, 18 NRC 299 (1983).

RULES OF PRACTICE: CONTENTIONS

A party is bound by the literal terms of its own contentions. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-836, 23 NRC 479, 505 (1986); *id.*, ALAB-819, 22 NRC 681, 709 (1985).

RULES OF PRACTICE: APPELLATE REVIEW

An appeal board will overturn a licensing board's findings of fact only where it is "convinced that the record compels a different result." *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 357 (1975). *See* ALAB-837, 23 NRC at 531.

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

It is not the licensing board's function to act as an intervenor's advocate and prepare its case.

APPEARANCES

Wells Eddleman, Durham, North Carolina, intervenor pro se.

Thomas A. Baxter, Washington, D.C. (with whom John H. O'Neill, Jr., Delissa A. Ridgway, and Pamela H. Anderson, Washington, D.C., and Richard E. Jones, and Dale E. Hollar, Raleigh, North Carolina, were on the brief) for the applicants Carolina Power & Light Company, *et al.*

Charles A. Barth (with whom Janice E. Moore and Marjorie U. Rothschild were on the brief) for the Nuclear Regulatory Commission staff.

DECISION

In its third partial initial decision in this operating license proceeding, the Licensing Board resolved in the applicants' favor several emergency planning and safety issues.¹ One of the several intervenors in the proceeding,² Wells Eddleman, now appeals several of the conclusions of that decision. He also seeks to appeal the Licensing Board's rejection of a number of his contentions.³ For the reasons that follow, we affirm the results reached by the Licensing Board on each of the challenged issues.⁴

¹ See LBP-85-49, 22 NRC 899 (1985).

² See LBP-85-5, 21 NRC 410, 412-13 (1985).

³ Although the Notice of Appeal from LBP-85-49 was signed by four intervenors (John Runkle, counsel for the Conservation Council of North Carolina (CCNC); Dr. Richard Wilson, pro se; Daniel F. Read, President of the Chapel Hill Anti-Nuclear Group Effort (CHANGE); and Wells Eddleman, pro se and as joint intervenor), only one appellate brief was filed and it was signed by Mr. Eddleman alone. Thus, despite Mr. Eddleman's representation on the first page of the brief that several intervenors have appealed, we reject Mr. Eddleman's attempts to appeal the rejection of contentions that were sponsored solely by other parties. Because Mr. Eddleman is not an attorney he cannot represent any other individual or any organization in which he does not hold membership, see 10 C.F.R. § 2.713(b), and he has no standing to raise before us possible grievances of other parties that have not perfected their appeals. See ALAB-837, 23 NRC 525, 543 n.58 (1986); *Houston Lighting & Power Co.* (Allens Creek Nuclear Generating Station, Unit No. 1), ALAB-631, 13 NRC 87, 89 (1981); *Puget Sound Power and Light Co.* (Skagit Nuclear Power Project, Units 1 and 2), ALAB-556, 10 NRC 30, 33 (1979). *Cf. Houston Lighting & Power Co.* (South Texas Project, Units 1 and 2), ALAB-799, 21 NRC 360, 383 (1985). Hence, we dismiss Mr. Eddleman's attempt to appeal the Licensing Board's rejection of CHANGE contentions 4, 9, 20, 21, 23 and 33, and Wilson contentions 1, 3, 4, 5(b), (c), (d) and (e). We likewise dismiss Mr. Eddleman's attempt to appeal the Licensing Board's ruling recasting Emergency Planning joint contention 1, because he did not sponsor that contention.

⁴ In ALAB-837, 23 NRC 525 (1986), we affirmed the Licensing Board's first partial initial decision on environmental issues.

Before turning to the various claims of error, a brief comment about the intervenor's appellate papers is in order. The Commission's Rules of Practice require that an appellant's brief clearly identify the errors of fact or law that are the subject of the appeal, and that for each issue appealed, the precise portion of the record relied upon in support of the assertion of error be set out.⁵ Moreover, the brief must contain sufficient information and cogent argument to alert the other parties and the appellate tribunal to the precise nature of and support for the appellant's claims.⁶

A party's failure to brief adequately its claims of error leaves the other parties in the dark as to how to respond properly and makes appellate review difficult, if not impossible. Unfortunately, this is precisely the situation we face here. Mr. Eddleman's "brief" is far from a model of clarity. In only nine pages, he asserts claims of error regarding, *inter alia*, dozens of separate contentions involving numerous Licensing Board rulings.⁷ From this fact alone, it is obvious that his assertions of error cannot possibly be adequately briefed. Many of his claims consist of little more than bald assertions that the Licensing Board erred, without any explanation or argument as to how or why the particular decision is wrong. As we have said before, "it is not enough simply to declare flatly that a particular Board ruling was in error. Rather, it is incumbent upon the appellant to confront directly the reasons assigned for the challenged ruling and to identify with particularity the infirmities purportedly inherent in those reasons."⁸ Similarly, Mr. Eddleman's brief is noticeably lacking in appropriate and necessary citations to the decisions in question and the evidentiary record.⁹ In the circumstances, we would be fully justified in dismissing the entire appeal.¹⁰ Rather than take that step, however, we have attempted to review those of Mr. Eddleman's claims that make

⁵ 10 C.F.R. § 2.762(d)(1).

⁶ See *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775, 805 (1979), *vacated in part and remanded*, CLI-80-8, 11 NRC 433 (1980).

⁷ Mr. Eddleman succeeded in keeping his brief under ten pages by failing to comply with the requirements of 10 C.F.R. § 2.708(b) that all documents filed in an adjudication must be typed double-spaced with margins of not less than one and one-quarter inches. While the first two pages and the final paragraph on the last page of Mr. Eddleman's brief comply with the regulation, the rest of his brief does not. Had Mr. Eddleman complied fully with section 2.708, his brief almost certainly would have exceeded ten pages in length. Hence, we find disingenuous the statement that "[a] table of contents etc. is not required for briefs 10 pages long, 10 CFR 2.762(c)." Eddleman Brief (January 30, 1986) at 2.

⁸ *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 84 n.128 (1985).

⁹ See *supra* note 5.

¹⁰ See *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-841, 24 NRC 64, 69 (1986); *Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-693, 16 NRC 952, 956-57 (1982).

enough sense so as to allow their disposition. All other claims are considered waived.¹¹

I. EMERGENCY PLANNING

The Commission's regulations dictate that "[a] range of protective actions" be developed for the plume exposure pathway emergency planning zone (EPZ).¹² One of the protective actions available during a radiological emergency is sheltering. The Commission's basic guidance document on emergency planning, NUREG-0654/FEMA-REP-1,¹³ provides that emergency plans should include "[t]he bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions. This shall include expected local protection afforded in residential units or other shelter for direct and inhalation exposure"¹⁴

In an attempt to comply with this guidance and the Commission's regulations, the applicants undertook a survey of the protection factors afforded by the types of housing prevalent in the plume EPZ.¹⁵ This review, however, did not address the protection factors afforded by typical institutional structures (schools, houses of worship, etc.), commercial structures, and industrial facilities in the EPZ, presumably because such buildings constitute only about twenty percent of the structures in the area.¹⁶ The Licensing Board determined that given the size of such buildings they could house far more than twenty percent of the plume EPZ population at the time of a radiological emergency.¹⁷ Thus, the Li-

¹¹ See *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-802, 21 NRC 490, 496 n.30 (1985); *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 1), ALAB-696, 16 NRC 1245, 1255 (1982); *Susquehanna*, 16 NRC at 954-57; *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 413-14, *reconsideration denied*, ALAB-359, 4 NRC 619 (1976).

¹² 10 C.F.R. § 50.47(b)(10).

¹³ "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," (Rev. 1, November 1980) [hereinafter referred to as "NUREG-0654"]. NUREG-0654, like the Regulatory Guides, serves as guidance and does not prescribe regulatory requirements. It simply serves as a method of meeting the applicable regulatory requirements. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 710 (1985), *review denied*, CLI-86-5, 23 NRC 125 (1986); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-698, 16 NRC 1290, 1298-99 (1982), *rev'd in part on other grounds*, CLI-83-22, 18 NRC 299 (1983).

¹⁴ Evaluation Criterion J.10.m., NUREG-0654 at 64 (footnote omitted).

¹⁵ The sheltering effectiveness of a structure is measured in terms of its protection factor. The PF is the ratio of the radiation dose outside the structure to the dose inside. It indicates the degree to which a structure would afford protection from a radiation release in comparison with no shelter at all. LBP-85-49, 22 NRC at 903.

¹⁶ See Applicants' Motion for Summary Disposition of Eddleman Contention 57-C-10 (January 14, 1985), Affidavit of Robert G. Black, Attachment 4.

¹⁷ Memorandum and Order (Ruling on Remaining Summary Disposition Motions) (April 24, 1985) at 7.

censing Board admitted Eddleman contention 57-C-10 for litigation, but confined the hearing on the contention to one issue: the adequacy of the applicants' review of sheltering afforded by non-residential structures in the EPZ.¹⁸

After the hearing on the contention, the Licensing Board found that a satisfactory survey of the protection factors of institutional, commercial and industrial structures in the Shearon Harris EPZ had been conducted; that a "range" of protection factors for representative structures had been obtained; that the North Carolina Division of Emergency Management had accepted the applicants' results; and that the emergency response plan "will be amended to reflect the results of the survey and to include an analysis of the level of protection from radiation releases afforded by representative commercial, institutional and industrial structures in the Harris EPZ"¹⁹ The Board also found that the applicants' evidence in support of their proposed findings had not been impeached, except in some "minor respects."²⁰

On appeal, Mr. Eddleman does not question the adequacy of the applicants' survey. He asserts that the Licensing Board erred in not requiring the protection factor data garnered as a result of the applicants' survey to be placed in the emergency plan. As best we can understand it, Mr. Eddleman's position is that NUREG-0654 dictates that the plan must include the actual protection factors typical of structures within the EPZ, as opposed to the "range" of protection factors described in the Licensing Board's findings. For support, Mr. Eddleman simply refers us to several of his proposed findings and several pages of the hearing transcript. He also cites, without more, *GUARD v. NRC*, for the proposition that the deference due an agency's interpretation of its own regulation "is appropriate only so long as the agency's interpretation does no violence to the plain meaning of the provision" in question.²¹

In addressing Mr. Eddleman's concern, the Licensing Board pointed out that

¹⁸ Eddleman contention 57-C-10, as originally admitted by the Licensing Board, stated in pertinent part: "The State Plan provides no useful analyses or information on sheltering effectiveness The Plan does not comply with Evaluation Criterion J.10.m. of NUREG-0654, which calls for 'expected local protection factors in residential units or other shelter for direct and inhalation exposure'" LBP-85-49, 22 NRC at 902.

¹⁹ *Id.* at 906.

²⁰ *Id.* at 904.

²¹ 753 F.2d 1144, 1148-49 (D.C. Cir. 1985).

[t]he purpose [of sheltering survey information] is to allow planners to make informed, but relatively gross, judgments about sheltering in the EPZ as a whole, or large segments of the EPZ, wherever people happen to be at the time. Its purpose is *not* to assist decisionmakers in deciding whether to move people, e.g., from wood buildings to brick buildings, seeking to maximize sheltering protection. Thus, what the decisionmakers need is a manageable set of reasonable estimates, not a finely tuned and detailed mass of data.²²

This conclusion was based on testimony of John C. Heard, Jr., an expert witness appearing on behalf of the Federal Emergency Management Agency (FEMA). Among other things, Mr. Heard testified that “[y]ou can’t run an evacuation or a protective action process in large sectors by earmarking one sector as having better protection so we will leave them alone;” and “it is never intended to move people from their homes into better protected buildings within the 10-mile EPZ.”²³ In light of this testimony, we can find no fault with the Licensing Board’s finding that “merely provid[ing] low- and high-range [protection factor] data on various categories of buildings” is sufficient to comply with the regulations.²⁴ Mr. Eddleman has not directed our attention to anything in the record that would tend to contradict Mr. Heard’s testimony and support the position that using ranges of protection afforded by structures in the EPZ does not satisfy NUREG-0654, and hence the Commission’s emergency planning regulations.²⁵ Furthermore, the very wording of Criterion J.10.m (on which contention 57-C-10 is apparently based) confirms that the use of the applicants’ summaries of protection factors is satisfactory, for they do, in fact, inform the decisionmakers of the “expected local protection afforded” in structures within the EPZ. Thus, Mr. Eddleman’s citation to *GUARD v. NRC* does not avail him.²⁶ The Licensing Board’s conclusion that the applicants have met their burden with respect to Eddleman contention 57-C-10 is affirmed.

II. FIRE PROTECTION

A. The Licensing Board also admitted for litigation Eddleman contention 116, which challenged various aspects of the applicants’ fire pro-

²² *Id.* at 906 (citation omitted; emphasis in original).

²³ Tr. 8155-56.

²⁴ LBP-85-49, 22 NRC at 907.

²⁵ Mr. Eddleman cites several pages of the transcript (Tr. 8137, 8139-40, 8142-44, 8146-48) for support. We have reviewed these and find nothing in them that brings the Licensing Board decision into question.

²⁶ In addition, NUREG-0654 is not a regulation and hence, the general principle propounded in the *GUARD* decision, and cited here by Mr. Eddleman, is not applicable in these circumstances. See *supra* note 13.

tection system.²⁷ Among other things, this contention averred that “[i]n establishing fire resistance ratings of fire barriers with respect to fire in cable trays, Applicants have not established that qualification tests represent actual plant conditions or comparable conditions.”²⁸ The Licensing Board specifically found, however, that “the qualification methods to be used by the Applicants represent equivalent or more rigorous tests of cable tray fire barriers than would be experienced under actual plant conditions.”²⁹

On appeal, Mr. Eddleman does not dispute this finding. Rather, he complains of what he describes as the Licensing Board’s acceptances of promises and future inspections with regard to fire protection.³⁰ What Mr. Eddleman is apparently referring to is the Board’s finding that each cable tray fire barrier will be tested “by an independent laboratory on a ‘generic’ assembly of that fire barrier, and [that] installation of that barrier will be done in accordance with the recommendations of the testing laboratory to ensure that the actual barrier has the same configuration as the test assembly.”³¹ Mr. Eddleman contends that the Board here impermissibly allowed the testing of the fire barriers to be performed after the hearing “instead of requiring data on the test results.”³² For support, he cites to Commission and Appeal Board decisions that teach that post-hearing resolution of issues should be employed sparingly and only in clear cases.³³

Mr. Eddleman’s argument is groundless, for as the applicants and the NRC staff indicate, there is nothing of this aspect of contention 116 left for post-hearing resolution. Mr. Eddleman is bound by the literal terms of his own contention,³⁴ and here the issue did not deal with the adequacy of testing or test data, but only concerned whether the qualification tests to be used with respect to cable tray fire barriers “represent actual plant conditions or comparable conditions.” The Licensing Board directly answered this question. It made specific findings, which are fully

²⁷ The basic purposes of a fire protection program for a nuclear power plant are to ensure that, in the event of a fire, the reactor can be shut down safely and maintained in that condition, and to control radioactive releases to the environment. See 10 C.F.R. Part 50, Appendix A, General Design Criterion 3, and Appendix R; LBP-85-49, 22 NRC at 917; Eberly/Ferguson, Tr. fol. 4626, at 6-7.

²⁸ LBP-85-49, 22 NRC at 916.

²⁹ *Id.* at 919.

³⁰ Eddleman Brief at 7.

³¹ LBP-85-49, 22 NRC at 919.

³² Eddleman Brief at 7.

³³ Mr. Eddleman cites *Consolidated Edison Co. of New York* (Indian Point Station, Unit No. 2), CLI-74-23, 7 AEC 947, 951-52 (1974) and *Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1103 (1983).

³⁴ *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-836, 23 NRC 479, 505 (1986); *id.*, ALAB-819, 22 NRC 681, 709 (1985).

supported by the record, concerning the qualification conditions for fire barriers. Testimony revealed that the tests to determine fire resistance ratings of the Shearon Harris fire barriers are conducted according to standard testing procedures approved by organizations such as Underwriters Laboratories.³⁵ The Board found that the fire barriers are qualified by an exposure fire “based on a standard, empirically derived time-temperature curve” which “represents a worst-case exposure fire.”³⁶ Accordingly, the Board found that a fire barrier tested under those conditions “will resist a fire from the maximum calculated combustible loading in any fire area in the [Shearon Harris] power block.”³⁷ Thus it is clear that this issue was correctly resolved by the Licensing Board.³⁸

B. Another part of Eddleman contention 116 is directed at the applicants’ treatment in the Final Safety Analysis Report (FSAR) of the consequences of the spread of a fire at Shearon Harris. The contention alleged that “the ‘analysis’ of what happens if the fire spreads is generally a rationalization that it can’t spread much, not an analysis.”³⁹ In addressing this issue, the Licensing Board agreed with the NRC staff’s assessment that, if the proper fire barriers and detection and extinguishing equipment are provided, there will be no spreading of fire.⁴⁰ Additionally, the Board found that the applicants’ analysis would enable them to know what the effect would be, should a fire spread.⁴¹

On appeal Mr. Eddleman complains of the Licensing Board’s “approval” of the applicants’ analysis of the effects of fire spreading from one fire area to another. He claims that “without analysis of what equipment will be knocked out in a spreading fire . . . the [applicants’] analysis cannot be adequate.”⁴²

Mr. Eddleman’s complaint is without merit. As noted above, the Licensing Board explicitly found that the applicants’ analysis of fire hazards is sufficient to analyze the impact of fire spreading to an adjacent

³⁵ Serbanescu, Tr. fol. 4256, at 8-9.

³⁶ LBP-85-49, 22 NRC at 919. See Serbanescu, Tr. fol. 4256, at 10-11; Tr. 4526, 4656-58, 4666-68.

³⁷ LBP-85-49, 22 NRC at 919. See Serbanescu, Tr. fol. 4256, at 11.

³⁸ Although it is not entirely clear that Mr. Eddleman’s argument is a challenge to the Licensing Board’s factual findings on this issue, to the extent it is we note that we will overturn a licensing board’s findings of fact only where “we are convinced that the record compels a different result.” *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 357 (1975). See ALAB-837, 23 NRC at 531.

³⁹ LBP-85-49, 22 NRC at 916.

⁴⁰ Fire and smoke detectors serve to provide timely warning to personnel. The use of sprinkler systems is the principal means of mitigating the effects of fires at the plant. *Id.* at 922. In addition, a backup manual firefighting capability will be provided in the form of trained fire brigades, which will consist of a minimum of five people on each plant shift. LBP-85-49, 22 NRC at 923.

⁴¹ *Id.*

⁴² Eddleman Brief at 7.

fire area, should that occur. This conclusion is amply supported by the record. The Shearon Harris plant is divided into a number of "Fire Areas." These were established based on the nature of occupancy of that part of the plant, the amount and distribution of combustible materials within the area, and the location of safety-related systems and equipment.⁴³ Further, the applicants' Safe Shutdown Analysis describes the equipment needed to achieve a safe shutdown, the Fire Areas where these systems are located, and the type of protection provided in each location.⁴⁴ Thus, contrary to Mr. Eddleman's assertion, the applicants have adequately analyzed the effects of fire on safe shutdown equipment.

Equally important is Mr. Eddleman's failure to challenge the Board's findings or the record relied on by the Board. For example, Mr. Eddleman criticizes the staff's position that, if its guidelines concerning fire barriers, extinguishment and detection are met, the spreading of fire will be prevented; yet at no point has Mr. Eddleman postulated a fire spreading scenario that would call into question the Shearon Harris fire protection program. We need not rehash all the additional record support for the Licensing Board's findings here. Suffice it to say that we have reviewed the record and find no cause for overturning the Licensing Board's conclusions regarding the adequacy of the applicants' Fire Hazards Analysis.⁴⁵

III. PIPE HANGER WELDS

Eddleman contention 41 states: "Applicants' QA/QC program fails to assure that safety-related equipment is properly inspected (e.g., the

⁴³ Serbanescu, Tr. fol. 4256, at 16.

⁴⁴ See Applicants Exh. 7, "Safe Shutdown Analysis Summary and Description [of] Fire Protection" (originally submitted in a letter from A.B. Cutter, Vice President, Nuclear Engineering & Licensing, Carolina Power & Light Co. to H.R. Denton, Director, Nuclear Reactor Regulation (June 12, 1984)); Applicants Exh. 6, Final Safety Analysis Report section 9.5.1 and Appendix 9.5A Fire Protection System.

⁴⁵ Mr. Eddleman also seeks to challenge the Licensing Board's rejection of several of his proposed findings on the fire protection issue. As to the bulk of these proposed findings he provides no argument at all as to how the Board erred. With respect to his proposed findings 16-21, they consist of allegations about certain material having been omitted from the FSAR. In rejecting these, the Board concluded that, because "the material in question was placed in the record at the hearing," any earlier omissions were irrelevant. LBP-85-49, 22 NRC at 925. On appeal, Mr. Eddleman opines that "omission of [the] material [in question] bears on the trustworthiness of Applicants and the thoroughness of their analysis," and that "[t]his is significant in light of the promises and analysis the Board has accepted." Eddleman Brief at 7.

Contrary to Mr. Eddleman's assertions, however, the Licensing Board did not improperly leave any matters regarding the applicants' fire protection system for later resolution. Moreover, aside from the fact that the "trustworthiness" of the applicants was not among the issues raised in Eddleman contention 116, we fail to see how the exclusion of some material from the FSAR would impugn the applicants' character.

'OK' tagging of defective pipe hanger welds at [Shearon Harris])."⁴⁶ In admitting the contention, the Licensing Board limited it "to Mr. Eddleman's only specified concern 'that there exist defective hanger welds that have been improperly inspected and approved.'"⁴⁷ The intervenor has not challenged this limitation.

The Licensing Board found that the applicants had suffered through several years of problems relating to pipe hanger welding, but that they had successfully taken actions to correct these problems. Thus, the Board concluded that although "[t]his contention may have had merit when it was initially raised[,] . . . remedial actions have averted a possible breakdown in quality construction." Furthermore, the Board found that "[n]o uncorrected errors that would affect safe plant operation were identified in this proceeding."⁴⁸

On appeal, Mr. Eddleman now asserts that the Board approved a pipe hanger welding program riddled with errors and administrative management failures based on mere promises to comply. For support, Mr. Eddleman refers us to our *Shoreham* decision⁴⁹ for the proposition that "a promise to comply is not enough."⁵⁰

This argument misses the mark. In the first place, Mr. Eddleman has not directed our attention to anything in the record that would indicate that the applicants' program is currently "riddled with errors." Instead, he simply asks us to consider his proposed findings. By so doing, Mr. Eddleman has failed to elucidate what he believes is wrong with the decision below, and what evidence he relies on for his position. As we have indicated in the past, this will not do.⁵¹ Furthermore, the Licensing Board's conclusion is not based on "promises to comply," but rather, on record evidence of actions that have already "been demonstrated to be effective."⁵² Based on Mr. Eddleman's failure to cite any evidence that would support his assertion on appeal, and our review of the record, we conclude that the Licensing Board reached the correct determination with regard to Eddleman contention 41.

⁴⁶ LBP-85-49, 22 NRC at 926.

⁴⁷ *Id.*

⁴⁸ *Id.* at 930.

⁴⁹ *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-788, 20 NRC 1102, 1146 (1984).

⁵⁰ Eddleman Brief at 8.

⁵¹ See *supra* pp. 204-05. See also *Black Fox*, 10 NRC at 805-06; *Public Service Electric and Gas Co.* (Hope Creek Generating Station, Units 1 and 2), ALAB-394, 5 NRC 769, 770 (1977). Moreover, we have reviewed Mr. Eddleman's proposed findings and agree with the Licensing Board that they do little more than repeat the history of the applicants' problems with pipe hanger welds. See LBP-85-49, 22 NRC at 929.

⁵² *Id.* at 929-30. See generally *id.* at 927-29; Nevill, *et al.*, Tr. fol. 6663; Tr. 6670-71, 7041-43.

IV. STEAM GENERATOR TUBE FAILURE

Mr. Eddleman next appeals the Licensing Board's conclusions on joint intervenors' contention VII(4).⁵³ The issue raised by that contention is whether the applicants were required to consider multiple tube failure in their steam generator tube failure analysis.⁵⁴ The Licensing Board found the applicants' analysis of tube failure to be adequate. More specifically, it found the likelihood of multiple tube failure to be so small as not to warrant an analysis of such an occurrence.⁵⁵

On appeal, Mr. Eddleman contends that the Board did not adequately justify its decision. He also asserts that "the probability of such events would be in the range of other events analyzed."⁵⁶ Both arguments are clearly without merit.

All direct evidence on this issue was presented by the applicants and the NRC staff.⁵⁷ Based on this evidence, the Licensing Board found that the likelihood of a steam generator tube rupture at the Harris plant was about one rupture every 45 years. It further found this number to be conservative, based on the fact that the causes of the five known tube ruptures in Westinghouse steam generators using Inconel tubes — stress corrosion cracking, denting, and loose foreign objects in the system — have either been eliminated or mitigated by subsequent developments. With these changes factored into the analysis, the probability of a single tube failure at Shearon Harris drops to about one in 120 years. The Board also noted that no multiple tube failure has ever occurred. Finally, the Board relied upon a Westinghouse analytical model that predicted the expected frequency of multiple tube failure to be approximately one in 14,000 plant-years.⁵⁸ Based on these findings, the Licensing Board found no reason to require analysis of multiple tube failure.

It is thus apparent that the Licensing Board did indeed "justify" its decision.⁵⁹ In light of the evidence supporting the Board's findings and Mr. Eddleman's failure to cite anything in the record that would call those

⁵³ This contention superseded contentions originally sponsored separately by Mr. Eddleman and CHANGE. See LBP-82-119A, 16 NRC 2069, 2075-78 & n.11 (1982).

⁵⁴ The rest of joint contention VII was disposed of by stipulation and summary disposition. LBP-85-49, 22 NRC at 931-32. Mr. Eddleman is not appealing the summary disposition ruling.

⁵⁵ *Id.* at 934-35. For a general discussion of steam generator tube failure, see *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Units 1 and 2), ALAB-739, 18 NRC 335 (1983).

⁵⁶ Eddleman Brief at 9.

⁵⁷ See Hitchler, Tr. fol. 4012; Marsh and Conrad, Tr. fol. 4176.

⁵⁸ LBP-85-49, 22 NRC at 932-33.

⁵⁹ The Licensing Board also fully answered the intervenors' arguments raised in their proposed findings. LBP-85-49, 22 NRC at 933-34.

findings into question,⁶⁰ we conclude that there is no merit to Mr. Eddleman's assertions on appeal. The Licensing Board's conclusion regarding joint contention VII(4), therefore, is affirmed.

V. EMPLOYEE HARASSMENT

Mr. Eddleman's next assertion of error concerns the Licensing Board's dismissal of his contention 41-G. That late-filed contention was based on an affidavit of Chan Van Vo, a former employee of one of the applicants, who alleged that he was harassed, and eventually fired, for raising construction-related safety concerns at the Shearon Harris plant. As admitted, the contention read: "Chan Van Vo was placed on probation and later terminated from his job with [Carolina Power & Light Company] because he had sought to raise nuclear safety concerns about the Harris facility, as he alleges, and not because of poor job performance, as CP&L alleges."⁶¹

In admitting contention 41-G, the Licensing Board determined that a balancing of the five criteria by which a late-filed contention must be judged tilted in favor of admitting the contention in this narrowed form.⁶² Later, however, the Board reconsidered its analysis admitting the contention after learning that Chan Van Vo's counsel could not warrant that his client would be available as a witness in the hearing that had been scheduled on contention 41-G.⁶³ The Board found Chan Van Vo's availability as a witness to be crucial to any hearing on the contention, because the contention "speaks directly to the unique personal experience, including the subjective reactions, of a single individual — Chan Van Vo."⁶⁴ It found that the third of the five factors, the ability of the

⁶⁰ Once again, Mr. Eddleman has failed to provide any citations to the Licensing Board decision or the record. Accordingly, we simply could have considered this claim to be waived. See *supra* pp. 204-05. We chose to address the claim because it purportedly speaks to one of the issues that the Licensing Board resolved on the merits, and because the intervenor did state, albeit in a minimal fashion, what he believed to be wrong with the ruling below (i.e., he did not simply state "the Licensing Board erred."). This should not be taken as an indication of our acceptance of such bare-bone briefing.

⁶¹ Memorandum and Order (Ruling on Certain Safety Contentions and Other Matters) (January 14, 1985) at 3.

⁶² As originally proposed, contention 41-G alleged the existence of a general pattern of harassment of employees raising quality assurance and quality control concerns at Shearon Harris, and merely cited to portions of the Chan Van Vo affidavit as examples of the alleged harassment. The Licensing Board concluded that the five criteria of 10 C.F.R. § 2.714(a) weighed against admission of contention 41-G in its original form. After narrowing the scope of the contention, however, the Board determined that the five-factor analysis favored its admission. See *id.* at 2-3.

⁶³ Robert Guild apparently was acting as counsel for Chan Van Vo and one of the other intervenors in this matter. See Tr. 7639, 7732.

⁶⁴ Memorandum and Order (Dismissing Contention Concerning Alleged Harassment of Former Employee and Rejecting Emergency Planning Contention) (June 12, 1985) at 5.

late-filing party to contribute to the record, had “changed dramatically against the Intervenor because they cannot produce the person they once recognized as their chief witness. This means . . . that further litigation of Contention 41-G would never get to the heart of that contention and would result only in wasted time and resources.”⁶⁵ The Board, therefore, dismissed the contention.

On appeal, Mr. Eddleman contends that the Licensing Board erred in dismissing the contention in that (1) the dismissal was based on “a factor not even noted in the decision admitting”⁶⁶ the contention (presumably, the presence of Chan Van Vo at the hearing), and (2) the Board took no steps to compel this witness’ attendance.

Mr. Eddleman’s arguments are without foundation. In originally addressing the five lateness factors, Mr. Eddleman acknowledged the importance of Chan Van Vo’s ability to appear. He made it clear to the Board that the third factor was met because he could present Chan Van Vo as a witness.⁶⁷ Moreover, while the Licensing Board’s order admitting the contention did not explicitly mention that this witness’ presence at any hearing was crucial to its decision to admit Eddleman 41-G, it is clear from the Board’s order that this was the case. In narrowing the contention from a broad allegation of harassment at Shearon Harris to a specific allegation regarding the treatment of Chan Van Vo, the Board stated: “This contention should be understood as focusing on the reasons particular personnel actions were taken against a particular individual. The parties’ attention should focus on particular incidents alleged in the Van Vo affidavit.”⁶⁸ Manifestly, such a specific contention, narrowly tailored to address one person’s experiences and impressions, could not be adequately litigated without that person’s availability for cross-examination.⁶⁹

⁶⁵ *Id.* at 6.

⁶⁶ Eddleman Brief at 2.

⁶⁷ See, e.g., Tr. 5738 (“Mr. Van Vo is available, and he is available reasonably promptly . . . [a]nd I would be prepared to put him on as a witness on these things.”); Tr. 5742 (“Mr. Van Vo, according to his counsel, is willing to appear . . . He is available and has direct knowledge of these matters as stated in his affidavit, so I think as to having a witness, we are okay.”); Tr. 5743 (“Since [Chan Van Vo] would be my witness, it doesn’t depend much on my ability to cross, it just depends on my ability to put him on.”); Tr. 5744 (“And my participation then would be basically just to get [Chan Van Vo] in here and make him available to bring out his information . . .”).

⁶⁸ Memorandum and Order (January 14, 1985) at 4.

⁶⁹ Further, Mr. Eddleman’s argument that “[i]t was never stated that Van Vo would not appear” (Eddleman Brief at 2) is frivolous and ignores the record of the Licensing Board’s efforts to schedule a hearing on contention 41-G. Chan Van Vo’s counsel clearly stated to the Board that he could not guarantee that his client would be available as a witness on the date that had been set for the hearing. Neither did Mr. Eddleman or Chan Van Vo’s counsel ever suggest an alternative date for the hearing at which the witness could appear. Indeed, Chan Van Vo’s counsel argued that the hearing should proceed without his client’s appearance as a witness. See Tr. 7732, 7745-48, 7750-51.

Contrary to Mr. Eddleman's view, the Licensing Board had no independent obligation to "compel" Chan Van Vo's appearance. Had he so wished, Mr. Eddleman could have requested that the Licensing Board issue a subpoena compelling this witness' attendance.⁷⁰ Mr. Eddleman did not do so. It is not the Licensing Board's function to act as an intervenor's advocate and prepare his case. The Board's decision dismissing contention 41-G is, therefore, affirmed.⁷¹

We have conducted our customary *sua sponte* review of the decision and have found no errors requiring correction. For the foregoing reasons, the Licensing Board's third partial initial decision, LBP-85-49, 22 NRC 899, is affirmed.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

⁷⁰ See 10 C.F.R. § 2.720.

⁷¹ Mr. Eddleman also complains of the Licensing Board's threshold dismissal of his emergency planning exercise (EPX) contentions 4, 9, 10 and 11. The preliminary emergency planning exercise required by 10 C.F.R. Part 50, Appendix E, § IV.F, was conducted for the Shearon Harris facility on May 17-18, 1985. On September 30, Mr. Eddleman proffered twelve contentions based on the exercise. The Licensing Board admitted two and rejected the remaining ten because they failed to allege fundamental flaws with the offsite emergency response plan. On appeal, Mr. Eddleman asserts that because the Commission had not adopted the "fundamental flaw" standard, the Licensing Board lacked authority to apply it. He also contends that, in rejecting EPX 4, 9, 10 and 11, the Licensing Board impermissibly reached the merits of the four contentions.

Although at the time the decision below was rendered the Commission had not spoken on the use of a "fundamental flaw" test, it has since expressly approved this standard. See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-86-11, 23 NRC 577, 581 (1986). The Commission therein made it clear that the term "fundamental flaw" means a "deficiency[y] which preclude[s] a finding of reasonable assurance that protective measures can and will be taken." *Id.* That same decision also made it clear that this standard is nothing more than the long-standing requirement of the Rules of Practice that contentions must be pleaded with adequate bases and specificity. *Id.* See also 10 C.F.R. § 2.714(b).

As to Mr. Eddleman's second argument (that the Licensing Board reached the merits of the contentions), we do not agree. The Board did not delve into the merits of the four contentions — it merely applied the standard for admissibility of contentions endorsed by the Commission in *Shoreham*, i.e., it found that the contentions in question did not allege that the exercise demonstrated fundamental flaws in the emergency plan, or did not plead bases that, if shown to be true, would demonstrate a fundamental flaw in the plan. See *Shoreham*, 23 NRC at 581.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Dr. W. Reed Johnson
Howard A. Wilber

In the Matter of

Docket Nos. 50-440-OL
50-441-OL

CLEVELAND ELECTRIC
ILLUMINATING COMPANY, *et al.*
(Perry Nuclear Power Plant,
Units 1 and 2)

August 18, 1986

The Appeal Board denies an intervenor's petition for reconsideration of portions of the Board's earlier decision, ALAB-841, 24 NRC 64 (1986), affirming the Licensing Board's concluding partial initial decision authorizing the issuance of licenses for the operation of Units 1 and 2 of the Perry Nuclear Power Plant.

APPEARANCE

Susan L. Hiatt, Mentor, Ohio, for the intervenor Ohio Citizens for Responsible Energy.

MEMORANDUM AND ORDER

Opinion of Messrs. Rosenthal and Wilber:

Intervenor Ohio Citizens for Responsible Energy (OCRE) has petitioned for reconsideration of portions of ALAB-841, 24 NRC 64 (1986). Our study of the petition discloses that in large measure it renews arguments previously advanced in OCRE's appellate brief and found to be without merit. In any event, the petition does not persuade us that the result reached in ALAB-841 warrants reexamination.

There is only one matter justifying any further discussion: intervenor's continued insistence that the preliminary analysis of the applicants' hydrogen control system should have addressed issues beyond the selected (and staff-approved) accident scenarios — more particularly, the effect of station blackout and the availability of containment sprays. In rejecting that claim in ALAB-841, we stated:

Given the complexity of a nuclear power plant, there is virtually no end to the sequences of failures and errors that might conceivably result in hydrogen production. But the likelihood of the occurrence of most of the sequences is extraordinarily remote: in order for them to materialize, there would have to be such unlikely developments as the concurrent failure of redundant safety-related equipment or an equipment malfunction accompanied by improbable operator error. Manifestly, the Commission did not intend to require utilities to include in their analyses — preliminary or final — every one of these sequences, irrespective of how divorced from reality it might be. Moreover, it is plain from the terms of the rule itself that the Commission was fully prepared to leave it to the staff to decide which of the vast number of possible scenarios should be analyzed. Assuming, again without deciding, that the exercise of the staff's broad discretion in that regard is reviewable at all, the intervenor seeking to challenge the choice of scenarios must do much more than simply allege that there are other scenarios that the staff might appropriately have insisted be factored into the analysis: it must also allege and establish that, without the inclusion of the additional scenarios, the analysis could not fulfill its intended purpose. We are satisfied that no such demonstration was made here. Stated otherwise, this record does not establish that the staff acted capriciously in approving the use of the two chosen scenarios for preliminary assessment purposes.¹

Although in disagreement with this standard of review, OCRE asserts in its reconsideration petition that, contrary to our conclusion, it has met the standard. We are told that the hydrogen control system analysis could not fulfill its intended purpose without inclusion of the two additional scenarios to which OCRE alluded.

¹ 24 NRC at 74-75 (footnote omitted).

We adhere to our belief that the standard of review adopted in ALAB-841 is appropriate. Further, we remain satisfied that there is no compelling necessity to include in the preliminary analysis either station blackout or total containment spray unavailability.

A "station blackout" scenario postulates a situation in which the plant loses both its offsite and onsite alternating current (AC) power. This would disable the hydrogen igniters, thereby allowing the accumulation of hydrogen to high concentrations.² The scenario then assumes the restoration of power and the consequent ignition of these high concentrations of hydrogen by the igniters or some other ignition source in the containment. The ensuing pressure could exceed the maximum pressure-containing capacity of the Perry containment. OCRE maintains that "[t]his scenario thus results in the failure to meet the containment integrity requirement of the rule; therefore the threshold for challenging the Staff's selection of accident scenarios has been surmounted."³

The short answer is that the Statement of Consideration accompanying the hydrogen control rule flatly states that "[p]rovision of a backup power supply is not required by this rule."⁴ In this connection, the Commission referred to the staff's acceptance, with regard to the scenarios analyzed at certain other facilities, of AC-powered igniters without requiring a backup power supply.⁵ This acceptance rested, the Commission noted, upon the "staff's perception that the incremental risk reduction associated with provision of the igniter system backup power supply did not warrant the additional cost at these particular facilities."⁶ Given this explicit Commission declaration, there is no possible foundation for OCRE's insistence that the intended purpose of the Perry hydrogen control analysis could be served only by the consideration of a station blackout scenario.

With respect to containment spray, we disagree with OCRE's assertion that the unavailability of both containment spray trains must be assumed in the preliminary hydrogen control analysis. As mentioned in ALAB-841, one of those two trains was assumed to operate in that analysis.⁷ Such an assumption is consistent with the Commission's design re-

² If it lasts sufficiently long, any station blackout will occasion a loss of cooling to the reactor core. The resultant overheating of the fuel cladding will lead to the generation of hydrogen.

³ Petition for Reconsideration of ALAB-841 (August 8, 1986) at 8.

⁴ 50 Fed. Reg. 3498, 3502 (1985).

⁵ *Ibid.*

⁶ *Ibid.*

⁷ 24 NRC at 74.

quirement that emergency systems be able to perform their functions despite the occurrence of a single failure⁸ and, therefore, is reasonable in terms of the preliminary analysis required by the hydrogen control rule. Beyond our scrutiny here, more severe failures of the containment spray trains may be addressed as part of the final hydrogen control analysis.

Petition for reconsideration *denied*.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

Concurring Opinion of Dr. Johnson:

Although in agreement with the summary denial of the petition for reconsideration, I do not join in the foregoing opinion and played no role in its preparation. I adhere to the view set forth in my concurring opinion in ALAB-841 that the Commission intended to preclude from exploration in licensing hearings the details of those scenarios that lead to the generation of large quantities of hydrogen.¹ Accordingly, I see no reason for any discussion of the station blackout and containment spray unavailability scenarios.

⁸ See generally 10 C.F.R. Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants."

¹ 24 NRC at 100.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

**Christine N. Kohl, Chairman
Gary J. Edles
Dr. Reginald L. Gotchy**

In the Matter of

**Docket Nos. 50-352-OL
50-353-OL**

**PHILADELPHIA ELECTRIC
COMPANY
(Limerick Generating Station,
Units 1 and 2)**

August 28, 1986

The Appeal Board affirms the Licensing Board's concluding partial initial decision in this operating license proceeding, LBP-85-25, 22 NRC 101 (1985), involving the emergency response plan for a prison located within the plume emergency planning zone of the Limerick facility. The Appeal Board also affirms the Licensing Board's rejection of several proffered contentions concerning the plan, but reverses the Board's rejection of another contention and remands for further action.

RULES OF PRACTICE: BRIEFS

Appeals that are not briefed are considered waived. *See* ALAB-836, 23 NRC 479, 485 n.2 (1986).

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

The Commission's Rules of Practice, 10 C.F.R. § 2.714(b), require intervenors to set forth the bases for each contention with "reasonable specificity."

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

There is no easy formula for determining what are "basis" and "reasonable specificity." Such judgment must be exercised case-by-case, with the underlying purpose of this requirement in mind. One such purpose is to help assure at the pleading stage that the hearing process is not improperly invoked — for example, by challenging statutory requirements or the basic structure of the Commission's regulatory process. *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20 (footnote omitted), *modified on other grounds*, CLI-74-32, 8 AEC 217 (1974). Other purposes are to put the parties on notice of what issues they will have to defend or oppose, and to assure the issues raised are appropriate for litigation in the particular proceeding. *Id.* at 20-21.

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

In exercising the "considerable amount of discretion" it has in determining the admissibility of a contention, a board must be careful not to reach the merits. *Id.* at 21, 20; *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 547-49 (1980).

EMERGENCY PLANS: NOTIFICATION REQUIREMENTS

Section 50.47(b)(5) of the Commission's regulations requires the establishment of procedures "for notification of emergency personnel by *all* organizations" (emphasis added). See also NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (1980) [hereafter, "NUREG-0654"] at 43 (Criterion E.2). Implicit in this standard — which must be met as part of the overall "reasonable assurance" finding required by 10 C.F.R. § 50.47(a)(1) — is that such notification procedures should be adequate to serve their intended purpose, i.e., eventual mobilization of necessary emergency workers.

EMERGENCY PLANS: NOTIFICATION REQUIREMENTS

Section 50.47(b)(5) of the Commission's regulations does not specify or prohibit any particular method of notifying emergency personnel. Some notion of adequacy, however, must be read into the section. *Cf. Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-86-13, 24 NRC 22, 32 (1986) (specific emergency planning measures not explicitly mentioned in the regulations may nevertheless be required for reasonable assurance).

EMERGENCY PLANS: COMMUNICATIONS REQUIREMENTS

Section 50.47(b)(6) of the Commission's regulations concerns prompt communications among principal response organizations to emergency personnel and to the public. A principal response organization is one that has a major or lead role in emergency planning and preparedness. NUREG-0654 at 5-1. *See Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-717, 17 NRC 346, 377-78 (1983), *aff'd*, *Carstens v. NRC*, 742 F.2d 1546 (D.C. Cir. 1984), *cert. denied*, 471 U.S. 1136, 105 S. Ct. 2675 (1985).

EMERGENCY PLANS: CONTENT (SUFFICIENCY)

Under section 50.47(c)(1) of the Commission's regulations, failure to meet the applicable standards set forth in section 50.47(b) may result in the Commission's declining to issue an operating license; however, the applicant will have an opportunity to demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question, that adequate interim compensating actions have been or will be taken promptly, or that there are other compelling reasons to permit plant operation.

EMERGENCY PLANS: CONTENT (ONSITE AND OFFSITE PREPAREDNESS)

Any participant in an emergency response activity should be adequately informed as to the nature of his or her responsibilities.

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

The Commission's regulations require that the basis for a contention be supplied in the contention itself — not developed at a hearing. *See* 10 C.F.R. § 2.714(b).

APPEAL BOARDS: SCOPE OF REVIEW

Arguments and issues not raised below cannot properly be pressed initially on appeal. ALAB-836, 23 NRC at 496 n.28.

EMERGENCY PLANS: CONTENT (ARRANGEMENTS FOR MEDICAL SERVICES)

The Commission's "Statement of Policy on Emergency Planning Standard 10 CFR 50.47(b)(12)," 50 Fed. Reg. 20,892 (1985), pertains to those situations where actual deficiencies in medical arrangements have been identified and a question thus has arisen as to the propriety of license issuance pursuant to 10 C.F.R. § 50.47(c)(1), notwithstanding the deficiency.

EMERGENCY PLANNING: REQUIREMENT FOR OPERATING LICENSES

Section 50.47(b)(14) of the Commission's regulations requires periodic exercises to evaluate major portions of emergency response capabilities, periodic drills to develop and maintain key skills, and the correction of identified deficiencies.

REGULATORY GUIDES: APPLICATION

NUREG-0654 simply serves as guidance for the staff's review of emergency plans and does not prescribe regulatory requirements. ALAB-819, 22 NRC 681, 710 (1985), *review declined*, CLI-86-5, 23 NRC 125 (1986).

EMERGENCY PLANNING: FEMA FINDING (REBUTTABLE PRESUMPTION)

Federal Emergency Management Agency (FEMA) findings concerning emergency preparedness exercises are only rebuttable presumptions in NRC proceedings. But before a party can exercise its right to challenge a FEMA finding at a hearing, it must proffer a contention that satisfies the basis and specificity requirements for admissible contentions.

RULES OF PRACTICE: CONTENTIONS

Nothing in *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), *cert. denied*, 469 U.S. 1132 (1985), suggests that it was in-

tended to override the fundamental Commission prerequisites for the adjudication of contentions.

RULES OF PRACTICE: DISCOVERY

Discovery begins only after the identification of the matters in controversy — i.e., the admission of contentions. 10 C.F.R. § 2.740(b)(1).

RULES OF PRACTICE: CONTENTIONS

Intervenors are bound by the literal terms of their own contentions. ALAB-836, 23 NRC at 505 (*citing* ALAB-819, 22 NRC at 709).

EMERGENCY PLANS: CONTENT (EVACUATION)

The Commission's emergency planning regulations require an evacuation time estimate (ETE) for various sectors and distances within the plume exposure pathway emergency planning zone for transient and permanent populations. 10 C.F.R. Part 50, Appendix E, § IV. No particular time limits are established for an evacuation; rather, the analysis is intended to reflect a realistic time for completing an evacuation. Thus, by using the ETE, emergency coordinators can then decide what protective actions (e.g., sheltering or evacuation) are warranted in the circumstances, if a radiological emergency occurs. ALAB-836, 23 NRC at 486, 491. *See also* NUREG-0654, Appendix 4.

EVIDENCE: EXHIBITS (STATUS AS EVIDENCE)

The fact that information contained in an exhibit admitted into evidence at an earlier stage of the proceeding may be superseded by more current information elsewhere in the record does not deprive the exhibit of its status as evidence of record.

EMERGENCY PLANS: CONTENT (EVACUATION)

An ETE should not reflect a "worst case" scenario. It is intended to be representative and reasonable so that any protective action based on its estimates will reflect realistic conditions. On the other hand, an ETE should take account of a wide range of seasonal, weather, and other conditions. ALAB-836, 23 NRC at 491. *See* NUREG-0654, Appendix 4.

EMERGENCY PLANS: CONTENT (EVACUATION)

The Commission's regulations require the ETEs for special facilities to be included in the applicant's emergency plan. *See* 10 C.F.R. Part 50, Appendix E, § IV ("Content of Emergency Plans"). *See also* 10 C.F.R. § 50.47(b)(10); NUREG-0654, Criterion J.8.

EMERGENCY PLANS: CONTENT (EVACUATION)

Despite the lack of a specific regulation prescribing it, ETEs necessarily must be readily available (logically as an addendum to the radiological emergency response plan) to *all* those decisionmakers whom the ETEs are to aid in deciding what protective actions to order.

RULES OF PRACTICE: MOTION FOR DISQUALIFICATION

Motions for disqualification under 10 C.F.R. § 2.704(c) must be filed as soon as possible after ostensible grounds for such action arise. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-749, 18 NRC 1195, 1198-99 (1983).

RULES OF PRACTICE: APPELLATE REVIEW (ISSUANCE OF SUBPOENAS)

To preserve for appeal a claim that a subpoena was improperly issued, a party is obliged to seek relief first from the Licensing Board by moving to quash the subpoena. *See* 10 C.F.R. § 2.720(f).

ADJUDICATORY BOARDS: CONDUCT OF PROCEEDINGS

A board on its own may interrupt or cut off a witness' testimony where the board believes the testimony strays beyond the issues in litigation. This action is implicitly, if not explicitly, within the board's authority "to take appropriate action to avoid delay," to "receive evidence," to "[r]egulate the course of the hearing," and to "[e]xamine witnesses." 10 C.F.R. § 2.718. *See also* 10 C.F.R. § 2.757.

ADJUDICATORY BOARDS: CONDUCT OF PROCEEDINGS

Where the circumstances warrant it, the Commission's regulations clearly permit the adjudicatory boards to shorten the time periods otherwise authorized for discovery and for submitting prefiled testimony and proposed findings of fact and conclusions of law. *See, e.g.,* 10 C.F.R.

§§ 2.711(a), 2.754(a). *See also Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 453 (1981).

ADJUDICATORY BOARDS: CONDUCT OF PROCEEDINGS

Expedition of a proceeding should not be at the expense of fairness. Claims of unfairness, however, must be supported by evidence of specific harm.

RULES OF PRACTICE: APPELLATE REVIEW (SCHEDULING DECISIONS)

If a party agrees to a schedule set by a licensing board, it cannot later complain on appeal that the schedule was unfair. *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 74 & n.69 (1985).

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

If an appellee fails to respond to an appellant's brief, it is in default so far as that particular appeal is concerned. *See* 10 C.F.R. § 2.707.

RULES OF PRACTICE: STANDING TO APPEAL

Only aggrieved parties may appeal decisions adverse to them. *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-790, 20 NRC 1450, 1453 (1974). A party cannot be legally "aggrieved" for the purpose of appealing an adverse decision if it did not meaningfully participate in the process that led to the objectionable decision. *See Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-583, 11 NRC 447, 448 (1980). *See also id.* at 448-49. *Cf. Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 542-43 n.58 (1986).

RULES OF PRACTICE: FINDINGS OF FACT (EFFECT OF FAILURE TO FILE

Unless a licensing board orders the submission of proposed findings of fact and conclusions of law, a party failing to do so is free to pursue on appeal all issues in which it participated below. *Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), ALAB-709, 17 NRC 17 (1983).

RULES OF PRACTICE: STANDING TO APPEAL

Whether an intervenor has the right to pursue a particular issue on appeal is a function of the level of interest expressed by the intervenor in such issue throughout the course of the proceeding. *See Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-244, 8 AEC 857, 863 & n.9, 870 n.19 (1974), *reconsideration denied*, ALAB-252, 8 AEC 1175, *aff'd*, CLI-75-1, 1 NRC 1 (1975).

RULES OF PRACTICE: ORAL ARGUMENT

Oral argument is a matter solely within the Appeal Board's discretion. 10 C.F.R. § 2.763; 10 C.F.R. Part 2, Appendix A, § IX(e). Thus, the Board can obviously set reasonable ground rules for participation, such as requiring the parties' representatives to be on time.

APPEARANCES

Angus R. Love, Norristown, Pennsylvania, for intervenors, inmates of the State Correctional Institution at Graterford, Pennsylvania.

Frank R. Romano, Ambler, Pennsylvania, for intervenor Air and Water Pollution Patrol.

Robert M. Rader, Washington, D.C. (with whom **Troy B. Conner, Jr.**, and **Nils N. Nichols**, Washington, D.C., were on the brief), for applicant Philadelphia Electric Company.

Zori G. Ferkin, Harrisburg, Pennsylvania (with whom **Theodore G. Otto, III**, Harrisburg, Pennsylvania, was on the brief), for the Commonwealth of Pennsylvania.

Joseph Rutberg (**Donald F. Hassell** and **Henry J. McGurren** on the brief) for the Nuclear Regulatory Commission.

DECISION

The appeals now before us concern the last issue to be resolved in this operating license proceeding — the adequacy of the emergency plan for

the State Correctional Institution at Graterford, Pennsylvania (SCIG).¹ A group of inmates petitioned to intervene and submitted one contention generally asserting a lack of reasonable assurance that the radiological emergency response plan (RERP) for SCIG would protect them and the prison staff in the event of a nuclear emergency at Limerick.² The contention, however, had eight subparts, two of which were admitted by the Licensing Board for litigation. Licensing Board Order of June 12, 1985 (unpublished), *reconsideration denied*, Licensing Board Order of July 2, 1985 (unpublished). After the hearing on these two issues (concerning the training for civilian emergency workers, such as bus drivers, and the estimated time of evacuation for SCIG), the Board issued its fourth partial initial decision. It concluded that, insofar as these two contested issues are concerned, the SCIG emergency plan meets all pertinent NRC regulatory requirements and guidance. Consequently, the Board authorized the Director of the Office of Nuclear Reactor Regulation (NRR) to issue a full-power operating license for Limerick. LBP-85-25, 22 NRC 101, 116 (1985).³

The inmates appeal the Licensing Board's fourth partial initial decision, as well as the Board's earlier rejection of five parts of their contention.⁴ Although it did not participate in this phase of the Limerick operating license proceeding, another intervenor, Air and Water Pollution Patrol (AWPP), also appeals the Board's decision.⁵ Applicant Philadelphia Electric Company (PECo), the Commonwealth of Pennsylvania, and the NRC staff each urge affirmance. As explained below, we affirm the two Licensing Board decisions here at issue in all but one respect: the Board's rejection of the inmates' contention concerning manpower mobilization is reversed, the contention is admitted, and this matter is re-

¹ SCIG is located in Skippack Township, approximately eight miles from the Limerick nuclear power plant, and is within the facility's plume exposure pathway emergency planning zone (EPZ). See Commonwealth Exh. E-9 (PEMA Evacuation Plan Map). See generally 10 C.F.R. § 50.47(c)(2) and *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-832, 23 NRC 135, 143-45 (1986), *review pending*, CLI-86-11, 23 NRC 577, 579 (1986), for a discussion of the EPZ concept. Other offsite emergency planning issues involving Limerick were addressed in ALAB-836, 23 NRC 479 (1986), *review declined*, Commission Order of July 24, 1986 (unpublished).

² The background of the inmates' efforts to participate in this proceeding is set out in ALAB-806, 21 NRC 1183 (1985). See also ALAB-809, 21 NRC 1605, *vacated as moot*, CLI-85-16, 22 NRC 459 (1985).

³ The Commission made the Licensing Board's decision "immediately effective," and the full-power license for Limerick was issued on August 8, 1985. CLI-85-15, 22 NRC 184 (1985). We denied subsequent requests for a stay, as did the Commission and the U.S. Court of Appeals for the Third Circuit. ALAB-814, 22 NRC 191 (1985); Commission Order of October 10, 1985 (unpublished); *Limerick Ecology Action, Inc. v. NRC*, No. 85-3431 (3d Cir. Aug. 21, 1985).

⁴ The inmates do not challenge the Licensing Board's exclusion of the remaining sixth part of their contention, which concerns the monitoring of radioactivity. See Licensing Board Order of June 12 at 10.

⁵ Still another joint intervenor from different phases of this proceeding, Robert L. Anthony/Friends of the Earth (Anthony/FOE), filed an appeal from the Board's fourth partial initial decision on July 31, 1985. Because Anthony/FOE did not file a brief in support of this appeal, however, they are in default and their appeal is dismissed. See ALAB-836, 23 NRC at 485 n.2.

manded to the Licensing Board for further action consistent with the Commission's Rules of Practice and this opinion. In addition, we dismiss AWPP's appeal.

I. REJECTED CONTENTIONS

A. Manpower Mobilization

The inmates' contention alleges that "[t]here is no reasonable assurance that the call up system to be utilized in the event of a nuclear emergency in order to mobilize the entire work force of the State Correctional Institute [sic] at Graterford will achieve its designated purpose." Proposed Revised Contentions (May 13, 1985) at 2. The basis for the contention notes that SCIG employees are to be mobilized through a pyramiding system in which one employee telephones ten others and so on until all persons are notified. This system could fail, according to the contention, if the commercial telephone lines become overburdened and thus unavailable. In this connection, the inmates refer to the testimony of Richard T. Brown (Chairman of the Lower Providence Township Board of Supervisors) in an earlier phase of this case, suggesting that the local telephone network had been impaired during a past emergency. The inmates claim that, in light of the possible disruption of commercial telephone lines, a backup or alternative system is necessary. They cite 10 C.F.R. §§ 50.47(b)(5), 50.47(b)(6), and NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (1980) [hereafter, "NUREG-0654"], Criteria E and F, in support of this argument. Proposed Revised Contentions at 2-4.

The Licensing Board concluded that the basis for this contention lacks the specificity required by 10 C.F.R. § 2.714(b). It observed that the NRC and Federal Emergency Management Agency (FEMA) requirements and guidance do not prohibit the use of commercial telephone lines for radiological emergency-related activities. Noting that it had earlier disposed of Mr. Brown's concerns about the commercial telephone system, the Board found that, in the "unlikely" event of a problem with these lines, "five dedicated telephone lines including a direct connection with the Pennsylvania State Police" (who would notify off-duty SCIG personnel) are available. Licensing Board Order of June 12 at 3. The Board also found that the inmates did not reasonably specify that procedures for notification of emergency personnel have not been established in accordance with 10 C.F.R. § 50.47(b)(5). Lastly, the Board concluded that the inmates misinterpreted and misapplied 10 C.F.R. § 50.47(b)(6)

and NUREG-0654, Criterion F; i.e., these provisions relate to communications among "principal response organizations" to emergency personnel and the public, whereas SCIG is a "support organization." *Id.* at 4.

On appeal, the inmates begin by observing that the adequacy of commercial telephone circuits during an emergency has been litigated in another NRC licensing proceeding, *Cincinnati Gas & Electric Co.* (Wm. H. Zimmer Nuclear Power Station, Unit No. 1), ALAB-727, 17 NRC 760 (1983). The inmates also argue that the Licensing Board's reasoning and references to dedicated telephone lines at SCIG "miss[] the point of the call-up system which would be relying on people's private lines and not the institutional telephone system." Brief of the Intervenor Graterford Inmates (Aug. 14, 1985) [hereafter, "Inmates' Brief"] at 12.⁶ They cite again to Mr. Brown's testimony concerning the capabilities of the commercial telephone lines, noting that Mr. Brown is an AT&T communications technician. The inmates also challenge the Board's conclusions that SCIG is not a principal response organization under 10 C.F.R. § 50.47(b)(6) and thus is not required to have a backup communications system. *Id.* at 13-14.

The Commission's Rules of Practice, 10 C.F.R. § 2.714(b), require intervenors to set forth "the bases for each contention . . . with *reasonable specificity*" (emphasis added). There is no easy formula for determining what are "basis" and "reasonable specificity." As we observed a dozen years ago, such judgment must be exercised case-by-case, with the underlying purposes of this requirement in mind. One such purpose "is to help assure at the pleading stage that the hearing process is not improperly invoked" — for example, by challenging statutory requirements or "the basic structure of the Commission's regulatory process." *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20 (footnote omitted), *modified on other grounds*, CLI-74-32, 8 AEC 217 (1974). Other purposes are to put the parties on notice of what issues they will have to defend or oppose, and to assure the issues raised are appropriate for litigation in the particular proceeding. *Id.* at 20-21. In exercising the "considerable amount of discretion" it has in determining the admissibility of a contention, however, a board must be careful not to reach the merits. *Id.* at 21, 20; *Houston Lighting*

⁶ The inmates further point out that the Board made a factual error, inasmuch as SCIG has only one "dedicated" telephone line with a direct link to the State Police, and four other commercial lines that would be used to initiate the call-up system. Inmates' Brief at 12-13. The Board's June 12 order does not define what it means by "dedicated" line or cite to the record source of its information; indeed, the transcript of the prehearing conference at which this matter was discussed is somewhat unclear as well. See Tr. 20,627-30, 20,672. The Commonwealth Response to Proposed Revised Contentions (May 24, 1985) at 4, however, supports the inmates' statement of the facts and can obviously be regarded as accurately describing the telephone system at SCIG.

and Power Co. (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 547-49 (1980).

Although the Licensing Board was fully aware of these principles, it abused its discretion in applying them to the inmates' manpower mobilization contention. See Licensing Board Order of June 12 at 2; Licensing Board Memorandum and Order of April 12, 1985 (unpublished) at 6-9, *rev'd on other grounds*, ALAB-806, 21 NRC 1183 (1985). The contention clearly raises an issue that can be a proper subject for litigation in an operating license proceeding — the adequacy of the communications system to be used in the event of an emergency.⁷ 10 C.F.R. § 50.47(b)(5) requires the establishment of procedures "for notification of emergency personnel by *all* organizations" (emphasis added). See also NUREG-0654 at 43 (Criterion E.2). Implicit in this standard — which must be met as part of the overall "reasonable assurance" finding required by 10 C.F.R. § 50.47(a)(1) — is that such notification procedures should be adequate to serve their intended purpose, i.e., eventual mobilization of necessary emergency workers.⁸ Because the inmates' contention questions whether the SCIG radiological emergency response plan complies with this pertinent NRC regulation, it raises an issue amenable to admission.⁹

⁷ Indeed, as the inmates point out, a similar contention was admitted and litigated in *Zimmer*, 17 NRC at 771-72. See also ALAB-836, 23 NRC at 510-11. The staff argues, however, that the inmates have not shown communication problems akin to those in *Zimmer*. NRC Staff Brief (Oct. 8, 1985) at 13. But that argument is off the mark because in *Zimmer* those communication problems were *demonstrated* at a hearing — an opportunity denied to the inmates here.

PECo also tries to distinguish *Zimmer*. It asserts that the off-duty SCIG personnel need not be notified as quickly as the school personnel involved in *Zimmer*. Licensee's Brief (Sept. 18, 1985) at 23-24. That may well be true, but the issue the inmates' contention raises is the adequacy of the SCIG call-up system to achieve "its designated purpose." Proposed Revised Contentions at 2. The availability of more time for notification does not necessarily render this notification system adequate for *its* intended use.

⁸ The Licensing Board's observation that the use of commercial telephone lines is not prohibited is unresponsive to the issue raised by the inmates. See Licensing Board Order of June 12 at 3. The same can be said with regard to PECO's argument that a network of sequential telephone calls has been approved in other cases. See Licensee's Brief at 20-21. We agree that 10 C.F.R. § 50.47(b)(5) does not specify or prohibit any particular method of notification. Some notion of adequacy, however, must be read into the section. (ALAB-836, 23 NRC at 510 n.33, was not intended to suggest otherwise.) For, if notification procedures only need be "established," an emergency plan that specifies the use of smoke signals or semaphore to notify emergency workers would suffice. Cf. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-86-13, 24 NRC 22, 32 (1986) (specific emergency planning measures not explicitly mentioned in regulations may nevertheless be required for reasonable assurance).

⁹ The Licensing Board, however, correctly concluded that 10 C.F.R. § 50.47(b)(6) and NUREG-0654, Criterion F (upon which the inmates also rely), do not apply here. See Licensing Board Order of June 12 at 4. Section 50.47(b)(6) concerns "prompt communications among principal response organizations to emergency personnel and to the public." A principal response organization has a major or lead role in emergency planning and preparedness. NUREG-0654 at 5-1. For example, the Pennsylvania Emergency Management Agency (PEMA) is such an organization: its business is planning for and aiding other organizational units (e.g., schools, hospitals, prisons) during emergencies. SCIG, on the other hand, is a support organization with largely reactive emergency responsibilities limited to its own needs rather than those of others. See *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-717, 17 NRC 346, 377-78 (1983), *aff'd*, *Carstens v. NRC*, 742 F.2d 1546 (D.C. Cir. 1984), *cert. denied*, 471 U.S. 1136, 105 S. Ct. 2675 (1985).

Moreover, by their explicit references to the pyramiding call-up system for mobilizing off-duty SCIG personnel and to the asserted inadequacies in the local commercial telephone network on which that system relies, the inmates have not only put the other parties on notice of exactly what they seek to litigate, they have also raised an issue specific to this case. Despite the Licensing Board's effort to minimize its significance or relevance here, the inmates' reference to Mr. Brown's earlier testimony certainly establishes a basis for questioning the adequacy of the commercial telephone system.¹⁰ Mr. Brown — who, as noted above, is both Chairman of the Board of Supervisors of Lower Providence Township and a communications technician for AT&T — testified that, based on his experience during emergencies, switching problems could overload the public telephone system in certain areas of his township. Tr. 18,133, 18,149-52.¹¹ As it pointed out, the Licensing Board "disposed of" Mr. Brown's concerns in its third partial initial decision. Licensing Board Order of June 12 at 3. But the immediate issue there involved notification of an unidentified number of township Emergency Operations Center personnel, which the Board determined (after hearing) could be accomplished without sole reliance on the commercial telephone system. LBP-85-14, 21 NRC 1219, 1387-88 (1985). *See also* ALAB-836, 23 NRC at 510-11. The overall adequacy of the public telephone network in the area relevant to the inmates' contention was not directly addressed, nor was Mr. Brown's testimony about deficiencies in the switching system actually refuted.¹²

The inmates also correctly argue that the Board's discussion of SCIG's direct (i.e., dedicated) line to the State Police misses the point of their contention. *See supra* pp. 229, 230 & note 6. As they noted in their Proposed Revised Contentions at 2, the pyramiding call-up system for mobilizing off-duty SCIG employees relies on the use of the commercial tele-

¹⁰ Although the inmates failed to cite the specific pages of the transcript where the pertinent portions of Mr. Brown's testimony could be found, they identified it by date (January 14, 1985), and neither the Board nor the parties appear to have had any difficulty locating the precise pages. *See* Proposed Revised Contentions at 2-3.

¹¹ Lower Providence Township is adjacent to Skippack Township, where SCIG is located. *See supra* note 1.

¹² The Board's characterization of the alleged communications problem as "unlikely" is therefore not supported in the record. *See* Licensing Board Order of June 12 at 3. Although the Board did not rely on it as a ground for its decision, PECO and the Commonwealth stressed at oral argument that off-duty personnel are to be notified at the "alert" stage (*see* ALAB-836, 23 NRC at 490 n.13), implying that the commercial telephone system would not likely be overburdened at that time. App. Tr. 60, 74-75. But this asserted effect on the communication system is speculation and does not take account of a fast developing accident scenario. It is also somewhat inconsistent with PECO's argument, discussed at *supra* note 7, that off-duty personnel are notified later, rather than earlier, in an emergency. In any event, this is the sort of "merits" issue that cannot be properly resolved at the contention stage. *See supra* pp. 230-31.

phone system, i.e., the private telephones in these employees' homes.¹³ If this communications network breaks down, even if the State Police can be contacted via the dedicated line, there is no indication by what means "the State Police will act as a back up to conduct notification of off duty personnel." Licensing Board Order of June 12 at 3.¹⁴

Thus, the inmates' manpower mobilization contention clearly meets the basis and specificity requirements of 10 C.F.R. § 2.714(b). This is particularly evident from a comparison of this contention with those properly excluded in this and other proceedings. *See, e.g., Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-84-14, 20 NRC 285, 286 (1984) (contentions failed to specify particular structures or systems for which it was claimed the quality assurance program was insufficient); ALAB-804, 21 NRC 587, 591-94 (1985) (failure to explain what contention sought to litigate and to identify clearly the studies or other documents upon which contention was ostensibly based). We therefore reverse the Licensing Board's Order of June 12 insofar as it rejected this contention. The contention is admitted and this matter is remanded to the Board for further action consistent with the Commission's Rules of Practice and this opinion. *See infra* p. 247.

With this reversal and remand, however, we are once again faced with determining the effect of this action on PECo's outstanding operating license. *See supra* note 3. On two earlier occasions, it was similarly necessary to reverse and remand a few emergency planning matters to the Licensing Board for further action. In both cases we determined that interim license suspension was not warranted under 10 C.F.R. § 50.47(c)(1). ALAB-836, 23 NRC at 520; ALAB-819, 22 NRC 681, 715-16 (1985), *review declined*, CLI-86-5, 23 NRC 125 (1986). That section of the Commission's emergency planning regulations provides:

Failure to meet the applicable standards set forth in . . . section [50.47(b)] may result in the Commission['s] declining to issue an operating license; however, the applicant will have an opportunity to demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question, that adequate interim compensating actions have been or will be taken promptly, or that there are other compelling reasons to permit plant operation.

¹³ This system was discussed later at the hearing on another issue. *See* Tr. 20,809. As many as 300 off-duty SCIG employees might have to be notified by this means. Tr. 20,840-42.

¹⁴ It is difficult to understand how, during an emergency when it has other responsibilities as well, the State Police would notify, without reliable telephone service over an uncertain area, up to 300 SCIG employees (*see supra* note 13) who live throughout a relatively wide geographic area extending beyond the EPZ. *See* Tr. 20,630, 20,672. *See also* ALAB-836, 23 NRC at 495 (other State Police responsibilities during emergency evacuation). It is also not apparent from the record before us how guards from other institutions would be notified and mobilized to help at SCIG if the commercial telephone system is overloaded. *See* CLI-85-15, 22 NRC at 186.

The issue now at hand provides even less cause for license suspension than the issues remanded in ALAB-836 and ALAB-819. The latter decisions concerned emergency planning deficiencies that were demonstrated on the record following admission of contentions and that nullified the “reasonable assurance” finding required by 10 C.F.R. § 50.47(a)(1). In this instance, however, there has been no showing yet of a “[f]ailure to meet the applicable standard[]” — i.e., 10 C.F.R. § 50.47(b)(5) — or of an actual deficiency in the SCIG emergency plan. Some means to notify off-duty SCIG personnel in an emergency does exist; it is only the adequacy of this notification in the event of an overload of the telephone network that is in question. Further, security personnel are obviously on duty at SCIG at all times; the individuals to be mobilized by the pyramiding call-up system are solely those extra off-duty personnel necessary to effect a faster evacuation of the facility. In these circumstances, we conclude that, if any deficiency in the SCIG emergency plan exists, it is not so significant as to warrant license suspension pending remedial action. *Compare Shoreham*, *supra* note 8, 24 NRC at 29.

B. Input of Correctional Officers (AFSCME)

The inmates contend that “[t]here is no reasonable assurance that the correctional officers union is aware of the Bureau of Corrections concept of operations and its relationship to the total effort.” Proposed Revised Contentions at 4. The inmates stress the crucial role of the guards in the SCIG emergency plan and argue that these individuals must therefore be well informed as to their duties. The inmates request that officials of the union representing the SCIG guards, the American Federation of State, County, and Municipal Employees (AFSCME), testify about their understanding of how the plan is to be implemented. The Licensing Board, however, rejected the contention, finding no NRC requirement for consideration of a union’s role under an emergency plan. Licensing Board Order of June 12 at 5.

On appeal, the inmates refer to testimony given during an earlier phase of this proceeding to support the admission of this contention. First, they cite the statement of a FEMA witness (James R. Asher at Tr. 20,210) that “anyone who is obligated to take a risk should be adequately informed.” Thus, the inmates argue that they should be afforded the opportunity to explore, during a hearing, how well informed the guards are as to their emergency duties. Second, the inmates point out that other union representatives were permitted to testify about their members’ participation in evacuation operations in the event of an emergency at Limerick. By denying testimony from the SCIG guards’ union, the Licensing

Board — in the inmates' view — has subjected their contention to a higher standard than that applied to the contentions of other intervenors in this proceeding. Inmates' Brief at 14-16.

The inmates' claims are easily dismissed. We do not quarrel with the general notion that any participant in an emergency response activity should be adequately informed as to the nature of his or her responsibilities. The contention in question, however, provides no basis whatsoever for doubting that the correctional officers at SCIG are adequately informed about their duties during an emergency at Limerick. *Compare supra* pp. 231-33. The Commission's regulations require such basis to be supplied *in the contention* — not developed at a hearing, as the inmates seek. See 10 C.F.R. § 2.714(b). As for the testimony of certain union officials given in connection with other intervenors' contentions, the inmates overlook a key distinction: those contentions satisfied the Commission's basis and specificity requirements (unlike here) and therefore were admitted for litigation. See LBP-85-14, 21 NRC at 1289, 1319. Similarly, the union testimony regarding those contentions was permitted because it met the Commission's standard for the admissibility of all evidence in licensing proceedings, 10 C.F.R. § 2.743(c). The admission of that testimony in no way signifies that any testimony offered by a union official — irrespective of its relevance, materiality, reliability, and other Commission requirements — must likewise be permitted, as the inmates apparently believe.¹⁵

Finally, the inmates rely on this testimony from earlier parts of the record for the first time on appeal. We have repeatedly stressed in this very proceeding that, in keeping with court practice, arguments and issues not raised before the Board below cannot properly be pressed initially on appeal. ALAB-836, 23 NRC at 496 n.28.

C. Medical Services

The inmates claim that "[t]here is no reasonable assurance that adequate medical services will be provided to those contaminated and/or injured individuals in the event of a nuclear emergency at [Limerick]." Proposed Revised Contentions at 9.¹⁶ They refer to an affidavit from

¹⁵ On the other hand, to the extent the Licensing Board suggests that no contention questioning the response of public employee union members during an emergency could ever be admitted, the Board is incorrect. See Licensing Board Order of June 12 at 5. If such a contention were reasonably specific and a basis for doubting these employees' participation were supplied, the contention would, of course, satisfy the Commission's standards for admission.

¹⁶ For a discussion of the meaning of "contaminated injured," see ALAB-819, 22 NRC at 711 n.39. The particular regulation pertinent to this contention is 10 C.F.R. § 50.47(b)(12), which requires "[a]rrangements [to be] made for medical services for contaminated injured individuals."

Dr. Roger E. Linnemann (PECo's expert consultant on the treatment of the contaminated injured) and chiefly complain that it does not address the adequacy of the capacity of Montgomery Hospital for treating contaminated injured persons. *Ibid.*¹⁷

The Licensing Board, however, concluded that the contention lacked "reasonable specific basis." Licensing Board Order of June 12 at 7. Noting that there is no requirement that each hospital handle a specific number of individuals, the Board thus did not understand "what capacity it is that the inmates have in mind." *Ibid.* It also explained that the extent of detail *vel non* in Dr. Linnemann's affidavit does not provide a basis for litigation. The inmates now briefly complain that the Board has effectively and improperly addressed the merits of their contention by shifting the burden of proving the *inadequacy* of the medical facilities to them, rather than requiring PECO to demonstrate their *adequacy*. Inmates' Brief at 16-17.

We disagree. The Board did not expect the inmates to "prove" their case on medical services at this stage; instead, it simply — and properly — required the inmates to meet their limited burden of supplying basis and specificity for their contention. See ALAB-804, 21 NRC at 592. The Commission earlier expressed its belief that "the number of individuals both onsite and offsite who may become contaminated and injured is expected to be very few." *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-83-10, 17 NRC 528, 535 (1983), *rev'd in part on other grounds*, *GUARD v. NRC*, 753 F.2d 1144 (D.C. Cir. 1985). Thus, it was incumbent upon the inmates to do more than just voice generalized concerns about the capacity of Montgomery Hospital: they should have supplied a good reason for doubting Montgomery Hospital's ability to handle the expected "few" contaminated injured persons from SCIG.

The inmates' criticism of the Linnemann affidavit is both unjustified and unavailing to their cause. Dr. Linnemann's affidavit was attached to PECO's response to an earlier set of contentions (not at issue here) proffered by the inmates. See Applicant's Answer, *supra* note 17. Because that version of the contention on medical services was extremely cryptic, Dr. Linnemann's affidavit understandably did not address in detail every discrete element of the treatment capability of Montgomery Hospital, particularly those matters not explicitly identified by the inmates as areas of concern. See Proposed Contentions of the Graterford Inmates (Feb. 15, 1985) [hereafter, "Original Contentions"] at 8. The inmates cannot

¹⁷ Montgomery Hospital apparently is the facility that routinely treats SCIG inmates. See Applicant's Answer to Proposed Emergency Planning Contentions (Apr. 4, 1985) [hereafter, "Applicant's Answer"] at 6 n.8; Licensee's Brief at 29.

reasonably or fairly find a basis for their later contention in an omission from an affidavit intended to respond to a different document. In any event, Dr. Linnemann unequivocally concluded that "Montgomery County [sic] Hospital has adequate facilities, plans, procedures and trained staff to handle contaminated and injured patients." Applicant's Answer, Affidavit of Roger E. Linnemann, M.D., at 3.¹⁸ See also Licensee's Proposal for Resolution of Remanded Issue (Nov. 18, 1985), Attachment (Nov. 15, 1985, letter from president of Montgomery Hospital agreeing "to respond to PECO requests to provide hospital treatment for victims of radiological accidents, including [but apparently not limited to] contaminated individuals from the Limerick Generating Station"). The inmates have failed to specify and explain why, in view of these facts, they still doubt the adequacy of Montgomery Hospital. The Licensing Board therefore correctly rejected the inmates' medical services contention.¹⁹

D. Simulated Evacuation Plan Exercise

10 C.F.R. § 50.47(b)(14) requires "[p]eriodic exercises . . . to evaluate major portions of emergency response capabilities, periodic drills . . . to develop and maintain key skills," and the correction of identified deficiencies (emphasis added). The inmates contend that there is no reasonable assurance of the adequacy, under this regulation, of a "table top" evacuation exercise conducted for SCIG on March 7, 1985. In particular, they claim that the exercise was deficient because it assertedly did not

¹⁸ Dr. Linnemann is Associate Professor of Clinical Radiology at the University of Pennsylvania School of Medicine. See Professional Qualifications, Roger E. Linnemann, M.D., fol. Tr. 9772.

¹⁹ Before the Licensing Board, the inmates raised several other arguments in connection with this contention. Because they do not pursue them on appeal, we need not address them here. We also need not address PECO's argument concerning the Commission's "Statement of Policy on Emergency Planning Standard 10 CFR 50.47(b)(12)," 50 Fed. Reg. 20,892 (1985). The Commission adopted that statement as an interim response to the court's remand in *GUARD*, *supra* p. 236. It pertains to those situations where actual deficiencies in medical arrangements have been identified and a question thus has arisen as to the propriety of license issuance pursuant to 10 C.F.R. § 50.47(c)(1) (see *supra* p. 233), notwithstanding the deficiency. By contrast, the inmates' medical services contention lacks even the basis and specificity required for admission, and the circumstances that would trigger application of the Policy Statement therefore do not pertain.

One matter, however, does warrant our attention. The Licensing Board essentially concluded, as it had in an earlier decision concerning a similar argument by another party, that a hospital accredited by the Joint Committee on Hospital Accreditation (JCHA) is necessarily adequate for purposes of 10 C.F.R. § 50.47(b)(12). Licensing Board Order of June 12 at 8. Subsequently, in ALAB-819, 22 NRC at 713-14 & n.44, we rejected that reasoning in the Board's earlier decision. The Board's comment on the effect of JCHA accreditation, however, is harmless error, given our agreement with the Board that the inmates' contention lacked basis and specificity in any event. Moreover, Dr. Linnemann's affidavit (see *supra* p. 236) provides more information than the mere fact of JCHA accreditation. Finally, we note that the inmates did not argue in their brief on appeal (as did the intervenor in ALAB-819, 22 NRC at 711-15) that an adequate backup hospital is also needed.

include certain elements or scenarios listed in NUREG-0654, Criterion N.3.e.²⁰ Proposed Revised Contentions at 15-16.

The Licensing Board rejected this contention on the ground that it lacks basis and specificity. The Board noted that the inmates did not either identify any deficiencies in the scenarios used or justify inclusion of those others listed in NUREG-0654, Criterion N.3.e. Nor, in the Board's view, did they give any reason for disputing FEMA's finding that this was a successful remedial exercise. Licensing Board Order of June 12 at 11.

On appeal, the inmates argue that all the justification they need for inclusion of the elements specified in NUREG-0654, Criterion N.3.e., is found in the criterion itself. They also argue that *Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), *cert. denied*, 469 U.S. 1132 (1985) [hereafter, "*UCS*"], precludes the removal from licensing hearings of issues concerning the adequacy of emergency preparedness exercises. They note that FEMA findings under the Commission's regulations are only "rebuttable presumptions" (see 10 C.F.R. § 50.47(a)(2)) and request the right to rebut at a hearing FEMA's finding of adequacy in connection with the March 7, 1985, exercise. Inmates' Brief at 17-19.²¹

The Licensing Board correctly rejected the inmates' contention for lack of basis and specificity. In the first place, as we have explained previously, NUREG-0654 "simply serve[s] as guidance for the staff's review [of emergency plans] and [does] not prescribe regulatory requirements." ALAB-819, 22 NRC at 710. Further, Criterion N.3.e. itself provides that exercises or drills include "*such things as simulated casualties*," etc. (emphasis added), indicating that the elements listed are to serve only as examples. Criterion N.1.b. states that "[t]he scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested within a five-year period." Thus, even if NUREG-0654 set "requirements," Criterion N is sufficiently flexible to permit substantial variation in the scenarios played out during emergency exercises. Therefore, contrary to the inmates' belief, satisfaction of the basis and specificity requirements of 10 C.F.R. § 2.714(b) requires more than the mere invocation of NUREG-0654, Criterion N. Once again, the inmates were obliged, but failed, to identify the particular deficiencies they perceived in the March 7 exercise.

²⁰ For example, simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities.

²¹ The inmates do not pursue on appeal the argument advanced and rejected below, regarding this contention, that the SCIG emergency plan is deficient for failure to mention by name any SCIG employee involved in the decisionmaking process. See Licensing Board Order of June 12 at 11.

The FEMA report on the exercise described the activities of the approximately five-hour period during which a simulated evacuation of the inmates took place. It noted that the results were "very positive" except in two Category B (i.e., of lesser importance) areas. The exercise involved testing of certain elements of the communications system and coordination among emergency teams, including SCIG, Bureau of Corrections, and PEMA personnel. Vehicle loading teams were assembled, and inmate and medical records and food were packed. SCIG was instructed to issue potassium iodide (KI) and dosimetry. An advance team was dispatched to a relocation center, and a lockdown of the inmates (*see infra* p. 247), preceding simulated evacuation, was effected. *See* Letter from D.F. Hassell to Licensing Board (Apr. 2, 1985), Enclosure (FEMA Memorandum of March 14, 1985).²² The exercise thus successfully simulated the "major" elements of an emergency evacuation. *See* 10 C.F.R. § 50.47(b)(14). In order to litigate the matter, it was not unreasonable for the Licensing Board to have expected the inmates to explain "with reasonable specificity" (10 C.F.R. § 2.714(b)) why, despite the FEMA report and the requirements of section 50.47(b)(14), the March 7 exercise was nonetheless deficient.

The inmates correctly note that FEMA findings are only rebuttable presumptions in NRC proceedings. But before a party can exercise its right to challenge a FEMA finding at a hearing, it must, of course, proffer a contention that satisfies the basis and specificity requirements for admissible contentions. Similarly, the *UCS* decision, 735 F.2d 1437, does not support the inmates' arguments. There the court overturned a former Commission *rule* that prohibited the litigation of the results of emergency preparedness exercises. But here the Licensing Board excluded the inmates' contention for lack of basis and specificity, not because of the NRC rule already overturned in *UCS*. Further, nothing in the *UCS* decision suggests that it was intended to override the fundamental Commission prerequisites for the adjudication of contentions.

E. Panic

The inmates contend that there is no reasonable assurance that the SCIG emergency plan will prevent panic by the guards or inmates. They refer to several factors that assertedly warrant special consideration of the potential for panic and disruption during an emergency at Limerick. SCIG is a maximum security penal institution, housing approximately

²² The inmates, of course, had this FEMA report at the time they prepared their Proposed Revised Contentions.

2500 inmates in space designed for 2000. Overcrowding taxes the resources of the facility and makes control of the prison population more difficult. Several escape, hostage, and riot incidents since 1980 serve as evidence of the potential for disruption. Proposed Revised Contentions at 16-19.

The Licensing Board rejected this contention essentially for lack of a specific basis. It found nothing in the SCIG emergency plan or elsewhere to suggest that the authorities could not handle any such disturbances. The Board explicitly assumed that the guards would perform their duties and that the inmates would therefore be controlled. Licensing Board Order of June 12 at 12. On appeal, the inmates take particular exception to these assumptions; in their view, these are conclusions on the merits that can be reached only after a hearing. They also argue that the incidents they cite provide a sufficient basis for the contention. Inmates' Brief at 19-20.

We agree with the Licensing Board that this contention lacks a sufficiently specific basis to warrant its admission. To be sure, the various incidents to which the inmates refer show a potential for disruption. But such disturbances are not unexpected in a prison environment, and SCIG personnel are trained and required to cope with them as a matter of course. More important, however, the SCIG emergency plan expressly recognizes and addresses the special security needs of the facility in the event of a radiological emergency at Limerick, as well as possible stresses on the inmates and the workforce. *See, e.g.*, Pennsylvania Bureau of Correction Radiological Emergency Response Plan, Appendix E, Annex 1 (Oct. 26, 1984) [hereafter, "SCIG Plan"], at E-1-8, E-1-A-1 to E-1-A-3, E-1-B-2, E-1-D-1 to E-1-D-2.²³ In view of this special attention in the plan itself, the inmates were obliged to explain more precisely why the plan is nevertheless inadequate for the prevention and control of a panic situation; the mere recitation of past disturbances at SCIG — none of which is alleged to have resulted in the type of panic situation contemplated by the inmates' contention — is not enough to establish a basis for hearing on this issue.

Similarly, the Board's "assumptions" concerning the guards' performance of their duties and the restraint of the inmates were not improper or unfounded. For them to have succeeded in gaining the admission of their contention, the inmates should have supplied a colorable reason for believing that the guards would or could *not* restrain the inmates in a

²³ Because the SCIG Plan is still subject to a protective order issued by the Licensing Board on March 20, 1985, our discussion of any portion of the plan is necessarily cryptic. *See infra* note 30.

manner that would permit implementation of the plan. In the absence of such a reason, the Board's assumptions are logical.²⁴

II. LITIGATED CONTENTIONS

A. Training

One of the two inmate contentions admitted and litigated concerns the training for civilian personnel (e.g., bus and ambulance drivers) to be used to evacuate SCIG in case of an emergency at Limerick. As proffered and admitted, the contention reads in pertinent part: "There is no reasonable assurance that emergency response training will be *offered* to civilian personnel who will be involved in the emergency response plans" Proposed Revised Contentions at 6 (emphasis added). The basis for the contention is a two-part criticism of the means by which PEMA is to offer this training — i.e., a letter from Donald F. Taylor, Director of PEMA's Office of Training and Education, to all bus companies providing service to the Bureau of Corrections. See Answer of the Commonwealth of Pennsylvania (Apr. 4, 1985), Exhibit B. The inmates first assert that this letter does not "guarantee that the employees will ever receive any notice of the opportunity to avail themselves of this training program." Proposed Revised Contentions at 7. Second, they contend that the training offered by PEMA to the bus drivers involved in an evacuation of SCIG is not as comprehensive as that offered to bus drivers used for school evacuations. *Ibid.* See also Licensing Board Order of June 12, Appendix at 1-2.

After a hearing on this matter, the Licensing Board found that "[r]easonable efforts are being made to offer training to civilian personnel who would be involved in an evacuation of Graterford." LBP-85-25, 22 NRC at 104. It relied on not only the PEMA letter criticized in the inmates' contention, but also Mr. Taylor's commitment to follow up his letters with personal visits to the bus and ambulance companies, urging them to participate in PEMA training activities. The Board noted that training sessions would be scheduled at times and locations convenient for the drivers and that refresher courses would be available annually. *Id.* at 104-05, 108. The Board also considered the nature of the training and concluded that it is essentially the same as that offered school bus drivers, including an overview of basic radiological principles and in-

²⁴ The Licensing Board correctly observed that the inmates essentially seek to make their contention more specific through the discovery process, "contrary to the requirement that it be sufficiently specific at the outset." Licensing Board Order of June 12 at 12. See *supra* p. 235. See also 10 C.F.R. § 2.740(b)(1) (discovery begins only after the identification of the matters in controversy — i.e., the admission of contentions).

struction on the use of dosimetry. *Id.* at 105-06, 108. The Board stressed, however, that the bus and ambulance drivers would be expected simply to drive their vehicles and would not be responsible for inmate custody and control. *Id.* at 106, 107.

In their brief on appeal, the inmates complain that the evidence adduced at the hearing and the Board's decision are wrongly concerned only with the offer of training and not with whether the drivers will actually receive the training. They note that, as of the date of the hearing, PEMA had received no responses to its offer of driver training. The inmates also refer to the testimony of their own witness, Major John D. Case (a former prison warden), that financial incentives are needed to encourage driver participation in the courses. Inmates' Brief at 21-25.²⁵

It is not surprising that the evidence and Licensing Board decision focus on the issue of whether training is or will be *offered* to the civilian drivers, for that is precisely the issue the inmates' contention, as admitted by the Board, unequivocally raises. *See* Licensing Board Order of June 12, Appendix at 1-2. Whether the inmates actually intended all along to litigate the issue of the drivers' *receipt* of training, or whether they have simply seized on an issue they believe to be more likely to succeed on appeal, is not clear. But in either case, it is far too late at this juncture to recast their contention. As we have stated twice before in similar circumstances in this proceeding, intervenors are "bound by the literal terms" of their own contentions. ALAB-836, 23 NRC at 505 (*citing* ALAB-819, 22 NRC at 709).

It is particularly reasonable here to bind the inmates to their own words because they had a second opportunity to formulate their contentions. *See* ALAB-806, 21 NRC 1183. The original version of this contention alleged no reasonable assurance that the drivers will "receive" any emergency response training. Original Contentions at 8. In the later version of the contention now at issue, however, the inmates changed "receive" to "will be offered" and specifically complained, in addition, that the PEMA letter is "inadequate . . . notice of the opportunity [for drivers] to avail themselves of this training program." Proposed Revised Contentions at 6, 7. Given the plain meaning of these words and the surrounding circumstances, it was thus not unreasonable for the Licensing Board and the parties to focus the hearing on the offer of training rather than its receipt.²⁶

²⁵ The inmates make no arguments in connection with the nature and scope of the driver training. They also do not directly challenge the Board's conclusion that reasonable efforts *are* being undertaken to "offer" training to the drivers.

²⁶ The inmates' contention does refer to 10 C.F.R. § 50.47(b)(15), which requires radiological emergency response training to be "*provided* to those who may be called on to assist in an emergency" (emphasis

Continued

That is not to say that the record and decision are silent on the matter of whether training will, in fact, be provided to the drivers. Despite the inherent limitations in the wording of the inmates' contention, the Licensing Board nonetheless addressed Major Case's testimony regarding the asserted need for financial incentives to assure driver acceptance of training. The Board, however, found that Major Case had supplied no reasons for his "belief." LBP-85-25, 22 NRC at 106-07. It also indicated that Mr. Taylor holds a contrary belief on this subject and pointed out that the overall standard for emergency planning is "'reasonable assurance,'" not a "'guarantee.'" *Id.* at 107. The Board accordingly concluded that there is "reasonable assurance that training will be offered and accepted by bus and ambulance providers." *Id.* at 108 (emphasis added).

In their attempt to show that the Board's conclusion is unwarranted, the inmates rely on Major Case's testimony about the need for a financial inducement. *See* Statement of Major John D. Case, fol. Tr. 20,930, at 5 (pages unnumbered); Deposition of John D. Case, fol. Tr. 20,930, at 40-42; Tr. 20,938-39, 20,951-52. Major Case's view on this matter is not as baseless as the Licensing Board suggests. *See* LBP-85-25, 22 NRC at 106-07. His experience in training corrections officers and in the Marine Corps has led him to conclude that civilian employees usually need some type of monetary incentive to attend courses. He also suggested, however, that if such training was offered during duty hours, or off-duty at premium pay, his concerns would be alleviated. Case Deposition, fol. Tr. 20,930, at 40-42. On the other hand, Mr. Taylor (representing PEMA) testified that, based on his experience in emergency preparedness training, he had no real reason to doubt that drivers would participate in the training, even without a financial incentive. Tr. 20,868, 20,869. He also stressed that the training sessions would be conducted at times and places convenient for the drivers. Testimony of Donald F. Taylor, fol. Tr. 20,856, at 4. Further, he suggested under cross-examination that, if financial incentives become an issue, reimbursement is not foreclosed and could be explored through various channels, including PECo. Tr. 20,864. The FEMA witnesses testified that, even though training had not yet been provided to any drivers at the time of the hearing, there was no indication that drivers would not ultimately participate in the program. Tr. 20,997, 21,004, 21,006.

added). Proposed Revised Contentions at 8. But the inmates go on to contend (*ibid.*) that emergency personnel "should be given the opportunity to receive the training" — bringing the focus of their concern back to the offer and notice of training, not its actual receipt. In any event, the inmates did not object to the Licensing Board when it failed to include this material in the restatement of the contention at the time of its admission, and it is too late to do so now. *See* Licensing Board Order of June 12, Appendix at 1-2.

Because of the wording of the inmates' contention, the record on this matter is necessarily limited. But, on balance, we cannot conclude that the Licensing Board's determination is unsupported or unreasonable. We therefore affirm the Board's decision insofar as it concerns the inmates' civilian driver training contention.

B. Estimated Time of Evacuation

The Commission's emergency planning regulations require an evacuation time estimate (ETE) for "various sectors and distances within the plume exposure pathway [emergency planning zone] for transient and permanent populations." 10 C.F.R. Part 50, Appendix E, § IV. No particular time limits are established for an evacuation; rather, the analysis is intended to reflect a realistic time for completing an evacuation. Thus, by using the ETE, emergency coordinators can then decide what protective actions (e.g., sheltering or evacuation) are warranted in the circumstances, if a radiological emergency occurs. ALAB-836, 23 NRC at 486, 491. *See also* NUREG-0654, Appendix 4.

When the inmates prepared their contentions, the then-current Bureau of Corrections estimate of the time needed for evacuation of SCIG was six to ten hours. *See* Applicant's Motion for Exemption (Feb. 7, 1985), Affidavit of E. Robert Schmidt and Geoffrey D. Kaiser at 7. The inmates' contention asserted that there is no reasonable assurance that an evacuation of SCIG could be achieved within this time frame. Proposed Revised Contentions at 11. The inmates raised questions about the adequacy of the methodology used to derive the ETE. They also called particular attention to NUREG-0654, Appendix 4 at 4-3, which states that ETEs for special facility populations (such as a prison) "shall usually be done on an institution-by-institution basis." Proposed Revised Contentions at 12.²⁷

The Licensing Board devoted the major part of the hearing and its decision to the consideration of the inmates' ETE contention. The Board noted at the outset that the six-to-ten hour ETE, developed by Bureau of Corrections Commissioner Glen Jeffes, was revised by SCIG Superintendent Charles H. Zimmerman. The revised ETE is eight to ten hours and is reflected on a "flow chart," showing vehicle arrival and loading times, off-duty personnel mobilization times, and the completion of evacuation. *See* Testimony of Charles H. Zimmerman, fol. Tr. 20,763, Flow Chart. The Board reviewed the methodology and different elements of

²⁷ The inmates also complained that the SCIG Plan itself contained no mention of the ETE. Proposed Revised Contentions at 11-13. *See infra* pp. 248-49.

the revised ETE, found the estimate reasonable, and concluded that it is in compliance with the NRC's regulations and guidance. LBP-85-25, 22 NRC at 109-16. The inmates, however, disagree and pursue numerous arguments on appeal concerning the methodology and reliability of the ETE. We address their claims seriatim.

1. The inmates complain that there have been three different ETEs prepared for SCIG by different persons, and that the discrepancies among the three "establish a prima facie case as to the unreliability of each and every" one. Inmates' Brief at 26. They add that this shows a lack of coordination and cooperation between the relevant emergency response organizations and constitutes a flaw in the planning process. *Id.* at 27-28. The first ETE, prepared in 1980 by the Commissioner of Corrections, estimated an evacuation time of five and one-half hours.²⁸ The second is the six-to-ten hour estimate by Commissioner Jeffes in early 1985 (*see supra* p. 244), and the third is Superintendent Zimmerman's eight-to-ten hour ETE embodied in the flow chart submitted with his testimony at the hearing.

The inmates' arguments with regard to the three ETEs are without merit. The existence of differences among them is not unexpected, given the five-year period between the first and the last ETE and the fact that little or no serious emergency planning had begun yet in 1980. As more information became available, the estimate was refined — precisely the process contemplated by the Commission's emergency planning regulations. Indeed, only the last version prepared by Superintendent Zimmerman can truly be considered an analysis of the evacuation time for SCIG: it is the only ETE tendered as such and the only one that separately (albeit briefly) shows the various components of an evacuation (vehicle arrival, vehicle loading, etc.). Moreover, as Superintendent of SCIG, Mr. Zimmerman is obviously in the better position from which to make the most accurate estimate of the time needed to evacuate *his* facility. Nonetheless — despite the inmates' protestations to the contrary — Superintendent Zimmerman did in fact confer with Commissioner Jeffes on the final version of the ETE. *See* Zimmerman, fol. Tr. 20,763, at 2-3.

²⁸ This time estimate is shown on Inmates Exhibit 1, a one-page excerpt from a preliminary ETE prepared for PECO in July 1980 by NUS Corporation. The Licensing Board rejected the exhibit on the ground that it was not germane to the issues being litigated. *See* Tr. 20,772-77, 21,084-85. The only basis on which the Board could have properly rejected the exhibit, however, was that it is "unduly repetitious." *See* 10 C.F.R. § 2.743(c). The entire NUS preliminary ETE was already admitted into evidence at an earlier stage of this proceeding as Applicant Exhibit 32 (Limerick Emergency Plan), Appendix H. *See* Tr. 20,891. The fact that the information contained in the exhibit may be superseded by more current information elsewhere in the record does not deprive it of its status as evidence of record. Nor does it preclude the inmates from referring to the preliminary ETE, or raising legitimate questions about which ETE is meant to apply. *See* Tr. 20,774.

2. The inmates challenge the ETE itself on several grounds. Citing the testimony of Major Case and the deposition of Robert L. Morris, the inmates' transportation and traffic engineering consultant, they claim that the eight-to-ten hour revised ETE is based on ideal conditions and overlooks traffic congestion caused by panic, public evacuation, and highways that may be closed due to meteorological conditions and radioactive fallout. The inmates specifically criticize Superintendent Zimmerman's two-to-four hour estimate of the time for the evacuation vehicles to arrive at SCIG, noting that the Superintendent has no training in traffic engineering. Inmates' Brief at 26, 27, 28-29.

The inmates are incorrect in their view that the ETE is based on ideal conditions. To be sure, it does not (and should not) reflect a "worst case" scenario. As the Licensing Board explained and the record demonstrates,

time estimates are intended to be representative and reasonable so that any protective action decision based on those estimates would reflect realistic conditions. An overly conservative estimate could result in an inappropriate decision.

LBP-85-25, 22 NRC at 109. On the other hand, an ETE should "[take] account of a wide range of seasonal, weather, and other conditions." ALAB-836, 23 NRC at 491. *See* NUREG-0654, Appendix 4. Superintendent Zimmerman's ETE does just that: in addition to the two-to-four hour estimated vehicle arrival time, the ETE explicitly increases this time to four to six hours under "adverse conditions." Zimmerman, fol. Tr. 20,763, Flow Chart. *See* Tr. 20,803, 20,808. Moreover, incoming vehicles will be moving in the opposite direction and on largely different routes from the general public evacuation. Tr. 20,803-05, 20,815-16, 20,844-45. Traffic congestion is therefore not expected to be a major factor with regard to vehicle arrival time.

The inmates' criticism of the ETE on the ground that Superintendent Zimmerman is not an expert in traffic engineering is without merit. In the first place, Major Case essentially conceded the value of the Superintendent's firsthand knowledge of the mechanics of the plan and the operations of SCIG. Case Statement, fol. Tr. 20,930, at 4. More important, the inmates completely ignore the fact that FEMA's witness, Edward B. Lieberman — an expert consultant in traffic engineering and the development of evacuation plans for nuclear power facilities — thoroughly analyzed Superintendent Zimmerman's time estimates and found them "certainly reasonable and somewhat conservative." FEMA Testimony of Edward Lieberman, fol. Tr. 20,956, at 8. *See also id.* at 4-8. On the other hand, Mr. Morris (for the inmates) has performed no comparable, close

analysis of the ETE, simply stating that factors like panic and meteorological conditions should be considered. *See* Deposition of Robert L. Morris, fol. Tr. 21,013, at 42-44, 60, 78-79 (cited in the Inmates' Brief at 29). Although the inmates refer to "Mr. Morris' estimates" as "more reliable," nowhere are those estimates revealed. Inmates' Brief at 29. Indeed, Mr. Morris has never done any traffic flow analysis in connection with the evacuation plan for a nuclear plant and is not familiar with NUREG-0654. Morris Deposition, fol. Tr. 21,013, at 43, 33-34.

The inmates next challenge the estimate of one to two hours for mobilization of necessary off-duty personnel. *See* Zimmerman, fol. Tr. 20,763, Flow Chart. The heart of their argument is that this estimate depends on the pyramiding call-up system used for mobilizing the off-duty SCIG staff — the adequacy of which the inmates unsuccessfully sought to litigate. Inmates' Brief at 29-30. Because we have determined here that the inmates were wrongly denied admission of their manpower mobilization contention (*see supra* pp. 229-33), the reliability of this part of the ETE is necessarily in question. The manpower mobilization contention, however, may well be eventually resolved on the merits in favor of PECo, or in a manner that would not alter or conflict with the ETE. In this connection, we note that the Superintendent's estimate already includes an adjustment for adverse conditions, increasing the time for mobilizing off-duty personnel to two to three hours. Zimmerman, fol. Tr. 20,763, Flow Chart. We therefore direct the Licensing Board and the parties, in the course of their consideration on remand of the inmates' manpower mobilization contention, to determine what effect, if any, the resolution of that issue has on the ETE.

The inmates also criticize Superintendent Zimmerman's estimate of 30 minutes to achieve a "lockdown" of SCIG — i.e., a return of all inmates to their cells to prepare for evacuation. The inmates cite Major Case's estimate of up to four hours and refer to several past incidents involving power failures and hostage situations where it took hours to complete lockdowns. Inmates' Brief at 30-31. But as the Licensing Board found and the record establishes, those incidents occurred before the installation of a backup emergency lighting system at SCIG in 1984. Since that time, lockdowns have taken less than 30 minutes, even during partial power failures. LBP-85-25, 22 NRC at 113. The Board also pointed out that the lockdown time is not "a critical path item" because it will occur during the two-to-four hour vehicle mobilization time. *Id.* at 114. Moreover, Superintendent Zimmerman testified that, based on his experience, the inmates cooperate and thereby shorten the lockdown time when they recognize the procedure is for their own benefit, as would be the case in an emergency evacuation. Tr. 20,782, 20,842. As a result of this testi-

mony, Major Case reconsidered his earlier four-hour lockdown estimate and pronounced the Superintendent's 30-minute estimate "realistic," assuming inmate cooperation. Tr. 20,946-47.²⁹

Finally, the inmates contend that the ETE is unreliable because it assumes 2450 inmates at SCIG, whereas the population has already risen to 2500 and, in their view, is likely to increase. Inmates' Brief at 32. The inmates, however, overlook the Licensing Board's disposition of this argument, which we conclude is fully in accord with the record. The Board found that any increase in inmate population will be met by a corresponding increase in staff and support facilities. Thus, it would have no effect on the estimated eight-to-ten hour evacuation time. LBP-85-25, 22 NRC at 115. See Tr. 20,830-33.

3. Although the inmates no longer pursue it on appeal, one final matter of "form" remains of concern to us. The inmates' contention complains that the ETE is not specifically mentioned or included in the SCIG Plan itself. Proposed Revised Contentions at 11, 13; Licensing Board Order of June 12, Appendix at 3. The Licensing Board stated:

whether the . . . estimate is in the plan, or not, does not require litigation. Reading of the plan will reveal its presence or absence. If absent, it will be inserted.

Licensing Board Order of June 12 at 9. The Board subsequently concluded, however, that

there is nothing in the Commission's emergency planning requirements or guidance that requires the estimated time for evacuating a special facility, such as the SCIG, to be included in the *radiological emergency response plan for that special facility* (see 10 C.F.R. § 50.47; Appendix E, 10 C.F.R. Part 50; NUREG-0654/FEMA-REP-1, Rev. 1 (November 1980).

LBP-85-25, 22 NRC at 115 (emphasis added). The Board's finding is technically accurate. The Commission's regulations, however, unquestionably require the ETE for SCIG to be included in *applicant* PECO's emergency plan. See 10 C.F.R. Part 50, Appendix E, § IV ("Content of Emergency Plans"). See also 10 C.F.R. § 50.47(b)(10); NUREG-0654,

²⁹ In this connection, Superintendent Zimmerman testified that an addendum to the inmate handbook would be issued, describing emergency evacuation procedures. Tr. 20,833-34. Major Case agreed that this is a "very good" idea. Tr. 20,938. The inmates now argue for the first time on appeal that the addendum is inadequate because of the high illiteracy rate and Spanish-speaking population at SCIG. They urge, instead, an emergency drill for the inmates. Inmates' Brief at 31-32.

As we state, at *supra* p. 235, arguments cannot be properly raised for the first time on appeal. Moreover, the points the inmates raise here are well beyond the scope of the ETE contention, with no effort to satisfy the Commission's prerequisites for reopening the record for hearing on a new, but late contention. See ALAB-828, 23 NRC 13, 17 (1986).

Criterion J.8. The Commission has already directed this action, and we assume that it has been taken. See CLI-85-15, 22 NRC at 188.

Despite the lack of a specific regulation prescribing it, the ETE necessarily must be readily available (logically as an addendum to the RERP) to *all* those decisionmakers whom the ETE is to aid in deciding what protective actions to order. See *supra* p. 244. In the case of SCIG, the Commissioner of Corrections is the only official who can order an evacuation (based on a PEMA recommendation). SCIG Plan at E-1-6, E-1-10, E-1-11.³⁰ We lack the authority to order the Commonwealth's Bureau of Corrections or PEMA to incorporate the ETE for SCIG in the emergency plan for that facility, but we strongly urge them to undertake this minimal task. This can only enhance the decisionmaking process, as the NRC's regulations contemplate. It is also particularly important here, where the pertinent ETE was prepared by someone other than the Corrections Commissioner or a PEMA official (i.e., Superintendent Zimmerman).

III. FAIRNESS OF THE HEARING

The inmates' concluding arguments are directed to the conduct of this proceeding. They claim that they have been denied their right to a fair and impartial hearing, as guaranteed not only by the Commission's own regulations (see 10 C.F.R. § 2.718), but also by the U.S. Constitution. In-

³⁰ We are somewhat uncomfortable in citing to the SCIG Plan, not only because it is protected information (see *supra* note 23), but also because — surprisingly — it was never introduced into evidence or otherwise incorporated into the record of this proceeding. (The protected nature of the plan could easily have been preserved by according it "in camera" status.) We expressed our concerns in this regard in our Order of June 3, 1986 (unpublished), at 1-2 (citing *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-580, 11 NRC 227 (1980)), and asked the parties to comment. In *Diablo Canyon*, the Licensing Board concluded that the plant's security plan (a protected document, like the SCIG emergency plan here) complied with the NRC's regulations — despite the fact that the plan was not evidence of record and had never been examined by the Board. We vacated the Board's decision, essentially on the ground that the Board's findings were "empty . . . in the absence of essential evidence." *Id.* at 230.

In response to our order, PECo, the staff, and the Commonwealth argue that *Diablo Canyon* is distinguishable in several respects; the inmates take no position. Given the lack of genuine dispute among the parties about this matter, a lengthy discussion of the similarities of, and differences between, *Diablo Canyon* and this proceeding is not warranted or necessary. We note, however, that, while the Licensing Board's ultimate conclusion here (as in *Diablo Canyon*) is that the SCIG Plan meets all pertinent regulatory requirements, that conclusion is explicitly limited to "the issues in controversy before us." LBP-85-25, 22 NRC at 116. As the parties point out, the issues litigated did not require scrutiny of the contents of the SCIG Plan itself, but rather involved matters peripheral to or missing from it. Moreover, the evidence adduced at the hearing was more than the conclusionary opinions of secondary sources, on which the Licensing Board in *Diablo Canyon* had relied. See 11 NRC at 229. In the circumstances, despite our discomfort with this omission, no one has been prejudiced and no useful purpose would be served by taking steps at this late stage to effect formal inclusion of the SCIG Plan in the record.

mates' Brief at 33. The inmates offer three examples of how their rights in this regard have assertedly been denied or prejudiced.³¹

First, they refer to the Licensing Board's issuance, upon the request of PECO's counsel, of a subpoena directing the inmates' witness, Mr. Morris, to appear for a deposition. The gist of the inmates' complaint is that, although the Board was allegedly aware that Mr. Morris would be available, if at all, only on July 3, 1985, the Board nonetheless directed him to appear on July 2. *Id.* at 35-36; Licensing Board Subpoena to Robert L. Morris (June 28, 1985); Letter to Judge H. Hoyt from A.R. Love (June 28, 1985). The inmates' argument is frivolous. They offer no explanation of how *they* have been harmed,³² nor could they: the subpoena for July 2 was withdrawn and Mr. Morris was deposed on his date of preference, July 3. *See* Licensee's Brief at 40; Morris Deposition, fol. Tr. 21,013, at 1.³³ In any event, to preserve a claim like this for appeal, a party is obliged to seek relief first from the Licensing Board by moving to quash the subpoena (*see* 10 C.F.R. § 2.720(f)) — action that the inmates failed to take here.

Citing Tr. 20,809-11, the inmates next contend that the Licensing Board improperly solicited and then sustained an objection from the Commonwealth to certain cross-examination by the inmates' counsel. Inmates' Brief at 36. The transcript, however, simply does not support the inmates' characterization of the events reported. Nor do we see any improper interference by the Licensing Board in this particular exchange. The Board essentially interrupted Superintendent Zimmerman when his answer strayed into the area of manpower mobilization — which the Board had earlier, albeit incorrectly, excluded from litigation — and then entertained (rather than invited) objections to the questioning by the Commonwealth's counsel. This action is implicitly, if not explicitly, within the Board's authority "to take appropriate action to avoid delay," to "receive evidence," to "[r]egulate the course of the hearing," and to "[e]xamine witnesses." 10 C.F.R. § 2.718. *See also* 10 C.F.R. § 2.757.

³¹ The inmates introduce their argument with a recitation of the various obstacles they had to overcome to participate in this case. Inmates' Brief at 33-35. The matters about which they complain, however, were eventually resolved in their favor, and thus provide no basis for the instant appeal. *See generally* ALAB-806, 21 NRC 1183; ALAB-809, 21 NRC 1605.

We note, in this regard, that, despite the inmates' charge that the Licensing Board was biased against them, at no time did they seek the disqualification of the Board or any member thereof. *See* 10 C.F.R. § 2.704(c). *See also Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-749, 18 NRC 1195, 1198-99 (1983) (motions for disqualification must be filed as soon as possible after ostensible grounds for such action arise).

³² Apparently, Mr. Morris was offended by being served with a subpoena. *See* Tr. 20,899-900.

³³ As a further indication of the lack of harm to the inmates, the other parties and the Licensing Board agreed to admit the Morris deposition into evidence on behalf of the inmates, even though Mr. Morris did not appear at the hearing. LBP-85-25, 22 NRC at 103.

The inmates' last due process challenge is directed at the expedited schedule for this proceeding. Specifically, they object to the abbreviated time for discovery and for submitting prefiled testimony and proposed findings of fact and conclusions of law. Inmates' Brief at 36-37.³⁴

Where the circumstances warrant it, the Commission's regulations clearly permit the adjudicatory boards to shorten the time otherwise authorized for each of the matters about which the inmates complain. *See, e.g.,* 10 C.F.R. §§ 2.711(a), 2.754(a). *See also Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 453 (1981). Here, the inmates' contentions did not become ripe for litigation until quite late in the proceeding. Although this was not the fault of the inmates, the Licensing Board nonetheless properly recognized the need to expedite the proceeding, given the completed status of the plant. The Commission and this Appeal Board also encouraged the Licensing Board to act promptly on all matters raised by the inmates. *See* CLI-85-11, 21 NRC 1585, 1586 (1985); ALAB-809, *supra* note 2, 21 NRC at 1614-15; ALAB-806, 21 NRC at 1186, 1193-94. Expedition, of course, should not be at the expense of fairness. But despite their generalized claims of unfairness, the inmates provide no evidence in their brief of specific harm. Indeed, all the parties were subject to the same time constraints, and the inmates agreed with the schedule at the time the Licensing Board proposed it. *See* Tr. 20,729, 20,741-42. *See also* Tr. 20,899. It is thus too late now to complain about it. *Duke Power Co. (Catawba Nuclear Station, Units 1 and 2)*, ALAB-813, 22 NRC 59, 74 & n.69 (1985).

In sum, the examples cited by the inmates do not support their charges on appeal of alleged unfairness and partiality by the Licensing Board.

IV. AWPP'S APPEAL

AWPP also appeals the Licensing Board's decisions in connection with the SCIG emergency plan.³⁵ Although it was an intervenor in another phase of this operating license proceeding, AWPP did not participate in any aspect of the litigation involving the Graterford inmates. It filed no contentions or any other pleadings in this regard, and its repre-

³⁴ The inmates also contend that the Board shifted the burden of proof from the applicant to them, in violation of 10 C.F.R. § 2.732, but they provide no specifics to support this charge. *See* Inmates' Brief at 37.

³⁵ AWPP misdirected its "Notice of Appeal" (dated July 26, 1985) to the Licensing Board. In our Order of August 1, 1985 (unpublished) at 1, we treated the appeal as properly filed and observed that the Notice of Appeal was also AWPP's brief on the merits. Despite being thus put on notice of our determination to treat AWPP's filing as a brief, PECO has failed to respond to the brief and is therefore in default insofar as AWPP's appeal is concerned. *See* 10 C.F.R. § 2.707. Both the staff and the Commonwealth, however, have complied with the Rules of Practice and addressed AWPP's arguments.

sentative did not participate in any of the conferences or hearings held by the Licensing Board. Indeed, until now, AWPP had expressed no interest in *any* aspect of emergency planning, limiting its concerns to aircraft carburetor icing caused by cooling tower emissions and quality assurance. See ALAB-819, 22 NRC at 716-30. See also Petition for Intervention (Sept. 3, 1981); Supplemental Petition of Coordinated Intervenor (Nov. 24, 1981); LBP-82-43A, 15 NRC 1423, 1519-20 (1982); LBP-84-18, 19 NRC 1020 (1984). Now, at the eleventh hour, AWPP seeks to pursue a variety of confusing claims in connection with the SCIG Plan. AWPP fails for several reasons, and its appeal is therefore dismissed.

Only aggrieved parties may appeal decisions adverse to them. *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-790, 20 NRC 1450, 1453 (1984). A party cannot be legally "aggrieved" for the purpose of appealing an adverse decision if it did not meaningfully participate in the process that led to the objectionable decision. As we stated in *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-583, 11 NRC 447, 448 (1980), "[a]n administrative hearing would be a meaningless charade if those with ample opportunity to participate were allowed to stand idly by and then, nevertheless, demand a replay when they do not like the result." See also *id.* at 448-49. Cf. *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 542-43 n.58 (1986) ("intervenors have no standing to press before us a possible grievance of another party to the proceeding who is not represented by the intervenors").

The staff argues, however, that "AWPP has the right to appeal," relying on our decision in *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-244, 8 AEC 857 (1974), *reconsideration denied*, ALAB-252, 8 AEC 1175, *aff'd*, CLI-75-1, 1 NRC 1 (1975). NRC Staff Brief, *supra* note 7, at 47.³⁶ The staff has given that decision too broad a reading. In *Prairie Island*, we held that

³⁶ The staff goes on to urge that we nevertheless reject AWPP's brief "for failure to file proposed findings of fact and conclusions after having had an opportunity to do so." NRC Staff Brief at 47. We do not agree that this would be a proper basis for rejecting AWPP's appeal. The Licensing Board did not "order" the filing of proposed findings of fact and conclusions of law under 10 C.F.R. § 2.754; rather, such filings were optional. See Licensing Board Memorandum and Order of June 18, 1985 (unpublished), at 3; Tr. 20,741, 21,014-16. In *Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), ALAB-709, 17 NRC 17 (1983), we held that, unless a licensing board orders the submission of proposed findings and conclusions, a party failing to do so is free to pursue on appeal all issues in which it participated below.

in placing certain specified issues into controversy himself, an intervenor should not be taken as waiving the right to insist that all other issues coming before the Board (*within the ambit of his interest as established by his intervention petition*) be decided in conformity with the evidence of record and applicable principles of law — no matter what the genesis of those issues or the source of the evidence.

8 AEC at 863 (emphasis added). *See also id.* at 863 n.9 (“[i]rrespective of who raised the issue, an intervenor *might* be aggrieved . . . by a finding contrary to the weight of the evidence” on that issue [emphasis added]), 870 n.19 (“as we have endeavored to make clear, the entire discussion in this opinion of intervenor participational rights likewise presupposes the existence of the requisite interest in the outcome of the particular issue being considered”). Thus, whether an intervenor has the right to pursue a particular issue on appeal is a function of the level of interest expressed by the intervenor in such issue throughout the course of the proceeding.³⁷ Applying that rule here, we have no hesitation in concluding that AWPP has failed to demonstrate the requisite interest — indeed, *any* interest whatsoever — in emergency planning for SCIG so as to legitimize its appeal. *See supra* p. 251-52.

AWPP also raises matters beyond the scope of the inmates’ contentions (e.g., the adequacy of the number of vehicles to be used for evacuating SCIG and the possible threat to the public safety from a prison riot during an evacuation). Such issues, of course, could not be raised by any party for the first time on appeal. *See supra* p. 235. As for the arguments that seemingly relate to issues otherwise suitable for appellate consideration (e.g., the reliability of the ETE and the offer of civilian driver training), we have treated those portions of AWPP’s filing as an amicus brief. Thus, we have taken AWPP’s views on those subjects into account in the course of our consideration of the inmates’ brief.³⁸

³⁷ The Commission recently proposed an even stricter rule, which would limit an intervenor to raising issues on appeal that *it* placed or sought to place in controversy. 51 Fed. Reg. 24,365, 24,368, 24,372 (1986).

³⁸ Despite the obvious defects in AWPP’s appeal, we accepted its brief for filing (*see supra* note 35) and allotted it time for oral argument. Order of October 24, 1985 (unpublished), at 1. Because of the repeated tardiness of several participants (most notably, AWPP’s representative) throughout this entire operating license proceeding (before both the Licensing Board and us), we noted our expectation that all the parties’ representatives be on time for the oral argument and indicated that “[a]nyone who is late will not be permitted to argue.” *Id.* at 2 (emphasis in original). For the convenience of the out-of-state parties, we scheduled the argument to take place in the afternoon and, as is our practice, we directed each party to notify the Board Secretary as to who would appear on its behalf. *Ibid.*

We received no response from AWPP to this latter directive, and, when the oral argument began at the scheduled hour, not surprisingly, AWPP’s representative was not present, whereas all others were. We took note of that fact and gave the time previously allotted to AWPP for oral argument to the inmates’ counsel. App. Tr. 3. AWPP’s representative arrived later and accordingly was advised by the Board Chairman (speaking on behalf of the entire Board) that, under the terms of our October 24 Order, he would not be allowed to participate. App. Tr. 46-47.

Continued

The Licensing Board's Order of June 12, 1985, and its fourth partial initial decision, LBP-85-25, are *affirmed in part*; to the extent they exclude the inmates' manpower mobilization contention, they are *reversed*, the contention is *admitted*, and this matter is *remanded* to the Licensing Board for further action consistent with this opinion.

AWPP's appeal, dated July 26, 1985, is *dismissed*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

Oral argument is a matter solely within our discretion. 10 C.F.R. § 2.763; 10 C.F.R. Part 2, Appendix A, § IX(e). Thus, we can obviously set reasonable ground rules for participation, such as requiring the parties' representatives to be on time. Any claim by AWPP that it was wrongly denied its "right" to oral argument is therefore wholly without merit. This is particularly so, given that AWPP had no appeal rights in this phase of the case in the first place.

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

**Dr. Robert M. Lazo, Chairman
Dr. Richard F. Cole
Dr. Emmeth A. Luebke**

In the Matter of

**Docket Nos. 50-250-OLA-3
50-251-OLA-3
(ASLBP No. 84-505-08-LA)
(Increased Fuel Enrichment)**

**FLORIDA POWER AND LIGHT
COMPANY**

**(Turkey Point Nuclear Generating
Plant, Units 3 and 4)**

August 25, 1986

MEMORANDUM AND ORDER

(Granting Summary Disposition Motion and Terminating Proceeding)

Before us is a motion by Florida Power and Light Company (Licensee) for summary disposition of Contention 3. Based upon our study of the motion, supporting documents, and the pleadings filed in response thereto, we grant the summary disposition motion. Inasmuch as Contention 3 is the only contention admitted for litigation, no other issues remain in controversy. Accordingly, we close the record and dismiss this operating license amendment proceeding.

I. BACKGROUND OF PROCEEDING

On June 20, 1984, the Commission published in the *Federal Register* a notice of consideration of the issuance of amendments to the facility operating licenses for Turkey Point Units 3 and 4 and offered an opportunity for a hearing on the amendments. 49 Fed. Reg. 25,350, 25,360. The amendments were requested to allow storage of fuel with increased enrichment, for use in future operating cycles, and include an additional K_{eff} (neutron multiplication factor) requirement for the existing new fuel storage racks under conditions of low density (optimum moderation). In support of this request, Licensee submitted a "Criticality Analysis of Turkey Point Units 3 & 4 Storage Racks with Increased Enrichment" (Criticality Analysis).

In response to the notice of opportunity for a hearing, Joette Lorion and the Center for Nuclear Responsibility, Inc. (collectively referred to herein as "Intervenors") filed a "Request for Hearing and Petition for Leave to Intervene" on July 12, 1984.

During its review, the NRC Staff (Staff) submitted written questions to Licensee regarding its request to expand the capacity of the Turkey Point spent fuel pools. Licensee submitted written responses to these questions which supplemented the information in the Criticality Analysis. Following completion of its review, the Staff determined that the requested amendments involved no significant hazards consideration, and issued the license amendments on September 5, 1984, accompanied by a Safety Evaluation (SE).

The Intervenors submitted an "Amended Petition to Intervene" on March 7, 1985, which listed four contentions that the Intervenors proposed be admitted for litigation in this proceeding. Following a prehearing conference on March 28, 1985, the Licensing Board issued a Memorandum and Order (unpublished) dated September 24, 1985, which accepted the Intervenors as a party to this proceeding and admitted Contention 3 for the purposes of litigation.

On January 23, 1986, Licensee filed "Licensee's Motion for Summary Disposition of Contention 3" (Motion). The Motion is accompanied by a statement of material facts as to which it is asserted there is no genuine issue to be heard, and an affidavit concerning the contention by Dr. Stanley E. Turner.

The Staff on February 18, 1986, filed a response in support of Licensee's Motion. (NRC Staff Response to Licensee Motion for Summary Disposition of Contention 3). The Staff response was accompanied by an affidavit of Dr. Lawrence I. Kopp regarding Contention 3.

On March 19, 1986, Intervenor filed a response to Licensee's Motion together with "Intervenor's Statement of Material Facts as to Which There Is a Genuine Issue to Be Heard with Respect to Intervenor's Contention 3" and an affidavit by Joette Lorion.

II. LEGAL STANDARDS FOR SUMMARY DISPOSITION

Summary disposition of contentions in NRC proceedings is governed by 10 C.F.R. § 2.749.¹

Under 10 C.F.R. § 2.749(a), any party may move, with or without supporting affidavits, for a decision in its favor as to all or any part of the matters involved in the proceeding. Such a motion must be accompanied by "a separate, short and concise statement of the material facts as to which . . . there is no genuine issue to be heard." *Id.* Any other party may support or oppose the motion. If it opposes the motion, a party must file its own statement of the material facts as to which it contends there is a genuine issue to be heard. Material facts are deemed to be admitted unless controverted by the opposing party. *Id.*

Under 10 C.F.R. § 2.749(b), when a motion for summary disposition is filed and is supported by affidavits, "a party opposing the motion may not rest upon the mere allegations or denials of his answer." Instead, the opposing party's "answer by affidavits or as otherwise provided in this section must set forth specific facts showing that there is a genuine issue of fact." *Id.* See also *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-629, 13 NRC 75, 77-78 (1981); *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), LBP-83-56, 18 NRC 421, 430 (1983). In particular, "[t]he opposing party's facts must be material, substantial, not fanciful, or merely suspicious." *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), LBP-75-10, 1 NRC 246, 248 (1975) (footnotes omitted). A party may not oppose a motion for summary disposition "on the vague supposition that something may turn up" at hearings, *id.*; nor may an opposing party rely upon general denials coupled with a claim that more information is needed for the party to evaluate the movant's analyses. *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 455 (1980). Furthermore, § 2.749(b) provides that "[a]ffidavits shall set forth such facts as would be admissible in evidence and shall show affirma-

¹ The standards for summary disposition under 10 C.F.R. § 2.749 are similar to those standards for summary judgment under Rule 56 of the Federal Rules of Civil Procedure. *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-554, 10 NRC 15, 20 n.17 (1979); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753-54 (1977).

tively that the affiant is competent to testify to the matters stated therein." If such an answer is not filed, summary disposition shall be granted, if appropriate. 10 C.F.R. § 2.749(b).

Under 10 C.F.R. § 2.749(d), summary disposition shall be granted

if the filings in the proceeding, depositions, answers to interrogatories, and admissions on file, together with the statements of the parties and the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law.

III. DISCUSSION OF CONTENTION 3

Contention 3 and the bases for the contention state as follows:

Contention 3

That the uranium enrichment amendments increase the chances of a criticality accident occurring in the fresh fuel pool and establishes a clear reduction in the safety margin of the fresh and spent fuel pool.

Bases for Contention

a) The U-235 loading of 52.40 grams per axial centimeter (SER pg 2), is the maximum loading which can assure a K_{eff} of no greater than 0.95, including uncertainties. Thus, the safety margins for the enrichment of the fuel have been pushed to the limit and leave no margin of safety.

b) The increase of criticality from 0.95 to 0.98 for the fresh pool pushed the criticality of the pool closer to criticality, which is 1.0. This increases reactivity and increases the possibility of a criticality accident and/or loss of fuel cooling system flow. Thus, the requirements of 10 C.F.R. Part 50, Appendix A, criterion 62 will not be met.

In admitting Contention 3, we stated that "the contention should be read as challenging the adequacy of this acceptance criteria by alleging that K_{eff} of 0.98 is not adequately safe for fresh fuel exposed to abnormal, optimum moderation conditions and 0.95 is not adequate for fresh or spent fuel exposed to the abnormal condition of full flooding with unborated water." Memorandum and Order (September 24, 1985) at 7-8.

The material facts regarding the issues raised by this contention are not in dispute. These facts are summarized below.

The new fuel storage vaults and the spent fuel storage pools at Turkey Point are unrelated facilities and are physically located in separate areas of the plant. The new fuel storage vaults are intended for the receipt and temporary storage of fresh unirradiated fuel assemblies being shipped into the plant. These fresh fuel assemblies do not require any shielding or cooling and, under normal conditions, are stored in a dry condition in

the Turkey Point new fuel storage vaults. The absence of a moderator for the fresh fuel assemblies in the new storage vaults assures very low values of K_{eff} with a large margin to criticality during normal storage of these assemblies. Spent fuel storage pools are designed and intended to store fuel discharged from the reactor core. The spent fuel assemblies are stored in borated water in the Turkey Point spent fuel pools. The presence of boron in the spent fuel pool water absorbs neutrons and therefore assures very low values of K_{eff} with a large margin to criticality during normal storage of these assemblies.²

Criticality analyses for fresh fuel storage areas and spent fuel pools are governed by General Design Criterion (GDC) 62 of Appendix A to 10 C.F.R. Part 50 of the NRC's regulations, which states that "[c]riticality in the fuel storage and handling system shall be prevented by physical systems or processes, preferably by use of geometrically safe configurations." The NRC Staff has issued guidance, in the form of Standard Review Plan (SRP) §§ 9.1.1 and 9.1.2 (NUREG-0800), for complying with GDC 62. SRP § 9.1.1 states that the NRC Staff will accept storage racks for new fuel assemblies if the K_{eff} of the assemblies is less than 0.95 for flooded conditions and if the K_{eff} will not exceed 0.98 for conditions of optimum moderation. SRP § 9.1.2 states that the NRC Staff will accept storage racks for spent fuel assemblies if the K_{eff} of the assemblies is not greater than 0.95 for flooded conditions with unborated water.³ The design basis K_{eff} limits for the Turkey Point fresh fuel storage vaults and spent fuel pools conform with the K_{eff} criteria in SRP §§ 9.1.1 and 9.1.2.⁴

Intervenors are incorrect when they contend that the Turkey Point K_{eff} limits are not adequate to prevent criticality. The Turkey Point K_{eff} limits are less than 1.0, thereby assuring that fresh and spent fuel will be stored in subcritical conditions. Further assurance is provided by the fact that: (1) K_{eff} is calculated by methods which have been calibrated and checked (thereby assuring the calculated values of K_{eff} are highly reliable), (2) all known uncertainties are included in the calculated values of K_{eff} , and (3) the K_{eff} limits apply to very unusual and highly improbable accident conditions (i.e., the presence of unborated water in the fresh fuel storage vaults and the absence of boron in the spent fuel pool water), and under normal conditions the fresh and spent fuel assemblies are maintained in a strongly subcritical condition by the absence of a

² Turner Affidavit, ¶¶ 8-10; Kopp Affidavit, ¶¶ 6-13.

³ Although the SRP does not have the force of regulations, the Appeal Board has held that "the staff guidance and acceptance criterion for spent fuel pool criticality is entitled to considerable weight." *Consumers Power Co. (Big Rock Point Nuclear Plant)*, ALAB-725, 17 NRC 562, 568 (1983).

⁴ Turner Affidavit, ¶¶ 12-15; Kopp Affidavit ¶ 13.

moderator in the fresh fuel storage vault and the presence of borated water in the spent fuel pool. A criticality accident would be possible only if two independent and unlikely accident conditions were postulated to occur simultaneously. This possibility is not credible and is not required to be considered under NRC Staff and industry standards.⁵

Intervenors also are incorrect when they contend that the Turkey Point K_{eff} limits "leave no margin of safety." The K_{eff} limit of 0.95 applicable to the Turkey Point fresh fuel storage vaults and spent fuel storage pools under conditions of flooding with unborated water provides for a criticality safety margin of $0.05 \Delta K_{eff}$. This margin is a factor of five times the usual uncertainty included in the calculated K_{eff} for fresh fuel storage vaults and a factor of two or more times the normal uncertainty included in the calculated K_{eff} for spent fuel storage pools. These safety factors are more than sufficient to assure that criticality will not occur. Furthermore, the existence of optimum moderation uniformly throughout a fresh fuel storage vault is not a credible occurrence and represents a theoretical and conservative upper-bound condition. Consequently, the K_{eff} limit of 0.98 for fresh fuel assemblies under conditions of optimum moderation provides a large criticality safety margin.⁶

Finally, Intervenors are incorrect when they contend that the increased fuel enrichment amendments reduced the margin of safety to criticality in the Turkey Point fresh fuel storage vaults and spent fuel pools. The amendments did not modify the preexisting K_{eff} limit of 0.95 for the Turkey Point spent fuel pools and fresh fuel storage vaults under flooded conditions. Consequently, the amendments did not reduce the margin of safety provided by these limits. Although the increased fuel enrichment amendments did establish a K_{eff} limit of 0.98 for conditions of optimum moderation in the fresh fuel storage vaults, there previously was no license requirement to consider optimum moderation in the vault.⁷ Consequently, the K_{eff} limit of 0.98 is a new and additional requirement, and not a reduction in safety provided by a previous requirement.⁸

⁵ Turner Affidavit, ¶ 16.

⁶ Turner Affidavit, ¶¶ 18, 21, and 24.

⁷ There is no K_{eff} criterion applicable to "optimum moderation" accidents in spent fuel pools, since the presence of stainless steel plates between the assemblies in the spent fuel storage racks absorbs thermalized neutrons and therefore removes the conditions necessary for optimum moderation. (Turner Affidavit, ¶ 23.) Additionally, the Appeal Board has ruled that the possibility of optimum moderation in a spent fuel pool need not be considered when reliable makeup is provided for the pool. *Consumers Power Co. (Big Rock Point Nuclear Plant)*, ALAB-725, 17 NRC 562 (1983).

⁸ Turner Affidavit, ¶¶ 19, 22, and 25.

Intervenors have set forth in five numbered paragraphs (two bear the number 3) statements which it is asserted are material facts as to which there is a genuine issue to be heard with respect to Intervenors' Contention 3. However, it is readily apparent on examination of these statements, that not one properly can be characterized as a specific fact showing that there is a genuine issue of fact.

IV. CONCLUSION

The K_{eff} limits for the Turkey Point fresh fuel storage vaults and spent fuel pools conform with the NRC Staff's acceptance criteria. These limits require that the fresh and spent fuel assemblies be maintained subcritical under postulated accident conditions, even when all known uncertainties are accounted for. Furthermore, these limits provide for margins of safety to criticality which are several times the normal uncertainties included in the calculated values of K_{eff} . Consequently, the limits are sufficient to prevent criticality in accordance with the Commission's regulations. Since there is no genuine issue regarding any of these material facts, the Licensee is entitled to summary disposition of Contention 3 as a matter of law.

V. ORDER

For all the foregoing reasons and upon consideration of the entire record in this matter, it is, this 25th day of August 1986, ORDERED

1. That the Licensee's Motion for Summary Disposition of Contention 3 (January 23, 1986) is *granted*; and

2. No other contentions having been admitted for litigation, the record is hereby closed and this operating license amendment proceeding is *dismissed*.

IT IS FURTHER ORDERED, pursuant to 10 C.F.R. § 2.760, that this Decision shall constitute the final decision of the Commission thirty (30) days from its date of issuance, unless an appeal is taken in accordance with 10 C.F.R. § 2.762 or the Commission directs otherwise. See also 10 C.F.R. §§ 2.785 and 2.786. Any party may take an appeal from this Decision by filing a Notice of Appeal within ten (10) days after service of this Decision. A brief in support of such appeal shall be filed within thirty (30) days after the filing of the Notice of Appeal (forty (40) days if the appellant is the Staff). Within thirty (30) days after the period has expired for the filing and service of the briefs of all appellants (forty (40) days in the case of the Staff), any party who is not an appellant may

file a brief in support of, or in opposition to, the appeal of any other party. A responding party shall file a single responsive brief, regardless of the number of appellants' briefs filed.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

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

**Richard F. Cole
ADMINISTRATIVE JUDGE**

**Emmeth A. Luebke
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 25th day of August 1986.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

**Morton B. Margulies, Chairman
Gustave A. Linenberger, Jr.
Dr. Oscar H. Paris**

In the Matter of

**Docket Nos. 50-424-OL
50-425-OL
(ASLBP No. 84-499-01-OL)**

**GEORGIA POWER COMPANY,
*et al.***

**(Vogtle Electric Generating
Plant, Units 1 and 2)**

August 27, 1986

In this Partial Initial Decision, the Licensing Board finds that Applicants have provided adequate assurance that public ground water supplies will not be contaminated by an accidental spill of radioactive water, and that certain polymer materials to be employed in plant components that perform safety-related functions are environmentally qualified.

APPEARANCES

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PARTIAL INITIAL DECISION

I. INTRODUCTION

A. Scope of Decision

The proceeding involves an application for an operating license for the nuclear Vogtle Electric Generating Plant, Units 1 and 2 (VEGP), located in Burke County, Georgia. The application was filed by Georgia Power Company as agent and representative for the co-owners, Georgia Power Company, Municipal Electric Authority of Georgia, Oglethorpe Power Corporation, and City of Dalton, Georgia (Applicants). Intervenor Georgians Against Nuclear Energy (GANE) contests the application. In this Partial Initial Decision, the Board considers two of three Intervenor contentions involving environmental and technical issues litigated at a hearing held in March 1986, in which Nuclear Regulatory Commission Staff (Staff) also participated as a party.

The three contentions heard, as originally numbered, consist of Contention 7 (alleging that Applicants have failed to assure that the ground

water below VEGP will not be contaminated by a spill of radioactive water); Contention 10.1 (alleging that Applicants have failed to assure that certain polymer materials, to be employed in components of the VEGP that perform safety-related functions, are environmentally qualified); and Contention 10.5 (alleging that Applicants have failed to assure that certain models of solenoid valves that are to be used to perform safety-related functions in the VEGP are environmentally qualified). The Board has deferred ruling on Contention 10.5 because of the issuance, on August 25, 1986, of "Board Notification Regarding ASCO Solenoid Valves for Vogtle Units 1 and 2" (Board Notification No. 86-18). We have decided Contentions 7 and 10.1 in Applicants' favor. Staff had supported Applicants on the contentions.

The Board found that: as to Contention 7, Applicants have provided adequate assurance that public ground water supplies will not be contaminated by an accidental spill of radioactive water at VEGP, and as to Contention 10.1, Applicants have provided adequate assurance that certain polymer materials, to be employed in components of the VEGP that perform safety-related functions, are environmentally qualified.

The Board concluded that, as to the contentions addressed in this Partial Initial Decision, there is reasonable assurance that, if an operating license is granted to Applicants, the activities authorized will not be inimical to the common defense and security, can be conducted without endangering the health or safety of the public, and will be conducted in compliance with applicable NRC regulations.

B. Development of the Decision

Applicants filed an application to operate VEGP on June 22, 1983. The facility contains two pressurized water nuclear reactors and is located in Burke County, Georgia, 26 air miles south southeast of Augusta and 15 air miles east northeast of Waynesboro. Each unit is designed to operate at a net electrical output of approximately 1160 megawatts.

The Nuclear Regulatory Commission (NRC) published a *Federal Register* Notice of Opportunity for Hearing on December 28, 1983. 48 Fed. Reg. 57,183 (1983). Petitions for leave to intervene and requests for hearing were subsequently filed by GANE, Campaign for a Prosperous Georgia (CPG), Coastal Citizens for a Clean Environment, and the Consumers' Utility Counsel of Georgia. On January 31, 1984, this Board was established to rule on the petitions to intervene and to preside over the proceeding in the event a hearing was ordered. 49 Fed. Reg. 4570 (1984).

The Consumers' Utility Counsel withdrew its petition for leave to intervene on February 20, 1984, and in a Memorandum and Order dated

March 9, 1984 (unpublished), we ruled that Coastal Citizens for a Clean Environment had not demonstrated the necessary interest to establish standing to intervene.

On May 30, 1984, the Board conducted a prehearing conference to consider some two dozen proposed contentions submitted by GANE and CPG, many of which were identical. Thereafter, by Memorandum and Order of September 5, 1984 (LBP-84-35, 20 NRC 887), the Board admitted for adjudication nine separate contentions on environmental and technical issues, which GANE and CPG adopted as Joint Intervenors. Contentions on emergency planning were permitted to be refiled after the emergency plans were submitted. This caused consideration of emergency planning issues to be delayed and considered separately from the other matters.

The contentions admitted by the September 5 Order, with their original numerical designations, were: Contention 7 (alleging a lack of assurance that a spill of radioactive water on site would not result in contamination of the aquifers underlying the site); Contention 8 (alleging a failure to enforce a quality assurance program in the construction of the facility that provides adequately for the safe functioning of diverse structures, systems, and components); Contention 10.1 (alleging that Applicants have failed to assure that certain polymer materials, to be employed in components of the VEGP that perform safety-related functions, are environmentally qualified); Contention 10.3 (alleging a lack of assurance that the environmental qualification of single conductor cables is representative of multiconductor performance); Contention 10.5 (alleging that Applicants have failed to assure that certain models of solenoid valves that are used to perform safety-related functions in the VEGP are environmentally qualified); Contention 10.7 (questioning whether the VEGP hydrogen recombiners have transducers or sensors that need to be qualified and whether the recombiners have been qualified as a unit); Contention 11 (alleging that Applicants have failed to consider vibration-induced fatigue cracking and bubble-collapse-induced water hammer in the VEGP steam generators); Contention 12 (alleging that Applicants had not properly assessed the amount of salt and chlorine gas release from the cooling towers and the extent of consequent adverse agricultural and environmental damage); and Contention 14 (alleging that there is no reasonable assurance that the emergency diesel generators manufactured by Transamerica Delaval, Inc., to be used at VEGP, will be adequate).

Following discovery, Applicants then moved for summary disposition of each of the admitted contentions in which they were supported by Staff. Intervenors responded only to the motions concerning Contentions

7 and 8. The Board granted summary disposition on all of the motions except those involving Contentions 7, 10.1, and 10.5.¹

The Board granted in part, and denied in part, Applicants' motion for summary disposition of Contention 7 and denied the motion as to Contention 10.1. The matters to be litigated in each of the contentions were identified in the Memoranda and Orders ruling on the motions for summary disposition.²

Hearing on the contentions commenced on March 11, 1986, at Waynesboro, Georgia, and continued through March 14, 1986. Applicants, GANE, CPG, and Staff appeared, GANE and CPG without counsel.³ CPG took the time allotted for making an opening statement to comment adversely on the Commission's hearing process and then immediately withdrew from the proceeding. (In this Decision where the term Intervenor is used, it pertains to the time when GANE and CPG were both participating in the proceeding. The singular is used to identify GANE.) Applicants and Staff presented witnesses to testify on each of the contentions and cross-examined GANE's witnesses. GANE presented a witness and cross-examined on Contention 7 but not on 10.1. Attached as an appendix (not published) is a list of the witnesses that testified at the hearing on Contentions 7 and 10.1.

At the conclusion of the hearing the Board directed that the parties file proposed findings of fact and conclusions of law in accordance with the schedule set forth in 10 C.F.R. § 2.754. Filings were made by Applicants and Staff as directed. The witness who had testified on behalf of GANE on Contention 7 submitted timely proposed findings in the name of GANE for the contention, but he was not an authorized representative of the organization. The Board permitted GANE to adopt his filings, which the organization did on May 30, 1986. It is permissible not to require the same precision in the filings of a layperson than is demanded of a lawyer. No prejudice was shown to have resulted from this course and the timely proposed findings were considered as if they were filed by GANE in the first instance.

The Board reached its decision in this proceeding upon consideration of the entire record pertaining to Contentions 7 and 10.1. All proposed findings of fact and conclusions of law submitted by the parties on the

¹ The unpublished Memoranda and Orders granting the motions are dated as follows: Contention 8, October 3, 1985, *reconsideration denied*, December 3, 1985; Contention 10.3, August 21, 1985; Contention 10.7, November 5, 1985; Contention 11, September 3, 1985; Contention 12, December 24, 1985; and Contention 14, November 25, 1985.

² The unpublished Memoranda and Orders ruling on the motions are dated as follows: Contention 7, November 18, 1985, *reconsideration denied*, January 8, 1986; and Contention 10.1, January 23, 1986, *partial reconsideration granted*, February 14, 1986.

³ Counsel for Intervenor withdrew from the proceeding on January 28, 1986.

two contentions, that are not directly or inferentially considered in this Initial Decision, were rejected as unsupported in fact or law or as unnecessary to the rendering of the decision. The Board's findings of fact are supported by reliable, probative, and substantial evidence of record that was presented by competent witnesses. The Board has concluded as to the matters considered in this Partial Initial Decision that should operating licenses be issued to Applicants for VEGP, it will not be inimical to the common defense and security or to the health and safety of the public.

At the time the oral hearing concluded on March 14, 1986, there remained, of the eight contentions admitted for litigation on the issue of emergency planning, six that were unresolved. Two had previously been disposed of by motions for summary disposition.⁴ This posed the possibility of a further hearing on emergency planning issues. Motions then were filed for summary disposition of the remaining contentions, which the Board granted, the last on July 17, 1986.⁵ All of the motions for summary disposition of the emergency planning contentions were unopposed. As a result of the disposition of all of the emergency planning contentions, there was nothing left for the Board to adjudicate in the proceeding beyond the issues raised in the oral hearing. By notice to the parties of August 5, 1986, we advised: (1) that we considered the entire record closed and (2) an initial decision would be issued, not a partial initial decision as was envisioned as of the close of the oral hearing. The issuance on August 25, 1986, of Board Notification No. 86-18, however, caused the Board to defer ruling on Contention 10.5 and to issue this Partial Initial Decision. The Board Notification advised that Staff had forwarded a request for additional information to Applicants on their main steamline break (MSLB) analysis, which relates to the environmental qualification of certain ASCO solenoid valves considered in Contention 10.5. The Staff's request in part questioned the applicability of the methodology used for the qualification of ASCO valves exposed to superheat conditions following an MSLB outside of containment. The Board retains jurisdiction of Contention 10.5, the only contested issue yet to be decided in the proceeding.

⁴ The unpublished Memoranda and Orders ruling on the motions are dated as follows: Contention EP-6, February 3, 1986; and Contention EP-7, August 12, 1985, *reconsideration denied*, October 1, 1985, *refiled motion granted*, March 6, 1986.

⁵ The unpublished Memoranda and Orders ruling on the motions are dated as follows: EP-1/EP-1(a)/EP-2(b), May 12, 1986; EP-2/EP-2(a), May 15, 1986; EP-2/EP-2(c), May 22, 1986; EP-2/EP-2(h), May 5, 1986; and EP-5, July 17, 1986.

II. FINDINGS OF FACT

A. Ground Water Contamination — Contention 7

Background

1. As admitted by our Memorandum and Order dated September 5, 1984, Contention 7 states as follows:

Applicant has not adequately addressed the value of the ground water below the plant site and fails to provide adequate assurance that the ground water will not be contaminated as required by 10 C.F.R. 51.20(a), (b), and (c), 10 C.F.R. 50.34(a)(1), and 10 C.F.R. 100.10(c)(3).

LBP-84-35, *supra*, 20 NRC at 898. The gravamen of Contention 7 is that an accidental spill of radioactive water on the Plant Vogtle site could result in radioactive contamination of the water table and possibly the deeper aquifers under the site.

2. On July 15, 1985, the Applicants filed "Applicants' Motion for Summary Disposition of Joint Intervenors' Contention 7 (Groundwater)." The motion was granted in part and denied in part by our Memorandum and Order (Ruling on Motion for Summary Disposition of Contention 7 re: Groundwater Contamination), issued November 12, 1985 (November 12 Order). Those issues satisfied by Applicants in the motion to strike were the following: whether data on ground water should be analyzed statistically; whether settlement of the VEGP has deformed the marl and thus affected its ability to function as an aquiclude; whether radioactive water in the auxiliary building (resulting from an accidental spill) could leak through the walls and into ground water; whether there is significant uncertainty with regard to the geology and hydrology under the marl; whether hazardous chemical wastes are covered by the contention; whether ground water contamination experience at the Savannah River Plant (SRP) can be extrapolated to VEGP; and whether exploratory wells could provide a pathway for radioactive contaminants to reach ground water.

3. There were five issues of material fact remaining to be litigated, as found by the November 12 Order. Those issues were:

- (1) Adequacy of the Geological/Hydrological Exploration of the Vogtle Site;
- (2) Uncertainty in Data on Marl Thickness and Permeability;
- (3) Data on Marl Continuity;
- (4) Direction of Ground Water Flow; and
- (5) Ground Water Travel Time.

4. Each of the parties prefiled testimony on this contention and sponsored witnesses who testified with respect to it at the hearing. Applicants prefiled testimony by Thomas W. Crosby, Clifford R. Farrell, and Lewis R. West (hereinafter Crosby, *et al.*, ff. Tr. 253) and testimony of Dr. Stavros S. Papadopoulos on Contention 7 (hereinafter Papadopoulos, ff. Tr. 253). We have examined the qualifications statements of these witnesses and find that they are well-qualified geologists and/or hydrogeologists. Joint Intervenor prefiled testimony by William F. Lawless (hereinafter Lawless, ff. Tr. 720) and an attachment to the Lawless testimony characterized as an analysis of the Board's November 12 Order and dated December 15, 1985 (hereinafter Lawless Attachment, ff. Tr. 720). No qualifications statement was appended to the filing by Mr. Lawless, but we are able to assess his qualifications from the cross-examination of the witness at the hearing. Tr. 721-28. Mr. Lawless, who is currently an Assistant Professor of Mathematics at Paine College, formerly worked for the Department of Energy's Savannah River Plant (SRP) where he had some experience reviewing reports and managing research projects dealing, at least in part, with ground water hydrogeology. He has had no training in geology or hydrology, however; his formal training has been in mathematics. We find him to have a general familiarity with the scientific method and to be conversant in the area of ground water hydrology, but his professional qualifications are in the area of mathematics, not ground water hydrology. The NRC Staff prefiled testimony of Lyman W. Heller and Raymond Gonzales (hereinafter Heller and Gonzales, ff. Tr. 764). Their qualifications statements show that they are qualified geological and hydraulic engineers.

Discussion

5. To make the context of Contention 7 understandable, we shall begin with a brief description of the VEGP site geology and hydrology. In the discussions that follow, we have relied on the testimony that we found convincing.

6. Plant Vogtle is located on the Coastal Plain of Georgia. The Coastal Plain is underlaid by a sequence of sedimentary formations consisting of alternating beds of sand, clay, marl, and limestone sediments atop a basement complex of older sedimentary, crystalline, and metamorphic rocks. Crosby, *et al.*, ff. Tr. 253, at 2. The Tuscaloosa Formation overlies the older basement complex and consists of sands and gravels with scattered beds of silt and clay deposited in late Cretaceous time (about 90 million years ago). *Id.* at 3. The Huber and Ellenton Formations overlie the Tuscaloosa Formation and consist of dark gray sandy

clays and silts and multicolored clays deposited during the Paleocene Epoch (Tertiary Period). The Lisbon Formation was deposited atop the Huber and Ellenton Formations during the Eocene Epoch (Tertiary Period). This formation is comprised of a lower calcareous sand unit, called the "unnamed sands" because it has no formal name, and an upper calcareous clay unit named the Blue Bluff marl. Finally, the Barnwell Group of sediments was deposited over the Lisbon Formation during the late Eocene Epoch and consists of sand with minor amounts of clay and limestones. The lowest stratum in the Barnwell Group, the Utley Limestone, was locally deposited on the Blue Bluff marl and is not present everywhere. The overlying sediments of the Barnwell Group are composed primarily of sands and silts which are exposed at the surface in the Plant Vogtle area. *Ibid.*

7. There are two major aquifers in the coastal plain region, both of which occur under the Vogtle site. The lower aquifer is called the Cretaceous aquifer and consists primarily of the sands and gravels of the Tuscaloosa Formation; it is often referred to as the Tuscaloosa aquifer. The upper aquifer is called the Tertiary aquifer and consists primarily of permeable sands and limestones of several Tertiary-age geologic formations. At the Vogtle site the Tertiary aquifer consists of the unnamed sands of the Lisbon Formation. Both of these aquifers are confined under the Vogtle site, with the uppermost confining layer being the Blue Bluff marl of the Lisbon Formation. *Id.* at 4. In addition to these aquifers, ground water also exists in the Barnwell Group in shallow, discontinuous bodies and is referred to as the water-table aquifer. *Id.* at 4-5.

Issues of Material Fact

(1) Adequacy of Geological/Hydrological Exploration of Vogtle Site

8. In denying in part Applicants' Motion for Summary Disposition we pointed to three inadequacies in Applicants' program for exploring the geology and hydrology of the Vogtle site that the Staff had identified in the Safety Evaluation Report (June 1985) (SER) and Applicants had agreed to correct. We concurred with the Staff that further evaluation was needed. This involved further monitoring of the water-table aquifer and backfill to establish the design-basis ground water level. In addition, Staff required additional wells in the marl because of the limited monitoring that had been done over the full depth of the marl. Finally, Staff is requiring that the Tuscaloosa aquifer be monitored by reading observation wells on a monthly basis, to determine the long-term

effect of withdrawing water from the aquifer. November 12 Order at 12-13.

9. During the summer of 1985, a further program of geotechnical verification work was conducted at Plant Vogtle to resolve NRC Staff questions and to acquire supplementary data on site characteristics. The work consisted of conducting standard penetration tests of the backfill, core drilling and *in situ* permeability testing of the marl, laboratory measurement of marl permeability, observation well installation, and laboratory measurement of the cation exchange capacity and equilibrium distribution coefficient of the backfill. Crosby, *et al.*, ff. Tr. 253, at 7-8.

10. At the time the Motion for Summary Disposition was filed, Applicants were still conducting laboratory permeability tests on cores taken from the marl in June 1985, and data from well series 42 were still being supplemented and confirmed by data from additional wells. At the hearing the Staff witnesses testified that, based on Staff's review of Applicants' report entitled "Geotechnical Verification Work — Report of Results," the geological exploration of the Vogtle site is now adequate. That report, which was submitted to Staff by GPC on August 23, 1985, describes the exploratory work carried out by six core borings into the marl and the results of pressure tests conducted in the cored holes. Heller and Gonzales, ff. Tr. 764, at 4. In addition, laboratory permeability tests were conducted on ten core samples from the marl, the results of which indicated that the marl permeability is about 10^{-7} centimeters per second (cm/s). This value is consistent with the description and classification of the marl. *Id.* at 5.

11. To address the Staff's concern about the design-basis ground water level in the unconfined aquifer, which related to a structural rather than a ground water contamination concern, Applicants installed four new monitoring wells in the plant backfill and two new wells in the Barnwell sediments. Two of these wells have continuous water level recorders, and the remainder are being monitored on a weekly basis. *Id.* at 7. The Staff will impose a license condition for VEGP to require this monitoring throughout the life of the plant, although the frequency of monitoring will be subject to change. *Id.* at 8. Data thus far indicate that the water level in the unconfined aquifer has remained well below the 165-foot design-basis level. Crosby, *et al.*, ff. Tr. 253, at 34-35.

12. In response to the SER concern regarding marl permeability, Applicants performed six continuous and controlled core borings into the marl. The wells were located in two clusters at opposite corners of the power block. Heller and Gonzales, ff. Tr. 764, at 8. Data on pore pressure distribution within the marl obtained from these wells provide additional evidence that the marl is an aquiclude that impedes the movement

of ground water from the water-table aquifer to the lower aquifers. *Id.* at 16.

13. The monitoring of the Tuscaloosa aquifer called for in the SER is an environmental concern intended to ensure that the withdrawal of water from this aquifer will not have an adverse impact on other ground water users. *Id.* at 8. This monitoring will be required throughout the lifetime of the plant. *Id.*; Crosby, *et al.*, ff. Tr. 253, at 35-36.

14. Laboratory permeability tests on ten samples obtained during core drilling of the marl, which gave permeabilities ranging from 10^{-6} to 10^{-8} , together with *in situ* field tests, confirm that the marl is nearly impermeable. Heller and Gonzales, ff. Tr. 764, at 9. Staff testified that its requirement for additional geologic and hydrologic exploration of the marl has now been satisfied. *Id.* at 6, 13.

15. Intervenor's witness Lawless testified that breaching the marl in order to monitor it may have resulted in the creation of flow pathways through the marl. The witness cited no data or other source of information to support this statement, however. The suggestion apparently is pure speculation. Lawless, ff. Tr. 720, at 7.

16. The Board finds that the further geological/hydrological exploration called for by the Staff in the SER, for the purposes set forth, *supra*, in ¶ A.8, has been adequately carried out by Applicants.

17. Prior to the 1985 explorations called for in the SER, Applicants conducted extensive investigations of the geology and hydrology at and in the vicinity of the plant. Crosby, *et al.*, ff. Tr. 235, at 5. The investigations commenced with site exploration in 1971. A thorough literature search, stereoscopic examination of color air photographs, detailed evaluation of geologic conditions at and within 5 miles of the site, and geologic reconnaissance along 12 miles of the Savannah River bluff upstream and downstream were conducted. Geological field investigations included geologic mapping, drilling, and geophysical surveys. During this phase of the investigation, 474 exploratory holes were drilled for a total of 60,000 feet of hole. The drilling program included electric logging, natural gamma, density, neutron, caliper, and three-dimensional velocity logs in selected drill holes. Menard pressure meter tests were performed to determine *in situ* engineering properties of the marl, which is the load-bearing unit for plant structures. The geophysical surveys consisted of a total of 28,400 feet of shallow-refraction seismic lines, 5000 feet of deep-refraction lines, and cross-hole velocity measurements in the upper 290 feet of materials. *Id.* at 5-6.

18. Ground water studies were also conducted during initial site exploration. These studies included *in situ* permeability testing, installation and monitoring of observation wells, and canvasses of offsite, nonproject

wells. A total of 280 wells were located and inspected on the west side of the Savannah River. These included all wells in use within 7 miles of the site and an estimated 60% of the wells beyond to a distance of 10 miles from the site. *Id.* at 6.

19. Investigations of the geology and hydrology at VEGP continued during site excavation and construction. These included detailed geologic mapping of the soil and rock strata exposed during the power block excavation plus coring and testing of the Blue Bluff marl. Over 100 additional exploratory holes were drilled in the vicinity of Plant Vogtle. In addition, since initial site exploration in 1971, thirty-seven observation wells have been used to monitor water levels in the water-table aquifer, and the Tertiary aquifer has been monitored by twenty-three wells. Data have also been obtained from four wells open to the Cretaceous aquifer. *Ibid.*

20. In May and June of 1982 another major well canvass was conducted to accumulate a comprehensive hydrogeologic data base to evaluate the postulated Millett fault. A total of 886 wells encompassing an area of approximately 4400 square miles surrounding the plant were investigated. Geophysical well log data from both the State of Georgia Geological Survey and the U.S. Geological Survey were obtained and analyzed. As part of the Millett study, twelve observation wells were installed along two lines southeast of the plant. The wells were drilled through the marl, and water levels were monitored in the Tertiary and Cretaceous aquifers below the marl. Data from these and other core holes provide accurate definition of the depth of geologic units, lithology, and aquifers from the plant to 19 miles southeast of the plant, and evidence of the lateral extent of the marl in that direction. Even more recently, in 1984, a well canvass was conducted to identify all offsite wells within 2 miles of the plant.⁶ *Id.* at 7 and Fig. 3.

21. Witness Farrell testified that he believes that the exploration done is adequate for characterization of ground water, and witness Papadopoulos testified that the number of wells to the north and northwest, in the direction of ground water flow, is more than adequate to establish the presence of the marl. Tr. 272-73. Witness Crosby testified that the Blue Bluff marl was also explored to the south and southeast by core holes and that examination of core holes throughout the plant site gives confidence that the marl is consistent throughout the area. Tr. 281. Dr. Papadopoulos attested that he, too, believes, based on his professional

⁶ On brief, Intervenor speculates that the Applicants' geological/hydrological surveys "appear to have treated protection of the ground water as a secondary consideration," citing Crosby, *et al.*, ff. Tr. 253, Fig. 4, Tr. 271-73, and Tr. 280-81. Lawless PF at 10. The testimony cited, however, contradicts this speculation.

experience, that the number of wells at the site is more than adequate to establish the continuity of the marl. Tr. 274. Staff Witness Heller testified that in his opinion, the data set now available for the marl indicates the marl to be continuous and to provide an effective impediment to ground water movement from the backfill to the aquifer directly below the marl. Heller and Gonzales, ff. Tr. 764, at 14. Finally, witness Gonzales attested that based on a review of all the information that has been made available to the Staff, he concludes that there is no need for concern that the water table and underlying aquifer will be contaminated by normal plant operation or a design-basis accident. *Id.* at 25.

22. The Board finds that the geological and hydrological exploration at VEGP is adequate to accurately characterize the geological formations and ground water conditions beneath the site.

(2) Uncertainty in Data on Marl Thickness and Permeability

23. As we indicated, *supra*, at ¶ 8, Staff had required in the SER that additional exploration over the full depth of the marl was needed because of the limited monitoring of the marl prior to 1985. Because the required work was still in progress in November 1985, this issue remained to be litigated.

24. The Blue Bluff marl is a densely consolidated, fine-grained calcareous clay with subordinate lenses of dense, well-indurated, well-cemented limestone. Reported values of the permeability of unweathered clays, of which the marl is a type, range from 10^{-7} to 10^{-10} cm/s. Crosby, *et al.*, ff. Tr. 253, at 12.

25. Thickness and permeability of the marl were tested *in situ* during the site exploration in 1971-1983; eighty packer tests and permeameter tests were conducted in twenty-two drill holes. During the geotechnical verification work conducted in the summer of 1985 an additional fifteen packer tests were performed in six new holes, and laboratory permeability measurements were taken on ten samples from these holes. *Id.* at 9, 13-14; Tr. 281. Marl thickness was determined by data from more than 200 exploratory holes and wells, which included approximately 25 south of the power block area (the power block area includes the entire backfilled excavation) and a large number to the north.⁷ Crosby, *et al.*,

⁷ The Staff's written testimony stated that marl thickness was known from 33 exploratory holes, which Staff considered to be a more than adequate number. Heller and Gonzales, ff. Tr. 764, at 11. Witness Heller cited Table 2B-2 of the FSAR as the source of this information. *Id.* But Table 2B-2 is merely a catalogue of selected marl core samples, obtained from 33 principal borings, that were placed in protective storage. FSAR § 2B.2. FSAR Table 2B-1, however, tabulates drilling statistics of 354 borings. *Id.* § 2B.1. Far more than 33 of these holes were deep enough to penetrate the marl. Moreover, Witness Farrell testified that more than 200 holes penetrated the marl. Tr. 663.

ff. Tr. 253, at 8 and Fig. 4; West, Tr. 810-11; Tr. 267. The marl is 65 to 70 feet thick and extends over an area well beyond the limits of the plant site and the interfluvial ridge on which the site is located. Because of excavation, marl thickness has been reduced to generally about 60 feet under the power block. An exception occurs under the auxiliary building, where additional excavation to accommodate the building's foundation reduced marl thickness to 38 feet. Crosby, *et al.*, ff. Tr. 253, at 12-13; Heller and Gonzales, ff. Tr. 764, at 11; Tr. 379.

26. During site exploration, *in situ* permeability tests were performed at eighty intervals of varying depth in twenty-two exploratory holes. Constant-head inflow methods were used. In twenty of the holes, inflatable packers were used to isolate a specified test interval, and water was injected under pressure into the isolated interval. Crosby, *et al.*, ff. Tr. 253, at 13; Papadopoulos, Tr. 451. In two holes near the intake structure, permeameter tests were conducted. Crosby, *et al.*, ff. Tr. 253, at 13. In nearly all of the test intervals, no measurable water inflow occurred. Water inflow from test intervals into the marl was measured in only three holes. Two of these were in near-surface, weathered marl at the intake structure. Three other cases of apparent water inflow actually resulted from leakage around the packers. *Id.* at 13-14. These results indicate a permeability of less than 10^{-7} cm/s, which would allow 1.5 to 2 inches per year of water to pass through the marl. This estimate of permeability is consistent with the total recharge, about 15 inches per year, that is available to the water-table aquifer. Were the permeability of the marl as high as 10^{-6} cm/s the flow through the marl would be about 20 inches per year and the water-table aquifer above the marl would not exist. Papadopoulos, Tr. 451.

27. *In situ* permeability testing was conducted again in the summer of 1985, at fifteen intervals in six new holes. The entire thickness of the marl penetrated in the holes was tested in 10-foot intervals, to ensure that all of the marl and interbedded limestone lenses were tested. In all of these *in situ* tests water intake was zero. Thus, results from the recent *in situ* tests confirmed the earlier *in situ* measurements. Crosby, *et al.*, ff. Tr. 253, at 14.

28. The laboratory permeability tests on ten marl core samples collected in the summer of 1985 gave permeabilities ranging from 8.5×10^{-6} to 5.0×10^{-9} cm/s. *Ibid.* There were five values in the 10^{-6} range, three in the 10^{-7} range, one in the 10^{-8} range, and one in the 10^{-9} range. Papadopoulos, Tr. 391. The harmonic mean of these permeability tests is

4.3×10^{-8} .⁸ Crosby, *et al.*, ff. Tr. 253, at 20. The harmonic mean is the appropriate statistic for estimating average rate of water movement across a layered earth system, and the Blue Bluff marl has such a layered heterogeneity. *Ibid.*; Papadopoulos, Tr. 587-89; *also see* VEGP-FSAR, at 2.5.1-19 and Fig. 2.5.1-24. Water movement through the marl is primarily in the vertical direction, across the layers. Papadopoulos, Tr. 591. Moreover it is the vertical component of flow in the marl that is of interest. *Id.*, Tr. 588. We conclude that it is clearly appropriate to use the harmonic mean of the permeabilities of the core samples, rather than the arithmetic mean.

29. Applicants used the harmonic mean only as a check on the permeability of 10^{-7} cm/s (0.1 foot per year (ft/yr)) estimated from the *in situ* tests, which was adopted by Applicants as the upper bound of marl permeability. The mean of 4.3×10^{-8} cm/s (0.045 ft/yr) from the laboratory permeability tests indicates that the 0.1-ft/yr estimate is reasonably conservative.⁹ Crosby, *et al.*, ff. Tr. 253, at 20. *In situ* permeability tests are generally considered to be more accurate than laboratory tests on core samples, because laboratory samples are of small size and therefore may not be representative, and the samples are necessarily disturbed when extracted. Papadopoulos, Tr. 451-52; Gonzales, Tr. 769. We conclude that the evidence establishes that the permeability estimate of 10^{-7} cm/s is both reasonably accurate and reasonably conservative.

30. The Board finds that there is sufficient certainty in the data on marl thickness and permeability to resolve this issue in Applicants' favor.

(3) Data on Marl Continuity

31. The continuity of the Blue Bluff marl, i.e., the lack of voids, open joints, or fractures, has been demonstrated at VEGP by a program of drilling, coring, standard penetration testing, and undisturbed sampling that has penetrated over 10,000 feet of the marl since 1971. During coring, the most revealing evidence of voids or fractures is a loss of drilling fluid and/or a sudden or rapid advance of the core barrel. At no time during the testing program was there any unaccountable fluid loss or abnormal tool advance in the marl. Very few joints or fractures were observed, and those identified were consistently found to be tight and with-

⁸ Intervenor challenges Applicants' use of the harmonic mean, on the grounds that Applicants have not shown that the marl is layered or that water movement through the marl is predominantly vertical. Lawless PF at 14. There is no basis for either allegation.

⁹ On brief, Intervenor proposed a permeability value for the marl of 0.5 ft/yr, or 5×10^{-7} cm/s, and calculated ground water travel time across the 38-foot-thick section of marl beneath the auxiliary building on this basis. Lawless PF at 18. This permeability value was suggested *de novo* and totally lacks any evidentiary basis. Consequently it must be rejected.

out voids. Crosby, *et al.*, ff. Tr. 253, at 14-15. More than 200 holes penetrated the marl and showed it to be a tight, calcareous clay of essentially constant thickness throughout the area. Farrell, Tr. 663-64.

32. Visual inspection and detailed logging and photographing of more than 500 feet of extracted samples of marl have likewise produced no indications of voids or extensive fracture zones. Marl that was exposed during excavation in the power block was examined directly and carefully logged by qualified geologists. This included more than 900,000 square feet of the upper surface of the marl in the power block excavation, more than 20,000 square feet of vertical face in the auxiliary building excavation, and more than 20,000 square feet in the radwaste solidification building caisson excavation. These extensive and detailed mapping investigations of the marl produced an abundance of data indicating an absence of voids, solution cavities, and systematic or extensive fractures or joint sets in the marl. Crosby, *et al.*, ff. Tr. 253, at 15-16.

33. The report from the 1985 geotechnical verification work presented geologic drill logs for the new holes drilled into the marl, which provide evidence that the marl is continuous and lacks detectable paths for water to leak into the lower aquifer. Heller and Gonzales, ff. Tr. 764, at 16. Staff testified as to additional evidence which also demonstrated the marl to be an effective and continuous aquiclude; the evidence is found in another report, "Vogtle Energy Generating Plant — Groundwater Monitoring Program July-December, 1985" that was attached to a letter, dated February 6, 1986, from J. Baily to B.J. Youngblood at the NRC. *Id.* at 14-15.

34. The large and consistent hydraulic head differential between the water-table aquifer and the confined aquifer immediately below the marl confirms that the marl is a barrier to significant ground water movement. Crosby, *et al.*, ff. Tr. 253, at 16. The hydraulic head or energy potential of ground water in an aquifer is commonly expressed in units of feet above sea level and is determined by measuring the elevation of water in an observation well. *Ibid.* Observation wells constructed in 1971, including two open to the marl itself and one each open to the confined and water-table aquifers, showed that in the vicinity of VEGP the hydraulic head in the water-table aquifer is 45 to 55 feet greater than the hydraulic head in the aquifer immediately below the marl. *Ibid.* These wells were monitored for 4 years until construction of the plant required their closure. *Id.* at 17.

35. In addition, two clusters of piezometers were installed in the power block in June and July of 1985 at opposite corners of the power block; they provide a direct measurement of hydraulic head over the full depth of the marl. The differences in hydraulic head between

piezometers within a cluster show a progressive decline in head with depth which is consistent with the results obtained from the observation wells installed in 1971.¹⁰ *Id.* at 18.

36. The Board finds the data regarding the continuity of the marl to be adequate; they show that there are no voids, fissures, or fractures that would allow radioactive material which might get into the water-table aquifer as a result of an accidental spill at VEGP to move into the confined aquifers below the marl.

(4) The Direction of Ground Water Flow

37. Three ground water maps for the Vogtle area dated November 1971, March 1980, and December 1984 showed differences in the flow fields sufficient to suggest the possibility that flow fields under VEGP may shift and change. These maps led Intervenorors to challenge Applicants' claim that ground water flow from the plant would be to the northwest, toward Mathes Pond; Intervenorors alleged that flow could occur to the southeast and southwest as well. November 12 Order at 23-24.

38. Because the marl will prevent significant vertical movement of contaminants through it, any migration of contaminants from an accidental spill at VEGP would be predominantly lateral in the direction of the decreasing head in the water-table aquifer. Crosby, *et al.*, ff. Tr. 253, at 21.

39. The November 1971 map shows ground water conditions prior to construction of the plant, with the highest ground water level of 162 feet south of the plant, and another high ground water level of 161 feet northeast of the plant. Both of these elevations are higher than the ground water level of 160 feet that is directly underneath the plant. These two ground water levels indicate a ridge in the ground water surface extending from northeast of the plant to south of the plant. If the plant were located astride the ridge, contaminants from a spill at the plant might flow in both directions. Staff testified that because the plant is located northwest of the ridge and ground water can only flow downgradient, it is not possible for ground water to move from a level of 160 feet beneath the plant to a higher elevation along the ridge located south of the plant. Heller and Gonzales, ff. Tr. 764, at 17.

40. The November 1971 map also shows that ground water levels west of the plant are even higher at an elevation of 165 feet; therefore

¹⁰ Although Intervenor stated that this issue was addressed in § II.B of its proposed findings, it was not. Lawless PF at 2.

there could be no flow in a westerly direction. Flow in a northerly direction is also impossible, because ground water would have to move from an elevation of 160 feet beneath the plant down to an elevation of 155 feet, and then back up to an elevation of 160 feet. Staff believes that the only direction ground water can flow from the plant is in a north-westerly direction. *Id.* at 18.

41. The March 1960 map suggests that the flow fields around the plant are directed back toward the plant, but this circumstance resulted from the effects of a temporary construction-related activity. The excavation of the power block extended well below the ground water level. To prevent sloughing of the excavation side slopes and to ensure dry, firm working conditions, the construction area was dewatered; the 1980 map reflects the effects of this dewatering program. The dewatering program was terminated once construction was completed. *Ibid.*

42. The post-construction December 1984 map is similar to the pre-construction November 1971 map in that it suggests a ground water ridge extending from south of the plant to northeast of the plant. This result indicates that dewatering was a temporary condition and suggests that water table has returned to approximately the 1971 configuration. *Id.* at 19; Crosby, *et al.*, ff. Tr. 253, at 22. Applicants' witnesses acknowledged, however, that changes in the water table due to construction preclude, at this time, a precise definition of its future configuration. Consequently, a flow path to the northeast cannot be unequivocally eliminated as a possibility. *Id.* at 31. But in any case, the ground water ridge running south to northeast will prevent ground water flow in a southerly direction. *Id.* at 23; Heller and Gonzales, ff. Tr. 764, at 19; Farrell and Papadopoulos, Tr. 673-77; Gonzales, Tr. 774. Ground water records taken for a period of 3 years prior to the start of construction indicated a persistent divide south of the site.¹¹ Papadopoulos, Tr. 675.

43. Ground water levels north and west of the plant are also lower than at the plant, but the gradients in those directions are flatter than the gradient toward the northwest. Heller and Gonzales, ff. Tr. 764, at 19. Since ground water flow follows the path of least resistance, flow will be toward the northwest. *Ibid.* Ground water moving northwestward from beneath the power block would eventually reach Mathes Pond. Crosby, *et al.*, ff. Tr. 253, at 23; Crosby, Tr. 401; Papadopoulos, Tr. 486. If radionuclides from a spill at the plant moved in ground water to Mathes

¹¹ On brief, Intervenor argues that contaminants can move upgradient because of a hydraulic head and concentration gradient resulting from a spill. Lawless PF at 19-20. Nothing in the record supports this claim, however. Intervenor also refers to Figure 16 of Applicants' testimony which showed that in 1985 the ground water divide had shifted closer to the power block. *Id.* at 20. This shift is believed to be the temporary result of localized recharge caused by the addition of water to the area during placement of the backfill. Crosby, *et al.*, ff. Tr. 253, at 22.

Pond, their concentrations would be further diluted to below maximum permissible concentration (MPC) levels for continuous routine releases as ground water slowly discharged into Mathes Pond and, subsequently, to the stream below Mathes Pond. Crosby, *et al.*, ff. Tr. 253, at 23, 30-31.

44. If, on the other hand, flow is northeasterly rather than toward Mathes Pond, contaminants reaching the water-table aquifer from the backfill would travel toward the Savannah River. *Id.* at 31. The discharge point would be on the bluff of the river at the head of a small tributary to the river. After discharging to the tributary, concentration of the spill would be diluted in the stream to below MPC levels. *Id.* at 32.

45. The Mathes Pond drainage has cut down to the marl, as have the other streams bordering the interfluvial ridge on which the plant is located, thus interrupting continuity between water-table aquifers. *Ibid.* Ground water in the water-table aquifers on both sides of the streams and the pond discharges into the streams and the pond and does not cross them. *Id.* at 10, 23. Since the interfluvial ridge on which the plant is located is bordered by the streams and pond, the water-table aquifer beneath VEGP is hydraulically isolated. *Ibid.* Consequently a spill at the site flowing in any direction could not impair any domestic or other wells located beyond the streams that border the interfluvial ridge. *Id.* at 23. There is only one well on the interfluvial ridge that draws water from the water-table aquifer beneath VEGP; it is located approximately 1.7 miles south of the plant, however, and an accidental spill would not move in that direction. *Ibid.* The determination that flow is northwestward is based on 13 years of records, from 1971 to 1984, and those records suggest that the divide can be expected to exist for the life of the plant. Gonzales, Tr. 774.

46. The Board finds that the evidence shows that radioactivity from an accidental spill that gets into the water-table aquifer can be expected to move either northwestward and eventually enter Mathes Pond or northeastward and eventually enter the Savannah River. In either case, the contaminants would pose no threat to domestic or commercial ground water supplies. Thus the issue of direction of ground water flow is satisfactorily resolved.

(5) *Ground Water Travel Time*

47. In its November 12 Order the Board acknowledged Intervenors' concern because Applicants and Staff had used a one-dimensional model to calculate ground water travel time, assuming the travel pathway to be the linear distance between point of spill and point of discharge, whereas at the Department of Energy's SRP across the river from VEGP a more

realistic three-dimensional model has been recently developed for estimating ground water travel times. The Board noted that at VEGP the hydraulic gradient becomes very steep as Mathes Pond and the Savannah River are approached from the plant, and it wanted to know whether a three-dimensional model that could account for changes in flow velocity as the water-table gradient changed would be superior to the one-dimensional model that had been used by Applicants and Staff.

48. The time required for ground water to migrate through the backfill toward Mathes Pond is determined by the permeability and porosity of the material and by the hydraulic gradient. The relationship between these parameters in determining ground water seepage is expressed by Darcy's Law:

$$V = Ki/n_e,$$

where

V = seepage velocity (L/T),

K = coefficient of hydraulic conductivity (permeability) (L/T),

i = hydraulic gradient (ratio), and

n_e = effective porosity (ratio).

Crosby, *et al.*, ff. Tr. 253, at 18-19.

49. Applicants' witness Papadopoulos addressed the foregoing question. Papadopoulos, ff. Tr. 253. Papadopoulos compared results calculated with a three-dimensional model with results calculated with the one-dimensional model and showed that the one-dimensional model gave a smaller travel time because the linear pathway is shorter than the three-dimensional pathway. *Id.* at 2-4 and Figs. 1 and 2. Staff took a different approach, arguing that since travel time and sorption would reduce radionuclide concentration within the homogeneous backfill to below 10 C.F.R. Part 20 limits by the time the contaminants left the backfill, the varying gradients between the site and Mathes Pond could be ignored.¹² Heller and Gonzales, ff. Tr. 764, at 20-24.

50. The Board finds that the concern with regard to use of the one-dimensional model has been resolved by the foregoing testimony, which shows the one-dimensional model to be more conservative than the three-dimensional model. Therefore we shall proceed now with our eval-

¹² Intervenor claims that Applicants assert "that the one-dimensional approach is . . . more conservative because the flow path is longer" (emphasis added), goes on to argue that it would be more correct "to assert that flow path is shorter in a one versus a three-dimensional model" (emphasis added), and concludes "it does not then follow that the one dimensional model is more conservative." *Ibid.* Intervenor appears to have misread the testimony of Dr. Papadopoulos, who testified "[s]ince the linear distance l is shorter than the three-dimensional pathway d , the travel time calculated by the one-dimensional approach is smaller." Papadopoulos, ff. Tr. 253, at 4.

uation of the estimates and testimony based on the one-dimensional model.

51. The backfill in the power block at VEGP is sand and silty sand compacted to an average of 97% of its maximum density. The permeability assigned to the backfill by Applicants was the maximum value measured *in situ*, 1220 ft/yr. Total porosity measurements of compacted backfill samples ranged from 31.6 to 37.6%, with an average of 34%. For sand and silty sand, total and effective porosity are essentially the same. The hydraulic gradient in the backfill along the Mathes Pond flow path is 3.5×10^{-3} , but for conservatism it was rounded off to 4.0×10^{-3} . Crosby, *et al.*, ff. Tr. 253, at 25-26. With these parameter values, Applicants estimated seepage velocity in the backfill, using Darcy's equation, to be 14.4 ft/yr. Using a flow path length of 550 feet, the ground water travel time in the backfill was estimated by Applicants to be 38.2 years. *Id.* at 26. Taking into account retardation due to radionuclide sorption, Applicants concluded that this travel time is sufficient to reduce the concentration of Sr-90 and Cs-137 spilled by rupture of the recycle holdup tank to below the maximum permissible concentration (MPC) limits of 10 C.F.R. Part 20. Tritium, on the other hand, is not retarded; it would migrate with ground water travelling through the backfill and would exceed MPC limits. These three radionuclides are considered important because of their long half-lives. *Id.* at 27-29.

52. The Staff performed its own calculations with Darcy's Law, using somewhat more conservative parameter values. Staff assumed a permeability of 2260 ft/yr and an effective porosity of 25% but used the same hydraulic gradient and length of flow path as Applicants. The resultant ground water velocity through the backfill is 36.6 ft/yr and the travel time would be 15 years. SER at 2-35. Staff assumed a rupture of the waste evaporator concentrate holdup tank and considered Co-60, Sr-90, Cs-134, and Cs-137. *Ibid.* Staff also assumed that once outside the backfill, radionuclides would travel rapidly through the Utley Limestone to a spring located at Mathes Pond. It conservatively ignored travel time through the Utley Limestone in calculating travel time to the spring. *Id.* at 2-34 and Fig. 2.9. Considering, then, a travel time of 15 years and the effects of sorption by soil and rock, Staff came to the conclusion that by the time the four radionuclides left the backfill, each would have a concentration that is a small fraction of the MPC limits set by 10 C.F.R. Part 20 and Part 100.¹³ *Id.* at 2-36; Heller and Gonzales, ff. Tr. 764, at 20-24.

¹³ Intervenor argues that Sr-90 is not retarded by sorption to the extent assumed by Applicants and Staff, citing the Final Environmental Impact Statement, L-Reactor Operation, Savannah River Plant

Continued

53. As was mentioned, *supra*, tritium is not retarded and would travel with the ground water; given the postulated accidents, tritium concentration in ground water would exceed the MPC limits. Crosby, *et al.*, ff. Tr. 253, at 29; Farrell, Tr. 306. If tritium migrated with ground water from the backfill and through the Utley Limestone to Mathes Pond, it would be further diluted in the pond and subsequently in the stream running from the pond to the Savannah River, so that its concentration would be below 10 C.F.R. Part 20 limits before it flowed off site. Crosby, *et al.*, ff. Tr. 253, at 29-30. If, on the other hand, tritium migrated from the backfill and through the Utley Limestone to the Savannah River, it would be diluted by stream water as it moved in the tributary toward the river. By the time it entered the river, the concentration would be about half the MPC value, and after entering the river it would be diluted to a negligible concentration almost immediately. *Id.* at 32-33. If tritium migrated downward through the 38 feet of marl under the auxiliary building, the estimated travel time for it to reach the confined aquifer below would be 123 years, because of the low ground water velocity in the marl. *Id.* at 20. When it finally reached the aquifer below the marl, the tritium [which has a half-life of 12.26 years] would have decayed to acceptably low concentrations. Farrell, Tr. 306.

54. We need not reach the question of whether the Staff's or Applicants' estimate of ground water travel time is the more acceptable, since the results from both show that radionuclide concentrations from the postulated accidents would be within MPC limits before migrating off site. We find that ground water travel time is sufficiently low to assure that any radionuclides that might be released by a design-basis accident into the water-table aquifer under VEGP would be reduced to acceptably low concentrations, as a result of sorption, dilution, and radioactive decay, or a combination of these factors, before migrating off site in ground water.

Settlement of the VEGP

55. Although not raised as an issue of material fact to be resolved at hearing, the Board permitted inquiry into a collateral issue regarding the

(May 1984) (L-Reactor EIS), the Technical Summary of Groundwater Quality Protection Program at Savannah River Plant (December 1983) (Technical Summary), and a report concerning the Edwin I. Hatch Plant. Lawless PF at 19. None of these documents is in evidence in this proceeding. Aside from that legal technicality, the two pages cited in the Technical Summary display maps, only, neither of which contains any reference to Sr-90, and the paragraph which discussed Sr-90 on the page cited in the L-Reactor EIS opens with the statement, "[s]trontium, unlike tritium, does not move over at the same rate as ground water" The Hatch report was not available to us. Evidence in this proceeding indicates that Sr-90 is retarded by sorption as assumed by Applicants and Staff; therefore Intervenor's claim to the contrary must be rejected.

impact that settlement of the VEGP would have on the grouted wells under the buildings in the power block. There are three grouted bore holes beneath the auxiliary building, eleven beneath unit 1 containment, three beneath unit 2 containment, and seven under the turbine building. West, Tr. 789-91. The issue is whether settlement might push the ground columns downward, causing slippage of the grout columns within the marl and thus opening a pathway for travel of contaminants. Tr. 713; Lawless, ff. Tr. 720, at 6.

56. Lawless testified that the well grout columns are likely to be less compressible vertically than the more elastic marl, and plant settlement would punch these well grout columns downward at a rate that might be different from the marl. Lawless Attachment, ff. Tr. 720, at 8. Applicants testified that the marl is actually more rigid than the grout columns. Crosby, Tr. 792. Moreover, slippage of the grout columns is very unlikely because the large surface area of grout in contact with the marl provides more than enough frictional area to prevent any movement. Crosby, Tr. 792-93. In addition, the unnamed sands under the marl are dense enough to resist punching of the grout columns into the lower sands. Crosby, Tr. 793; Papadopoulos, Tr. 805. Moreover, the plasticity of the marl would cause the marl to tend to deform and close any opening that occurred. Papadopoulos, Tr. 804-05; Crosby, Tr. 798.

57. Net settlement during the entire excavation, construction, and backfilling process has been about 1 inch. Crosby, Tr. 794. Net settlement is the difference between heave, which occurred before placement of the backfill, and gross settlement after placement of the backfill. At VEGP the heave was about 3 inches and the weight of the plant plus the backfill caused a total settlement of about 4 inches. Crosby, Tr. 815-16; Heller, Tr. 776-77.

58. The Board finds that the evidence shows that the grout columns under the building at VEGP will not move at a different rate than the marl, should there be additional settlement.¹⁴ Therefore they pose no risk to the integrity of the marl beneath the power block.

¹⁴ Additional settlement at VEGP is not expected to be significant, because backfilling is now 95% complete. Crosby, Tr. 794. Intervenor claims that the possibility of uneven settlement was raised in testimony. Lawless PF at 28. Intervenor's citation, however, was to the opening statement read into the record by Mr. Tim Johnson when he withdrew his organization, Campaign for a Prosperous Georgia, from this proceeding. See Tr. 229-40. Mr. Johnson's statement is not testimony. Moreover, the issue of continuing settlement at VEGP has already been resolved in this proceeding by our November 12 Order, where we found from the undisputed Affidavit of Walter R. Ferris (Sept. 7, 1985) that settlement at VEGP was essentially complete.

Conclusions

59. Based on the evidence of record, the Board finds that Applicants have adequately explored the geology and hydrology at VEGP and in its vicinity. The thickness, permeability, and continuity of the Blue Bluff marl have been established and will protect the underlying aquifers from contamination should an accidental spill or a design-basis accident occur at the plant. Further, the possible directions of ground water movement away from the plant and ground water travel time have been determined, and the results assure that a postulated spill would pose no threat to domestic or commercial water supplies. We also find that settlement of structures overlying grouted wells could not result in the opening of flow paths for contaminants through the marl. Thus, we conclude that the issues regarding contamination of the water table and protection of the underlying aquifers by an accidental spill or a design-basis accident are resolved. There is reasonable assurance that ground water used as public water supplies will not be contaminated by an accidental spill, including that resulting from a design-basis accident, at VEGP. Contention 7 is without merit.

B. Environmental Qualification — Contention 10.1

Background

1. This contention asserts that VEGP safety-related equipment containing certain polymer materials identified in a report by Sandia National Laboratories (Sandia), and cited by Intervenor, has not been properly qualified because of possible dose rate effects dealt with in the report. (Dose rate effects refers to a phenomenon whereby radiation degradation of some materials may depend upon the rate of radiation exposure even though the total integrated dose remains the same.) In this contention Intervenor relies upon one Sandia report (NUREG/CR-2157, discussed below) for the proposition that dose rate effects can distort conclusions regarding the acceptability of polymer materials destined for use in the VEGP. That report gave results of tests on mechanical properties of these polymers, whereas their applications in VEGP also involve the integrity of electrical properties of some of the polymers. Subsequent Sandia work included testing of electrical properties. Applicants' motion for summary disposition considered dose rate effects on mechanical properties of the polymers, as raised by Intervenor in the contention, as well as the electrical properties of some of the polymers as appropriate to their VEGP applications. The motion generated no Intervenor response. The motion satisfactorily resolved the contention issues on dose

rate effects on mechanical properties, and adequately explained Applicants' review of investigations of dose rate impacts on electrical properties, with the exception of certain mechanical and electrical issues that the Board found to have been inadequately addressed. Because of those issues, we denied the summary disposition motion (note 2, *supra*). The issues were identified as follows:

- (1) Whether cross-linked polyolefin is the only polymer in question whose electrical properties were evaluated subsequent to radiation exposure.
- (2) What significance is to be derived from Duke Power Company's 10-year cable surveillance program.
- (3) The scope and results of the mechanical stress tests on prototype VEGP cables.
- (4) The nature of Staff's requirement for an operational surveillance program, the status of Staff's approval of Applicants' submittal of a proposed surveillance program, and Staff's requirement for its implementation.
- (5) The Staff's reliance upon a future operational surveillance program rather than upon the prior environmental testing results described by Applicants.

Intervenor GANE offered no witnesses, conducted no cross-examination, and submitted no proposed findings on the contention. Applicants presented the following witnesses as a panel: Joel Kitchens, Mark L. Mayer, Patrick R. Nau, Harold J. Quasny, and George Bockhold, Jr. (hereinafter the testimony of Kitchens, *et al.*, ff. Tr. 561) and the testimony of Bockhold and Quasny (Bockhold and Quasny, ff. Tr. 561). The Staff presented Armando Masciantonio (whose prefiled testimony is in evidence) as a witness (Masciantonio, ff. Tr. 576). The professional qualifications of these witnesses were found to be acceptable for giving expert testimony on the issues.

Discussion

2. The Staff described the reason for the environmental qualification of nuclear power plant equipment and identified the NRC's regulatory requirements for same. The purpose of environmental qualification at a nuclear power plant is to demonstrate that equipment used to perform a necessary safety function is capable of maintaining functional operability under all service conditions postulated to occur during its installed life. The qualification program must also demonstrate that the equipment in question is capable of the specific length of operating time required following an accident. Environmental qualification is normally achieved by

subjecting a representative piece of equipment to a test program that simulates the expected environmental and service conditions the equipment will see during its installed life, followed by exposure to a simulation of design-basis accident environment during or after which the equipment is required to operate. Exposure to the radiation generated by the normal operation of a nuclear plant represents an environmental condition that plant components and equipment must be qualified to endure. The higher radiation doses associated with a design-basis accident are not of concern with respect to dose rate effects, since accident radiation effects can be readily simulated. The regulatory requirements for environmental qualification are stated in General Design Criterion 1 and 4 of Appendix A and in §§ III, XI, and XVII of Appendix B to 10 C.F.R. Part 50. Specific requirements for environmental qualification of electric equipment important to safety are stated in 10 C.F.R. § 50.49. Masciantonio, ff. Tr. 550, at 5-7.

3. In June 1981, Sandia published a report, NUREG/CR-2157, entitled "Occurrence and Implications of Radiation Dose-Rate Effects for Material Aging Studies." The work reported therein dealt with laboratory studies of the mechanical properties of ethylene propylene rubber (EPR) and cross-linked polyolefin (XLPO), to be used in VEGP as electric cable insulation materials, and the mechanical properties of chlorosulfonated polyethylene (Hypalon) and chloroprene (Neoprene), to be used in VEGP as electric cable jacketing materials. These materials were stripped from cable samples and irradiated in air and nitrogen at radiation dose rates ranging from approximately 0.001 to 1.0 megarads per hour (Mrads/hr). Degradation of tensile properties (elongation and tensile strength) was measured; radiation dose rate effects were found in all materials tested in air. Kitchens, *et al.*, ff. Tr. 561, at 4-6, 8-9; Masciantonio, ff. Tr. 576, at 2-4.

4. The dose rate effects on mechanical properties observed in these four polymers, however, are minor. Moreover, the differences in the rate of degradation caused by the various dose rates decrease as the total integrated dose decreases, and they are not discernible at the maximum total integrated doses these polymers could incur over 40 years of normal plant operation at VEGP. In the case of EPR and Hypalon, the reduction of tensile properties is virtually the same for all dose rates up to a total integrated dose of 20 megarads. In the case of Neoprene, the reduction is virtually the same for all dose rates up to a total integrated dose of 10 megarads. At VEGP, no safety-related equipment containing XLPO, EPR, Hypalon, or Neoprene will receive a total integrated dose for 40 years of normal operation greater than 10 megarads, and most such equipment will receive less than 2 megarads. Thus for EPR, Neo-

prene, and Hypalon, the dose rate effects reported in NUREG/CR-2157 are insignificant irrespective of polymer application. Kitchens, *et al.*, ff. Tr. 561, at 9-10.

5. Of the four polymers tested by Sandia and reported in NUREG/CR-2157, only the sample designated as XLPO exhibited dose rate effects that were discernible at total doses below 10 megarads. *Id.* at 10; Masciantonio, ff. Tr. 576, at 4. The term "XLPO," however, does not refer to a specific polymer, but instead refers to a group of cross-linked polymers that are based on aliphatic alkene monomers. Kitchens, *et al.*, ff. Tr. 561, at 7. Cross-linked polyethylene (XLPE) is the polymer most often referred to generically as XLPO. Applicants learned from Sandia, however, that the polymer that was designated as XLPO in the Sandia study (NUREG/CR-2157) was a copolymer of ethylene and vinyl acetate (EVA). *Id.* at 8.

6. Applicants stated that EVA is not used at VEGP in any safety-related equipment subject to a harsh environment. Nor can the results for EVA be used to predict similar effects in other cross-linked polyolefins. A later study by Sandia, released after Applicants' summary disposition motion was filed, evaluated dose rate effects in XLPE. NUREG/CR-4358, "Applications of Density Profiling to Equipment Qualification Issues" (September 1985). Sandia evaluated the degradation of tensile properties of XLPE insulation at various dose rates. The results demonstrate that dose rate effects on tensile properties of XLPE are insignificant below 20 megarads total integrated dose. Kitchens, *et al.*, ff. Tr. 561, at 10.

7. Applicants had assumed, for the purpose of their summary disposition motion, that the dose rate effects reported in NUREG/CR-2157 for XLPO (which was EVA) were applicable to XLPE. The only safety-related application of XLPE, or of any other type of XLPO, subject to a harsh radiation environment at VEGP is cable insulation. To demonstrate that the dose rate effects observed in XLPO did not compromise safety-related cable, Applicants described the results of another Sandia study demonstrating that degradation of the mechanical properties of XLPO insulation does not prevent the cable from performing its required electrical function. This particular Sandia study is reported in NUREG/CR-2932, "Equipment Qualification Research Test of Electric Cable with Factory Splices and Insulation Rework Test No. 2" (September 1982). For the results reported in NUREG/CR-2932, the XLPO materials that were tested consisted of XLPE. Electrical cable insulated with these materials was exposed to radiation at a relatively low dose rate (0.062 Mrads/hr) for a total integrated normal operational dose of 50 Mrads/hr. Then, after elevated temperature aging, the cable was exposed

to an accident dose of 150 megarads at a rate of 0.77 Mrads/hr. Despite severe degradation of mechanical properties, the cable was able to perform its electrical function at all times. This series of tests was conducted according to industry standards (IEEE 323-1974 and IEEE 383-1974) and NRC guidelines (NUREG-0588). Sandia concluded that the methodology employed by the nuclear industry to qualify electrical equipment (which includes accelerated aging) is adequate. Kitchens, *et al.*, ff. Tr. 561, at 11-12. We concur.

Issue (1)

8. Applicants testified that they are not aware of studies that evaluated dose rate effects in the electrical properties of polymers other than XLPE after radiation exposure. The electrical properties of XLPE and EPR after radiation exposure have been evaluated in two additional Sandia studies, but these studies did not assess dose rate effects. *Id.* at 12-13. However, Applicants and Staff noted that during environmental qualification testing, all safety-related cables undergo an insulation test after LOCA simulation. *Id.* at 13; Masciantonio, ff. Tr. 576, at 4. Thus, we find that the electrical properties (in this case insulating capability) of all polymers in question used as insulation are tested and we conclude that Issue (1) has been resolved to our satisfaction.

Issue (2)

9. In support of their prior summary disposition motion, Applicants noted that additional information regarding dose rate effects may be obtained from a Duke Power Company study. Duke Power established an informal cable life evaluation program at its Oconee Nuclear Generating Unit 1, which became commercially operational in 1973. For this program, representative specimens of control, instrumentation, and power cable were placed in selected locations within the reactor building so that they would be subjected to a normal in-containment environment. The cables were for the most part insulated with EPR and had Neoprene jackets. In addition, some samples were insulated with XLPE and covered with Neoprene jackets. For all cable samples, the average radiation exposure rate was 0.65 rad/hr during operation and 0.12 rad/hr when the unit was shut down. The actual exposure level that each sample received is considered to have varied considerably over the length of the cable dependent upon the exact location of the cable within the reactor building. These dose rates are quite low in comparison to rates used in the Sandia investigations, but are representative of the dose rates ex-

pected to occur at VEGP. Samples of these cables were removed after 5 years and again after 10 years of exposure. Physical and electrical tests were conducted to determine the degree of degradation of the cable components. In all cases, the cables were in good condition with no more deterioration observed than would be expected over a similar period in a nonnuclear environment. Kitchens, *et al.*, ff. Tr. 561, at 13-14.

10. Applicants testified that the significance of the Duke Power Company's cable surveillance program is that a 10-year exposure to the low-dose-rate radiation actually encountered in operating nuclear power plants has not done detectable harm to cables of the same general type that are to be used at VEGP. Furthermore, the results demonstrate that there will be plenty of time to benefit from operating experience gained from other plants and to take any necessary corrective action if significant dose rate effects are identified. *Id.* at 14-15. This testimony establishes to our satisfaction that the Duke Power Company experience, although not ruling out dose rate effects in VEGP, adds confidence that such effects will not rapidly occur. Thus Issue (2), we conclude, has been put to rest.

Issue (3)

11. Environmental qualification tests of cable types to be used at VEGP include a mechanical durability (or stress) test, applied to the cable samples following their exposure to the simulated normal and accident environmental conditions. All VEGP safety-related cables are given such tests, which comply with § 2.4 of IEEE 383-1974. In pertinent part, the IEEE requirement states:

Upon completion of the LOCA simulation, the specimens should be straightened and recoiled around a metal mandrel with a diameter approximately 40 times the overall cable diameter and immersed in tap water at room temperature. While still immersed, these specimens should again pass a voltage withstand test for 5 minutes at a potential of 80 V/mil ac or 240 V/mil dc.

All specimens used to qualify each type of VEGP safety-related cables passed this test. Kitchens, *et al.*, ff. Tr. 561, at 15-16. This testimony explains the nature of the stress tests and reports the successful results therefrom. Hence we find that Issue (3) has been resolved to our satisfaction.

Issue (4)

12. In order to detect any unanticipated degradation, Applicants stated that prior to fuel loading at Unit 1 they will implement a maintenance and surveillance program to be employed over the lifetime of the plant. Bockhold and Quasny, ff. Tr. 561, at 2. Such a program derives from Regulatory Guide 1.33, Rev. 2, and its endorsement, in turn, of the more detailed guidance of the American Nuclear Society/American National Standards Institute standard ANS-3.2/ANSI N18.7-1976. This standard defines the scope and content of a maintenance/surveillance program for safety-related equipment that is acceptable to the Staff. Regulatory Guide 1.33 is acceptable to the Staff as a means of meeting the requirements of 10 C.F.R. § 50.49. Additional guidance is found in NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment." Masciantonio, ff. Tr. 576, at 5-6. The Applicants have submitted their proposed maintenance and surveillance program, which has been found to be satisfactory by the Staff. Applicants' witnesses Bockhold and Quasny stated that this program is described in Applicants' FSAR response to Staff question Q271.1 (September 6, 1983) and in § 4.2 of "Environmental Qualification of Safety-Related Equipment Located in a Harsh Environment" (September 1985). In addition, their testimony also summarizes the important features of that program. Bockhold and Quasny, ff. Tr. 561, at 2-7. The Staff stated that it will formally document its approval of the maintenance program in the Safety Evaluation Report prior to licensing the VEGP. Masciantonio, Tr. 579.

The Board has reviewed the Bockhold and Quasny testimony cited above and finds that, if implemented as planned, such a maintenance program will provide a means whereby unanticipated radiation degradation of polymer materials can be detected and remedied prior to compromising operational safety. The nature and intent of the Staff's requirement and the Applicants' response, along with the Staff's stated approval of that response cause us to find that Issue D has been dispositively addressed.

Issue (5)

13. Issue (5) notes that the Staff relies upon a future operational maintenance and surveillance program rather than upon the prior testing results described by Applicants. The matter was not explicitly addressed by Staff or Applicants. The Staff did state that its review of Applicants' testimony did not generate any exceptions or disagreements with that

testimony. Masciantonio, Tr. 580. The Applicants' commitment to implementing a Staff-approved maintenance and surveillance effort directed toward these polymers (approved by Staff and us, as discussed under Issue (4) above) provides assurance that safety-related equipment will perform its intended function if needed. Thus, the silence of both parties on this difference in their approaches does not appear to us to be of material significance since each approach provides the assurance required. We find that Issue (5) has been implicitly resolved.

Conclusions

14. The full testimony of Applicants and Staff on Contention 10.1 is uncontroverted. We find that testimony to be correct and persuasive. The evidence addressed Intervenor's original challenge, limited in NUREG/CR-2157 to mechanical properties, and included the adequacy of the environmental testing of those polymers whose electrical properties are also of import to VEGP. Moreover, each of the litigable issues identified (II.1, above) has been addressed to the Board's satisfaction as discussed above. We find from the evidence that polymer materials destined for use in safety-related VEGP applications have acceptably passed an adequate environmental qualification program. Additional assurance as to the adequacy of these polymers will derive from an operational surveillance program to be implemented by Applicants. Accordingly, the Board concludes that Contention 10.1 is without merit and that Applicants have prevailed.

III. CONCLUSIONS OF LAW

The Board has considered all of the evidence submitted by the parties in this proceeding on Contentions 7 and 10.1. Based upon a review of the record and the foregoing Findings of Fact on the two contentions, the Board concludes that:

1. As to the contentions addressed herein, there is reasonable assurance that, if operating licenses are subsequently granted to Applicants, the activities authorized thereby will not be inimical to the common defense and security, can be conducted without endangering the health or safety of the public, and that such activities will be conducted in compliance with applicable NRC regulations.

IV. APPEAL

Although this Decision does not authorize the issuance of licenses or resolve all contentions, i.e., Contention 10.5, it does resolve a major segment of the case and is therefore appealable at this time. 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 a single, responsive brief regardless of the number of appellants' briefs filed (*see* 10 C.F.R. § 2.762(c)).

THE ATOMIC SAFETY AND LICENSING BOARD

**Morton B. Margulies, Chairman
ADMINISTRATIVE LAW
JUDGE**

**Gustave A. Linenberger, Jr.
ADMINISTRATIVE JUDGE**

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

**Dated at Bethesda, Maryland,
this 27th day of August 1986.**

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. James C. Lamb
Frederick J. Shon

In the Matter of

Docket Nos. STN 50-498-OL
STN 50-499-OL
(ASLBP No. 79-421-07-OL)

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

August 29, 1986

The Licensing Board issues a Partial Initial Decision that resolves all issues not decided by the Board's two previous partial initial decisions and authorizes operating licenses (subject to further Staff and Commission review). The Board determines that, because of the extremely low probability of significant damage from a hurricane missile strike, portions of three structures need not be designed to withstand such missiles.

RULES OF PRACTICE: EVIDENCE

That scientific studies were not performed by NRC does not *per se* undermine their acceptability.

ATOMIC ENERGY ACT: LICENSING STANDARDS

Under the Commission's Policy Statement on Safety Goals for the Operations of Nuclear Power Plants, deterministic licensing criteria are to

be observed as the primary basis for regulation, but probabilities of significant damage may be considered as one factor in the licensing decision.

ATOMIC ENERGY ACT: LICENSING STANDARDS

Where the probability of significant damage from an external hazard is sufficiently low, a failure to conform to otherwise applicable regulatory requirements may be regarded as *de minimis* and accepted on that basis.

OPERATING LICENSE HEARINGS: *SUA SPONTE* ISSUES

In an operating license proceeding, a licensing board is required to give limited consideration to certain unresolved generic issues, as well as other uncontested safety and environmental issues.

LICENSING BOARD: JURISDICTION

A licensing board has jurisdiction to conduct the requisite review of unresolved generic issues and other contested safety and environmental issues, notwithstanding that it did not expressly reserve such jurisdiction in a prior partial initial decision which resolved most (although not all) remaining contested issues.

TECHNICAL ISSUES DISCUSSED

- Externally generated missiles
- Probabilistic risk assessment
- Safety goals.

APPEARANCES

Alvin H. Gutterman, Esq., Washington, D.C., for Houston Lighting and Power Co. (HL&P), *et al.*, Applicants.

Lanny Alan Sinkin, Esq., Washington, D.C., for Citizens Concerned About Nuclear Power, Inc. (CCANP), Intervenor.

Oreste Russ Pirfo, Esq., for the United States Nuclear Regulatory Commission Staff.

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PARTIAL INITIAL DECISION (Authorizing Operating Licenses)

Opinion

I. INTRODUCTION AND SUMMARY (Findings 816-819)

This is our third Partial Initial Decision (PID-III) in this operating license proceeding involving the South Texas Project, Units 1 and 2 (STP), two pressurized water reactors located approximately 12 miles south-southwest of Bay City, Matagorda County, Texas. Each plant is designed for a rated electrical output of 1250 megawatts.

The Applicants for operating licenses are Houston Lighting & Power Company (HL&P), the project manager; the City of San Antonio, Texas;

Central Power and Light Company; and the City of Austin, Texas (hereinafter referred to collectively as the Applicants). Other participants in this portion of the proceeding are Citizens Concerned About Nuclear Power, Inc. (CCANP), the only remaining Intervenor, and the NRC Staff. (The State of Texas, an interested State, did not participate in the issues covered by this Decision.)

The procedural background of this proceeding is set forth extensively in our earlier two decisions and will not be repeated here. We need only reiterate that, in those decisions, we resolved all contested issues except for two aspects of one contention (dealing generally with the adequacy of the design and construction of the STP to withstand hurricanes and hurricane missiles). LBP-84-13, 19 NRC 659 (1984) (PID-I), *aff'd in part*, ALAB-799, 21 NRC 360 (1985), *review declined by Commission*, letter dated July 30, 1985; LBP-86-15, 23 NRC 595 (1986) (PID-II). In this Decision, we are granting the Applicants' motion for summary disposition with respect to the unresolved design questions — finding that, with respect to portions of three structures which are not designed to withstand wind-driven missiles, the risk of severe damage is so low that the failure to satisfy otherwise applicable design standards may be regarded as *de minimis*. Accordingly, we are concluding that the STP has been adequately designed to withstand hurricanes and hurricane missiles. We are also dismissing that portion of the contention which questions whether the STP has been adequately constructed to withstand hurricanes.

Finally, we have completed the review which we must give to uncontested matters. We posed questions regarding one aspect of the emergency plan, and the Applicants have provided a satisfactory response. We accordingly have found no matter warranting our further consideration pursuant to 10 C.F.R. § 2.760a.

Having concluded our review of all matters before us, we are authorizing the Staff (upon completion of those aspects of review within its responsibilities) to issue licenses permitting fuel loading and low-power operations and thereafter (subject to Commission "immediate effectiveness" review) full-power operations. Such licenses are subject to conditions previously imposed by us in our earlier decisions.

II. CONTENTION 4: HURRICANE DESIGN AND CONSTRUCTION

A. Introduction (Findings 819-821)

CCANP Contention 4 questions whether Category I structures at the STP have been adequately "designed and constructed" to withstand hur-

ricanes, including hurricane-generated missiles. In dealing with this contention in PID-II, we granted the Applicants' motion for summary disposition insofar as it related to the design of the STP to withstand hurricane winds. We also determined that all but designated portions of three Category I structures were adequately designed to withstand hurricane-generated missiles. But we also found the record inadequate to permit us to grant summary disposition with respect to the design of those portions of three structures to withstand hurricane missiles. In addition, we noted that CCANP had a further opportunity to raise questions concerning the adequacy of STP construction to withstand hurricanes, and we declined to rule on that issue at that time. PID-II, *supra*, 23 NRC at 646-57 and Findings 763-793, 23 NRC at 769-79.

CCANP was permitted to raise hurricane-related construction questions by June 9, 1986 (PID-II, 23 NRC at 657 n.14). It has not sought to do so. Accordingly, without expressing any opinion on the merits of the issue, we are dismissing the construction allegations of Contention 4.

The portions of three Category I structures with respect to which we declined to grant summary disposition in PID-II were the roof areas of the isolation valve cubicles (IVC), certain Mechanical Electrical Auxiliary Building (MEAB) HVAC openings, and the diesel generator exhaust stack openings (hereinafter referred to collectively as "nonconforming structures") (Finding 825). These nonconforming structures were concededly not designed to withstand hurricane-generated missiles, as required by 10 C.F.R. Part 50, Appendix A, General Design Criterion 4. Instead, the Applicants (supported by the Staff) sought to establish the licenseability of these structures on the basis that the probability of severe damage from hurricane (or tornado) missiles was so low that the structures were not required to be equipped with protective features to resist such missiles. Specifically, the Applicants (and Staff) asserted that the probability of a missile strike was less than 1×10^{-7} annually and hence that a long-standing Staff acceptance criterion was satisfied.

CCANP opposed this approach on the ground that licensing through a probability approach is not permissible and that the nonconforming structures did not meet governing regulatory requirements. We concurred in part with that view, expressing our opinion that it was perhaps not permissible (as the Staff had argued) to accumulate nonprotected Category I structures until the 1×10^{-7} criterion was reached. However, we also concluded that, if the probability of a missile strike on the nonconforming structures were as low as suggested by the Applicants or Staff, the failure to satisfy deterministic licensing requirements with respect to those structures could be regarded as *de minimis* and acceptable

on that basis. We express some additional views on this subject later in this Opinion.

We declined to grant summary disposition in PID-II with respect to the nonconforming structures because the record did not appear to support the probability calculations which were before us. We indicated that we would pose certain questions to the parties concerning, *inter alia*, the probability calculations and the missile resistance of the nonconforming structures, to determine whether summary disposition could be granted. We set forth such questions in our Memorandum and Order (Board Questions Concerning Design of Nonconforming Structures to Withstand Hurricanes and Tornados), dated June 23, 1986 (unpublished).

The Applicants and Staff each filed responses, dated July 14, 1986. (The Staff filed a corrected response on July 22, 1986.¹) CCANP filed a statement of its views on July 17, 1986.

B. Clarification of Record on Probability Calculations (Findings 822-839)

The long-standing Staff acceptance criterion to which we have referred provides, in effect, that Category I structures must be protected from offsite hazards (such as tornados or hurricanes) where "the expected rate of occurrence of potential exposures in excess of the 10 C.F.R. Part 100 guidelines is estimated to exceed the NRC Staff objective of approximately 10^{-7} per year" (Standard Review Plan, NUREG-0800, Rev. 2, July 1981 (SRP), § 2.2.3). This criterion, which is derived from Regulatory Guide 1.70, Rev. 3, November 1978, § 2.2.3.1, *Determination of Design Basis Events*, is applicable to the assessment of possible hazards due to missiles generated by such natural phenomena (SRP § 3.5.1.4; Regulatory Guide 1.117, Rev. 1, April 1978).

As we discussed in PID-II, the Applicants and Staff each attempted to demonstrate that the probability of a missile striking the nonconforming structures as a result of a hurricane or tornado was less than 1×10^{-7} annually and, accordingly, that the structures need not be designed to withstand such externally generated missiles. The Applicants had claimed that this probability (summed for the three structures) was approximately 6×10^{-10} annually (PID-II, 23 NRC at 652 and Finding 785, 23 NRC at 777); the Staff concluded that it was approximately 4.5×10^{-9} annually (*id.* at 652). Both of these calculated probabilities are orders of magnitude less than the 1×10^{-7} acceptance criterion. For that reason, the Ap-

¹ The Staff moved for leave to file a supplemental affidavit to correct certain errors in the affidavit upon which its earlier response was based. Absent any opposition, we *accept* the supplemental affidavit.

plicants (supported by the Staff) sought summary disposition of the design aspects of Contention 4, including the design of the nonconforming structures, claiming that there was no outstanding issue of material fact with respect thereto.

Although CCANP did not file affidavits raising questions as to these probabilities, we were unable to accept the Applicants' or Staff's probability calculations at face value. In our view, the record was not clear as to whether an appropriate spectrum of missiles had been used to determine the probability of a missile strike. Hence, we determined that, with respect to the three nonconforming structures (or portions thereof), there was an unresolved material issue of fact that precluded our granting summary disposition of that portion of Contention 4 dealing with the design of those structures.

As we explained (PID-II, *supra*, 23 NRC at 653-55), it appeared to us (mostly from language in the Staff's safety evaluation of this issue) that one of the spectra of design-basis missiles set forth in SRP § 3.5.1.4 had been utilized. Such a spectrum is appropriate for evaluating the design of Category I structures, since it envelopes missiles of less severity (although possibly greater frequency). But where, as here, structures are concededly not designed to resist missiles, missiles which might cause damage to nonconforming structures, or to the safety-related equipment protected thereby, might have been improperly omitted from the spectrum employed to ascertain the probabilities in question. As examples, we mentioned missiles such as pieces of sheet metal, tree limbs, small fence rails, pieces of wood, or even chickens or birds (PID-II, *supra*, 23 NRC at 655).

The affidavits submitted by the Applicants and Staff in response to our questions have clarified the record and dispelled our reservations as to the adequacy of the calculated probabilities previously submitted to us in support of summary disposition. Each of the affiants is technically qualified to address the questions to which he responds (Findings 823, 824). The affidavits identify three categories of externally generated missile spectra which must be considered in ascertaining the necessity for missile protection of Category I structures. As designated by the Applicants, they are (Findings 827, 831):

1. *Substantive Missiles.* Missiles of moderate to heavy weight, such as large pieces of lumber and pipes. The Board perceives these missiles as being encompassed by the various spectra of design-basis missiles identified in SRP § 3.5.1.4.
2. *Light Missiles.* Objects such as pieces of wood, sheet metal, plywood, and tree limbs, which are comprehended by the re-

sults of onsite surveys of potential missiles at seven nuclear power plants in various stages of construction and operation.

3. *Debris.* Small lightweight objects which, in general, do not have sufficient energy to cause significant damage to safety-related equipment.

As explained in our Findings, the Applicants and Staff utilized a "standard" missile for their PRA missile spectrum, comprised of missiles in the first and second categories. Although the third category was not encompassed within the missile spectrum used for the probability calculations, the Applicants and Staff have each demonstrated that the likelihood of excessive releases of radiation caused by a missile strike of the third category of missiles is virtually nonexistent. Furthermore, numerous conservatisms have been employed by the Applicants and Staff in utilizing their "standard" spectrum of missiles. For example, damage in excess of Part 100 guidelines was presumed for every missile strike, even though that result would clearly not occur with many missile strikes. For that reason, we are able to accept the probability calculations employed by the Applicants or Staff in support of our granting summary disposition of the remainder of the design aspects of Contention 4. *See Findings 827-835.*

CCANP has not furnished any affidavits in responding to those submitted by the Applicants and Staff. In effect, it challenges the legal adequacy of using probabilities as a basis for licensing — not one of the questions left open by PID-II. For their part, the Applicants have commented on the reservations which we earlier expressed concerning use of probabilities in licensing decisions (although they expressly refrain from seeking reconsideration of our ruling in PID-II). For reasons set forth in Part I.C of this Decision, we are explaining in greater detail and reaffirming the views which we expressed in PID-II.

On the basis of the entire record before us, including the enhanced record on probability calculations which we now view as adequate for resolving the material factual issue upon which our ruling in PID-II was predicated, we are granting the Applicants' motion for summary disposition of the design aspects of Contention 4.

C. Legal Questions Raised by CCANP and Discussed by the Applicants

Both CCANP and the Applicants have provided comments concerning our Opinion in PID-II that interpreted the Commission's rules as permitting, to a limited degree, and on the basis of a lack of significant probability of damage, a facility's failure to conform to deterministic standards otherwise applicable to it. CCANP views that approach as imper-

missible; the Applicants view it as overly restrictive (although they recognize that the approach would permit the licensing of STP and hence do not seek reconsideration of any of our rulings). On the basis of these comments, we believe that a greater explication of our legal rulings — to which we adhere — is warranted.

1. In its statement of views, CCANP opposes our granting summary disposition of the design aspects of Contention 4 (to the extent it relates to the nonconforming structures) on essentially two grounds. First, CCANP asserts that the use of a probability approach amounts to a license (construction permit) amendment without following prescribed procedures. Second, assuming *arguendo* that use of probabilities does not constitute a license amendment, CCANP asserts that probabilistic risk assessment is an “inherently unreliable methodology”; that the determinations made with respect to the nonconforming structures rely on sparse data obtained from studies not performed by NRC but rather by industry; and that, since it would be feasible to modify the nonconforming structures to comply with applicable regulatory requirements, we should require the Applicants to do so.

We need devote little analysis to the first of CCANP's claims. When a construction permit is issued, it does not normally include details of the design of each structure. Although it requires that applicable regulatory requirements be satisfied, it does not specify the precise manner in which that objective must be achieved. Here, the Applicants are asserting that certain requirements need not be construed to govern the protection of the nonconforming structures from external missiles. If they prevail, the applicable regulatory requirements will have been satisfied, and no license amendment is involved. If they were not to prevail, they would be required to design the nonconforming structures to provide adequate protection against missiles. Thus, we do not perceive that the Applicants are seeking an amendment to their construction permits.

CCANP's second claim warrants some further comment. It asserts, in effect, that probability analyses should never be used to analyze compliance with NRC regulatory requirements, at least where (as here) there are significant uncertainties in the data utilized. It also questions the use of data from studies not performed by NRC.

In our view, the Commission has sanctioned to some degree the use of probability analyses in conducting its regulatory reviews: the only question is the extent to which such use is permissible — a topic to which we will turn in discussing the Applicants' comments (Part I.C.2, *infra*). As for uncertainties, the Staff's acceptance criterion envisions the presence of certain uncertainties. Where calculations are demonstrably conservative, the probability of exceeding 10 C.F.R. Part 100 guidelines may be

as high as 1×10^{-6} (SRP § 2.2.3 at 2.2.3.-2). The Applicants and Staff, in performing the probability analyses with respect to the susceptibility of the nonconforming structures to strikes from externally generated missiles, have incorporated a number of conservative assumptions into their calculations (Finding 830). Nonetheless, they have utilized the 1×10^{-7} acceptance criterion. That being so, we believe that the calculations before us adequately take into account the uncertainties to which CCANP refers. Moreover, CCANP has provided us no ground for questioning the adequacy of the studies not performed by NRC, and we perceive no such ground. Both the Applicants and the NRC Staff relied on those studies, which were undertaken by the Electric Power Research Institute (EPRI). That they were not performed by NRC does not *per se* undermine their acceptability. See *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-841, 24 NRC 64, 82 (1986).

2. In PID-II, we were unwilling to accept in its entirety the Staff's position that the 1×10^{-7} acceptance criterion should be applied irrespective of the number of safety structures which do not meet deterministic standards and are added together to ascertain whether the probability of damage exceeds 1×10^{-7} annually. We reasoned that this position amounted to regulation by probability or safety goal — a position which we viewed as barred by a then-applicable Commission Policy Statement.

The Applicants do not formally seek reconsideration of this position. But they state that they agree with the Staff's position that an unlimited number of safety structures may fail to conform to regulatory requirements, as long as the annual probability of being adversely affected by a natural phenomenon (or natural phenomena) is less than 1×10^{-7} . The Applicants cite several decisions that assertedly support this view.

In the interim, since the issuance of PID-II, the Commission has issued a new Policy Statement to replace the Statement on which we had relied in PID-II. *Safety Goals for the Operations of Nuclear Power Plants: Policy Statement*, 51 Fed. Reg. 28,044 (Aug. 4, 1986). That Policy Statement, which became effective upon publication, defines certain safety goals which are fundamentally probabilistic in nature and which nuclear power plants must satisfy. With respect to regulation by probability or safety goal, the new Policy Statement states, in pertinent part:

These safety goals and these implementation guidelines are not meant as a substitute for NRC's regulations and do not relieve nuclear power plant permittees and licensees from complying with regulations. Nor are the safety goals and these implementation guidelines in and of themselves meant to serve as a sole basis for licensing decisions. However, if pursuant to these guidelines, information is developed that is applicable to a particular licensing decision, it may be considered as one factor in the licensing decision.

51 Fed. Reg. at 28,047.²

In declining to accept potential damage to an unlimited number of structures in determining whether the 1×10^{-7} acceptance criterion has been satisfied, we were motivated by language in the Commission's interim draft safety goal Policy Statement which appeared to preclude that result (PID-II, *supra*, 23 NRC at 652-53). The new final Policy Statement, as quoted above, seems somewhat more permissive in allowing probabilities or safety goals to serve as at least a partial basis for licensing decisions. Nonetheless, like the earlier statement, it provides that deterministic licensing criteria are to be observed as the primary basis for regulation.

To recognize the 1×10^{-7} acceptance criterion as applicable to an unlimited number of structures (as asserted by the Applicants and Staff) could elevate that acceptance criterion to the status of a regulation and permit it to override the requirements of NRC deterministic rules and regulations. To permit that result would undermine the fundamental thrust of the new (as well as the former) Policy Statement. It would in effect provide that, as long as the probability of damage from a given hazard or hazards (e.g., hurricanes and tornados) were less than 1×10^{-7} , portions of every safety structure on site could fail to meet regulatory design standards. We cannot envision such a result being permissible under the regulatory regimen now in effect, even though the probabilities were to be computed as acceptably low.

We nonetheless believe that the *de minimis* approach we outlined in PID-II is a permissible interpretation of governing regulatory requirements. We accordingly are adhering to the views expressed in PID-II and are noting that this approach is more clearly permitted by the new Policy Statement than by the old (which at least explicitly gave no sanction at all to the use of probabilities in licensing decisions). We cannot, and need not, define with precision the numbers of safety structures which can fail to meet deterministic requirements under this approach. It would depend in part on balancing the severity of damage which could

² In their comments, the Applicants cite a discussion draft of this Policy Statement that included (at 13) the foregoing language but differed in other respects from the final statement.

result from an accident produced by the hazard in question with the calculated probability of the damage occurring.

The authorities cited by the Applicants (July 14, 1986 Response at 2-3 n.1) are not inconsistent with the result we are reaching. *Offshore Power Systems* (Manufacturing License for Floating Nuclear Power Plants), LBP-82-49, 15 NRC 1658, 1722-23 (1982) involved whether the 1×10^{-7} acceptance criterion was applicable to floating as well as land-based plants, for evaluating protection against turbine missiles. The probability discussion related to the existence of the hazard (turbine missiles), not the effects of the hazard on individual structures failing to adhere to design standards.³ *Portland General Electric Co.* (Trojan Nuclear Plant), LBP-78-32, 8 NRC 413, 429-33 (1978), *aff'd*, ALAB-531, 9 NRC 263, 276-77 (1979), similarly dealt with the likelihood of damage to one structure — the spent fuel pool — from several hazards (each of which was analyzed separately).⁴

Florida Power & Light Co. (St. Lucie Nuclear Power Plant, Unit No. 2), CLI-81-12, 13 NRC 838, 843-44 (1981) is, if anything, contrary to the Applicants' and Staff's position here, for it stresses the plant-specific analysis which must be factored into any reliance on probabilities; it specifically disapproved any single numerical threshold for the mandatory consideration of accident sequences, concluding that "the probability values calculated for [a] particular event should not be interpreted as establishing a generic numerical threshold to be used for future consideration of accident sequences" (*id.* at 843). To the same effect, *see Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-84-11, 20 NRC 1, 9-10 (1984). We interpret those opinions as equally adverse to the unquestioned use of a generic numerical threshold to exclude the need to consider otherwise applicable licensing requirements in evaluating design acceptability.

For these reasons, we do not believe that the Commission has enshrined the 1×10^{-7} numerical threshold acceptance criterion as a licensing standard to be used in all cases where the threshold is satisfied. Discretion in the use of such a threshold must be observed. There must be a consideration of, *inter alia*, the number of structures affected, the extent

³ To the same effect, *see Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), LBP-83-46, 18 NRC 218 (1983), also cited by the Applicants.

⁴ We presume the Applicants had in mind the tornado missile hazard, as to which the evidence demonstrated that tornado missiles would not cause damage beyond the design-basis fuel-handling accident. As a conservatism, the Board noted that at 96 hours after reactor shutdown (minimum decay time before fuel could be transferred to the spent fuel pool) at least 10 fuel assemblies could be damaged without exceeding 10 C.F.R. Part 100 guidelines. All of those fuel assemblies were in the same structure. Thus, although the Board (as a conservatism) referred to the probability of tornado missile damage to more than 10 fuel assemblies, the decision did not find permissible a hazard which could impact more than one structure. 8 NRC at 430-31.

of damage which might result, the uncertainties attendant to determining whether the 1×10^{-7} threshold has been satisfied, and the degree by which the likelihood of damage is less than the 1×10^{-7} acceptance criterion.

Here, we are convinced that the failure of three nonconforming structures to meet deterministic standards coupled with a likelihood of missile impact orders of magnitude less than the acceptance criterion, and a likely lack of severe damage even if a missile strike were to occur, falls well within the category of risk which the acceptance criterion deems acceptable. Even though it would have been preferable for the Applicants to have properly designed the nonconforming structures to resist hurricane and tornado missiles, we view the failure to meet deterministic requirements here as *de minimis* and not sufficient to warrant redesign to accord with the deterministic requirements.⁵

III. UNCONTESTED MATTERS

We have reviewed various unresolved generic issues applicable to STP, as well as other uncontested safety and environmental matters, as required for operating license applications by *Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1110-12 (1983), and by *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-491, 8 NRC 245 (1978). We posed questions to the Applicants regarding one matter, concerning the alert and notification system of the emergency plan. See our letter dated July 25, 1986, to the Applicants' counsel.

The unresolved generic issues applicable to STP are set forth in Appendix C of the Staff's Safety Evaluation Report, dated April 1986 (NUREG-0781). Taking into account the scope of review appropriate for an uncontested issue in an operating license proceeding, we have examined whether the generic safety issues have been taken into account in a manner that is at least plausible and that, if proven to be of substance, would be adequate to justify operation. *North Anna*, ALAB-491, *supra*, 8 NRC at 248-49 n.7. We are satisfied that the Staff's review has met that standard and, accordingly, that further examination of any generic safety

⁵ We note that, in the new Policy Statement, two Commissioners express the view that significant damage should be equated to a radiation release in excess of EPA standards (which are somewhat lower than Part 100 standards) (51 Fed. Reg. at 28,048). Resolution of possible differences with the acceptance criterion which we are relying on here is not necessary or relevant, inasmuch as the Applicants and Staff are conservatively relying on probabilities of missile strikes, not damage caused from a strike. They each presume unacceptable damage in the event of a strike (Findings 830, 835), clearly a very pessimistic assumption.

issue pursuant to our authority under 10 C.F.R. § 2.760a would not be warranted.

We have reached a similar conclusion with respect to other uncontested matters. With respect to the emergency planning matter referenced above, the Applicants provided responses to our questions by letter dated August 14, 1986.⁶ (CCANP did not offer any comments on the Applicants' response; the Staff (which could file comments as late as today), advised us by telephone that it did not intend to do so.) Our questions had been motivated by our belief that the alerting and notification provisions of the emergency plan (which relied on a combination of sirens and tone-alert radios in some residences) might not have been adequate to provide effective nighttime alerting in summer (when windows are likely to be closed and air-conditioning equipment is in operation). In response, the Applicants expressed their belief that the emergency plan satisfied all governing requirements, but they volunteered to amend their emergency plan to include tone-alert radios in every residence within the portions of the Emergency Planning Zone (EPZ) within a 10-mile radius of the plant. Without reaching any conclusion as to the adequacy of the earlier version of the emergency plan, we are satisfied that, with the described amendment, the emergency plan adequately resolves the Board's concerns in this matter. We now find no warrant for raising this issue pursuant to 10 C.F.R. § 2.760a. We commend the Applicants for the responsible manner in which they have responded to the questions we raised.⁷

IV. CONCLUSION

With this Decision, we are concluding our consideration of all matters raised by CCANP in this proceeding. Our earlier decisions considered

⁶ In that letter (at 4 n.7), the Applicants raised a question about our continuing jurisdiction to raise issues pursuant to 10 C.F.R. § 2.760a. They cite the Appeal Board Order of July 10, 1986, which stated that the Appeal Board would review PID-II *sua sponte* (no appeals having been filed), together with our statements in PID-II which expressly reserved jurisdiction only with respect to Contention 4. They rely on several decisions involving motions to reopen a record or to admit new contentions.

In our view, since we are required in an operating license proceeding to review unresolved generic issues and other uncontested safety and environmental questions, under standards spelled out in *Waterford*, ALAB-732, *supra*, and *North Anna*, ALAB-491, *supra*, we need not expressly reserve jurisdiction to do so. In any event, the Appeal Board Order indicated only that that Board was reviewing *sua sponte* PID-II. Its quotation from PID-II of our description of unresolved contested issues did not purport to, and did not, deprive us of jurisdiction to review uncontested issues pursuant to the standards set forth in 10 C.F.R. § 2.760a.

Unlike the cases cited by the Applicants, we are not involved in reopening the record or admitting a new contention. We are merely carrying out a duty that we are obliged to undertake and have not yet completed.

⁷ Nothing we say here should be construed as depriving the Staff of any authority it has to require other changes in the emergency plan which is before it for review.

other questions raised by the Intervenor, as well as issues derived from the Commission's decision in CLI-80-32, 12 NRC 281 (1980).

In reaching this Decision on the single contention left open by PID-II, we have reviewed all of CCANP's claims with great care, including the entire record of the proceeding. On the basis of the record as supplemented by affidavits of the Applicants and Staff filed subsequent to PID-II, we have concluded that there is no genuine issue as to any material fact bearing on the claims of CCANP Contention 4 with respect to the design of the nonconforming structures to withstand hurricane-generated missiles, and that the Applicants are entitled to a decision as a matter of law on this aspect of Contention 4. Further, because CCANP has not pursued its claims concerning the construction of the STP to withstand hurricanes and hurricane missiles, we are dismissing those claims. (We granted summary disposition of the remainder of Contention 4 in PID-II.) We now have reasonable assurance that safety structures at the STP have been adequately designed to withstand hurricanes and hurricane missiles.

Finally, because we have completed our review of all issues before us (either contested or uncontested), we are authorizing the Staff, upon completion of its own review (which covers many more aspects of the facility than have been litigated before us), to authorize operations initially for fuel loading and low-power operations and thereafter (subject to Commission consideration pursuant to 10 C.F.R. § 2.764(f)) full-power operations. This authorization is subject to the terms and conditions previously imposed by us.⁸

In examining the various issues before us on which we ruled either in our earlier decisions or in this Decision, we have not found safety or environmental issues arising under applicable Commission regulations and policies which we believe present serious, close questions which are crucial to whether the authorized licenses should become effective before full appellate review is completed, or on which prompt Commission policy guidance is called for, within the meaning of 10 C.F.R. § 2.764(f)(1)(ii). We note, however, that we have used a probability approach in resolving a portion of Contention 4 (hurricane design) and that, if that approach were to be found impermissible, substantial design changes to three Category I structures might be required.

⁸ Since we have not formally raised pursuant to 10 C.F.R. § 2.760a the emergency planning matter dealt with in our letter to the Applicants' counsel dated July 25, 1986, we are not imposing as a license condition the improvements to the emergency plan to which the Applicants committed themselves in their August 14, 1986 response. Nonetheless, we fully expect the Applicants to adhere to their commitment to provide tone-alert radios to all households in the portion of the EPZ within a 10-mile radius of the plant (Affidavit of Warren H. Kinsey, STP Plant Manager, provided by Applicants' letter dated August 14, 1986, A.3).

This Opinion is based upon, and incorporates, the Findings of Fact and Conclusions of Law that follow. Any statements or filings on the issues considered herein submitted by the parties that are not dealt with directly or inferentially in this Partial Initial Decision are rejected as being unsupported in law or in fact or as being unnecessary to the rendering of this Decision.

Findings of Fact and Conclusions of Law

I. FINDINGS OF FACT

A. Procedural Background

816.⁹ The procedural background of this proceeding is set forth in the Licensing Board's two earlier partial initial decisions and will not generally be repeated here. LBP-84-13, 19 NRC 659 (1984) (PID-I), at 723-26 (Findings 1-12); LBP-86-15, 23 NRC 595 (1986) (PID-II), at 678-83 (Findings 426-445).

817. The parties participating in the resolution of the issues dealt with by this Decision are the Applicants (Houston Lighting and Power Co. (HL&P), the project manager; the City of San Antonio; Central Power and Light Co.; and the City of Austin), the Intervenor (Citizens Concerned About Nuclear Power, Inc. (CCANP)), and the NRC Staff.

818. The Licensing Board presiding over this portion of the proceeding is the same as that which presided over the Phase II hearings and issued PID-II. *See* PID-II, Finding 439, 23 NRC at 681.

819. The only contested issue remaining unresolved after PID-II is CCANP Contention 4, concerning the adequacy of the design and construction of the STP to withstand hurricanes and hurricane-generated missiles. *See* PID-II, Finding 763, 23 NRC at 769. We granted summary disposition of this contention insofar as it questioned the design of STP Category I structures to withstand hurricanes and (except with respect to portions of three structures) hurricane-generated missiles. With respect to the missile protection of the three "nonconforming structures," however, we found the record inadequate to permit us to grant summary disposition, as requested by the Applicants and supported by the NRC Staff. PID-II, *supra*, Findings 778, 780, 784-786, and 788-790, 23 NRC at 774-78.

⁹ Findings 1-425 appear in PID-I, and Findings 426-815 appear in PID-II. We are utilizing consecutive numbering of findings to avoid potential confusion stemming from the consideration of different aspects of issues or contentions in more than one PID. *See* PID-II, 23 NRC at 678 n.39.

820. To rectify the record deficiencies which we perceived with regard to the missile protection of the three nonconforming structures, we stated that in the near future we would issue questions to the parties and that, after receiving responses, we would evaluate whether summary disposition might then be granted or whether further hearings may be required. PID-II, *supra*, 23 NRC at 655-56. We issued those questions through our Memorandum and Order (Board Questions Concerning Design of Nonconforming Structures to Withstand Hurricanes and Tornadoes), dated June 23, 1986 (unpublished).

821. The Applicants and Staff each filed responses to our questions, supported by affidavits, on July 14, 1986. Our Order dated July 17, 1986, established a schedule for responses by all parties. CCANP filed a statement of its views on July 17, 1986. No supporting affidavits were included with this response. No other party filed any response. On July 22, 1986, the Staff moved for leave to file a supplemental (corrected) affidavit. Absent any response, we are granting the Staff's motion (*see* note 1, *supra*) and are considering the Staff's affidavit as corrected by the supplemental affidavit.

B. Probability Calculations

822. In response to our questions, the Applicants submitted affidavits by Messrs. R. Bruce Linderman (Appl. Aff. (Linderman III)),¹⁰ Donald H. Ashton (Appl. Aff. (Ashton)), and Dr. Anthony J. Mark (Appl. Aff. (Mark)). The Staff submitted an affidavit of Mr. Jerry N. Wilson (Wilson, Aff. III).¹¹

823. Messrs. Linderman and Wolfe have been previously found by us to be professionally qualified in the areas covered by their affidavits (PID-II, *supra*, Findings 765 and 767, 23 NRC at 769-71). They are similarly qualified to address the questions dealt with in their most recent affidavits.

824. Mr. Donald H. Ashton has a B.S. in Mechanical Engineering from the University of Connecticut, and an M.S. in Nuclear Engineering from Purdue University. He is currently employed by Bechtel Energy Corp. as Project Engineer for the STP. He previously has served, *inter alia*, as Chief Nuclear/Environmental Engineer for Bechtel's Houston Area Office, and as Assistant Chief Nuclear Engineer in Bechtel's Gaithersburg, Maryland office (where he was also designated to coordi-

¹⁰ Mr. Linderman previously submitted two affidavits (Linderman Aff. and Linderman Supp. Aff.) (*see* PID-II, Findings 765 and 785).

¹¹ Mr. Wilson previously submitted two affidavits (Wilson Aff. and Wilson Supp. Aff.) (*see* PID-II, Findings 767 and 786).

nate the program for Reliability Analysis and Probabilistic Risk Assessment). Dr. Anthony J. Mark has a B.S. in Biological Sciences and a Ph.D. in Cellular and Molecular Biology, both degrees from the University of Southern California. He has taken additional coursework in, *inter alia*, reliability and risk assessment engineering. He currently serves as Engineering Supervisor for the Reliability and Risk Assessment Group of Bechtel Western Power Corp. He previously served as a Senior Engineer for the same Group. Appl. Aff. (Ashton), Summary of Education and Professional Experience; Appl. Aff. (Mark), Summary of Education and Professional Experience. Mr. Ashton and Dr. Mark are each professionally qualified in the areas covered by their affidavits.

825. The three "nonconforming structures" which have not been designed to withstand hurricane missiles are:

1. The roof area of the Isolation Valve Cubicles (IVC), of which there is one for each unit, divided into four compartments that are separated from each other by reinforced concrete walls capable of withstanding the design-basis tornado missiles;
2. Mechanical Electrical Auxiliary Building (MEAB) HVAC openings for each unit, as described in Appl. Aff. (Ashton), A.1, and Wilson, Aff. III, A.1 and Attachment 1.
3. Three diesel generator exhaust stack openings.

Appl. Aff. (Ashton), A.1, A.2, A.3.C; Wilson, Aff. III (corrected), A.1, A.2.

826. The Board declined to grant summary disposition of the design aspects of Contention 4 (insofar as it questioned the missile resistance of the three nonconforming structures) because the record was not clear as to what spectrum of missiles had been used to determine the probability of missile strike on the three nonconforming structures. It appeared that a spectrum of design-basis missiles, as set forth in SRP § 3.5.1.4, had been utilized. We observed that such spectra are appropriate for evaluating the missile resistance of Category I structures but may be unsuitable for calculating the likelihood of missile damage to Category I structures not appropriately designed to withstand missiles. PID-II, *supra*, Finding 790, 23 NRC at 778; to the same effect, *see* Wilson, Aff. III, A.4.

827. As explained by the affiants, the spectrum of missiles used in the probabilistic risk assessment (PRA) of a tornado or hurricane missile strike on the three nonconforming structures was not limited to one of the spectra of design-basis missiles set forth in SRP § 3.5.1.4. The Applicants identified three categories of missiles: substantive missiles, light missiles, and debris. The Applicants' PRA utilized a "standard" missile the characteristics of which were based both upon the SRP spectrum (including substantive missiles) and upon the results of onsite surveys of po-

tential missiles at seven nuclear power plants in various stages of construction and operation, as set forth in Electric Power Research Institute (EPRI) reports NP-768 and NP-769 (Twisdale, *et al.*, "Tornado Missile Risk Analysis" (May 1978)). The objects counted as potential missiles in the EPRI survey included not only construction materials and objects found about the plant sites but also missiles which could originate from failures of structures (both temporary construction buildings and permanent facilities) not designed to withstand tornados. The EPRI spectrum of missiles was broader than the spectrum of design-basis missiles included in SRP § 3.5.1.4. Missiles that could be generated from non-Category I structures (and which are mentioned in the allegations of Contention 4) are included in the spectrum of missiles utilized by the Applicants and Staff. This spectrum included all of the "substantive" and "light" missiles as identified by the Applicants. These potential missiles were grouped into twenty-six categories, depending on their material and shape. Appl. Aff. (Mark, Ashton), A.4; Appl. Aff. (Mark), A.9; Wilson, Aff. III, A.4, A.9.

828. The "standard" missile used in the STP PRA included assumptions about missile density derived from EPRI survey results for a three-unit plant with all units in operation and a one-unit operating plant. (The other plants surveyed by EPRI had one or more units under construction and had many construction materials which would not be present on the STP site during plant operation. The Applicants regarded differences in missile density due to continued construction at Unit 2 to be insignificant, since Unit 2 is anticipated to load fuel approximately 18 months after Unit 1 and, during this period, will be undergoing startup testing, not major construction.) To account for local variations in missile densities and plant-to-plant differences, the STP analysis increased the missile density by a factor of approximately 2.5. Appl. Aff. (Mark, Ashton), A.4; Appl. Aff. (Mark), A.6; Wilson, Aff. III, A.5, item 7(b) (corrected).

829. The methodology and assumptions used in the STP probability calculations are summarized and referenced in Appl. Aff. (Mark), A.5, and Wilson, Aff. III, A.5 (as corrected). We accept the described methodology and assumptions as adequate for the purposes for which utilized. A number of conservative assumptions, as set forth in Finding 830, were utilized.

830. The Applicants' PRA included the following conservatisms:

- (1) The IVC roof area was assumed to be transparent to missiles — i.e., open and without missile protection of any kind. In fact, the IVCs will have a roof, although it will blow off as a result of a 2-psi increase in internal pressure. As described in Finding 832, the steel portions of the roof are designed to withstand hurri-

cane, although not tornado, winds. Although the roof is assumed not to resist the spectrum of missiles utilized in the PRA, it may provide protection against debris.

- (2) A tornado missile strike in the open top of any one IVC compartment represents failure.
- (3) The comparison of the strike probability to the activity release frequency acceptance criteria assumes (a) missile-inflicted damage is certain and total, and (b) damage leads directly to activity releases in excess of 10 C.F.R. Part 100 guidelines.
- (4) The potential missile model assumes (a) a missile density upper limit increased by a factor of 2.5 (*see* Finding 828); (b) one-half of the potential missiles are distributed up to 20 feet above grade, with the remainder at grade; and (c) the number of unrestrained potential missiles is conservatively chosen to be 10% of all potential missiles.
- (5) The tornado frequency is based on a 30-year historical record fitted with a more conservative lognormal distribution having a larger mean and spread than the empirical distribution.
- (6) Geometric factors that result in further conservatisms are (a) the neglect of sheltering by other structures; (b) the failure assumed for a missile strike in any IVC opening (to the extent that no credit is taken for the existence of redundant components or for separation between safety-related trains); and (c) safety-related target areas are less than the IVC open area utilized in the PRA computation.

Wilson, Aff. III, A.5 (corrected); Appl. Aff. (Mark), A.5; Appl. Aff. (Ashton, Linderman III), A.7.

831. Excluded from the spectrum of missiles utilized for the STP PRA was a category of missiles characterized as "debris" (Applicants) or "light debris" (Staff). These missiles are smaller than the spectrum considered in the EPRI study. (They would include the birds and chickens referenced in PID-II.) The Applicants and Staff excluded these missiles from their PRA calculations because they believed that in general they do not have sufficient energy to cause damage of any significance, and that the potential for damage from debris is negligible and other assumptions in the analyses were sufficiently conservative so that their ultimate conclusions would not be changed. Appl. Aff. (Mark), A.6; Appl. Aff. (Ashton, Linderman III), A.7(1); Wilson, Aff. III, A.6, A.8, A.10.

832. With respect to the IVCs, each of the four compartments contains equipment associated with an individual steam generator, including a portion of a main steam and a feedwater line, and the main steam and feedwater isolation valves and main steam safety and relief valves associ-

ated with the steam and feedwater lines. The safety-related equipment which could be impacted by a missile is described in detail in Appl. Aff. (Ashton), A.3.C, and Wilson, Aff. III, A.3 and Attachment 2 at 2. Although the PRA assumed no roof on the IVCs, each IVC compartment has a roof made of 18-gauge steel with a small portion constructed of reinforced concrete. The steel portions of the roof will withstand hurricane winds but could be removed by a tornado. If not removed or significantly damaged, the roof will effectively protect the equipment within the IVC from debris (as well as some light missiles). In addition, most of the safety-related equipment in the IVCs is located below one or more levels of grating, which will withstand the impact of debris and most light missiles. The only safety-related equipment in the IVC which could be affected by debris or light missiles are the fans and power supply cables and valve control systems associated with the main steam and feedwater isolation and bypass valves and the PORV. Failure of power supply cables or control to any of the valves will result in that valve failing closed (safe position). Failure of the IVC HVAC fans would not affect the ability to shut down the plant safely. Appl. Aff. (Ashton, Linderman III), A.7.A.

833. The only safety-related equipment which could be struck by a missile entering the MEAB HVAC openings are tornado dampers, on the interior face of each opening. The tornado damper blades are of sufficient strength to withstand debris. Failure of only a small section would not significantly reduce the effectiveness of the large dampers. Debris and light missiles would thus not significantly reduce the effectiveness of the large dampers. But even were the dampers to fail completely, no adverse effects would be expected. The internal walls in the vicinity of the various openings would maintain their structural integrity in the event of full depressurization (3 psi). No anticipated effects of depressurization on safety-related equipment in the adjoining rooms would adversely affect the ability to shut down the plant safely. Appl. Aff. (Ashton, Linderman III), A.3.A and 7.B; Wilson, Aff. III, A.10.

834. The only safety-related equipment which could be damaged by a missile striking a DGB exhaust stack opening is the DGB exhaust stack. A missile strike in an exhaust stack would only interfere with diesel operation if it resulted in blockage of approximately 40% or more of the 32-inch-diameter exhaust stack opening. Even in that circumstance, only the diesel associated with that specific exhaust stack would be affected. Only one of the three diesels would be required to shut down the plant safely, in the event of a loss of offsite power (the only occasion when diesels are required to function). Appl. Aff. (Ashton, Linderman III), A.7.C; Wilson, Aff. III, A.10.

835. The Applicants and Staff have not calculated the probability of a release of radiation in excess of the limits in 10 C.F.R. Part 100, assuming a missile strike on a nonconforming structure. They each express the belief that it would be "extremely small" (Applicants) or "de minimis" (Staff), inasmuch as the damage which might reasonably be postulated to result from a missile will not prevent the plant from being shut down safely or prevent successful mitigation of resulting transients and accidents (which are bounded by FSAR analyses). Appl. Aff. (Ashton, Linderman III), A.11; Wilson, Aff. III, A.11.

836. It would be feasible, although quite costly and time-consuming, to provide missile protection for each of the nonconforming structures. The Staff has expressed the view that the significant expense would be unjustified in light of the low probability of externally generated missiles striking the nonconforming structures. Appl. Aff. (Linderman III), A.12; Wilson, Aff. III, A.12.

837. On the basis of Findings 827-836, we conclude that the missile spectrum utilized by the Applicants and Staff for their PRA calculations is adequate and conservative, notwithstanding that it omits debris. We have reasonable assurance that a strike of debris would not likely significantly affect the nonconforming structures and that the lack of inclusion of debris in the missile spectrum used for the probability calculations is offset by other conservatisms in those calculations, as described in Finding 830.

838. Applicants have computed the collective probability of a missile strike on the nonconforming structures resulting from a tornado or hurricane-generated missile as approximately 6×10^{-10} per year. The Staff has computed the probability as approximately 5×10^{-9} . Appl. Aff. (Mark, Ashton, Linderman III), A.8; Wilson, Aff. III, A.8; *see also* PID-II, 23 NRC at 652, and Finding 785, 23 NRC at 777. Each of these probabilities is orders of magnitude lower than the Staff acceptance criterion of 1×10^{-7} . Taking into account the low likelihood of a strike, the significant conservatisms incorporated into the PRAs, and the low likelihood of significant damage should a strike occur, we agree with the Applicants and Staff that such protection need not be provided.

C. Conclusion with Respect to Contention 4

839. We conclude, on the basis of the record as enhanced by the July 14, 1986 submissions of the Applicants and Staff, and our discussion of CCANP's views, that there is no genuine issue as to any material fact concerning the design of STP safety structures to withstand hurricanes

and hurricane missiles, and that the Applicants are entitled to a decision on this issue as a matter of law.

II. CONCLUSIONS OF LAW

Based upon the foregoing Findings of Fact and upon consideration of the entire record in this proceeding, the Board makes the following conclusions of law, which supplement the conclusions of law reached in our earlier partial initial decisions:

1. The risk of a hurricane (or tornado) missile strike on Category I structures not designed to withstand such missiles (i.e., the IVC roof area, certain MEAB HVAC openings, and the diesel exhaust stack openings, as identified in Finding 825) is orders of magnitude less than the Staff's acceptance criterion of 1×10^{-7} . The probability of damage from a hurricane (or tornado) missile strike in excess of 10 C.F.R. Part 100 guidelines is much lower. Accordingly, the failure of the IVC roof area, the described MEAB HVAC openings, and diesel exhaust stack openings to meet the otherwise applicable requirements of General Design Criterion 4 is a *de minimis* departure from those requirements. On the record before us, these nonconforming structures need not be redesigned to resist hurricane (or tornado) missiles.

2. The Applicants are entitled to a decision as a matter of law on CCANP Contention 4.

3. Structures, systems, and components important to safety have been adequately designed to withstand hurricanes and hurricane-generated missiles, to the extent required by General Design Criterion 4 (and taking into account the above conclusions).

4. On the basis only of the contentions considered by us, we have reasonable assurance that, if operating licenses are subsequently granted for the STP, the activities authorized thereby can be conducted without endangering the health or safety of the public and that such activities can and will be conducted in compliance with applicable NRC regulations.

Order

On the basis of the foregoing Findings of Fact, Conclusions of Law, and Opinion, and the entire record, it is, this 29th day of August 1986,
ORDERED:

1. The Staff's Motion for Leave to File Supplemental Affidavit in Response to Licensing Board's Questions Concerning Design of Noncon-

forming Structures to Withstand Hurricanes and Tornados, dated July 22, 1986, is hereby *granted*.

2. The Applicants' Motion for Summary Disposition of CCANP Contention 4, dated March 12, 1985, to the extent it relates to the adequacy of design to withstand hurricane missiles of the IVC roof, certain MEAB HVAC openings, and the diesel generator exhaust stack openings, is hereby *granted*. (Summary disposition of the other design aspects of the contention was granted in PID-II.)

3. CCANP Contention 4, to the extent it questions the construction of safety structures to withstand hurricanes and hurricane missiles, is hereby *dismissed*.

4. Pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's rules, the Director of Nuclear Reactor Regulation is authorized, upon making the findings on all applicable matters specified in 10 C.F.R. § 50.57(a), and subject to conditions previously imposed by this Board, to issue to the Applicants Houston Lighting & Power Company, the City of San Antonio, Texas, Central Power and Light Company, and the City of Austin, Texas, licenses to authorize fuel loading and low-power operations (up to 5% of rated power) and, upon completion of requisite testing (and subject to Commission review pursuant to 10 C.F.R. § 2.764(f)), licenses to authorize full-power operation of the South Texas Project, Units 1 and 2.

5. In accordance with 10 C.F.R. §§ 2.760, 2.762, 2.764, 2.785, 2.786, and 2.788, and subject to ¶ 4 of this Order, this Partial Initial Decision shall become effective immediately. It will constitute the final action of the Commission forty-five (45) days after the date of its issuance, unless (1) review is sought or conducted pursuant to the above-cited Rules of Practice, (2) a stay is obtained pursuant to 10 C.F.R. § 2.788, or (3) the Commission directs that the record be certified to it for final decision. Any party may take an appeal from this Partial Initial Decision by filing a Notice of Appeal within ten (10) days after service of this Decision. Each appellant must file a brief supporting its position on appeal within thirty (30) days after filing its Notice of Appeal (forty (40) days if the Staff is the appellant). Within thirty (30) days after the period has expired for the filing and service of the briefs of all appellants (forty (40) days in the case of the Staff), a party who is not an appellant may file a brief in support of, or in opposition to, any such appeal(s). A responding party shall file a single, responsive brief *only*, regardless of the number of appellants' briefs filed.

Please be advised that, in addition to the appeal and stay remedies mentioned above, the Commission will be conducting an "immediate effectiveness" review of this and our earlier Partial Initial Decisions pur-

suant to 10 C.F.R. § 2.764(f)(2). As to timing, that provision states in pertinent part:

(ii) For operating license decisions other than those authorizing only fuel loading and low power testing consistent with the target schedule set forth below, the parties may file brief comments with the Commission pointing out matters which, in their view, pertain to the immediate effectiveness issue. To be considered, such comments must be received within 10 days of the Board decision. However, the Commission may dispense with comments by so advising the parties. No extensive stay shall be issued without giving the affected parties an opportunity to be heard.

(iii) The Commission intends to issue a stay decision within 30 days of receipt of the Licensing Board's decision. The Licensing Board's initial decision will be considered stayed pending the Commission's decision insofar as it may authorize operations other than fuel loading and low power (up to 5 percent of rated power) testing.

THE ATOMIC SAFETY AND LICENSING BOARD

**Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE**

**Dr. James C. Lamb
ADMINISTRATIVE JUDGE**

**Frederick J. Shon
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 29th day of August 1986.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ADMINISTRATIVE LAW JUDGE

Ivan W. Smith

In the Matter of

Docket No. 50-289-EW
(ASLBP No. 86-532-04-SP)

EDWARD WALLACE
(Three Mile Island Nuclear
Station, Unit 1)

August 19, 1986

**MEMORANDUM AND ORDER TERMINATING
PROCEEDING AND REMOVING NOTIFICATION
REQUIREMENTS AS TO EDWARD WALLACE**

BACKGROUND

On October 25, 1979, the NRC Staff issued a Notice of Violation to the Metropolitan Edison Company, then the operator of Three Mile Island Units 1 and 2, for actions arising out of the TMI-2 accident. Subsequently, in July 1984, the Staff issued a special report on its evaluation of the integrity of the Licensee's management as it might affect the restart of Unit 1. NUREG-0680, Supp. No. 5 (July 1984). Among the concerns expressed by the Staff was its conclusion that Metropolitan Edison Company may have knowingly provided false information in the response to the Notice of Violation. However, since the two officials primarily responsible for the questioned response, Robert Arnold and Edward Wallace, were no longer associated with TMI-1 activities, the Commission decided not to grant motions to reopen the record in the restart proceeding on that issue. Instead the Commission imposed a requirement on Licensee to notify the Commission before returning either Mr. Wallace or Mr. Arnold to responsible positions at Unit 1. *Metropoli-*

tan Edison Co. (Three Mile Island Nuclear Station, Unit 1), CLI-85-2, 21 NRC 282, 323 (1985).

Both Mr. Arnold and Mr. Wallace took exception to the implication respecting their reputations and integrity contained in CLI-85-2. Each requested a hearing. On December 19, 1985, the Commission invited comments from interested persons on the requests for hearings. The Commission stated that, based on the information submitted, it would consider initiating an adjudicatory hearing on whether the notification requirement should be retained. *General Public Utilities Nuclear Corp.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-19, 22 NRC 886, 889 (1985).

Comments from some of the intervenors in the TMI-1 restart proceeding, the Commonwealth of Pennsylvania, and the NRC Staff were submitted. On May 15, 1986, the Commission issued an Advisory Opinion and Notice of Hearing effectively exculpating Mr. Arnold (Advisory Opinion) and granting Mr. Wallace's hearing request (Notice of Hearing). *General Public Utilities Nuclear Corp.* (Three Mile Island Nuclear Station, Unit 1), CLI-86-9, 23 NRC 465 (1986). The Notice of Hearing provided for an adjudication before an administrative law judge under 10 C.F.R. Part 2 and set out the major benchmarks for the proceeding:

Any petitions to intervene by persons who responded by filing comments in response to CLI-85-19 shall be filed in accordance with 10 C.F.R. § 2.714 and, to be timely, shall be filed within 45 days of the date of this Notice. No other interventions shall be permitted except upon a balancing of the factors in 10 C.F.R. § 2.714(a)(1). NRC Staff shall participate as a party. Any party who advocates that Wallace made a knowing, willful, or reckless material false statement in the NOV response shall have the burden of going forward and persuasion. *If no person intervenes against Wallace and NRC Staff does not advocate a position against Wallace, then the proceeding shall be terminated and the TMI-1 notification requirement as to Wallace shall be removed.*

23 NRC at 472 (emphasis added).

No petition to intervene has been filed.¹ On June 30, 1986, the Commonwealth of Pennsylvania filed a timely petition to leave to participate as an interested state pursuant to 10 C.F.R. § 2.715(c). On July 17, the NRC Staff reported that it does not advocate a position against Mr. Wallace. The matter is now ripe for decision.

¹ The Advisory Opinion and Notice of Hearing, CLI-86-9, dated May 15, 1986, was published in the *Federal Register* on June 24, 1986. 51 Fed. Reg. 23,008. Action under the Notice of Hearing has been deferred for at least 45 days following the publication date.

DISCUSSION

In its petition to participate, the Commonwealth assumed that there would be a hearing and stated that:

[T]he Commonwealth has no additional facts to offer, and has no independent means of obtaining information on the facts in dispute. However, the Commonwealth is interested in participating in the upcoming hearing to ensure that the facts are fairly presented and that the evidence is thoroughly analyzed. The Commonwealth is not now advocating a position against Mr. Wallace.

Commonwealth Petition at 4.

As noted, the Staff, on July 17, 1986, reported that it does not advocate a position against Mr. Wallace.² Also on July 17 the Staff answered the Commonwealth's petition by noting that no person petitioned to intervene and that neither the Staff nor the Commonwealth advocates a position against Mr. Wallace. Therefore, according to the Staff, effect must be given to the Commission directive, cited above, to terminate the proceeding. Staff Answer at 2-3.

Notwithstanding the Commission's directive and the failure of anyone to take a position against Mr. Wallace, the Commonwealth, on August 1, replied to the Staff's answer insisting that a hearing be held. The Commonwealth urges that the Staff be directed to carry the burden of proof despite the Staff's disinclination to do so.

Scarcely acknowledging the Commission's directive to terminate the proceeding absent an adversary against Mr. Wallace (Reply at 3) the Commonwealth advances three principal arguments why, in its view, a hearing must be held. Each is discussed in the following paragraphs.

1. *The Commission directed the Staff to participate in a hearing.* Commonwealth Reply at 2, 4, 6. In this argument the Commonwealth is apparently alluding to the Commission's order in the Notice of Hearing that "NRC Staff shall participate as a party." 23 NRC at 472. In the full context of the Notice, however, it is clear the Commission intended for the Staff to participate only if there is a hearing initiated by someone advocating a position against Mr. Wallace.

2. *The Commonwealth elected to participate as a state rather than as a party because it does not have the facts in its possession and therefore cannot meet the burden of going forward and persuasion. Only the NRC Staff has the facts, knowledge and information to meet this burden.* Commonwealth Reply at 3.

² Letter from Mary Wagner, counsel for NRC Staff, to Judge Ivan W. Smith, July 17, 1986.

Given the Commission's directive to terminate the proceeding if no one takes a position against Mr. Wallace, the Commonwealth's second argument is irrelevant. However, the record of this proceeding should not close with the suggestion that Mr. Wallace has escaped the notification requirement solely as a consequence of a default by the NRC Staff. The Commonwealth has participated fully in the TMI-1 restart proceeding since its inception 7 years ago. Its counsel must be aware that if there were a hearing, the Commonwealth would have at its command, through the discovery regulations of Part 2 and the Freedom of Information Act (5 U.S.C. § 552), complete access to any evidence against Mr. Wallace.

3. *A hearing is necessary in light of the Commission's and Staff's prior statements regarding Mr. Wallace. The Commission found that Mr. Wallace's name cannot be cleared without additional evidence.* Commonwealth Reply at 5-9.

The Commonwealth's third argument is directed to the Commission's policy determination to place the burdens of going forward and persuasion on any party who advocates a position against Mr. Wallace. That determination is binding upon the presiding officer of this proceeding and the Commonwealth's third argument may not be considered.

In sum, the Commonwealth has not advanced any reason not to comply with the Commission's directive to terminate the proceeding if no one advocates a position against Mr. Wallace.

ORDER

1. This proceeding is terminated.
2. Pursuant to the delegation to the presiding officer in the Commission's Advisory Opinion and Notice of Hearing dated May 15, 1986, the TMI-1 notification requirement as to Mr. Wallace is removed.

APPEAL

This Order may be appealed to the Atomic Safety and Licensing Appeal Board within 10 days following its service.

Ivan W. Smith
ADMINISTRATIVE LAW
JUDGE

Bethesda, Maryland
August 19, 1986

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

James M. Taylor, Director

In the Matter of

Docket No. 70-1113

GENERAL ELECTRIC COMPANY
(Wilmington, North Carolina
Facility)

August 29, 1986

The Director, Office of Inspection and Enforcement, denies in part a petition filed pursuant to 10 C.F.R. § 2.206 by Vera M. English (Petitioner).

The Petitioner, in part, requested the Nuclear Regulatory Commission (NRC) to impose civil penalties against the General Electric Company (GE or Licensee) for alleged serious violations occurring at its Wilmington, North Carolina fuel fabrication facility. Specifically, the Petitioner referred to NRC inspection reports and argued that certain conclusions in those reports were in error. The Petitioner requested that the inspection reports be withdrawn and be reissued with the appropriate Notices of Violation and Proposed Imposition of Civil Penalties. The Petitioner also requested that a hearing be scheduled to inquire into these matters.

The Director reviewed numerous inspection report findings and related allegations regarding public health and safety and concluded that the relief requested in the Petition with regard to them was inappropriate.

Consideration of certain other allegations, specifically allegations of wrongdoing by the Licensee and allegations that the Licensee discriminated against the Petitioner and others in violation of § 210 of the Energy Reorganization Act of 1974, as amended, have been deferred until the NRC's Office of Investigations and the U.S. Department of Labor complete their review of the issues raised.

ENERGY REORGANIZATION ACT OF 1974: SECTION 210

The NRC and the Department of Labor have agreed to coordinate and cooperate concerning the employee protection provisions of § 210 of the Energy Reorganization Act of 1974. Generally, when a complaint has been filed with the Department of Labor alleging discrimination by an NRC licensee, the NRC defers consideration of the matter until the Department of Labor has acted.

CIVIL PENALTIES: ASSESSMENT

Under the NRC Enforcement Policy, civil penalties are not proposed for Severity Level IV violations unless such violations are similar to previous violations for which the licensee has failed to take effective corrective action or are willful.

CIVIL PENALTIES: ASSESSMENT

Civil penalties are not proposed for Severity Level V violations in the absence of willfulness.

PARTIAL DIRECTOR'S DECISION PURSUANT TO 10 C.F.R. § 2.206

INTRODUCTION

On December 13, 1984, Mozart J. Ratner and Arthur M. Schiller, as Counsel for Vera M. English (Petitioner), filed pursuant to 10 C.F.R. § 2.206 a "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 Hearing Thereon." The Petitioner, in part, requested the Nuclear Regulatory Commission (NRC) to impose civil penalties against the General Electric Company (GE or Licensee) for alleged serious violations occurring at its Wilmington, North Carolina fuel fabrication facility. Specifically, the Petitioner referred to five NRC inspection reports and argued that certain conclusions in those reports were in error. The Petitioner requested that the inspection reports be withdrawn and be reissued with the appropriate Notices of Violation and Proposed Imposition of Civil Penalties. The Petitioner also requested that a hearing be scheduled to inquire into these matters. By a letter dated January 10, 1985, the Deputy Director, Office of Inspection and

Enforcement, informed the Petitioner that her request was being reviewed by the Office of Inspection and Enforcement and would be responded to by that Office. Consideration of Petitioner's request by the NRC was also noticed in the *Federal Register* (50 Fed. Reg. 2634, Jan. 17, 1985).

The Petitioner subsequently supplemented her original request. On February 28, 1985, the Petitioner filed a supplement discussing alleged deficiencies in additional inspection reports received by Petitioner subsequent to her initial filing. Again, the Petitioner sought the issuance of new "corrected" reports, Notices of Violation, and assessment of civil penalties. A second supplement, dated March 12, 1985, further discussed earlier inspection reports and identified additional inspection reports which the Petitioner sought to have withdrawn and new "correct" reports issued. Again, the Petitioner sought the issuance of Notices of Violation for substantiated allegations and assessment of civil penalties.

The thrust of these three filings by the Petitioner is to challenge the adequacy and findings of certain NRC inspection activities. The technical adequacy of the review by NRC inspectors of a wide variety of activities is questioned. Not only is the technical assessment questioned, but in many instances the Petitioner suggests, and in some instances expressly alleges, that NRC inspectors have acted improperly by either overlooking matters or failing to make findings warranted by the facts. As a result, the Petitioner claims that numerous violations have either been categorized incorrectly or have gone undocumented. The Petitioner further claims that alleged violations which have occurred at the Licensee's Wilmington facility have been categorized at inappropriately low severity levels under the Commission's Enforcement Policy, 10 C.F.R. Part 2, Appendix C. The Petitioner claims that violations that have occurred should have been categorized at severity levels justifying the imposition of civil penalties. The Petitioner alleges this is particularly the case with respect to violations which she claims were willful on the part of the Licensee.

On April 11, 1985, the Petitioner provided additional information to the NRC for consideration. The point of this submission was ostensibly to provide the NRC with additional information which surfaced in a Department of Labor proceeding conducted in Wilmington, North Carolina, from December 17 to December 19, 1984, and March 19 to March 28, 1985.¹ In her April 11, 1985 submittal, the Petitioner submitted GE

¹ This proceeding was before an Administrative Law Judge pursuant to § 210 of the Energy Reorganization Act of 1974, as amended, 42 U.S.C. § 5851 and styled *Vera M. English v. General Electric Co.*, Case No. 85-ERA-2. The Petitioner was complainant in this proceeding and alleged discrimination by

Continued

documents which were alleged to constitute admissions of previous claims that GE violations at the Wilmington facility were willful, that GE had made material false statements to the NRC, and that GE had failed in its reporting requirements to the NRC. A variety of relief was requested including a renewed request to the Director, Office of Inspection and Enforcement, to find violations, assign them the highest severity level, and assess civil penalties, and furthermore to condition retention of GE's license for the Wilmington facility upon immediate removal of specifically named facility officers, officials, managers, and supervisors.

Finally, on June 20, 1985, the Petitioner submitted to the NRC documents pertaining to another pending Department of Labor proceeding initiated pursuant to § 210 of the Energy Reorganization Act of 1974.² In her June 20, 1985 supplement, the Petitioner asked the NRC to conduct its own investigation or cooperate with the Department of Labor in its investigation into the alleged violations of § 210. The Petitioner asked NRC to take independent action against GE to assure that employees would be free to exercise their rights without any fear of reprisal. On July 12, 1985, the Petitioner submitted a motion addressed to the Secretary of Labor which contained further information regarding alleged GE interference with the rights of employees.³

The Licensee also made a submittal on May 29, 1985, discussing issues raised by the Petitioner's filings. The Licensee argued that the Petitioner's submittals represented a direct and unjustified affront to GE, the NRC, the integrity of the NRC regulatory and licensing process, and the objective facts of record. GE argued that the Petitioner's requests should be denied in their entirety.⁴

GE as a result of her initiation of and the participation in NRC investigations at the GE Wilmington facility. The Administrative Law Judge issued a decision favorable to the complainant on August 1, 1985. On May 9, 1986, the Under Secretary of Labor remanded the case to the Administrative Law Judge for the limited purpose of taking certain further testimony.

² On May 23, 1985, a complaint alleging violations of § 210 was filed with the Department of Labor by Joy Malpass and John Clarence Lewis alleging discriminatory conduct by General Electric Company (85-ERA-38 and 39). On August 30, 1985, the Department of Labor, Wage and Hour Division, made a determination. Complainants appealed. On January 20, 1986, the Administrative Law Judge sitting in the matter dismissed the proceeding with prejudice at the prehearing stage.

³ I have also given consideration to the comments of Mr. Ratner re Inspection Report 85-04 contained in his March 28, 1986 letter to the NRC.

⁴ The five submittals made by the Petitioner (i.e., the submittals of December 13, 1984; February 28, 1985; March 12, 1985; April 11, 1985; and June 20, 1985) will be hereinafter cumulatively referred to as the Petition.

DISCUSSION

Prior to discussing the allegations of the Petition, a brief discussion of the activities conducted at the Wilmington facility is appropriate. The function of the GE Wilmington facility is to produce nuclear reactor fuel. In the production areas of the facility, incoming uranium is converted chemically to a powder and then, in a ceramic process, to pellets, which are assembled into fuel rods and bundles. These production operations are supported by the Chemet Laboratory, which provides metallurgical, environmental, chemical, and spectrographic analyses.

Some of these analyses are performed on small uranium samples brought in from the production areas of the plant. If not controlled carefully, analyses could result in uranium contamination on laboratory surfaces and in laboratory air. Equipment, procedures, and training are designed to minimize such contamination. Surface and air monitoring are intended to detect significant contamination. Bioassay measurements are used to determine whether workers have inhaled, ingested, or absorbed measurable uranium. Thermoluminescent dosimeters (TLDs) are worn on workers' clothing to measure exposure from radiation outside the body.

As described in NRC inspection reports discussing inspections conducted at the Wilmington facility, minor uranium contamination has occurred in portions of the Chemet Laboratory while performing analyses. However, radiation and contamination survey records, supported by personal exposure records including bioassay measurements, have indicated little uranium exposure to laboratory workers. Nevertheless, NRC inspection reports have identified a variety of minor regulatory violations, procedural weaknesses, and other matters, the correction of which have improved Chemet Laboratory safety. Some of these inspection report findings are attributable either directly or indirectly to concerns expressed by the Petitioner while other inspection findings, particularly those that discount Petitioner's allegations, have been challenged by the Petitioner.

The Petition makes many serious allegations regarding operation of the Licensee's Wilmington facility and the conduct of the NRC's inspection and enforcement program. Consequently, at the outset, I determined that a commitment of significant resources would be necessary to examine these issues and assure that they received appropriate consideration.

Accordingly, I assigned senior Headquarters staff essentially full time to oversee activities of personnel in Region II in resolving the allegations raised by the Petition. Specifically, I assigned John T. Collins, then my Special Assistant, to oversee preparation of the response to the Petition. Having been assigned overall responsibility for the response to the Peti-

tion, Mr. Collins became the focal point at Headquarters for communications with Mr. Ratner. To the extent possible, without compromising NRC investigations, Mr. Collins responded to Mr. Ratner's requests and provided him material, such as inspection reports.

Mr. Collins was assisted by William L. Fisher, a Senior Health Physicist. Together they worked with Region II to ensure that adequate inspections had been or would be undertaken to confirm or deny each allegation, a time-consuming process performed concurrently with other required inspections at NRC licensed facilities. This involvement of senior Headquarters staff provided additional assurance that the review conducted by Region II was a balanced one.

On March 13, 1985, Region II personnel met with the General Electric Company at GE's request in Atlanta, Georgia, to discuss health physics and accountability violations at the Wilmington facility. The Licensee took that opportunity to describe the actions that it was taking pertaining to allegation followup. The NRC stated that it would continue to follow up on the allegations in accordance with agency policy.

On May 6, 1985, I and other NRC Staff working on the Petition met with Messrs. Ratner and Schiller in Washington to respond to questions regarding the process whereby the response to the Petition was to be prepared and the status of that response.⁵

On May 24, 1985, Region II management assigned a Project Manager to ensure that the allegations raised by the Petition had been reviewed properly. This unusual assignment was necessitated by the number of allegations; by the overwhelming volume of related correspondence, inspection reports, and other pertinent material; and by the Petitioner's frequent contacts with the Region. The Region's efforts in addressing the allegations raised in the Petition were substantial. Among other things, a new computer-based tracking system had to be developed to relate inspections to allegations. Since late 1982, nineteen inspections by Region II have addressed the Petitioner's concerns.⁶ Some of those inspections were devoted entirely to that purpose. During calendar years 1984 and 1985, the Region devoted about 4000 man-hours to pursuing the Petitioner's concerns. (This figure does not include NRC Headquarters assistance, nor does it include investigations by the Office of Inspector and Auditor or the Office of Investigations.) About 4000 more regional man-

⁵ Executive Director for Operations William Dircks, I, and other NRC Staff also met on July 11, 1985, with General Electric corporate management and Wilmington plant management in Washington, at General Electric's request, to discuss the Wilmington plant but not the allegations raised in the Petition. A transcription was made of this meeting.

⁶ The Inspection Reports which address to varying degrees NRC's review of the allegations raised in the Petition are: 82-18; 84-04, 05, 08, 13, 15, 16, 17, and 18; and 85-02, 04, 05, 06, 11, 12, 13, 15, 16, and 17.

hours were devoted to normal inspection activities related to this Licensee.

On May 20, 1985, I referred to the Director of the NRC's Office of Inspector and Auditor those portions of the Petition that raised allegations about the conduct of the NRC in general and about some NRC employees.

In short, the NRC has given the allegations raised in the Petition a long, hard look.

For purposes of dealing with the many issues raised, the Petition can be divided into four categories.

1. The Petition makes numerous assertions regarding violations of regulatory requirements in the conduct by GE of its operation at the Wilmington facility. Numerous inspection reports are referred to as failing to make appropriate findings with respect to alleged violations; or when violations are identified, the Petition alleges that the assigned severity level is inappropriate.
2. The Petition alleges wrongdoing on the part of the Licensee in conducting its operations at the Wilmington facility. The Petition alleges that the Licensee knowingly permitted and/or fostered noncompliance with the Commission's regulations.
3. The Petition alleges that certain NRC employees, especially NRC inspectors, were remiss in their duties by, for example, failing to inspect adequately GE's activities at its Wilmington facility and, on occasion, deliberately downplaying known violations.
4. The Petition alleges that the Licensee discriminated against the Petitioner and also against others in violation of § 210 of the Energy Reorganization Act of 1974, as amended, and consequently that the NRC should take independent action against the Licensee to remedy such conduct.

Some of these issues will not be addressed in this Decision. Specifically, issues relating to the propriety of conduct by NRC employees are handled within the NRC by the Office of Inspector and Auditor and do not fall within the scope of § 2.206. *See Duke Power Co. (Catawba Nuclear Station, Units 1 and 2)*, DD-84-16, 20 NRC 161, 164 n.3 (1984). Accordingly, allegations made by the Petitioner in this regard have been referred to that Office for its consideration.

I am also not prepared, at this time, to take action with respect to the allegations of discrimination raised by the Petitioner. The NRC and the Department of Labor have agreed to coordinate and cooperate concerning the employee protection provisions of § 210 of the Energy Reorgani-

zation Act of 1974.⁷ Generally, when a complaint has been filed with the Department of Labor alleging discrimination by an NRC licensee, the NRC defers its consideration of the matter until the Department of Labor has acted. This policy avoids duplication of effort and the needless expense of resources by deferring NRC actions until the Department of Labor has fully considered the issues. In the case of the Petitioner's complaint before the Department of Labor, which was resolved in her favor by the Administrative Law Judge, this means deferral of NRC consideration until the matter has been determined by the Secretary of Labor. Should litigation result from the complaints filed by Ms. Malpass and Mr. Lewis, *see* note 2, *supra*, the NRC likely will await a final determination by the Secretary of Labor. Consequently, I do not reach the discrimination issues in my Decision today.

It should be noted that deferral of NRC consideration of any potential discrimination issues at the Wilmington facility is appropriate in this matter in light of the extensive inspection activities which have been conducted at the facility, as discussed below, with generally acceptable results.

Nor do I make a determination regarding all of the issues regarding Licensee wrongdoing raised by the Petitioner. Certain of the wrongdoing issues raised by the Petitioner are so clearly without factual substance and foundation that they may be dismissed without extensive investigation. Such issues are discussed in the attached Appendix A, "Resolution of Certain Issues Raised by Vera English in Her Petition Pursuant to 10 C.F.R. § 2.206," hereinafter referred to as Appendix A and incorporated herein by reference. Certain other issues alleging wrongdoing by the Licensee will require further investigation by the Commission's Office of Investigations (OI) before I can determine what action, if any, is appropriate. These issues currently are being addressed within OI. When that effort and the DOL proceedings are complete, I intend to issue a supplement to this Decision.

My Decision today deals with those issues falling into the first category described above, i.e., issues related to the sufficiency of the inspection reports and NRC inspections conducted over the past several years of the Licensee's activities at its Wilmington facility and those issues within the second category found to be without factual substance. As was discussed above, extensive Staff efforts and resources were committed to reviewing these issues. Appendix A discusses their resolution. With respect to the issues addressed in Appendix A, no significant health

⁷ "Memorandum of Understanding Between NRC and the Department of Labor; Employee Protection," 47 Fed. Reg. 54,585 (Dec. 3, 1982).

and safety problems were identified requiring action by the NRC. Generally, the findings of the inspection reports which were the subject of the Petition were substantiated, while most of the allegations contained in the Petition were not substantiated. However, allegations did lead directly to the following six Notices of Violation:

Inspection Report	Violation	Severity Level
84-15	Visible contamination not cleaned up	IV
84-17	Termination exposure report not timely	V
85-02	Lab coats worn improperly and failure to perform uranium powder sampling inside a hood	IV
85-04	Failure to measure airborne concentrations during pellet cutting and polishing	IV
85-04	Failure to provide a complete termination exposure report	IV
86-01	Failure to have an approved procedure for transportation	V

The intensive inspection program conducted during 1984 and 1985 in response to the allegations resulted in the following eight additional items of noncompliance:

Inspection Report	Violation	Severity Level
84-04	Improper frisking	V
84-16	Failure to investigate and correct when control limits were exceeded	IV
84-17	Failure to perform proper air sampling	IV
84-18	Failure to provide for certain emergency preparedness procedures	IV
85-02	Failure to label shipment properly	IV
85-02	Failure to instruct individuals	IV
85-02	Failure to post one gate as required by Part 19	V
85-04	Unauthorized transfer of uranium dioxide samples	IV

The severity level assigned to previous violations, to violations identified as a direct consequence of the allegations, and to violations resulting from intensive inspections prompted by the allegations were classified appropriately as Severity Level IV or V. Under the NRC Enforcement Policy, civil penalties usually are not proposed for Severity Level IV violations, unless such violations are similar to previous violations for which the licensee failed to take effective corrective action or are willful. This was not the case here. Civil penalties are not proposed for Severity Level V violations in the absence of willfulness which was not found here. Consequently, no civil penalties are being proposed at this time.

To the extent that further NRC investigation determines that certain violations committed by the Licensee involved wrongdoing, further enforcement action may be warranted. Consideration of these matters is being deferred until OI completes its investigation of these issues.

The Petitioner requested, among other things, that Inspection Reports 82-18, and 84-04, 05, 08, 10, 13, 15, 16, 17, and 18 be withdrawn and re-issued. Our review of these inspection reports has identified no reason to do so. The above inspections appear to have been properly performed and adequately documented.

The Petitioner referred to, but did not request withdrawal of, Inspection Reports 81-11, 82-10 and 16, 83-05, and 85-04 which we also find adequate.

As noted above, certain issues will be addressed later in a supplement to this Decision. Specifically, wrongdoing issues which have been identified as requiring further investigation and issues related to employee discrimination will be addressed later. No actions need be taken at the Wilmington facility regarding these issues in the interim, as the regulated activities at this facility generally have been found to be well controlled and the NRC inspection oversight will continue to be sufficient to assure that this remains the case. Accordingly, I decline at this time to grant relief requested in the Petition.

CONCLUSION

For the reasons given above, certain issues raised by the Petitioner are deferred pending further investigation by the NRC or further determinations by the Secretary of Labor. Based on the review of the issues which are considered herein, operation of the Wilmington facility has not created an undue risk to the public health and safety, including the employees at the facility, and the issues do not raise substantive health and safety concerns warranting regulatory action. Consequently, I decline to

take the actions requested by the Petitioner with respect to these issues. To this extent, Petitioner's request for action pursuant to § 2.206 is denied. As provided in 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary for the Commission's review.

James M. Taylor, Director
Office of Inspection and
Enforcement

Dated at Bethesda, Maryland,
this 29th day of August 1986.

APPENDIX A

Resolution of Certain Issues Raised by Vera English in Her Petition Pursuant to 10 C.F.R. § 2.206

The Petitioner, in addition to raising questions as to whether the factual findings in referenced inspection reports demonstrate violations, also argues that violations exist because the Licensee did not meet certain reporting requirements. To the extent the reporting requirements are relevant to the subject reports, they are discussed below. However, it should be noted that the Petitioner has incorrectly cited and relied on 10 C.F.R. § 50.73 concerning reporting requirements. That provision does not apply to a materials licensee, such as General Electric. Section 50.73 applies only to the holders of operating licenses for nuclear power plants.

The Petitioner also argues that, unless a violation meets the standards in § IV of Appendix C to 10 C.F.R. Part 2 (hereinafter the NRC Enforcement Policy), a Notice of Violation must be issued for the violation. Although as a general matter the Commission does cite all violations which it identifies, the appropriate action to be taken in a given case depends on the circumstances of the case and requires the exercise of discretion after consideration of the policies and procedures set out in the NRC Enforcement Policy. Thus, there is no case in which the Commission *must* issue a Notice of Violation or a Proposed Imposition of Civil Penalty. The institution of any enforcement action is within the discretionary authority of the Commission.¹

¹ The concept of prosecutorial discretion on the part of the Commission has been recognized by the D.C. Circuit. See *Union of Concerned Scientists v. NRC*, 711 F.2d 370, 382 (D.C. Cir. 1983).

While the Petitioner suggests that the NRC is "legally bound" by the NRC Enforcement Policy (Petition at 7), the policy actually serves only as a guide and announces this agency's intentions. As was stated in the Statement of Consideration for the policy, the policy was adopted as "a statement of general policy rather than as a regulation." 47 Fed. Reg. 9987. (See *Consolidated X-Ray Service Corp.*, ALJ-83-2, 17 NRC 693, 705 (1983)). It is the essence of a policy statement that the agency remains genuinely free to exercise discretion in carrying out its statutory responsibilities.

A number of the Petitioner's concerns appear to arise from a misunderstanding of what is required of NRC licensees. Enforceable requirements for which a Notice of Violation² may be issued by the NRC include *only* requirements specified in statutes, NRC regulations, license conditions, or orders of the NRC. Commitments by licensees or recommendations by NRC inspectors are not properly the subject of a Notice of Violation. The NRC encourages licensees to use the best practices available and, while pleased when a licensee exceeds regulatory requirements, the Commission does not take enforcement action when a licensee does not take additional actions. The only exception to this would be when a licensee has formally committed to the NRC to take certain actions. In that circumstance, a Notice of Deviation may be issued if the commitment is not met. (See NRC Enforcement Policy, § IV.E.2.) However, such failures, though subject to remedy by agency orders, are not violations which could result in issuance of a Notice of Violation or a Proposed Imposition of Civil Penalty.

With these general observations, the majority of the concerns of the Petitioner are organized and discussed under the following categories:

1. Chemet Laboratory Operations (pp. 337-40)
2. GE Policies, Procedures, and Actions (pp. 340-47)
3. NRC Inspections, Findings, and Enforcement
 - a. Inadequate Inspection (pp. 347-54)
 - b. Improper Findings (pp. 354-91)
 - c. Improper Enforcement (pp. 391-96)

Where possible, the issues are quoted as presented by the Petitioner. Otherwise, for clarity and brevity the NRC has characterized the issues. References to source documents are provided to assist in a fuller understanding of the matters raised by the Petitioner.

² A Notice of Violation is a prerequisite for the Proposed Imposition of Civil Penalty.

1. Chemet Laboratory Operations

Petitioner made several comments in reference to Chemet Laboratory operations. Those comments and NRC resolution of them are as follows:

- a. Concerning an October 21, 1983 memorandum from a Chemet Lab Supervisor to the Chemet Lab Manager, the Petitioner states that the memo shows that management knew that Chemet Lab personnel felt under inordinate pressure to cover up out-of-alarm limit (OAL) and out-of-control limit (OCL) results and to release only results "acceptable" under "biased" standards established "in order to satisfy production oriented egos." (Petition, Chap. I at 13)

Response

From the review of the referenced memorandum, the NRC concludes that the supervisor was advising his superior that there was a problem in the Chemet Lab and believed the best way to correct the problem was to meet with the affected employees. Note the last sentence of his memorandum: "I feel a meeting is needed to address employees' concerns and reduce self imposed pressure to produce."

While production pressure may be unpleasant for employees, it is present frequently in any production-based operation. This pressure becomes of concern to the NRC when it leads to employees failing to follow procedures which implement NRC requirements.

The NRC found nothing during its review to indicate that management deliberately adopted and enforced on employees a policy to increase production and adhere to delivery schedules and to ignore safety considerations. Further, the violation identified in Report No. 84-16 during the NRC review of the out-of-alarm limit (OAL) and out-of-control limit (OCL) areas was not attributed to production pressures.

- b. Petitioner also asserts that violations documented in reports by the NRC continued after October 21, 1983. (Petition, Chap. I at 13)

Response

It is not clear to what "reports" the petitioner is referencing. The two violations identified in Report No. 84-17, which was the subject of that section of Chapter I, were not "continued" in the sense suggested by the Petitioner. One violation dealt with failure to use suitable measurements of concentrations of radioactive materials in air. The issue of air samplers, which became a point of contention between the Licensee and the

NRC, was ultimately resolved by the Licensee adding four more air samplers. The other violation involving Petitioner's termination exposure report was admitted by the Licensee and the Licensee revised an existing computerized termination dose reporting program in an effort to avoid such violations in the future. Therefore, the violations were resolved to the NRC's satisfaction.

- c. In an attempt to "clean up" the lab, a portion of the flooring was ripped out only to find that the foundation actually was "hotter" than the floor. Nevertheless the foundation was not torn out but rather a new floor was laid on the "hot" base. Further, after working all night to clean contamination from a lab wall, the workers were instructed to paint over a heavily contaminated wall. (Petition, Chap. I at 13-14)

Response

The Licensee performed a special contamination survey in the LEA measurement system (counting) room at the request and in the presence of an NRC inspector. This special survey identified low-level contamination on parts of the floor (not in the normal walk areas), counting equipment, and table tops. No visible contamination was observed on the walls during the survey. Some visible contamination was observed on the walls when equipment was moved to facilitate decontamination. The contamination was not "vast," as characterized by the Petitioner. However, the contamination levels were above the Licensee's contamination action level of 220 dpm/100 cm² for an uncontrolled area, which was specified in Licensee's procedure, Nuclear Safety Instruction 0-6.0. As stated in Inspection Report 85-02, neither NRC regulations, License No. SNM-1097, nor any specific Licensee procedure establishes specific contamination limits for this room. Only action levels at which cleanup should be initiated are established. A small section of tile was removed to decontaminate the floor. Equipment and walls were wiped down and repainted. During Inspection 85-02, the Licensee removed several pieces of the new tile, at the request of the NRC inspector, and performed removable and fixed contamination surveys to determine the extent of contamination remaining under the new tile. The contamination levels were less than the Licensee's action level for an uncontrolled area. Contamination surveys were not performed before or after decontamination of the wall. However, if one assumed that the contamination levels on the wall were equivalent to the maximum level identified in the actual survey performed in December 1984 under the observation of the inspector, they

would not represent a significant exposure source. Painting over low-level contamination that cannot be easily removed is a method of ensuring that contamination remains fixed. Painting over contamination fixes the uranium in place and removes its potential to become airborne. It should be noted that no NRC requirements prohibit the painting of contaminated surfaces.

- d. On December 5, 1984, a Chemet Lab employee inspected six employee chairs and found them to be "hot" with radiation. When confronted about the matter by an employee, McLamb (supervisor) became agitated and angry, denied the chairs were "hot," and said "[w]henever discovered they were hot had better clean them up." (Petition, Chap. I at 14)

Response

The fact that some chairs in the Wet Lab were contaminated with low levels of fixed contamination was confirmed by an NRC inspector through independent surveys, the results of which were reported in Inspection Report 85-02. This independent survey found that one chair had fixed contamination above the Licensee's action level for fixed contamination of 2200 dpm/100 cm². The removable contamination levels were all less than the Licensee's action level of 220 dpm/100 cm². The presence of contamination on the laboratory chairs was discussed in Inspection Report 85-02 as evidence that spills in the Chemet Lab had not been cleaned up. This was identified as an example of failure to follow procedures, for which a Notice of Violation was issued as discussed previously in Inspection Report 84-15. As McLamb did order the cleanup, it is not of concern to the NRC that he might have a temper or poor management style unless he intended to and did prevent the reporting of such contaminations. The Petitioner offered no clear indication or evidence that this was the case.

- e. The "Hendry Report," a March 29, 1984 memorandum titled "Chemet Lab Safety Review" from W.J. Hendry to E.A. Lees, establishes that personnel were not monitoring the isotopic room as a result of GE management orders not to do so. (April 11 Letter at 29)

Response

The Petitioner is incorrect in assuming that the microwave work area mentioned in the Hendry Report was in the Isotopic Area where the Pe-

titioner previously worked. As stated in the report the microwave oven was in the Spectrometer Lab, an entirely separate room from the Wet Lab where the Isotopic Area is located. The microwave oven in the Spectrometer Lab was used only infrequently. Documenting the locations where smear surveys were taken in no way limits the discretion or authority of radiation safety technicians to monitor as they believe necessary in the Isotopic Area. Although the radiation safety technicians most frequently took smears in the walk patterns, they occasionally took samples in other areas. Survey results documented by the Licensee indicated that surveys had been taken in the Isotopic Area. There is some rationale for using surveys of walk patterns to detect spread of contamination. However, in Inspection Report 84-17, the inspector suggested that the Licensee routinely survey the work areas where there was a greater potential for a contaminating event. Based on recorded survey results reviewed by the inspector the Petitioner's contention that radiation safety technicians were under management orders not to monitor in the Isotopic Area was not substantiated.

2. GE Policies, Procedures, and Actions

- a. At several points, Petitioner made the point that ALARA was not adhered to by the Licensee or addressed by the NRC. (Petition, Chap. I at 6-7, 11, 15, 18-20; Chap. II at 3; April 11 Letter at 28.) More specifically, the Petitioner asserted that the Licensee willfully breached ALARA.

Response

Before addressing the Petitioner's complaint, a brief discussion of the origin and meaning of ALARA is useful. ALARA is an abbreviation for the phrase "as low as is reasonably achievable." The Petitioner addresses ALARA as though it is a readily identifiable and precise regulatory requirement. This in fact is not the case. ALARA is a *regulatory goal*, which in practical application may lead to more conservative actions, in terms of radiation safety, than those otherwise required by NRC regulations (10 C.F.R. § 20.1(c)).

The NRC strives to protect the public health and safety against unnecessary exposure to radiation by setting limits to those exposures in a given period of time. The radiation exposure limits referenced in 10 C.F.R. Part 20 are considered to be safe; but to ensure additional margin of safety the NRC has adopted the concept of ALARA as published by The International Commission on Radiological Protection in 1973. An

underlying principle of ALARA is that radiological protection should be pursued to reduce exposures to a point where any further reduction in risk would not justify the effort required to accomplish it. It must be noted that the application of the ALARA goal involves highly subjective value judgments, which may also include economic and other sociological factors.

From the above it should be clear that ALARA is a goal or objective and not in and of itself a requirement. Accordingly, it would be an error to talk in terms of a "breach of ALARA."³ The question is whether GE pursued an adequate ALARA program.

We now will address the Petitioner's complaint. Although not specifically addressed in the inspection reports mentioned in the Petition, reviewing the Licensee's program for maintaining radiation exposures "as low as is reasonably achievable" is one aspect of the radiation protection inspection program. Guidance to inspectors contained in the inspection procedure⁴ for radiation protection programs at fuel fabrication facilities is discussed in Regulatory Guides 8.8 and 8.10.

While License SNM-1097 does not refer directly to the ALARA principle, the license is subject to 10 C.F.R. Part 20 and to the conditions of Part I of the Licensee's application dated May 14 and June 20, 1984. Part 20 (§ 20.1(c), "Purpose") states that licensees "should . . . make every reasonable effort to maintain radiation exposures . . . as low as is reasonably achievable." It defines that ALARA "means as low as is reasonably achievable taking into account the state of technology, and the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to the utilization of atomic energy in the public interest." Section 20.103(b)(2) requires "precautionary procedures" under certain conditions, essentially to achieve inhalation exposures ALARA. Other than in this limited circumstance, 10 C.F.R. Part 20 does not elaborate or require licensees to achieve exposures ALARA.

Part I of the Licensee's application (§ 2.3.1) requires a Wilmington Safety Review Committee, whose responsibilities include an

annual ALARA review which considers the following:

Programs and projects undertaken by the radiation safety function and the

³ It is noted that Petitioner's mischaracterization of ALARA as a "standard" may have arisen out of a mischaracterization of the concept by Plaintiff's attorney in the Karen Silkwood case while questioning an NRC witness, which was later picked up by the trial judge as dicta in his opinion denying defendants a rehearing in that case (*Silkwood v. Kerr-McGee*, 485 F. Supp. 566 (1979)). The error was then repeated, as dicta, by the U.S. Supreme Court in its review of the case (*Silkwood v. Kerr-McGee*, 464 U.S. 238, 78 L. Ed. 2d 443, 104 S. Ct. 615 (1984)).

⁴ IE Manual Chapter 2600.

operational radiation safety committee.

Performance including, but not limited to, trends in airborne concentrations of radioactivity, personnel exposures and environmental monitoring results.

Programs for improving the effectiveness of equipment used for effluent and exposure control.

Section 2.3.2 requires an Operational Radiation Safety Committee to ensure that "the occupational radiation exposures of employees are kept as low as practicable and within established limits." (The term "as low as practicable" is synonymous with ALARA.)

Section 2.7.1 states that the radiation protection program is designed to establish and maintain written instructions for radiation health and safety practices "so as to maintain occupational radiation exposures at levels as low as reasonably achievable."

Finally, § 3.1.2 states, "WMD [Wilmington facility] has established a radiation protection program designed to ensure that occupational radiation exposures are maintained at levels as low as reasonably achievable."

There is no question of GE Wilmington's obligation to work toward the objective of maintaining exposures ALARA. Inspectable evidence of such effort includes (1) minutes and correspondence of the Wilmington Safety Review and Operational Radiation Safety Committees, (2) exposure reduction aspects of operating procedures, and (3) the four aspects of the ALARA Program described in § 3.1.2 (management commitment, detection and measurement systems, information systems, and major facility and equipment changes).

To maximize available inspection time, NRC inspection reports concentrate on actual and potential problems and on matters of greatest safety or regulatory significance and focus on radiation protection subtopics, such as air sampling, internal dose control, etc. The subject of ALARA, which deals with making the already low even lower, is not ignored during NRC inspections but it evokes little inspection report discussion as a separate topic. The ALARA goal is considered in inspections in all radiation protection subtopics.

Nevertheless, there are two fairly recent examples of ALARA discussions in GE Wilmington inspection reports:

85-07, in which the inspector reviewed the activities of the Wilmington Safety Review Committee and the Operational Radiation Safety Committee.

83-24, in which the inspector reviewed ALARA aspects of ventilation and whole-body counting concerns.

Thus, the NRC does examine the Licensee's ALARA Program and believes that it is in keeping with the goals of the program.

- b. Petitioner complains that samples received from the production area for analysis were found to have external contamination on the container. (Petition at 13)

Response

There is no NRC requirement that samples transferred from one area of the plant to another be transferred in contamination-free containers, as long as the transfer is not to an area where there are no precautions applied to protect against radiation or radioactivity. In fact, the Licensee recognizes that samples from the production area may be contaminated, cautions Chemet Lab personnel by plant procedures that samples may be contaminated, and requires the use of appropriate protective clothing by laboratory personnel. The Licensee's procedures stated that visibly contaminated sample containers are not to be received in the laboratory. Although Inspection Report 84-04 stated that samples from the production area had been externally contaminated, the contamination was not visible. Considering the nature of the uranium material handled in the laboratory, the absence of visible contamination would indicate that contamination levels on the container were low.

- c. Petitioner also complains that the Licensee procedures and notices regarding protective clothing requirements failed to require employees to wear protective gloves when handling radioactive material. (Petition at 13)

Response

Inspection Report 84-04 specified that the Licensee's written procedures and notices regarding protective clothing requirements failed to require employees to wear protective gloves when handling radioactive material. However, Licensee management indicated during the inspection that they expected personnel in the laboratory to wear gloves when handling radioactive material. It is good health physics practice to wear protective gloves when handling potentially contaminated items, but it is not a regulatory requirement. In fact, the inspector observed that personnel in the Chemet Lab wore plastic gloves when handling potentially contaminated material. Since the Licensee intended to receive potentially contaminated material in the laboratory from the production area, the inspector indicated it would be prudent to clarify the plant procedure spe-

cifically to require that gloves be worn when handling radioactive samples.

- d. Petitioner believes that the "Wieczorek Report," an April 26, 1984 memorandum titled "Employee Allegations of Violations to Company Practices and Procedures" from F.J. Wieczorek to E.A. Lees, substantiates her allegation that isotopic results are accessible in the computer and can be altered. Petitioner also addresses the issue of computer acceptance of out-of-control results. (April 11 Letter at 15-18)

Response

The Petitioner has combined inspection results which addressed several separate allegations. The allegations addressed in Inspection Report 84-05 and the Wieczorek Report concerned the accessibility of analytical results in the computer, the use of transaction codes to alter existing data, and the falsification of data.

Inspection Report 84-05 and the Wieczorek Report concluded that measurement data were accessible in the computer, that transaction codes had been used to correct data, and that no falsification of measurement data could be found. Because NRC has no requirements in the area of computer security, no violation was issued. However, the Licensee agreed to improve the control of access to measurement data.

Inspection Report 84-15 addressed the allegation that the computer was programmed to accept out-of-control results. In Inspection Report 84-15, the inspector concluded that the computer had not been programmed to accept out-of-control results and that the computer was reasonably protected from unauthorized changes.

- e. Petitioner asserts that GE made no reports to the NRC between May 22, 1980, and June 1984 of such events as —
 - (1) the "UF₆ release" on September 15, 1981;
 - (2) the July 29, 1982 dumping of "internally contaminated" 2½-inch pipe;
 - (3) failure, as of February 11, 1982, to record standards and sample data on bench worksheets, sample reports, control logs/control charts;
 - (4) Chemet Lab contamination levels during 1984 ranging "from 317 dpm/100 cm² to 5100 dpm/100 cm²;
 - (5) 902/903 password system subject to abuse both long before and long after early 1984;

- (6) April 1–May 31, 1984, “both the alarm limits and out-of-control limits were not in agreement with (LMCS) computer limits”;
 - (7) constant exceeding of out-of-control limits during 1984;
 - (8) increasing “weaknesses in the contamination control program in the Chemet Lab” and “the fuel manufacturing area” during the period 1978-1984; and,
 - (9) failure in 1984 to provide projected dose information and recommendations to offsite organizations.
- (April 11 Letter at 38)

Response

Based on NRC review, all of the incidents referenced by the Petitioner, except one, involved conditions below the threshold specified in NRC regulations for reporting and, therefore, were not reportable. Data on the September 16, 1981 UF₆ gas release were provided to NRC Region II by telephone. Additionally, inspectors went to the plant the week after the incident to verify conditions. No written report was submitted because NRC indicated that it had obtained the necessary information and did not need a written report.

- f. In general terms, the Petitioner asserts that the NRC inspectors did not consider that the Licensee did not make timely and voluntary identification of violations to the NRC. More specifically, the Petitioner noted that GE reported the Petitioner's allegations to the NRC more than 1 month after GE received them from the Petitioner. (April 11 Letter at 38-39) Petitioner asserts that an NOV must issue if violations were not identified to the NRC in a timely manner. (*See also* Petition, Chap. II at 7)

Response

With respect to the timeliness of the verification to NRC of allegations received by a licensee, the licensee is not required to report allegations until they are determined to have substance and to be reportable. The Petitioner's allegations did not concern reportable matters.

Nevertheless, the NRC was notified telephonically by the Licensee on the morning of March 23, 1984, that it had received allegations from one of its employees concerning safety and accountability issues. At that time, the NRC had already received the allegations from a confidential source. The Licensee was told that a detailed discussion of the issues was not appropriate but that NRC would review the issues and the Licensee's investigative findings during a routine inspection. Unknown to the

Licensee, NRC had already arranged to visit the site unannounced on March 26, 1984. NRC inspectors arrived on site on March 26, 1984, and the meeting described in Inspection Report 84-05 took place.

- g. Dr. Kenneth Mossman, Associate Professor of Radiation Medicine and Director of the Graduate Program in Radiation Science at Georgetown University in Washington, D.C., testified at Petitioner's Department of Labor hearing. Petitioner characterized his testimony as showing serious deficiencies in certain radiation practices, including frisking, training, contamination surveys, and air sampling. (April 11 Letter at 39-42)

Response

In regard to frisking as was noted in Inspection Report 82-10, "the inspector stated that it appears that licensee personnel who audit the frisking activities may not know what constitutes a thorough frisk for personnel contamination. The inspector further stated that there is no reason to believe that what he observed on May 20 and 21 is not typical." Having cited GE for the frisking failures observed by him, the inspector, nevertheless, found no evidence which indicated misrepresentation on the part of GE in regard to the GE audits in this area.

The danger of improper frisking depends on the contamination potential of the area being left. The low levels of contamination typically found in the Chemet Lab suggest that improper frisking is not likely to be dangerous to the worker or to the public. However, that does not excuse anyone's failure to use safety equipment as intended.

The low levels of contamination found in the Chemet Lab during Licensee surveys, including special surveys performed under the observation of the NRC, and the small quantity of material handled in the laboratory indicate little chance of significant exposure to uranium. NRC audits of the Licensee's training programs have confirmed that training generally is consistent with the requirements of 10 C.F.R. § 19.12.

NRC inspections have found training weaknesses but these findings have not been frequent or severe enough to label the training inadequate. As discussed previously, the contention that radiation safety personnel were excluded from monitoring certain areas was found to be without merit.

Air sampling and contamination surveys are discussed in responses at §§ 3.b(11), (12), and (14), and 3.c(4).

The NRC does not find in Dr. Mossman's statements a basis for concluding that "if the condition found at WMD were allowed to exist and

persist in his own research laboratory, this would be serious grounds for possible civil penalties and even temporary revocation of the license." No radiation protection program, whether at fuel facilities, universities, or other licensed facilities, is without some weaknesses. Imperfections generally are found, documented, and corrected without resorting to civil penalty or license revocation. No significant health and safety problems were found at GE Wilmington. Therefore, consistent with the NRC Enforcement Policy, inspection findings at GE Wilmington have not required such escalated enforcement action.

3. NRC Inspections, Findings, and Enforcement

a. Inadequate Inspection

- (1) In regard to Inspection Report 84-05, Petitioner asserts that the Petitioner told GE of password access violations but was ignored. (Petition at 16)

Response

As part of the inspection conducted March 26-29, 1984, the inspectors investigated the Petitioner's assertion that data associated with isotopic analyses that were stored in the Licensee's computer system could be altered and falsified. The inspectors investigated the possibility of laboratory technicians using each other's and their supervisor's passwords to change or falsify data.

The inspectors determined that there was liberal use of employee passwords by other individuals but that the use was necessary to maintain laboratory access to data across several shifts. The software in this computer system required the use of the sample preparer's password to release data over the time span of several shifts. However, once apprised of the Petitioner's concerns, the Licensee modified the computer software to facilitate the release of sample results by individuals other than the sample preparer.

A "Laboratory Policy Memorandum" dated January 19, 1984, was issued by the Licensee to inform laboratory personnel that use of passwords of other individuals was unauthorized. The inspectors viewed the referenced memorandum as a recognition by the Licensee of a problem in the use of passwords and transaction codes. This memorandum clearly addressed the types of concerns raised by the Petitioner and indicated corrective actions to preclude unauthorized use of passwords and transaction codes.

The inspectors found no evidence that data had been falsified either intentionally or accidentally. Further, there is no NRC requirement for computer system security. No enforcement action was appropriate concerning the lack of password control.

The accessibility of computer data also is discussed in the response at ¶ 2.d.

- (2) As to Inspection Report 84-13, Petitioner noted that the inspector failed to identify and review Petitioner's termination radiation exposure report. (Petition at 21)

Response

NRC inspections routinely involve a sampling of records. During Inspection 84-13, the inspector reviewed selected Licensee records of termination reports but did not indicate whether the Petitioner's report was or was not included. Nevertheless, it should be noted that the Petitioner's termination radiation exposure report was reviewed and specifically commented on by the inspector in Inspection Reports 84-17 and 85-04. Further, Notices of Violation related to the termination radiation exposure report were issued as a result of both inspections.

- (3) Petitioner attacks NRC "assumption" that because of unannounced inspections, the NRC observes "normal" conditions because management has no opportunity to "clean up" and alert the workers to be on good behavior. (Petition, Chap. I at 3)

Response

Most NRC inspections are unannounced, meaning that the Licensee is not informed ahead of time about a forthcoming inspection. Upon arriving at the GE site, the inspector will present himself at the guardhouse and will conduct an entrance interview with the plant manager or his designee. During the entrance interview the inspector will outline the scope of his inspection and will specify any requirements he may have before or during the inspection. The NRC believes it is not inappropriate that the security guard notifies site management that an NRC inspector has arrived on site for an inspection. Site management has a right to know who is on their site in order to carry out their responsibility for the safety and the emergency accountability of all people on site, including NRC inspectors. To our knowledge, this common practice in inspections has not led to covering up significant safety problems.

The Petitioner implies that unsafe conditions are changed to safe conditions in 15 minutes. Although minor remedial actions could occur before an inspector observes the facility or operations, it would be extremely unlikely that serious conditions could be corrected in that time. In this instance, the inspectors found no evidence that an unsafe condition was changed to a safe one during this entry period. In addition, NRC inspectors not only observe work being performed, they also interview workers and review the Licensee's records to determine conditions that existed at other times.

- (4) Petitioner implies that employees of GE talked to by NRC inspectors were inhibited from talking freely and candidly with the inspector because of the presence of GE management representatives during such interviews. (Petition, Chap. I at 4-5)

Response

During NRC inspections, the Licensee's employees have been interviewed by inspectors off the site and on the site. While on site, interviews frequently are conducted in rooms supplied by the Licensee (usually without management attendance). Regardless, 10 C.F.R. § 19.15(a) and (b) provide for private consultation between inspectors and workers concerning occupational radiation protection and other matters. Form NRC-3, which must be posted in accordance with 10 C.F.R. § 19.11(c) and (d), describes the employees' right to talk privately and confidentially with an NRC inspector.

At times it is necessary for the inspector to be accompanied by a Licensee representative to assist the inspector in securing necessary information for his inspection, to act as a guide in parts of the facility with which the inspector may not be familiar, and to answer questions related to the inspection. Nevertheless, it should be recognized that inspectors have essentially free access to the Licensee's facilities and usually are not escorted by the Licensee. Additionally, 10 C.F.R. § 70.55(c)(3) requires licensees to afford inspectors unfettered access, consistent with identification and access control requirements. The NRC inspections associated with the Petitioner's allegations did not reveal instances of Licensee accompaniment having interfered with communication between employees and NRC inspectors.

- (5) Petitioner observes that the ALARA "standard" is not mentioned in IE reports. (Petition, Chap. I at 6-7)

Response

See again discussion of ALARA, ¶ 2.a.

- (6) Petitioner believes that the inspector mainly accepted management explanation for alleged failures instead of consulting relevant documents. (Petition, Chap. I at 23)

Response

Contrary to Petitioner's belief, the inspector made an independent assessment of the pertinent documents. Further, the Petitioner was incorrect as to the meaning and application of the documents cited by her to the issue raised. See a fuller discussion of the matter at ¶ 3.b(17).

- (7) Petitioner charges that the inspector responsible for Inspection Report 84-17 was gratuitously insulting, disparaging, and misleading in his treatment of a Petitioner allegation concerning the failure of some lab personnel to monitor themselves for contamination when leaving the lab. Petitioner also charges that the inspector failed to consider prior violations concerning frisking. (Petition, Chap. II at 17-19)

Response

From a review of the inspection findings and discussions with the inspector of record, the NRC believes, regarding the technical aspects of this allegation, the followup to and disposition of the allegation was handled in an appropriate and professional manner by the inspector. The inspector's conclusion that the allegation was not substantiated was correct. The inspector did not observe or find any evidence which would indicate that individuals are leaving the controlled area without proper monitoring. The NRC believes further that the Licensee acted responsibly by establishing a disciplinary action program for personnel who are observed not to frisk or who frisk improperly as determined by detection of contamination on personnel by the radiation protection staff during the special checks. While the employer is responsible for the action of its employees, the employee, once trained, also has an obligation to adhere to regulatory requirements and Licensee procedures.

With regard to Petitioner's concern for the inspector's alleged failure to consider prior violations, the NRC Enforcement Policy is silent with regard to repetitive Severity Level V violations, but repeated similar vio-

lations could result in further enforcement action. However, during Inspection 84-17, the inspector was unable to substantiate that Chemet Lab personnel were not frisking and so the issue of repetitive violations did not arise.

- (8) Petitioner asserts that the inspector failed to find that GE violated 10 C.F.R. § 19.13(b) and (c), 20.408(b), and Nuclear Safety Instruction E-6.0, addressed in section "n," Inspection Report 84-17, by classifying the matter as a technical violation and leaving the matter as "unresolved." (Petition, Chap. II at 19-22)

Response

During the inspection (84-17), the inspector reviewed available radiation exposure data for the Petitioner. However, there was some question as to the retrievability of some of the data that were not in the computer file. At the time of the inspection, the inspector had not determined whether a regulatory requirement had been violated regarding the Petitioner's termination exposure report. Based on these uncertainties the inspector left that issue as unresolved, but he did cite the Licensee for violating 10 C.F.R. § 20.408(b) by not furnishing the NRC a copy of the termination report within 30 days. An unresolved item is one for which more information is required to determine whether the item is acceptable or may involve violations or deviations. The unresolved item was followed up during an inspection conducted April 8-12, 1985 (Inspection Report 85-04), and a violation of 10 C.F.R. § 19.13 was identified. (Nuclear Safety Instruction E-6.0 was merely a Licensee procedure intended to implement the requirements of § 19.13.)

Regarding the need for the Licensee to provide external radiation monitoring devices (film badge/TLD) to people employed in the Chemet Lab, the film badge/TLD data reported by the Licensee's dosimetry service since 1976 indicated that radiation exposures for Chemet Lab personnel were less than 25% of the applicable limit specified in 10 C.F.R. § 20.101. Thus, personal monitoring would not have been required by NRC regulations.

- (9) Petitioner asserts that the inspector's "selective" review did not discover rejection by JNF, a vendor customer, of a GE product and therefore did not find what Petitioner believed to be multiple violations of 10 C.F.R. §§ 70.57 and 70.58. (Petition, Chap. II at 26-27)

Response

The Petitioner did not properly characterize the scope of this inspection. The referenced sections of Inspection Report 81-11 dealing with transportation, on pages 3 and 4, were taken out of context and applied to a completely unrelated matter.

The inspection concerned the shipment of radioactive waste to a licensed burial facility and focused on DOT requirements (49 C.F.R. § 173.393) and the site disposal criteria. The inspector did not evaluate shipments to a customer or material control and accounting requirements as suggested by the Petitioner's reference to 10 C.F.R. §§ 70.57 and 70.58. The Petitioner makes an incorrect statement regarding who selected the documentation to be reviewed. The NRC inspector had available at the time the documentation for all waste shipments for the period January to August 1981. Consistent with NRC practice, the inspector selected only a portion of the documentation to review in detail.

- (10) Petitioner maintains that the inspectors did not find "crucial" violations of 10 C.F.R. § 70.57 in GE's failure to determine metal impurity content in UO_2 and improper verification of out-of-control conditions. (Petition, Chap. II at 27)

Response

The Petitioner concluded that a violation of 10 C.F.R. § 70.57 occurred since the Chemet Laboratory "does not know the metal impurity content in the UO_2 being assayed," and therefore reports only the oxygen-to-uranium ratio. This is not a correct conclusion. Total nonvolatile metallic impurity (TMI) analyses and oxygen-to-uranium ratio (O/U) analyses are performed routinely and independently by different groups in the Chemet Lab. The two analyses are combined subsequently to obtain a corrected uranium factor, which is used in accordance with the Licensee's Fundamental Nuclear Material Control (FNMC) Plan. Consequently, no violation was appropriate.

As a result of a corporate audit review, GE's Product and Quality Assurance Operations raised the issue of not always using the same standards to verify correction of an out-of-control condition. They suggested changes in the GE Nuclear Fuels Manufacturing Department special nuclear material control program to ensure compliance with § 70.57. In a letter dated April 9, 1982, to the NRC Fuel Facility Safeguards Licensing Branch, GE attempted to clarify its procedures. The NRC considered the clarification unnecessary because GE's FNMC Plan (§ 4.0 and

Appendix C § 4-0) contained sufficient procedures to verify correction of an out-of-control condition. Therefore no violation occurred.

- (11) Petitioner notes the inspector's failure to interview Petitioner, resulting in the inspector not getting supporting evidence (both testimonial and documentary) supporting her allegation concerning improper tag removal from an analyzer. (Petition, Chap. II at 28-29)

Response

The inspectors who conducted the inspection interviewed Mrs. English by telephone on several occasions before the inspection and covered many issues, one of which was the out-of-service tag issue. Pertinent information on that issue was obtained during these interviews. Although the inspectors had not seen copies of the out-of-service tags before the inspection, subsequent review of these copies did not provide the inspectors any unknown information or change their original conclusion.

During the inspections, the inspectors applied an accepted inspection technique by interviewing the laboratory personnel. Based on the best recollection individuals had of the event, it was determined that the subject equipment had been tagged as a precautionary measure and that the tag probably had been removed by a supervisor (based on the supervisor's remembrance) in accordance with a Licensee procedure entitled "Administrative, Lock, Tag and Try, No. 302." This procedure did not require the Licensee to maintain a log of out-of-service tag use and did not require the Licensee to retain used tags.

The "shift logs" referenced in the inspection report were informal logs or notes maintained by some shift supervisors but not required by NRC regulations or the Licensee's procedures. The logs maintained for equipment trend analysis were informal shift logs used by the Technical Equipment Support Unit to monitor equipment failure rates and maintenance time. These logs also are not required by NRC regulations or the Licensee's procedures. The logs were referenced in Inspection Report 84-16 to describe the scope of the inspection and the leads the inspector developed in his effort to draw a complete conclusion regarding the incident.

Because the Licensee was not required by NRC regulations or the Licensee's procedures to maintain Equipment Support shift logs, laboratory supervisor shift logs, or logs documenting the use of out-of-service tags, no violation was issued.

- (12) Petitioner notes that although inspector found no such requirement in GE documents, GE rules did require the wearing of protective gloves. (April 11 Letter at 19)

Response

At the time the allegation was made and at the time of the 84-04 inspection, NSR/R 6.1.0 specified the radiological controls for the Chemet Lab. The documents referenced by the Petitioner in footnote 5 on page 19 of the April 11 letter were either not considered required procedures by the NRC or were out of date and had been superseded by other documents which did not have a requirement to wear protective gloves. In either case, since there were no violations of regulatory requirements, no discussion of severity level was appropriate.

b. Improper Findings

- (1) The Petitioner alleges that the conclusion in Inspection Report No. 82-18 that no violations or deviations were disclosed is in error because (a) the General Electric Fundamental Nuclear Material Control (FNMC) Plan does not reflect GE's actual practice in responding to out-of-control conditions and (b) the FNMC Plan does not reflect a license condition. (Petition at 7-8)

Response

During an inspection conducted March 15-18, 1982 (Inspection Report 82-07), the inspector observed that the Licensee's practice concerning initiation of investigations was more conservative than required by the facility's FNMC Plan. The plan required an investigation whenever (1) *two or more* measured values of a standard or (2) the difference between duplicate analyses fell outside the warning limits. (Warning limits are those established at the 0.05 level of significance.) The Licensee's actual practice, not reflected in the FNMC Plan, was to investigate *each* time the warning limits were exceeded. Because that practice was more conservative, compliance with the FNMC Plan requirement was being maintained. The NRC inspector believed that the Licensee should modify the FNMC Plan to be consistent with current practices, because those current practices were superior to the FNMC Plan requirements. A recommendation to this effect was forwarded to the Office of Nuclear Materials Safety and Safeguards (NMSS) in a memorandum dated April 15, 1982.

As a result of this memorandum, NMSS issued License Condition 4.10, effective immediately, by letter to General Electric dated July 20, 1982. The July 20, 1982 letter stated that the requirements of License Condition 4.10 *should* be incorporated into the Licensee's FNMC Plan as soon as practical.

General Electric submitted to NMSS for approval the revised pages to its FNMC Plan pursuant to 10 C.F.R. § 70.34 on December 9, 1983. This submittal occurred after periodic, extensive discussions with NMSS concerning the subject matter. The December 9, 1983 submittal also addressed the Region II concern originally raised in Inspection Report No. 82-07. The revised pages were approved by NMSS on November 30, 1984.

The purpose of requesting the Licensee to put the essence of License Condition 4.10 in its FNMC Plan was to have a comprehensive, inclusive document containing all pertinent Material Control and Accountability (MC&A) aspects. While this is ideal, it is not required. Therefore, during this time period the Licensee was considered to have an acceptable MC&A program based on the commitments in the FNMC Plan and the requirements imposed by license conditions.

(2) In regard to Inspection Report 84-04, Petitioner —

(a) believes that GE committed identical violations in the past. (Petition at 9-10)

Response

During the previous 2 years, only one similar violation was identified, as documented in Inspection Report 82-10 for an inspection during the period May 17-21, 1982. However, the corrective action taken by the Licensee in response to the 1982 violation was in most respects effective in preventing recurrence.

In response to the violation cited in 1984, the Licensee took corrective action, including disciplining the individuals, conducting special training sessions, and issuing to Chemet Lab personnel a written notice that stressed the need to survey. Consequently, escalated enforcement was not considered necessary to achieve adequate corrective action.

- (b) asserts that violations and civil penalties should have been issued for failure of the Licensee to incorporate certain calibration requirements into its formal procedures and for failure of the procedures to require calibration with sources "traceable to National Standards." (Petition at 10-12)

Response

Neither a violation of a regulatory requirement nor a deviation from a Licensee commitment was involved with regard to the Petitioner's contention that a Notice of Violation or Deviation should have been issued for the Licensee's failure to approve formally the procedure used for calibrating the whole-body counter and high-volume air samplers. Paragraph 4.1 of Appendix A to NRC License SNM-1097 requires area managers to establish written operating procedures incorporating radiation and criticality safety controls and limits. Neither License SNM-1097 nor the license application specifies what type of procedures are required. The Licensee is permitted to use judgment in determining what procedures are needed for operation. Consequently, the Licensee's administrative procedures permit area managers to determine what procedures are necessary for operations. At the time of the inspection, an adequate procedure was in use for calibrating the whole-body counter and high-volume air samplers. The Licensee did not have an administrative procedure to require management approval of calibration procedures for the whole-body counter or the high-volume air samplers, nor was such a procedure required. The NRC inspector indicated in the inspection report that it would be prudent for Licensee management formally to approve the procedures to ensure adequate technical content and to prevent significant changes to the procedures without the knowledge of appropriate Licensee personnel. It should be emphasized that the inspector did not disagree with the technical content of the calibration procedures.

The NRC inspector found that controlling documents (procedures) for onsite calibration of instruments used to determine internal exposure, exposure rates, or radioactivity released from the facility did not require that the instruments be calibrated with a source traceable to national standards. It is a good practice that calibration sources be traceable to national standards and the inspector was encouraging this. However, there is no regulatory requirement that instrument calibration be performed using such national standards. Therefore, the inspection report is correct because no violations or deviations from NRC regulations or license conditions were identified.

- (c) notes that ¶ 6 of the report discloses circumstances at odds with the inspector's conclusion of "no violations were identified" in light of the fact that the inspector did note that GE's fuel shipment of February 8, 1984, was labeled with RADIOACTIVE WHITE-1 labels rather than RADIOACTIVE YELLOW-II labels. (Petition at 12)

Response

As noted in Inspection Report 84-04, the NRC inspector reviewed the Licensee's program for surveying and labeling fuel shipments, including calibration of survey instruments by an independent vendor; observed the techniques used by a Licensee technician to perform the survey; reviewed records of previous fuel shipments, including a February 8, 1984 shipment to a utility; and performed an independent radiation survey of a fuel shipment. Although it was not possible for the NRC independently to confirm the results of the survey performed by the recipient of the February 8, 1984 shipment, no evidence was found by the inspector that surveys performed by the Licensee were in error or that data recorded by the Licensee were incorrect or falsified. Thus, it could not be concluded that the shipment was improperly surveyed or incorrectly labeled, and a Notice of Violation was unwarranted.

- (d) also notes, along with item #(4) above, that the inspector found some 1983 Department of Transportation and NRC changes to transport regulations which had yet to be incorporated into GE's shipping procedures. (Petition at 13)

Response

The Licensee's failure to incorporate certain 1983 changes to the Department of Transportation and NRC shipping regulations into shipping procedures was the result of an administrative delay that had been recognized by the Licensee.

A draft procedure had been prepared and was being used, but had not been approved formally. The individuals responsible for shipping radioactive materials were well versed in the contents of the new regulations. Necessary form changes had been made, and shipments were being made in accordance with the appropriate regulations. The Inspection Report 84-04 specifically stated that the inspector reviewed shipping records for shipments made in 1984 and found no violations of DOT or NRC regula-

tions in any of these shipments, nor did it identify any violations with regard to failure to incorporate the 1983 changes into GE's transportation procedures.

However, in response to the Petitioner's concern, a specific NRC requirement for preparing shipments of radioactive material using approved procedures was identified. Section 71.0(d) of 10 C.F.R. states that the transport of licensed material or delivery of licensed material to a carrier for transport is subject to the quality assurance requirements of Subpart H of 10 C.F.R. Part 71. Section 71.113 of Subpart H requires the Licensee to establish measures to control the issuance of documents such as instructions, procedures, and drawings, including changes, which prescribe all activities affecting quality. Section 71.113 also requires that the measures must assure that documents, including changes, are reviewed for adequacy and approved for release by authorized personnel. The determination that the Licensee did violate NRC requirements by not having changes to procedures formally approved before use in preparing shipments of radioactive material has led to the issuance of a Notice of Violation in Inspection Report 70-1113/86-01.

Since the shipping records indicated that the shipments met DOT and NRC requirements, as reported in Inspection Report 84-04, failure to have management approval for the procedural changes is of only minor safety concern and the violation was categorized at Severity Level V.

- (e) questions a finding of "no violation or deviations were identified" when an inspector-requested survey disclosed three work areas which exceeded GE's administrative dose limit. This was particularly questioned in light of previous surveys which had also confirmed contamination above the "administrative limit." (Petition at 13-14)

Response

The Licensee's "administrative limit" is a self-imposed action point used to initiate cleanup. This "administrative limit," approximately one-fifth the removable contamination limit for releasing an item for unrestricted use imposed by Condition 14 of the license in effect at the time of the 84-04 inspection, was used for uncontrolled areas. This indicated the Licensee's intent to keep the contamination level in the Chemet Lab low. The inspector's review of weekly contamination surveys performed by the Licensee's Radiation Safety staff in January and February 1984 indicated that when contamination was identified in the Chemet Lab, prompt decontamination and resurvey was performed as required by

plant procedures. Prompt decontamination and resurvey also occurred after the survey requested by the inspector, which identified three work areas above the action point.

During tours of the Chemet Lab, discussed in Inspection Report 84-04, the inspector did not identify visible contamination which could have indicated that spills had not been cleaned up. Licensee procedures required that spills be cleaned up immediately. Licensee radiation safety surveys, an independent check of the Chemet Lab housekeeping program, assist the laboratory in identifying problem areas to lessen the potential for internal deposition of radioactive material. During the inspection, the inspector found no evidence that the Licensee's program for identification and prompt cleanup of radioactive contamination was not in accordance with license conditions and plant procedures. Finding contamination does not form the basis for a violation. The instances of contamination levels in the Chemet Lab exceeding the action level, noted in the survey records reviewed, did not indicate a breakdown in the contamination control program in the laboratory, and no violation of NRC requirements occurred.

- (3) In regard to Inspection Report 84-05, Petitioner alleges that the conclusion in Inspection Report 84-05 that no violations or deviations were identified is incorrect because (a) the Licensee failed to follow certain procedures when calibrating enrichment analyzers, and (b) the Licensee failed to maintain certain calibration logs. The Petitioner also alleges that Licensee management misled NRC inspectors and that all of these concerns should have been identified as violations of NRC requirements. (Petition at 14-15)

Response

During the inspection conducted March 26-29, 1984 (Inspection Report 84-05), the NRC inspectors reviewed the Licensee's records to evaluate the Petitioner's assertion that proper calibrations were not completed following detector changes for analyzer #4 on August 20, 1982, and for analyzer #3 on June 22, 1983. The inspectors reviewed the computer-generated records, tapes, handwritten logs, and procedures. The inspectors' review determined that the applicable procedure was not written clearly. To ensure that they were interpreting it correctly, the inspectors discussed the procedure with the individual who had prepared it. Also, although not documented in the inspection report, the inspectors interviewed several laboratory technicians. All of the technicians inter-

viewed had the same interpretation as the author of the procedure. Inspection of the computer tapes revealed that, for the two detectors on the dates specified, the Licensee had performed the calibrations consistent with the intent of the procedure. The inspectors concluded that the Petitioner had misinterpreted the procedure to require six complete calibrations rather than the analysis of the highest standard six times. The inspectors further determined that the procedure used by the Licensee was adequate.

During the same inspection, a review of Licensee procedures and discussions with Licensee management did not reveal any requirement for the Licensee to maintain information or data in the calibration log. However, a subsequent inspection (Inspection Report 84-15) in this area revealed that one step in a Station Control Plan which was in effect between April 29, 1979, and September 15, 1983, specified that this log was to be maintained. The log was used to provide the Licensee rapid indication of the status of equipment, thus precluding the need periodically to examine the computer tapes. During the inspection documented in Inspection Report 84-15, the inspector determined that because of an oversight the Licensee had failed to withdraw the Station Control Plan requirement to maintain the calibration log. In any event, the Station Control Plan was not a procedure used to implement NRC requirements; the Licensee used the computer system for maintaining the records required by NRC. Thus, statements of Licensee management that the log was not required were not false and no Notice of Violation was issued.

- (4) In regard to Inspection Report 84-08, the Petitioner identifies the inspector's statement of "no violations or deviations" as worthless when it was determined that tests to analyze UO_2 were not actually performed nor was the item kept "open" or reserved for subsequent inspection. Further she views as "illegal" a report comment that in the case of examination of analytical control chart data for the period April 1-May 31, 1984, it is a "matter currently being addressed by Licensee." (Petition at 17-19)

Response

During the inspection conducted on June 25-28, 1984, the inspector obtained samples of special nuclear material (UO_2) scheduled for export by the Licensee. These samples were sent to the New Brunswick Laboratory (NBL) for analysis under NRC contract. Although not clearly specified, "84-08-01" in the inspection report is the identification se-

quence for this open item. Open items are closed during future inspections, and, if appropriate, enforcement action is taken. This particular item was reviewed during and closed by Inspection Report 85-14 when data analysis showed no significant difference between the Licensee's and NBL's results.

Control chart data were reviewed during the inspection documented in Inspection Report 84-08 to determine whether the Licensee was complying with NRC regulations relative to measurement quality control. The inspector noted that one of the Licensee's computer reports (a graphical representation of the data) was not properly graphing the control chart limits. Further investigation revealed that this was an anomaly with that particular computer report and that the computer had been programmed with the proper limits. This was verified by the inspector by reviewing a second type of computer report, which was produced using the same data base. No violations were detected because the Licensee was controlling measurements properly and was taking appropriate action when limits were exceeded.

The inspector reviewed an internal Licensee report (the Wieczorek Report) covering employee concerns relative to the Licensee's efforts to follow procedures when detectors were replaced. This review was in addition to previous inspections of data, records, and procedures in the Licensee's laboratory by NRC inspectors, as documented in Inspection Reports 84-08 and 84-05. The conclusions in the Licensee's report, as in the NRC inspection reports, were that the Licensee's procedures were adequate. The Wieczorek Report, referenced in Petitioner's Exhibit F, is discussed in detail in the response in ¶ 2.d, above.

(5) In regard to Inspection Report 84-13, Petitioner —

(a) asserts that the following examples show willful deviations by the Licensee, making a conclusion of "no violations or deviations" not only "incomprehensible" but "patently illegal." (Petition at 20)

(i) Having only one air sampler in the laboratory. (Petition at 20)

Response

It should be noted that Inspection Report 84-13 carried this issue as an unresolved item, a matter about which more information was required to determine whether it involved a violation. As noted in Inspection Report 84-13, the Licensee stated that documentation should be retrievable from old files to indicate that the single air sampler collected samples that

were representative of the concentrations to which workers in the laboratory were exposed. In a subsequent inspection during the period November 27-30, 1984 (Inspection Report 84-17), the documentation was found to be inadequate. It also was determined that the location of the air sampler was inadequate to provide representative samples of breathing air concentrations for workers in the area. Therefore, a Severity Level IV Notice of Violation was issued. Based on the low contamination levels in the Chemet Lab and the low potential for the material to become airborne, there was only a small probability that the exposure of a worker would even approach the intake limits of § 20.103. Therefore, in the absence of a finding of willfulness, which would be examined by OI, the violation was appropriately classified as a Severity Level IV violation.

- (ii) Defective hoods and inefficient ventilation equipment and the absence of Licensee identification of the problem to the NRC.

Response

The statement made in Inspection Report 84-13 that flaps covering hood openings on several hoods needed repair or replacement pertained to rubber devices through which an individual inserts his hand and arm in order to work inside enclosures or hoods in the fuel manufacturing area. This enables the individual to handle material which would potentially become airborne if it were not for the enclosures or hoods. The enclosures or hoods are connected to a filtered ventilation system that draws air out of an enclosure and creates a partial vacuum in the enclosure. In other words, the pressure is less inside the enclosure than outside. This differential pressure causes air to flow into the enclosure, thus keeping airborne radioactivity inside the enclosure. Damaged or missing flaps over openings in the enclosures would reduce the differential pressure but not necessarily to the extent that airborne radioactive material would leak out of the enclosure. The Petitioner apparently misunderstood the finding when she stated that air flow into a hood was evidence of a malfunctioning hood. In this case, there was no violation and the Petitioner's belief that the inspector's findings were inappropriate is incorrect.

- (b) questions the inspector finding of no incidents of exposure or contamination for the previous year, when, in fact, Petitioner was transferred for an alleged failure to clean up a radioactive spill. (Petition at 21)

Response

Although the Petitioner did not provide specific information (e.g., contamination level, size of contaminated area, and location in the laboratory) concerning the event characterized as a spill, most spills of radioactive material in powder or liquid form at the plant typically would not be reportable under NRC regulations or license conditions.

A review of the Petitioner's bioassay data for 1984 indicated that the Petitioner had no detectable uptake of radioactive material. The absence of positive bioassay data supports the conclusion that the Petitioner was not exposed to radioactivity in excess of the limits specified in 10 C.F.R. § 20.103(a)(1) and (2) as a result of the alleged spill and, therefore, the event was not reportable. A review of the Petitioner's radiation exposure records for the last 4 years indicates that her radiation dose for that period was minimal and well below NRC limits. The exposure records of other Chemet Lab personnel indicate their exposure to radioactive material also was minimal.

Reviews of routine contamination surveys performed by the Licensee and special surveys performed at the request of the NRC indicated that loose contamination levels in the laboratory were low.

A review of monitoring records for the Chemet Lab exhaust system indicated that there was no release of radioactivity to unrestricted areas in excess of NRC limits during the period 1983-1984.

The NRC review did not confirm that the alleged spill in the Chemet Lab, described in the Petition, met any applicable reporting criteria. Consequently, there was no violation identified and no "knowing or conscious" failure, as the Petitioner characterizes it, of the Licensee to report. The Petitioner has incorrectly cited and relied on 10 C.F.R. § 50.73 concerning reporting requirements. That provision does not apply to a materials licensee, such as General Electric. Section 50.73 applies only to the holders of operating licenses for nuclear power plants.

On the basis of the above, the inspection report is correct in stating that there were no reportable incidents.

- (6) In the Introduction to Chapter I, the Petitioner contends that a number of inspection reports were in error or deficient because the inspectors (a) found no violations in their followup to many

of the allegations, (b) refused to find a violation on the ground that there is no legally binding requirement, (c) paid no attention to previous violations in the same area, (d) did not find that offenses reflected deliberate or careless disregard and willfulness and were not reported to the NRC as required, (e) did not pursue dereliction of duty on the part of GE management, (f) never assigned severity levels more than a IV or V, (g) drafted findings to make it appear that violations were only "technical," (h) never considered the actual effect on worker health and safety, and (i) never considered the economic advantage to GE of noncompliance. (Petition at 2-3)

Response

1. It is true that no violations were found in many areas where allegations were made. Either the allegation was found not to have merit or, in some cases in which the allegation had merit, no regulatory requirement was violated by the Licensee. In areas where there were no regulatory requirements but where practices could be improved, the Licensee in many cases voluntarily improved the program. When there were no regulatory requirements, this lack of requirement did not lead to a situation that adversely affected the health and safety of workers or the public.

2. It is true that in many instances no violations were issued because there was no legally binding NRC requirement. The NRC cannot issue a violation for failure to do that which the Licensee is not required to do by regulation, license condition, or other requirement. However, NRC does comment to licensees where improvements can be made beyond regulatory requirements. If there is a lack of requirements in an area that could significantly affect public health and safety, the NRC can impose requirements or terminate operations, as necessary, to ensure the public health and safety. During inspections of the GE Wilmington facility, NRC inspectors found no instances where worker or public health and safety required actions other than those taken and documented in the inspection reports.

3. Although the contention is made several times throughout the Petition that the NRC did not consider a particular violation in light of previous violations, the NRC did, in fact, consider previous violations in the area. Violations for the preceding 2 years in each technical area were considered to determine if there were repeat violations or trends. None were found that indicated the need for enforcement actions different from those taken.

4. The NRC has not identified any instances where a violation required to be reported to the NRC was not reported. The Petitioner has alleged several instances where the Licensee did not report when required. Based on NRC's review, in each instance the Petitioner's position was based on a lack of understanding of NRC reporting requirements applicable to the GE Wilmington facility.

5. Neither the NRC review of the Petitioner's concerns nor NRC inspections of the Licensee's facility revealed dereliction of duty on the part of the Licensee.

6. See Response, ¶ 3.c(2).

7. Violations must clearly describe the regulatory bases and, where appropriate, a discussion of technical issues. In many instances, information concerning the health and safety significance of issues was included in inspection report details. In all instances it was considered in assigning severity levels.

8. It is true that not all NRC inspection reports speak directly of worker or public health and safety. Rather, NRC inspection reports frequently refer only to NRC regulatory requirements, the main purpose of which is protection of workers and the public. Thus, in fact, inspection reports do concern issues relevant to worker and public health and safety or national security.

9. The NRC Enforcement Policy states that sanctions should be designed to ensure that a licensee does not profit deliberately from violations of NRC requirements. Whether a matter is deliberate must be determined by the Office of Investigations. Their investigations are pending on matters that may involve deliberate violations.

- (7) Petitioner criticizes IE inspection reports in that they are expressed in terms of conditions on the date of the inspection and not on the date(s) of the reported deficiencies. (Petition, Chap. I at 3)

Response

It is true that inspection reports generally describe conditions that existed during an inspection. Inspection reports also may discuss conditions that existed when the inspector was not on site, as determined from discussions with workers and from review of Licensee records. The fact that an inspection report does not specifically discuss conditions alleged to have existed on dates referred to in the allegation does not mean that the inspector ignored those dates. It is normal practice for inspectors to interview people who may or should know of the alleged conditions.

Also, inspectors review Licensee records to determine plant conditions that existed when NRC inspectors were not on site.

- (8) Petitioner complains that when the investigators are unable to find physical evidence which was under the control of management, they conclude that they are unable to prove the case. (Petition, Chap. I at 14)

Response

The Petitioner implies that there should have been some evidence provided to the NRC that was not and that this lack of evidence was not discussed in NRC reports, but the Petition cites no examples of where this was the case.

If through followup of a specific allegation NRC inspectors become aware that a Licensee may have destroyed records required by the NRC, with the intent of withholding such evidence from the NRC, this information is turned over to the Office of Investigations for appropriate followup. NRC inspections of the GE Wilmington facility have found no indication that the Licensee destroyed records with the intent of withholding such evidence from the NRC.

- (9) Petitioner complains that covering letters "virtually always assume that the report is 'privileged and confidential' and invite the licensee to forward his response as a separate document to avoid disclosure." (Petition, Chap. I at 5)

Response

Pursuant to 10 C.F.R. § 2.790(d), correspondence and reports which contain information or records concerning a licensee's or applicant's physical protection or material control and accounting program for special nuclear material not otherwise designated as Safeguards Information or classified as National Security Information or Restricted Data are subject to disclosure only in accordance with the provisions of 10 C.F.R. § 9.12. Accordingly, inspection reports of General Electric's fuel manufacturing facility, Wilmington, North Carolina, that contain material control and accounting information or physical protection information generally are not released by the NRC. All other NRC inspection reports, Notices of Violation, and Licensee responses to inspection reports are posted at the plant site and are available in the Public Document Room in Washington, D.C.

- (10) Petitioner complains that although the NRC was officially notified on September 26, 1984, that Mrs. English waived confidentiality, every report written after that date has still referred to her as 'alleger.' (Petition, Chap. I at 5)

Response

This method of referring to allegers in inspection reports is common practice in the NRC. It helps avoid inadvertent identification of confidential sources.

- (11) Petitioner asserts that GE's highest management "willfully, calculatedly or by 'careless disregard,' and by deception, for its own profit, destroyed the utility of at least *four* of the systems it was required by law to maintain to guard against exposure to radiation hazards: (1) air intake monitoring; (2) Rad. Safety Inspections; (3) frisking and (4) body counts. In consequence, GE was, at the time of Mrs. English's complaints, and at least until December 6, 1984, unable to ascertain or accurately to report the intake of radioactive contamination by wet lab employees." (Petition, Chap. I at 11)

Response

The inspection reports discussed by the Petitioner do not demonstrate that GE management willfully, calculatedly, or by careless disregard and by deception destroyed the utility of air intake monitoring, radiation safety inspections, frisking, and body counts. The NRC expects licensees to adhere to NRC requirements and license conditions and holds the Licensee responsible for the acts of their employees. The inspector identified areas that could be improved in the Licensee's program relative to air monitoring, radiation safety inspections, frisking, and body counts, but the inspector did not find the Licensee's program to be ineffective. In most cases the Licensee's program was in conformance with NRC requirements. Where violations of NRC requirements, license conditions, or required procedures were identified, appropriate Notices of Violation were issued.

The Notice of Violation issued regarding air monitoring was for not performing suitable measurements of concentrations of radioactivity in air, not for exposing individuals excessively or unnecessarily. The inspector reviewed the Licensee's records of contamination surveys, operations, techniques, and the results of bioassays, and found that excessive

exposures had not occurred. The statement by the Petitioner that the utility of the Licensee's employee protection program was destroyed as it applied to the Chemet Lab, is not supported by fact. Based on NRC inspections the Licensee's radiation protection program did have the necessary controls commensurate with the potential hazards, and the health and safety of the employees was being protected.

- (12) Petitioner asserts that the exit interview described in Inspection Report 84-17 established willful per se violations of the entire contamination control program. (Petition, Chap. I at 11-13)

Response

It is normal practice for NRC inspectors during the exit interview to point out to the Licensee weaknesses in a particular program. Observed weaknesses are not necessarily violations. Usually they are potential problem areas that if left unattended could possibly result in violations. The Licensee may be requested to respond to these concerns, addressing particular actions taken or planned to improve the effectiveness of its program. The NRC constantly strives to improve the effectiveness of licensee programs. An inspector's finding a problem does not mean that management knew of and had deliberately ignored the problem or had carelessly disregarded it. The NRC does not interpret management willingness and commitment to take corrective actions as an admission of a willful violation, per se. Rather, NRC views it as an indication of a responsible and responsive licensee.

The premise stated by the Petitioner that the admission of a violation was an admission of willfully violating NRC regulations is not correct. Section 2.201(b) of 10 C.F.R. states that licensees may be required to admit or deny a violation when formally responding to the Notice of Violation. In admitting a violation, a licensee is acknowledging that the violation occurred essentially as described in the Notice of Violation and that corrective action is or was necessary to correct the condition that led to the violation. It is not an admission of willfully violating NRC requirements.

- (13) Petitioner asserts that McAlpine signed reports for Clay and Bates because they might have objected to signing a "white wash." (Petition, Chap. I at 14-15)

Response

Inspection reports are reviewed by several levels of NRC management before issuance. It is normal NRC practice (Exhibit 3 (at E3-1), IE MC 0610) for supervisors to sign inspection reports for inspectors when the inspectors are out of town, so as not to delay issuance of the reports. In the cases cited, recommended changes were coordinated by telephone with the inspectors, and their concurrence was received before the reports were issued. When the inspectors returned to the regional office, they again reviewed and concurred in the inspection reports.

- (14) Petitioner questions finding of "no violations or deviations were identified" in Inspection Report 84-17. Section 4.f, in light of showing as Petitioner puts it, that "the Rad Safety inspectors monitor frequently enough *but* only in the wrong places" (*id.* at 19); believes the Licensee procedures provide the "illusion" of radiation safety protection which belies reality; questions why the ALARA obligation imposed by 10 C.F.R. § 20.103(b)(2) was never mentioned; and, charged that the isotopic room was the "hottest spot in the lab." (Petition, Chap. I at 18-21)

Response

Requirements for contamination surveys are described in the Licensee's license application. The surveys specified in the license application were being performed. The rationale behind contamination surveys of the walk areas to detect spread of contamination was sound. The NRC inspector was indicating that the Licensee also should consider surveys of the work areas in which there are operations with high potential for the spread of contamination. The inspector was encouraging the Licensee to consider improvements in the contamination survey program in the laboratory, though such improvements were not specifically required by NRC regulations. The inspector was not implying that the Licensee's program was not in compliance with NRC regulations.

The contamination action levels used by the Licensee in the Chemet Lab were the same as those for "uncontrolled areas" of the plant. These action levels were conservative and were much lower than the action levels used for "controlled areas" within the plant. Therefore, the NRC concluded that the Licensee has used extremely conservative administrative action levels for contamination control in the Chemet Lab. The

Chemet Lab administrative action level of 1000 dpm/100 cm² ⁵ for smearable contamination is the same value specified in § 1.8.2 of the license application for acceptable contamination on articles released for unrestricted use. The applicability of ALARA is discussed in ¶ 2.a, above.

Inspection Report 84-17 does not say that radiation safety technicians monitored in the wrong places. The inspection report at page 6 states, "[t]he review of the contamination survey results and observations by the inspector indicate that surveys performed by the radiation safety technicians are generally in the same locations which are often not the areas with the highest potential for becoming contaminated." The NRC inspector was pointing out to the Licensee a weakness in the radiation survey program. At the time of the inspection, the NRC inspector did not observe any violations.

The administrative limits referred to by the Petitioner are administrative action levels for contamination that are contained in the license. The Licensee is required to take corrective action if surface contamination levels exceed these values. Contrary to Petitioner's assertion, exceeding the surface contamination action level is not a violation of 10 C.F.R. § 20.103(a)(3) and (b)(2) because those subsections pertain to NRC requirements to perform suitable measurements of radioactive materials in air and to perform bioassays as appropriate. Subsection 20.103(b)(2) requires licensees to limit the intake of radioactive material by an individual by the use of respiratory protection devices or other precautionary procedures if process or engineering controls are impractical.

The Petitioner's statement that the Isotopic Room was the "hottest" spot in the Chemet Lab is not supported by the facts. Records of contamination surveys performed by the Licensee and those requested by and observed by NRC inspectors indicate that contamination levels in the Isotopic Room are similar to other work areas in the Chemet Lab. Records of contamination surveys performed by the Licensee which were reviewed by the inspector indicate that radiation protection technicians routinely went into the Isotopic Room and conducted surveys similar to those conducted in other parts of the laboratory.

- (15) In a footnote, the Petitioner concluded that an NRC inspector had inferred that Rad Safety personnel did not know where to look for contamination which showed that they were 'unquali-

⁵ Before May 21, 1985, the administrative action level for the Chemet Laboratory was 220 dpm/100 cm², approximately a factor of 5 below the unrestricted area limit.

fied' or inadequately trained under 10 C.F.R. §§ 19.12 and 20.206. (Petition, Chap. I at 19)

Response

The inspector did not infer that radiation safety personnel did not know where to look for contamination and that they were not qualified. Each technician met or exceeded the minimum qualifications specified in Licensee's application for license renewal. The inspector's comments indicated how the Licensee might improve the program. Thus, the basic premise for the Petitioner's statement is incorrect.

The referenced regulations, 10 C.F.R. § 19.12 (Instruction to Workers) and 10 C.F.R. § 20.206 (Instruction of Personnel), do not define the qualifications and training of radiation protection technicians. As stated in § 2.5.3.3 of the license, radiation protection technicians at the GE Wilmington facility must meet all requirements for a radiation protection technician trainee (which includes 2 years of college or completion of high school and adequate experience plus at least 6 months experience in the field of nuclear safety). The individual also must successfully complete a comprehensive General Electric training program, including the Rockwell International "Radiation Protection Technologist" course, and pass tests independently administered by Rockwell International. Written and oral examinations covering radiological/criticality control procedures are administered by the Licensee. The Licensee's requirements for a radiation protection technician are more stringent than the qualification requirements for radiation protection technicians specified as part of the NRC license SNM-1097. This area has been reviewed previously and found acceptable by NRC.

- (16) Petitioner asserts that the finding that GE had no policy requiring notification of Rad Safety in the event of a spill in the lab was false because GE did have a written policy on the matter, which indicates to the Petitioner that the inspector probably took the word of GE management on the issue. (Petition, Chap. I at 21-22)

Response

During inspection 84-17, the inspector reviewed Nuclear Safety Release/Requirement (NSR/R) 6.1.0, which he believed to establish general radiological safety requirements for the Chemet Lab. NSR/R 6.1.0 required that spills be cleaned up, but not that they be reported. At that

time, the inspector, being unaware of a Job Hazard Analysis (JHA) for the Chemet Lab, which stated that Radiation Protection was to be notified of spills, encouraged the Licensee to establish a notification requirement and to correct an apparent deficiency in the procedure. During a more recent inspection (85-02), the inspector determined that Chemet Lab personnel had not been notifying Radiation Protection of spills. Job Hazard Analyses are not required by the Licensee except for maintenance operations, where JHAs are used to establish radiological controls. Therefore, failure to notify Radiation Protection of spills was not a violation of NRC requirements or license conditions. The Petitioner referred also to the General Electric Course for Hourly Workers. Although training course outlines or handouts may discuss NRC requirements, license conditions, or procedures, such outlines and handouts are not formal procedures. Thus, the inspector properly concluded that the Licensee had no policy requiring notification in the event of a spill.

- (17) Petitioner asserts that the finding in Inspection Report 84-17 that GE does not have a procedural requirement, nor do they rope off or otherwise mark contaminated areas, is false. (Petition, Chap. I at 22, Chap. II at 11; April 11 Letter at 20)

Response

Before reaching the stated conclusion, the inspector reviewed appropriate NRC regulations, license conditions for the facility, and required procedures. The inspector did not "naively" accept the verbal statements of GE management, but he reviewed procedures and interviewed individual nonmanagement employees. Contrary to the Petitioner's statement that the finding was predicated upon GE's misrepresenting, the inspector's independent assessment of Licensee documents determined that the Licensee's documents discussed in the Petition had no relevance to the issue of marking off radioactively contaminated areas. Contrary to the Petitioner's assertion, the Course for Hourly Workers is not a formal procedure. It also should be noted that NRC has no specific requirements for roping off contaminated areas. The Petitioner's discussion of "dead zones" and "safety zones" pertains to criticality safety. The document entitled "Criticality Safety Control Chemet Lab" pertains to the general criticality safety rules, practices, and procedures and does not pertain to radiation safety or to the marking off of radioactively contaminated areas. The GE document C2.0-QA-201, "Criticality Safety Control — Chemet Lab" (in use between 1973 and 1976), also concerned criticality safety, not contamination control. At the time of the inspection, Nu-

clear Safety Release/Requirement 6.1.0 was the effective document for specifying radiation safety practices in the Chemet Lab. This document also did not address marking off contaminated areas.

The "Hourly Course Outline" referenced in the Petition was not a procedure, but instead was an outline for a radiation safety training course given to plant personnel in the early 1970's. The NRC requires licensees to adhere to NRC regulations and license conditions and to license application commitments which are made a part of the license by reference, including specific procedures. Failure to adhere to statements made in course outlines is not a violation of these requirements.

Petitioner's comment regarding the red line on the floor refers to a line below the personnel survey station that persons will step across as they survey themselves and leave the area. Such a line is common in the nuclear industry at controlled area entrances to indicate the boundary of an area where radioactive materials are handled. No such convention regarding a red line applies to marking of spills.

In conclusion, the inspector was correct in stating that no violations or deviations were identified.

- (18) Petitioner asserts that the inspector's conclusion is false that allowing open cooling of uranium sintered pellets is neither prohibited nor a radiation safety problem. (Petition, Chap. I at 23-27)

Response

The inspector observed laboratory technicians performing hydrogen determinations on sintered pellets during inspections 84-17 and 85-02.

During these periods, the inspector observed the removal of pellet pieces from the analyzer and the placement of them in a stainless steel can for cooling. The inspector did not observe any emission of particles of uranium dust while the pellets were being transferred to the can for cooling or from the cooling pellets. In addition, as discussed in Inspection Report 85-02, the inspector had the Licensee collect an air sample approximately 1 foot above the cooling can and in a position such that the air flowed from the source to the air sampler while a laboratory technician performed four analyses. The results of this air sample showed that the air concentrations in the immediate vicinity of the cooling can were less than 1% of the concentration listed in 10 C.F.R. Part 20, Appendix B, Table 1, col. 1. Any airborne radioactivity that would be released would be in an insoluble form. If an individual remained at this station for the entire working time in a calendar quarter (520 hours), the

calculated intake from this operation would have been less than 1% of the limit specified in 10 C.F.R. § 20.103(a)(1).

Reviews by the inspector and discussion with Licensee representatives indicate that Standard Operating Procedure 0.3.4 was discontinued as a procedure for the Chemet Lab operations during the period 1977-1978 and replaced with Nuclear Safety Release/Requirements. In addition, Calibration and Operation Instruction (COI) 409 and Analytical Test Method 5.2.9.6 are not applicable to the hydrogen determination and subsequent cooling of sintered pellets, but rather pertain to the analysis of liquid solutions. Thus, open cooling was not prohibited.

Based on review of the inspection reports for the GE Wilmington facility and from interviews of the NRC Region II inspectors assigned to this facility over the past several years, the NRC has found no evidence to support the Petitioner's statement that workers in the Chemet Lab are receiving "unnecessary exposure to radiation or to radioactive material."

- (19) Petitioner claims that GE never made any tests for contamination by examining feces and took care to assure that these measures would be unrepresentative, *inter alia*, because it took body samples only after the absence of the worker for several days from the lab and did not make or keep required historical records. (Petition, Chap. I at 27)

Response

License No. SNM-1097, Part I, ¶ 3.2.4.3.3 permits lung counting, in lieu of fecal analysis, to evaluate the uptake of insoluble uranium. Regarding soluble uranium, the Licensee's bioassay program, including sampling frequencies, is consistent with Regulatory Guide 8.11, "Applications of Bioassay for Uranium," as required by the license. Review of bioassay program documentation by the inspector showed no instances where required historical information was not maintained.

- (20) Petitioner asserts that the inspector conclusion that neither NRC regulations nor license conditions prohibit dichromate titrations outside a hood is false. (Petition, Chap. I at 27, Chap. II at 11)

Response

The Petitioner implies that the use of contamination survey data for the titration work station was inappropriate because radiation safety technicians surveyed in the wrong places, the Licensee used inappropri-

ate contamination action levels, and contamination above the action level was found at the work station. Inspection Report 84-17 stated that radiation safety technicians generally survey in the same location often not in the areas with the highest potential for becoming contaminated. The inspection report did not state that radiation safety technicians surveyed only in the wrong places.

In the case of the titration work station, surveys were performed routinely in this area. Contrary to the statement made by the Petitioner, and as stated in the inspection report, contamination levels were not found above the Licensee's action level. In addition, the Petitioner misunderstood the statement in the inspection report concerning the administrative limits for contamination used by the Licensee. In the inspection report the inspector pointed out that the administrative limits used by the Licensee for removable contamination in the Chemet Lab were very low. In fact, they were less than the removable contamination levels permitted on material and equipment that is unconditionally released from the facility to the public in accordance with license conditions.

The Petitioner incorrectly states that the Licensee is required by NRC regulations to keep radiation exposures as low as reasonably achievable (ALARA). (See earlier discussion of ALARA.)

During a more recent inspection (85-02), under direct observation of the inspector, the Licensee took an air sample approximately 1 foot above the titration beakers. The air sampler was positioned so that the air flow was from the source (beakers) to the air sampler. The total sampling time selected was based on collecting a large enough sample to ensure that the minimum detectable level was small compared to the concentration specified in 10 C.F.R. Part 20, Appendix B, Table 1, col. 1. The air sampler operated while the Licensee's technician performed four separate titrations. The air sample results indicated that air concentrations in the vicinity of the titration work station were less than 1% of the concentrations specified in Part 20, Appendix B, Table 1, col. 1.

The NRC advised the North Carolina Department of Labor, Division of Occupational Safety and Health, of the nonradiological safety matter (i.e., the potential for inhaling noxious fumes) by letter of November 8, 1984. Following their investigation of January 29, 1985, the North Carolina DOL concluded that detector tube samples taken in the breathing zone of workers showed no exposure to acid during dichromate titrations. No violations of Occupational Safety and Health Administration Standards were found; hence, no citations were issued by the State.

The statements in Chapter II, page 11, of the Petition indicate that the Petitioner reached an invalid conclusion by putting together unrelated facts. As previously stated, the document "Rad Safety Lab Operating

Procedures, 1973" was not in effect at the time of the allegation or the inspection; therefore, the Licensee was not bound to follow it. The Petitioner states that (surface) contamination surveys performed at the work station were unreliable because an air sampler (for monitoring airborne contamination) in the Chemet Lab is improperly located. These two survey methods are not related in this manner. In addition, special air samples performed at the dichromate titration work station during inspection 85-02 demonstrated that the airborne radioactivity levels resulting from the titrations were less than 1% of the concentration specified in Part 20, Appendix B, and are, in fact, extremely low.

The Petitioner's contention that during Inspection 84-17, the inspector "ignored" the air sampling finding of Inspection Report 81-11 as it relates to performing titration is correct. However, the subject of air sampling in the Chemet Lab had been discussed and identified as an unresolved item in Inspection Report 84-13. As noted in Inspection Report 84-17, the inspector followed up on the unresolved item and determined that air sampling in the laboratory did not meet the requirements of § 20.103(a)(3). A Notice of Violation appropriately classified as Severity Level IV was issued.

Because neither NRC regulations nor license conditions address industrial safety in the laboratory, the nonradiological concerns noted in the allegation were referred to OSHA.

- (21) The Petitioner alleges that the inspector overlooked Part 20, Appendix B, footnote 4, in finding that "because 'the procedure contains no precaution concerning the inhalation of acid fumes that evolve from the titration,' GE was not obligated by its license to take any precautionary action against that danger."

Response

Chemical toxicity referred to in footnote 4 to Appendix B refers only to the chemical toxicity of uranium, not to the toxicity of other materials which might be present.

- (22) Petitioner cites a memorandum dated November 9, 1981, from Bowman to Hendry stating that "'analyses of the 9 air sampler filters in the ADU vaporization room' showed airborne contamination levels 'exceed 300 times the maximum permissible concentration.'" (Petition, Chap. I at 28)

Response

The Petitioner's contention that a Licensee memorandum which discussed the analysis of air samples collected in the ADU Vaporization Room was evidence that radiation safety surveys in the Chemet Lab were inadequate is not only incorrect, but it is irrelevant to the discussion of radiation safety aspects of titrations in the Chemet Lab. The referenced memorandum pertained to the analysis of air samples collected during an accidental release of uranium hexafluoride gas in the fuel manufacturing area, an area far removed and physically separated from the Chemet Lab. The release resulted from the failure of equipment.

Information and data concerning the release were reviewed by an NRC inspector and the findings were discussed in Inspection Report 81-11. In addition the Licensee conducted an appropriate investigation of the event and provided a detailed report to the NRC. This report included a description of actions taken to improve the Licensee's timeliness of the assessment of dose to the general public, as requested by the NRC in the cover letter to Inspection Report 81-11.

- (23) Petitioner questioned findings in two separate Inspection Reports regarding contamination on vials, etc., received into the lab. (Petition, Chap. II at 3-5; April 11 Letter at 21)

Response

Inspection Report 84-17 § 4(d) states, "[t]he Licensee recognizes that samples that come from the production area may be contaminated. Plant procedures caution Chemet Lab personnel that samples may be contaminated and require the use of appropriate protective clothing for lab personnel." Nuclear Safety Release/Requirement 6.1.0 does not prohibit receipt of contaminated samples; but it does require that containers and equipment in the Chemet Lab be wiped clean of visible contamination. NRC inspectors did not observe visible contamination on samples sent to the laboratory from the production area. The Petitioner incorrectly claims that Inspection Report 84-04 substantiates that a violation occurred in stating that samples received from the production area for analysis were found to have external contamination on the containers. The contamination on containers from the production area discussed in Inspection Report 84-04 was not visible contamination, but was determined by wiping the surface of the container with a piece of filter paper and then measuring the removable contamination with a radiation survey instrument. Visible contamination was not observed on samples sent from

the production area to the Chemet Lab during unannounced visits to the laboratory by the inspector during the periods February 21-24, 1984, November 27-30, 1984, or January 7-11, 1985.

With regard to the issuance of the February 19, 1985 memorandum by the laboratory manager alerting workers to the acceptance of sample items from the production area with external contamination, its issuance does not alter the fact that the Licensee had no procedures (nor were they required) which prohibited the receipt of visibly contaminated samples in the Chemet Lab. In sum, receipt of such samples was not a violation of NRC regulations, license conditions, or Licensee procedures.

Inspection Reports 84-04 and 84-17 were correct in concluding that no violation or deviation was identified regarding accepting visibly contaminated sample vials and paperwork into the laboratory.

- (24) Petitioner believes that the inspector's finding that allegation "(e)" (concerning deliberate contamination of the work area) could not be substantiated results from inspector misrepresentation of the allegation (Petition, Chap. II at 5-6)

Response

With regard to the Petitioner's contention that the inspector misrepresented the allegation, attention is called to the Petitioner's interview with an NRC investigator on July 11, 1984. On page 190, line 16, of that transcript, the Petitioner indicated it looked like her work area was deliberately being contaminated by someone. On page 255, lines 2-14, she again indicated that someone was attempting to harass or irritate her by deliberately contaminating her work station. The nature of the Petitioner's allegation as stated to the NRC, was not misrepresented.

Contrary to the statement in the Petition, individuals interviewed did not identify the specific individual who was observed using poor work practices by name. The individual who stated that the Petitioner contaminated her own work station voluntarily stated he was told this by the Petitioner.

Without witnesses or records to confirm the Petitioner's allegation, the inspector rightly concluded that the allegation could not be substantiated. The NRC's review could not conclude that management condones contamination of any work area.

- (25) Petitioner believes that the inspector finding that management did not discourage employees from answering questions by NRC inspectors is erroneous. (Petition, Chap. II at 6-8)

Response

Section 19.15(b) of 10 C.F.R. permits an individual to bring privately to the attention of inspectors, either orally or in writing, any past or present condition which he/she has reason to believe may have contributed to or caused any violation of the Act, NRC regulations, or license conditions, or any unnecessary exposure of an individual to radiation from licensed radioactive material under the Licensee's control. It enables the worker to bring concerns to the attention of the NRC. It does not prohibit the Licensee from requesting that employees refer questions from NRC inspectors to the appropriate supervisor. Otherwise, a worker may feel compelled to answer an NRC inspector's questions, even though the worker may not have the requisite knowledge in the area. Nevertheless, the worker is free to talk to an NRC inspector at any time. The Petition indicates a possible conflict with the number of individuals in Inspection Reports 84-16 and 84-17 who stated that they were told to refer to their supervisor questions asked them by NRC inspectors. There is no conflict in the two reports. Each inspector independently selected twelve laboratory employees to interview. Several individuals were interviewed separately by both inspectors. The individuals interviewed during inspection 84-17 were interviewed in private with no other Licensee employee present. They were asked if the Licensee had told them they could not talk with an NRC inspector and that they should not answer the NRC inspector's questions. Out of the twenty-four interviews conducted by the two inspectors, two individuals indicated that at least once their supervisor told them to refer questions from NRC inspectors to the supervisors, but that they were not discouraged from talking to NRC inspectors. The Petitioner was not one of the twenty-four interviewed because she no longer worked at GE at that time. As noted in Inspection Report 84-17 the inspector on a number of inspections at the facility had never encountered a Licensee employee who refused to answer his questions or one who referred the inspector to a supervisor. Of the twelve individuals interviewed during the inspection documented in Inspection Report 84-17, only two were supervisors or management.

- (26) Petitioner believes that the inspector finding that Petitioner's "posting" allegation is not a violation is legally and factually in

error because GE failed to post conspicuous notice. (Petition, Chap. II at 8-10)

Response

The Petitioner's contention that a violation should have been issued for failure to post the document required by 10 C.F.R. § 19.11 is not correct. From a review of the inspection findings, the Region agrees with the inspector that the Licensee was meeting the requirements of § 19.11. Due to the volume of documents required to be posted in accordance with 10 C.F.R. § 19.11(a), the Licensee properly implemented the requirements of 10 C.F.R. § 19.11(b), which states that if posting of a document specified in subsections (a)(1), (2), and (3) is not practicable, the Licensee may post a notice which describes the document and where it may be examined.

The inspector also found that those documents required by § 19.11 were conspicuously posted and had been neither defaced nor altered. Contrary to the allegations of the Petitioner, the inspector did not find that even the portions of the documents visible through the Plexiglas were barely legible during the night hours without improved lighting. The inspector found that the postings were legible during night hours, although lighting in the area could have been improved. As a result of the inspector's findings, the Licensee agreed to install better lighting in the vicinity of the bulletin boards.

From discussions with inspectors who have inspected GE facilities during the past several years, the NRC found no evidence that the Licensee made any attempt to monitor or observe personnel reading materials posted.

The Licensee's reduction of the number of locations within the plant where the documents or notices required by § 19.11 were posted is not a violation, since posting at the gatehouse fulfills the requirement to post the documents, notices, or forms such that an individual is permitted to observe them on the way to or from any particular licensed activity.

- (27) Petitioner believes that the inspector conclusion that the dumping of uranium powder outside hoods is not a violation is untenable. (Petition, Chap. II at 10-11)

Response

The Petitioner's use of the phrase "dumping uranium powder" misrepresents what actually occurs. The operation in question involves use of a

spatula to remove a small quantity of uranium powder from a sample container and to place the sample on an analytical balance for weighing.

The weighing of uranium powder outside of hoods was prohibited by procedures at the time of the allegation and at the time of the inspection only in the Spectrographic Area of the Chemet Lab. As noted in Inspection Report 85-02, a Notice of Violation was issued for handling uranium powder outside the hood in the Spectrographic Area of the laboratory. The document referenced by the Petitioner was issued in 1973 and was superseded in 1978 by Nuclear Safety Release/Requirement 6.1.0. Therefore, the Petitioner was in error in stating that GE was "legally bound" to comply with the obsolete document. Further, the inspector never concluded that weighing uranium powder outside hoods was not a violation. The inspector did state that from interviews with twelve laboratory personnel he was unable to establish any association between weighing uranium powder and sinus problems. The question of the release of fumes into the laboratory and sinus problems was referred to OSHA.

- (28) Petitioner contends that the inspector finding on airborne radioactivity having been minimal is based on a GE survey characterized by the inspector, himself, to be worthless and conflicting with the finding. (Petition, Chap. II at 13-16)

Response

Inspection Report 84-17 states,

"[a]t the request of the inspector and under the direct observation of the inspector, the Licensee performed a surface contamination survey in the recirculation system intake ducts prior to the high efficiency filters. The highest survey result was 300 dpm/100 cm². These results indicate that general airborne radioactivity levels in the laboratory have been minimal. The recirculation system has been in operation since the laboratory started up.

According to Licensee representatives, the ductwork had never been decontaminated.

The inspector also found no evidence to substantiate the allegation that an airborne hazard was created by cooling samples outside a hood. In addition, the inspector found that bioassay data indicated very little uptake of radioactivity by Chemet Lab personnel, in most cases not significantly greater than the minimum detectable level for the instrument used for the analysis. In sum, contrary to Petitioner's observation, the inspection did *not* find the GE survey to be "worthless," nor did he even question its validity in Inspection Report 84-17.

- (29) Petitioner raises again her allegation regarding failure to place cooling racks under a hood, which was addressed by the NRC in Inspection Report 84-17. (Petition, Chap. II at 13)

Response

The Petitioner's original allegation, which was addressed in Inspection Report 84-17, was that an airborne radiation hazard was created when bubbly hot uranium material was removed from a microwave oven and allowed to cool in the open and not in a vented hood. Three of twelve Lab personnel interviewed indicated that the trays of samples were not cooled under a hood. Ten of the individuals stated that they had not noted any problems with fumes from cooling samples. It should be noted that Calibration and Operation Instruction (COI) 409 required that watch glasses be placed over the crucible while they were heated and cooled, thus reducing the possibility of radioactivity being released during the cooling process. During tours of the Chemet Lab, the inspector did not observe the cooling of samples outside the hood. The inspector could not substantiate the allegation that "an airborne hazard" was created by cooling samples outside a hood.

- (30) Petitioner contends that Inspection Report 84-17 "condemned" GE's bioassay program as "inadequate and deficient." (Petition, Chap. II at 14)

Response

The Petitioner misinterpreted the cited inspection report. The discussion referenced in the inspection report pertained to a question of whether the Licensee performed whole-body counts during the early days of the Petitioner's employment at the plant and the Licensee's explanation of why some bioassay data had been omitted from the Petitioner's exposure records. The inspector did not find the Licensee's bioassay program to be unacceptable. The inspector did not identify noncompliance with NRC regulations. The Petitioner's statement that the whole-body counting system was found to be deficient in Inspection Report 84-04 was also incorrect. Inspection Report 84-04 simply stated that the procedure used to calibrate the whole-body counter, although technically adequate, had not been formally approved by plant management.

With regard to the Petitioner's questions regarding the internal management report evaluation of the Semitrex UA-3 analyzer, these findings by the Licensee were the result of its early internal evaluation of the

equipment. A review of Licensee's bioassay program and equipment in use, including the Semitrex analyzer, as documented in Inspection Report 85-05, showed the equipment had been operating adequately when used for bioassay analyses and was providing accurate results.

- (31) Petitioner claims that Inspection Report 84-17 excused GE violations on the basis that "general radiation levels in the lab have been minimal." (Petition, Chap. II at 14)

Response

In fact the cited report stated that a particular survey indicated "that general *airborne radioactivity* levels in the lab have been minimal" (emphasis added). As noted in the report, the flow of air from the microwave oven area was toward the Chemet Lab recirculation ventilation system. If airborne radioactivity had evolved from the cooling of samples, it would either fall out on the floor along the path of the air flow or be taken into the recirculation system. Contamination surveys performed by the Licensee and reviewed by the inspector indicated that surface contamination was not identified along the air flow path. Additionally, surveys in the recirculation system housing before the high-efficiency filter indicated that there had been no buildup of significant amounts of uranium in the housing as the result of airborne radioactivity in the laboratory. Years of operation of the recirculation ventilation system without a buildup of contamination in the ducts is a valid method of assessing the extent of airborne radioactivity in the laboratory. The inspection report stated that the single air sampler may not be adequate to measure the concentration to which individuals were exposed while working at some stations where loose powder was handled. The inspection report further stated that even if the Licensee could produce evidence of an evaluation and could prove that the single air sampler in the laboratory was representative of the concentrations to which individual workers were exposed, it would not be relevant, since modifications of the Chemet Lab exhaust ventilation system could have altered the flow in the laboratory.

The Petitioner argues that the findings noted in Inspection Report 84-04 contrast sharply with the results in Inspection Report 84-17. The fact that the surface contamination levels ranged from 317 dpm/100 cm² to 5100 dpm/100 cm² is not unanticipated when one considers the various operations being performed in the Chemet Lab. Since the inspections were done at separate times it is not surprising that the results would be different. The Petitioner also tries to equate airborne survey results with

surface contamination survey results, although the two surveys are not equivalent.

- (32) Petitioner believes that the inspector finding in Inspection Report 84-17 that GE had not violated safety rules by removing posted instructions concerning required monitoring of small items when removed from controlled areas cannot stand. (Petition, Chap. II at 16-17)

Response

The Petitioner's contention that GE violated safety rules by not posting requirements concerning monitoring of paper, notebooks, and personal items removed from the laboratory is invalid. The Procedure (SOP 0.3.4) referenced in the Petition as requiring the maintenance of a "log for clearance of small items from the lab" was not in effect at the time the allegation was made. Discussions with Licensee representatives and reviews of Licensee records indicate that this 1973 procedure was replaced in 1978 with NSR/R 6.1.0. There was no regulatory requirement that the instructions be posted. Additionally, as stated in the Inspection Report 84-17, the inspector did not observe anyone removing items from the laboratory without monitoring them.

- (33) Petitioner contends that the inspector failed to make a proper finding concerning GE's "out of control" testing requirements. (Petition, Chap. II at 22-23)

Response

The Petition states that the number of "out-of-control" measurements was unacceptably high, in that 104 out of 1197 (or 9%) and 5 out of 32 (or 16%) exceeded the 0.05 control limit and one out of 1197 exceeded the 0.001 control limit. The Petitioner asks "what happened to the obvious, *substantive*, violation of 70.51, 70.57, and 70.58 . . . ?"

Licensees are required to establish statistical control limits at the 0.05 and 0.001 level of significance and NRC inspects to assure that those requirements are met.

The inspections documented in Inspection Reports 84-15 and 84-16 were conducted, respectively, by a specialist in nondestructive assay and a chemist. The scope of these inspections was to determine whether the Licensee had taken appropriate action when control limits were exceeded. One inspection revealed that the Licensee had taken all system-

related actions that were required but failed to make a notification; therefore, a Notice of Violation was issued in Inspection Report 84-16. As part of both inspections, NRC evaluated the data subjectively at the time the reports were issued and concluded that 104 of 1197 and 5 of 32 measurements outside the 0.05 control limits and one of 1197 outside the 0.001 control limit were not of sufficient statistical significance to establish that the limits were unreasonable. For this reason, no other Notice of Violation was issued.

The data from Inspection Report 84-15 could not be reanalyzed, because they represented a composite set of data from several instruments. However, the Licensee's original data were reexamined and reanalyzed again during an inspection documented in Inspection Report 85-17. This inspection confirmed that the Licensee was accurately calculating control chart limits for the enrichment analyzers. During inspection 85-17, control data for enrichment analyzers for the period February 1983 to October 1985 were analyzed. Eight cases were identified where the observed number of measurements which fell outside the control limits differed from the number predicted by theory. In five of those cases, the Licensee had established limits tighter than required, which resulted in better control than required by NRC. In the other three cases, the observed number of measurements outside the control limits differed from the theoretical value by only one measurement in two cases and by three measurements in the other case. Statistically, the hypothesis that the control chart limits are stated accurately is supported by the data. Based on the above, the Petitioner's contention is incorrect.

- (34) Petitioner objects to the fact that Inspection Report 84-15 finds that the password system is "‘reasonably protected from unauthorized changes’ and that Mrs. English's ‘concerns’ were therefore ‘not substantiated.’" (Petition, Chap. II at 30)

Response

As reported in Inspection Reports 84-05, 84-15, and 85-06, several weaknesses in the Licensee's overall internal program for controlling and using password-designated accessibility to computer information have been identified. Once apprised of these weaknesses, the Licensee took prompt and effective corrective action. It should be noted, however, that the Licensee's control of passwords for the identified computer equipment was and is solely to protect company proprietary information and processes. No NRC regulations require the Licensee to have specific protective measures, such as password control, to protect this type of in-

formation. Accordingly, no enforcement action was taken concerning the lack of password control.

- (35) Petitioner claims that knowledge of the Wieczorek Report would have led the inspector to the same conclusions about enrichment analyzer calibration as reached by her. (April 11 Letter at 8-11)

Response

As reported in Inspection Reports 82-18, 84-05, 84-15, and 84-16, during an NRC review of the Licensee's internal investigation (Wieczorek Report) reported in Inspection Report 85-12, the subject analyzer was properly calibrated following a detector change.

The Petitioner has incorrectly characterized the Licensee's employees' interpretation of the procedure. The NRC has never reported or indicated in any way that only *one* "counting of the standard" was required to constitute a properly calibrated and "ready to use" analyzer. The NRC interviewed the author of the procedure to positively remove any element of interpretation and then verified that the calibration in question was properly performed using the procedure-specified combinations of calibration standards and verification standards. The highest standard was analyzed for an aggregate total of six times before the certification of equipment function, stabilization, and the counting release of unknown samples, consistent with the intent of the author of the procedure.

- (36) The Petitioner contends that the inspectors obtained information about calibration/verification logs, as reported in Inspection Reports 84-05 and 84-16, solely from Licensee statements and without reviewing procedures or previous inspection reports that referenced a violation in similar related areas. (April 11 Letter at 11-12)

Response

The inspectors interviewed Licensee personnel, reviewed procedure COI 411, and examined the referenced calibration/verification log for the period under review. The NRC Staff admits that the varying nomenclature used in the inspection reports regarding log books may have confused the reader, but calibration/verification logs and equipment support shift logs are two different log book references.

Regarding the calibration/verification log, the inspector interviewed Licensee personnel relative to maintenance of the log, examined the log book for the period referenced by the Petitioner, and reviewed procedure COI 411. The persons interviewed were the laboratory manager, two laboratory supervisors, a licensing specialist, the measurement control specialist, and three Lab technicians, all of whom were considered to be very knowledgeable regarding laboratory operations. As a result of these interviews, procedure reviews, and document reviews, the inspector concluded that the calibration/verification log was maintained as required.

The inspector's review of Procedure COI 411 determined that log maintenance was required for standard changes and amplifier setting changes but was not required for the routine recording of calibration/verification counting data. Therefore, the Licensee was found to be in compliance with the operating procedure. The fact that the Licensee did not record verification/calibration data during periods when production samples were not being run was not a violation.

Equipment support shift logs, which are different from the calibration/verification logs, are maintained by the Technical Equipment Support Unit for a variety of reasons, including trend analysis of equipment failure. These logs were reviewed by inspectors in an effort to obtain additional information relative to the Petitioner's concerns about improper removal of an out-of-service tag. Equipment support shift logs are not required to be maintained by Licensee's procedures or NRC regulations.

The findings in Inspection Report 84-05 are not related to calibration and verification data recordings that qualify an analyzer for production use. Those results dealt with a different analytical technique having different procedural requirements.

- (37) The Petitioner asserts that the Wieczorek Report substantiated the allegation that "calibration and verification were not completed before samples were run and material released during 8/20/82 and 6/22/83" and that this is in "irreconcilable conflict" with NRC inspection reports. (April 11 Letter at 13)

Response

Wieczorek and NRC inspectors determined that the Licensee's Procedure COI 411 was worded such that several interpretations were possible, but each took a different approach in reviewing this allegation. Wieczorek made his own independent interpretation of the intent of the procedure, whereas NRC inspectors interviewed the author of the proce-

dures and several technicians who used it to determine the Licensee's intended meaning. The Wiczorek interpretation and the Licensee's intended meaning were different. Either method of implementing this procedure would have been acceptable to the NRC. Since it was the Licensee's procedure, NRC used the Licensee's intended meaning and determined that no violation had occurred.

(38) The Petitioner believes that the "Hendry Report" should have led to other than "no violations" findings by inspectors regarding the following matters —

(a) the microwave oven leak problem (Hendry Report at 24);

Response

This concern of the Petitioner regarding the microwave oven pertains to the removal of a shield which could result in the leakage of microwaves out of the oven during operation. This area is outside the purview of the NRC and was turned over to OSHA to follow up. As noted in Inspection Report 85-02, discussions with twelve laboratory employees failed to substantiate the Petitioner's allegation that fumes are given off during the processing of samples. In addition, observations by the inspector during the processing of samples failed to disclose any emission of fumes while samples were being heated.

With regard to the violation of requirements of Job Hazard Analysis (JHA) CL-JHA-12, it should be noted that the JHA for routine analyses performed in the laboratory is not a procedure required by NRC regulations or license conditions. Therefore, failure to adhere to this document would not be a violation of NRC requirements. During a subsequent inspection, inspectors reviewed the Hendry Report and determined that even if they had seen it before the inspections, the results of those inspections would not have been different.

(b) housekeeping of the lab (Hendry Report at 26, 28);

Response

The violation cited in Inspection Reports 84-15 and 85-02 pertained to a failure of the Licensee to clean up spills in the Chemet Lab immediately and did not address general housekeeping in the laboratory. The reference to housekeeping in the Fuel Manufacturing Area in Inspection Report 81-11 for the most part is irrelevant to the discussion of housekeeping in the Chemet Lab. Only in a broad, laboratory-wide, general

sense is housekeeping in the Fuel Manufacturing Area relevant to housekeeping in the Chemet Lab. The discussion of "powder on the floor" in Inspection Report 82-10 was the result of a change-out of a high-efficiency filter in the exhaust of a powder-handling enclosure in the Fuel Manufacturing Area. This discussion also is not relevant to activities in the Chemet Lab. As stated previously the contamination above action levels found during the special survey reported in Inspection Report 84-04 did not represent a significant hazard. The Licensee took prompt action to reduce the levels below the action level.

The Petitioner combined several unrelated events and concluded incorrectly that housekeeping in the Chemet Lab was a "substantive violation."

(c) spills in the lab (Hendry Report at 30);

Response

See again ¶ 3.b(17).

(d) surface contamination (Hendry Report at 31-33);

Response

The Petitioner is correct when stating that swipes and smears can measure only loose surface contamination. However, the Petitioner is incorrect in the assessment of the significance of fixed contamination measurements in the Chemet Lab. Measurements performed by the inspector and the Licensee indicated that fixed contamination levels in the Chemet Lab are low. Additionally, fixed uranium contamination is not in itself a safety hazard, because the direct radiation levels are low. Fixed contamination will not result in personal contamination if brushed against and will not become an airborne radioactivity hazard in normal laboratory operations.

The surveys performed frequently in the Chemet Lab provide adequate evaluation of surface contamination hazards in the Chemet Lab.

The total amount of surface contamination present on a surface may be underestimated if only removable contamination surveys are performed. However, in the case of uranium, the amount of fixed contamination remaining after the removal of visible contamination is small and, as previously stated, does not constitute a radiological hazard. Therefore, in terms of radiological significance, the use of removable contamination

surveys was reasonable under the circumstances to evaluate the extent of radiological hazard.

- (e) installation of sufficient air samplers (Hendry Report at 33-34);

Response

See ¶ 3.c(4).

- (f) radiation safety training (Hendry Report at 34-35).

Response

In Inspection Report 81-11, the inspector documented a discussion with the Licensee regarding an IE information notice about geotropism, which is the difference in response resulting from different orientations of the survey instrument during a survey. The Licensee indicated that special training on this topic would be given to radiation safety technicians in the event they needed to use instruments affected by geotropism. However, there is no reason to believe that geotropism had any bearing on the radiation safety technician's ability to detect contamination at the Petitioner's work station on March 5, 1984.

Observations by the inspector during a number of inspections indicated that radiation safety technicians did, in fact, know how to use radiation survey instruments.

The Petitioner's statements that the general employee and radiation safety training were inadequate are not correct. The reference to employee safety training in Inspection Report 82-10 was a recommendation that the Licensee modify its training to improve the presentation. The training met the requirements of 10 C.F.R. § 19.12 in content.

The statement in Inspection Report 84-17 concerning survey techniques used by technicians did not imply that technician training was inadequate but that the training should be expanded to include familiarization with Chemet Lab operations so as to improve survey techniques in the Lab.

- (39) Petitioner alleges that contamination on the switch box and on the legs of her table were cleaned up at the command of supervision before Radiation Safety was called. (April 11 Letter at 35)

Response

The NRC was unable to verify the Petitioner's statement that the switch box and legs of her table were cleaned before calling Radiation Safety and, therefore, was unable to substantiate the allegation.

- (40) Petitioner claims that the Hendry Report provides some new evidence about frisker violations. (April 11 Letter at 37)

Response

See ¶ 3.c(1)(a) for a discussion of frisking.

c. Improper Enforcement

- (1) In regard to Inspection Report 84-04, Petitioner —

- (a) believes that Severity Level V should have been Level I (regarding failure by GE to follow survey procedure when exiting controlled area). (Petition at 8)

Response

It is a prudent, well-established industry practice for individuals to survey themselves for contamination when leaving potentially contaminated areas. The Licensee has incorporated this practice into plant procedures. Individuals frequenting the controlled area have been trained in the proper methods to comply with this requirement. Appropriate survey instruments have been placed at the exit points for performing such surveys. Notices that such surveys are required are posted conspicuously at exits from potentially contaminated areas. In addition, Licensee representatives periodically observe survey techniques and conduct unannounced spot-check surveys of individuals after they have performed self-monitoring and have left the Chemet Lab as well as other controlled areas. Disciplinary actions can be and have been taken by the Licensee against an individual who fails to survey or who surveys incorrectly. The above actions show that the Licensee was acting responsibly.

Despite possible disciplinary actions, there may be occasions when an individual neglects to survey upon leaving an area. Without an indication that an individual knowingly failed to survey, such circumstances are not considered willful acts on the part of the Licensee, but are considered violations of the Licensee's procedures. Consequently, a Notice of Violation for failure to follow procedures at the appropriate severity level would be issued if observed by an NRC inspector.

As noted in Inspection Report 84-04, a Notice of Violation (Severity Level V) was issued because of two individuals who failed to perform personal contamination monitoring in accordance with plant procedures. These individuals were visitors to the Chemet Lab, not regular laboratory employees.

The Petitioner's statement is incorrect that the Licensee contended and the NRC accepted the contention that laxness and even violation of the self-monitoring procedure for the Chemet Lab would be excused "because of the lower probability of personnel being contaminated." A Licensee representative did state, as noted in the inspection report, that inadequate attention may have been given to the Chemet Lab because of the lower probability of personnel becoming contaminated. This statement was made in the context of a discussion of the actions taken by the Licensee to ensure that personnel leaving the Fuel Manufacturing Area, where the potential for an individual becoming contaminated is significantly greater, properly surveyed themselves. The Licensee noted that while concentrating on the Fuel Manufacturing Area it unintentionally may have overlooked a similar problem with personnel leaving the Chemet Lab.

It should be noted that the violation was issued as a Severity Level V, which, according to the NRC Enforcement Policy, is reserved for matters that have minor safety significance. Contamination levels in the Chemet Lab were low and those individuals who failed to survey were found not to be contaminated. Observations by the inspector of many individuals leaving contamination-controlled areas during the inspection showed no other examples of failure to survey. In 1984 approximately 1000 spot-check surveys were performed plant-wide by the Licensee's Radiation Safety Group, including several spot-checks at the Chemet Lab exit. Only one individual was found who exceeded the contamination release limit for personnel. This individual came out of the Fuel Manufacturing Area, not the Chemet Lab. This is indicative of the low potential for personnel contamination in the facility as a whole.

During the review of this report, NRC regional management correctly concluded that failure to follow the personal survey procedure was an isolated incident of minor safety significance. Therefore, the violation was categorized appropriately as a Severity Level V.

- (b) in regard to GE's failure to calibrate whole-body counters, observes that the Director, IE —
 - (i) did not discuss the severity level of violations or determine whether they were willful;

- (ii) did not determine whether violations were discovered and reported by GE or instead by the NRC, although crucial to the imposition and quantum of penalty; and,
 - (iii) did not explain or attempt to rationalize his failure to find a violation.
- (Petition at 10-12)

Response

As was pointed out in the response discussed under ¶ 3.b(2)(b), above, no violations were found.

- (2) Petitioner makes the general comment that findings in inspections were illegally assigned the lowest categories of severity levels, i.e., never more than a IV or V. (Petition, Chap. I at 2)

Response

It is true that all violations referenced by the Petitioner were Severity Level IV or V. All violations were properly categorized in accordance with the NRC Enforcement Policy, 10 C.F.R. Part 2, Appendix C, or the Enforcement Policy in effect at the time of the violation.

- (3) Petitioner maintains that the aggregate of the violations cited should have resulted in assignment of a Severity Level I and civil penalties. More specifically, she asserts that the alleged "careless disregard violation," at a minimum, should have been a Level II violation. (Petition, Chap. I at 16)

Response

The NRC has reviewed the violations noted in the inspection reports performed by Region II for the period 1981 through the first half of 1985 and has found that the Region properly assigned the Severity Level to these violations, using the Enforcement Policy in effect at the time of the violation. With regard to those issues raised in the Petition for which the Petitioner felt the Licensee should have been cited for a violation, the Region properly determined except as described herein that these issues were not violations of license conditions or other NRC requirements.

The NRC found that at the time the allegations were made the Licensee's radiation protection program was effective overall. The violations

cited were indications that the Licensee had areas where improvements were needed. The violations apparently were not the result of intentional or careless disregard of regulations on the part of the Licensee, but were a failure of the Licensee to adequately review and implement a completely effective radiation protection program in the Chemet Lab. Therefore, there was no "careless disregard" violation, as alleged by the Petitioner.

Furthermore, the Petitioner misapplied a section of the Enforcement Policy in stating that elements of the radiation protection program constituted "a system designed to prevent or mitigate a serious safety event [from] being able to perform its intended safety function" (10 C.F.R. Part 2, Appendix C, Supp. I). This particular section of the Enforcement Policy generally does not pertain to a radiation protection program. Radiation protection occurrences generally are categorized using Supplement IV of the NRC Enforcement Policy.

The violations were assigned the appropriate severity level in accordance with the Enforcement Policy. It is noted that the Petitioner incorrectly assumed that an individual received a cumulative radiation exposure above regulatory limits. Even if the violations identified during each inspection had been aggregated, they would not have been sufficiently significant to justify a higher severity level.

- (4) Petitioner makes reference to the alleged failure of GE to follow NRC advice on the air monitor, which in the Petitioner's view also should have led to an increased severity level. The Petitioner further noted that the air monitors are now installed at the wrong height and that the defects noted in Inspection Report 84-17 discredit all GE air intake contamination surveys. Also, deterioration of cleanliness, addressed in Inspection Report 81-11, should have led to a finding. (Petition, Chap. II at 23-26)

Response

In reviewing operations in the Chemet Lab during Inspection 84-13, the inspector observed only one sampler in the Wet Lab area. It appeared that this sampler was not located in such a manner as to provide representative air samples. The Licensee contended that there was documentation of an analysis that showed the location to be suitable and stated that it would retrieve the information from document storage. This issue was identified as an unresolved item pending review of the Licensee's documentation as to the suitability of the sampling results.

As noted previously, an unresolved item is one for which more information is needed to determine whether the item is acceptable or may involve violations or deviations. Until the issue is resolved, the Licensee is not required by NRC regulations to take corrective actions. In a subsequent inspection (84-17), the inspector issued a Notice of Violation for improper sampler location, because the Licensee was unable to provide documentation showing the sampler location to be suitable.

The Petitioner's contention that the lack of air sampling discredits all elements of protection for Chemet Lab employees is without merit. It should be noted that the failure to provide suitable air sampling does not affect the quality of the results of other control and monitoring systems, such as removable contamination surveys, urinalysis results, or lung counts.

With regard to the Petitioner's comments about cleanliness, the inspector's comment in Inspection Report 81-11 referred to housekeeping and cleanliness in the Fuel Manufacturing Area, not in the Chemet Lab. No NRC requirements specifically address an acceptable level of housekeeping or cleanliness, so Notices of Violation were not issued in that regard.

- (5) Petitioner holds that collective reports should have been forwarded by Region II to Headquarters, NRC, for collective review and hence assignment of Severity Level I. (Petition, Chap. II at 31)

Response

Part 2, Appendix C, § III states: "In each case, the severity of a violation will be characterized at the level best suited to the significance of the particular violation. In some cases, violations may be evaluated in the aggregate and a single severity level assigned for a group of violations." Similarly, Appendix C, § V.B, states that "civil penalties . . . are considered for Severity Level III violations and *may* be imposed for Severity Level IV violations that are similar to previous violations for which the licensee did not take effective corrective action" (emphasis added, footnote omitted). There is no requirement that the severity level must be increased by considering violations collectively over several inspection reports. The NRC did, in the instances referenced, consider whether the violations as a group identified during an inspection indicated a trend or program breakdown for which escalated enforcement was appropriate. The conclusion was and is that the violations were not of the level of safety significance equivalent to those items listed as examples of Severity Levels I, II, or III in Supplements IV and VI of the NRC Enforce-

ment Policy. The significance of the violations, even in their totality, did not justify referring the matter to Headquarters, and certainly did not justify a Severity Level I categorization.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. 50-445-CPA

TEXAS UTILITIES ELECTRIC
COMPANY, *et al.*
(Comanche Peak Steam
Electric Station, Unit 1

September 19, 1986

The Commission offers guidance on the admissibility of a contention into the construction permit extension proceeding. The Commission holds that if a permittee is seeking a construction permit extension because of delays associated with the need to correct safety problems, any delays arising therefrom would be "good cause" for an allowance of more time for plant completion. In this context, a contention directed only at permittee's past conduct would not be sufficient to defeat a construction permit extension.

**CONSTRUCTION PERMIT: EXTENSION OF COMPLETION
DATE (GOOD CAUSE)**

A permittee may demonstrate "good cause" for a construction permit extension in one of two ways. A permittee may demonstrate that there was good cause for the *past delay* in plant completion, or a permittee may show that its *current* and *future* actions are "good cause" for an allowance of more time for plant completion.

CONSTRUCTION PERMIT: EXTENSION OF COMPLETION DATE (GOOD CAUSE)

Where the permittee asserts the need for more time to correct safety deficiencies, the Licensing Board should not look to past conduct to determine "good cause" for the extension.

MEMORANDUM AND ORDER

This matter is before the Commission on a question certified to it by the Atomic Safety and Licensing Appeal Board ("Appeal Board") regarding the admissibility of a contention into a construction permit ("CP") extension proceeding. The Texas Utilities Electric Company ("TUEC") seeks an extension of construction permit CPPR-126 which authorizes it to construct Unit 1 of the proposed two-unit facility at Comanche Peak near Glen Rose, Texas. We have discussed the background facts surrounding this episode elsewhere, so we will not repeat them at length here. *See* CLI-86-4, 23 NRC 113 (1986). Briefly, TUEC submitted an untimely application for an extension of the CP which the Staff approved. The Citizens Association for Sound Energy ("CASE"), an intervenor in the ongoing operating license proceeding, filed a request for a hearing on the construction permit extension under § 189a of the Atomic Energy Act ("AEA"), 42 U.S.C. § 2239(a). We referred the request to the Atomic Safety and Licensing Board ("Licensing Board") for a post-extension hearing under 10 C.F.R. Part 2. *See* CLI-86-4, *supra*, 23 NRC at 121. The Licensing Board began proceedings to define and resolve contentions whether TUEC had demonstrated "good cause" for extension of the permit. *See* § 185 of the AEA, 42 U.S.C. § 2235; 10 C.F.R. § 50.55(b) (1986).

On May 2, 1986, the Licensing Board issued a Memorandum and Order (unpublished) admitting CASE and an individual named Meddie Gregory as a consolidated intervening party with one consolidated contention. *See* ASLBP No. 86-528-02-CPA (May 2, 1986). ("ASLBP Op.") That contention alleges that:

Applicants have not met their burden of proving that the delay in completion of construction was not caused by their own dilatory conduct.

- a. Applicants have not given any reason for the existence of the delay. They only assert they need more time to complete a reinspection, redesign, and reconstruction program but they do not disclose the reason why such programs are needed or that the reason for delay was not intentional and without a valid purpose.

b. The real reasons for the delay in construction completion were that:

1. Applicants deliberately refused to take positive action to reform their QA/QC program in the face of consistent criticism, and
2. Applicants have failed to properly design their plant, specifically:
 - i. Applicants failed to correctly apply fundamental engineering principles,
 - ii. Applicants failed to properly identify unique designs in their PSAR,
 - iii. Applicants constructed much of their plant prior to its design having been completed,
 - iv. Applicants have failed to comply with 10 C.F.R. Part 50, Appendices A and B, including their failure to promptly identify and correct design deficiencies, and deliberately refused to take positive action to correct such deficiencies.

ASLBP Op. at 7. Essentially, the contention appears to allege that TUEC had a corporate policy to construct the plant in violation of NRC requirements, and that subsequent discovery and efforts to correct these violations caused the delay. Therefore, argues CASE, the delay does not constitute "good cause" because of the deliberate, intentional, and knowing nature of the violations which caused it.

Both TUEC and the Staff have appealed the decision admitting that contention to the Appeal Board. The permittees assert that any delay for reinspection and correction of defects, regardless of their root cause, is "good cause" for an extension under both the statute and NRC regulations, citing the Commission's decision in *Washington Public Power Supply System* (WPPSS Nuclear Project Nos. 1 and 2), CLI-82-29, 16 NRC 1221, 1230-31 (1982) ("WPPSS"). The Staff challenges the admissibility of the contention on two other grounds which are not relevant to the question before us today.¹

The Appeal Board certified a question to us under 10 C.F.R. § 2.718(i) (1986) and our *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 456 (1981). That question reads: "Is the admitted CASE/Gregory contention . . . foreclosed as a matter of law by

¹ The Staff argues that (1) the Licensing Board incorrectly relied upon information developed in the licensing proceeding to cure deficiencies in the basis supporting the intervenors' contentions and (2) in light of the intervenors' statement that it does not seek denial of the permit but instead seeks imposition of certain conditions on the construction permit, together with the Licensing Board's determination that it lacks authority to impose those conditions, a hearing is not warranted. See NRC Staff's Brief to the Appeal Board at 3 (May 12, 1986). These issues are not before us at this time and we express no opinion on them. The Staff does not support TUEC's broad interpretation of "good cause" as defined in WPPSS. See Transcript of Oral Argument Before Atomic Safety and Licensing Appeal Board at 28-32 (June 18, 1986).

[WPPSS]" *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 1), Appeal Board Memorandum and Opinion (July 2, 1986) ("Slip Op."). In answering the question below, we have carefully reviewed all of the relevant papers and arguments of the parties to the Boards below.²

Initially, we must start with language of the statute at issue which provides in pertinent part that "[u]nless the construction or modification of the facility is completed by the completion date, the construction permit shall expire, and all rights there under be forfeited, *unless upon good cause shown, the Commission extends the completion date.*" § 185 of the AEA, 42 U.S.C. § 2235 (emphasis added). The regulation implementing this statute states that the applicant must complete construction "by the latest completion date" or face forfeiture of its rights under the permit. "*Provided, however, that upon good cause shown the Commission will extend the completion date for a reasonable period of time. The Commission will recognize, among other things, . . . [specific enumerated acts] and other acts beyond the control of the permit holder, as a basis for extending the completion date.*" 10 C.F.R. § 50.55(b) (1986) (emphasis added).

As we read the statute, the implementing regulation, and agency case law, a permittee may demonstrate good cause for a CP extension in two different ways. First, as the regulation in 10 C.F.R. § 50.55(b) expressly contemplates, a permittee will demonstrate "good cause" for the extension if it demonstrates that there was good cause for the *past delay* in plant completion. *Public Service Co. of New Hampshire* (Seabrook Station, Unit 2), CLI-84-6, 19 NRC 975, 978 (1984) ("*Seabrook*"); *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-722, 17 NRC 546, 551 (1983). Indeed, most past CP extension requests have alleged good cause for the past delay. Our decision in *Seabrook* further defined good cause for the past delay. In *Seabrook* the Commission was confronted with contentions in the CP extension proceeding that related to need for power, cost of completion, and financial consequences to the utility and ratepayers. There was no attack on the sufficiency of applicant's asserted reasons for the past delay. In this context, we stated that in order to defeat an extension request based on good cause for the past delay:

² We assume, for purposes of decision, that the contention as alleged is true.

"First, the construction delays at issue have to be traceable to the applicant. Second, the delays must be 'dilatory.' If both prongs are met, the delay is without 'good cause.'" *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-722, 17 NRC 546, 551 (1983). In other words, the proponent of the contention must articulate some basis to show that the applicant is responsible for the delay and has acted intentionally and without a valid business purpose. *Id.* at 553.

Seabrook, supra, 19 NRC at 978.

On the other hand, a permittee may also demonstrate good cause for a CP extension by showing not that there was good cause for the past delay, but that there is *now* good cause for the NRC to allow more time for plant completion. Unlike the first way to show good cause, which focuses on the permittee's past actions, the second option focuses upon the permittee's current and future actions. *WPPSS* addressed efforts to correct safety deficiencies in relation to this second method to show good cause.

Our holding in *WPPSS* was intended to encourage licensees to conduct vigorous internal investigations and remedial safety actions by not penalizing them for any completion delay caused thereby. *See* 16 NRC at 1230-31. On its face, *WPPSS* does not distinguish among innocent, negligent, or intentional violations of NRC requirements as the root cause of the deficiencies requiring correction. Moreover, we believe that *WPPSS*' underlying philosophy intended no such distinction necessarily to be controlling. For example, if a utility were to adopt a corporate policy to construct the plant in willful violation of NRC requirements, but were then to reverse that policy, remove the wrongdoers, and embark on a new effort to construct a safe plant in full compliance with NRC requirements, we could find that the new policy constituted "good cause" for an extension. We will not penalize a current management for the mistakes of its predecessors in this regard. *See, e.g., Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-2, 21 NRC 282, 296-306 (1985); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-9, 21 NRC 1118, 1135-40 (1985). This interpretation furthers the policy expressed in *WPPSS* of encouraging efforts to search out and correct safety deficiencies.

We turn now to the contention at issue in this proceeding. In its CP extension request, TUEC asserts good cause by alleging that the delays that have been required to date, and the additional time that will be required in the future, are to determine and correct safety problems. CASE charges in response that TUEC had a corporate policy to construct the plant in violation of NRC requirements, and that later discovery of this policy and efforts to correct the violations caused and is causing delay. For purposes of analysis, we turn first to the method to show good cause

described in *WPPSS*. If the permittee is seeking the permit extension because it claims good cause for the NRC to allow more time for plant completion under *WPPSS*,³ this particular contention is barred by our *WPPSS* decision because, as currently worded, it focuses only on the permittee's *past* conduct. If a permittee is seeking a CP extension solely because more time is needed to correct deficiencies, a contention worded like this one and directed only at past conduct would not be sufficient, even if true, to defeat the extension.

We focus next on the first method to demonstrate good cause for a CP extension by showing good cause for the past delay. A simple, mechanical application of the holding in *Seabrook* leads to the conclusion that a finding that construction delays arose from a deliberate corporate policy to construct the plant in violation of NRC requirements would virtually never defeat a CP extension. Such a corporate policy could hardly be characterized as "dilatatory" conduct if, as is most likely to be the case, the policy was intended to speed construction. And if we go further and apply the *Seabrook* elaboration of what is meant by "dilatatory," we would be hard pressed to avoid the conclusion that the policy, while intentional, had the valid business purpose to speed construction.

But in *Seabrook* there was no contention like the one before us in this case. And the *Seabrook* analytical framework would lead to the same result — dismissal of the contention as insufficient to defeat the extension request — even if the deliberate corporate policy to construct in violation were an ongoing one, for even an ongoing policy would presumably have the valid business purpose to speed construction and not be "dilatatory." Yet to grant a CP extension request in the face of a finding that the past delays were caused by a past and still ongoing policy of deliberate violations would be to reward such wrongdoing. Surely the drafters of the Atomic Energy Act cannot have had this in mind when they allowed CP extensions for good cause.

We conclude that the *Seabrook* framework for testing contentions in a CP extension proceeding does not work well when applied to the type of CP extension request and contention at issue in this proceeding. We therefore decline to extend it to this case. Instead, the question is whether, in view of the safety purposes of the Atomic Energy Act, the need to evaluate and correct safety deficiencies can be good cause for delays in construction completion even when those deficiencies resulted from deliberate corporate wrongdoing. Our analysis here proceeds along the same lines as the analysis under the second way to show good cause,

³ See Letter from permittee's counsel to Secretary Chilk dated February 4, 1986, at 6, and "Opposition of Texas Utilities Electric Company, *et al.* to Request for Stay" dated February 13, 1986, at 13.

and leads to the same result. We should not reward wrongdoing by granting a CP extension in the face of a finding that construction delays arose from deliberate wrongdoing, but we also should not penalize a current management for the mistakes of its predecessors. We believe that the appropriate balance is struck by holding that if there was a corporate policy to speed construction by violating NRC requirements, and that policy was discarded and repudiated by the permittee, any delays arising from the need to take corrective action would be delays for good cause. Thus, if a permittee is seeking a CP extension because of delays associated with the need to correct safety problems, a contention, worded like this one, that is directed only at past conduct would not be sufficient, even if true, to defeat the extension.

The Appeal Board should determine the admissibility of the consolidated intervenors' contention in accord with this guidance.

The additional views of Commissioner Bernthal are attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 19th day of September 1986.

COMMISSIONER BERNTHAL'S ADDITIONAL VIEWS

I concur in the result reached in the proposed order; in my judgment the criteria set forth in ALAB-722 (and applied by the Commission in the *Seabrook* proceeding) for determining whether a utility has been dilatory in executing a construction project could never have been intended to apply to circumstances such as those present in the Comanche Peak case.

But I am troubled that the term "valid business purpose" should ever have found its way into the Commission's lexicon of jurisprudence in construction permit extension cases — as if the Commission were equipped to make judgments on matters of business and economics. Indeed, such terminology is reminiscent of the Commission's dubious charge to rule on "need for power" and "financial qualifications."

I question whether the Commission today should ever deny a construction permit extension request on other than public health and safety grounds. The original purpose of the so-called "latest date for completion of construction" inserted in all permits was related solely to questions of adequate uranium supply for commercial reactors — a consideration that has long since lost its currency.

Issues of economics and "business purpose" are more properly the subject of prudence hearings before state public utility commissions. Therefore, I believe the Commission should modify its rule regarding construction permit extension requests so that the rule is based solely on public health and safety considerations. Considerations of economics should be left to those with a statutory mandate and expertise in that arena.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. 50-322-OL-5
(Emergency Planning Exercise)

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

September 26, 1986

The Commission denies Intervenor's motion demanding termination of the adjudicatory proceeding on the results of Licensee's emergency planning exercise. The Commission finds that while the status of a relocation center in Licensee's plan is not entirely clear due to its loss of the facility on which it had intended to rely, the ongoing hearing should proceed because it can lead to resolution of issues that involve functions not dependent on the relocation center. Furthermore, the Commission determines that the State's enactment of legislation for the creation of a municipal power authority empowered to purchase Licensee does not offer a sound basis on which to terminate the hearing since the potential take-over is subject to many contingencies.

MEMORANDUM AND ORDER

BACKGROUND AND SUMMARY

In CLI-86-11, 23 NRC 577 (1986), the Commission directed the appointment of a Licensing Board to commence a hearing on the February 13, 1986 emergency preparedness exercise for Shoreham. A Board was appointed and has already conducted preliminary proceedings. After the issuance of CLI-86-11, two developments occurred which, intervenors argue in a July 21, 1986 Motion to Reconsider, demand termination of both the exercise hearing and the whole proceeding on LILCO's emergency plan. These developments are: (1) the June 16 action of Nassau County denying LILCO the use of the Nassau Coliseum as a reception center for potential evacuees in a Shoreham emergency; and (2) the July 3 enactment by the New York State legislature of legislation creating a municipal power authority (Long Island Power Authority — LIPA) empowered to purchase LILCO, if that is in the best interest of ratepayers. Suffolk County, State of New York, and Town of Southampton Motion for Reconsideration of CLI-86-11. The Staff and LILCO oppose the motion. We are not persuaded by Intervenor's that the relief suggested is warranted, and we deny the motion.

ANALYSIS

Intervenor's argue that a hearing on the exercise would be a waste of time and resources because Nassau Coliseum was the focal point of the exercise. In support of this argument, they assert that all bus drivers were trained to drive routes leading to the Coliseum, and "evacuees" were monitored and decontaminated at the Coliseum. More importantly, Intervenor's add, the lack of a relocation center, and the lack of an *agreement* for a relocation center, violates NUREG-0654, and thus should lead to a Commission holding that the entire plan fails to comply with the Commission's emergency planning requirements in 10 C.F.R. § 50.47. Motion at 4-8.

Intervenor's also argue that the creation of LIPA should lead to termination of the entire Shoreham proceeding because LILCO is no longer a *bona fide* applicant, and the Commission "cannot . . . have intended . . . such pointless and wasteful litigation . . ." *Id.* at 9-10.

Both the Staff and LILCO oppose the motion, arguing that while knowing the location of a reception center may be important to testing *some* functions in an exercise, most functions can be tested adequately

without knowing the location of a reception center, e.g., how well emergency personnel know correct dosimetry procedures, communications procedures, and mobilization procedures. As to a state takeover of LILCO, Staff and LILCO also observe that this is no certainty. The bill authorizes acquisition only if it benefits ratepayers, but LILCO notes that it's "far from free of doubt" that there's an acquisition price that can protect ratepayers and at the same time protect LILCO shareholders and creditors. Response at 4.

We agree with the Staff and LILCO that we should not reverse our decision to direct the conduct of a hearing on the exercise. While the status of the relocation center in LILCO's plan may not be entirely clear, we are not prepared to agree with Intervenor that the Coliseum was such an important focus in the exercise that the ongoing hearing will be wasteful and pointless. Much can be accomplished in the ongoing hearing in resolving issues that involve functions not dependent on the exact location of the relocation center or centers.

Nor does the LIPA legislation offer a sound basis on which to terminate hearings. Intervenor presents the takeover as a *fait accompli*, but we believe that much needs to be resolved before any actual takeover can be effected. Thus termination of the hearings on this ground would be premature and unwise.

Accordingly, the motion is denied.

It is so ORDERED.

For the Commission*

John C. Hoyle
Acting Secretary of the
Commission

Dated at Washington, D.C.,
this 26th day of September 1986.

*Chairman Zech was not present for the affirmation of this Order. Had he been present he would have approved it.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Gary J. Edles, Chairman
Dr. Reginald L. Gotchy
Howard A. Wilber

In the Matter of

Docket Nos. 50-250-OLA-1
50-251-OLA-1
(Vessel Flux Reduction)

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

September 16, 1986

Upon conducting its sua sponte review of the Licensing Board decision that disposed of one of the two admitted contentions in this license amendment proceeding, the Appeal Board finds no errors that warrant corrective action.

ATOMIC ENERGY ACT: LICENSING DECISION (IMMEDIATE
EFFECTIVENESS)

If a determination is made, pursuant to 42 U.S.C. 2239(a)(2)(A), that a proposed license amendment involves "no significant hazards," the Commission may issue the amendment and make it immediately effective notwithstanding any request for a hearing. The hearing, however, may take place after issuance of the amendment. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-807, 21 NRC 1195, 1200 n.12 (1985).

APPEAL BOARDS: SUA SPONTE REVIEW

When no appeals are taken from a reviewable licensing board decision, an appeal board will review that decision sua sponte. See *Offshore Power Systems* (Manufacturing License for Floating Nuclear Power Plants), ALAB-689, 16 NRC 887, 890-91 & n.4 (1982).

RULES OF PRACTICE: APPELLATE REVIEW

Appeal boards generally do not review licensing board determinations that do not constitute a final resolution on the merits. See *Houston Lighting & Power Co.* (South Texas Project, Units 1 and 2), ALAB-799, 21 NRC 360, 369 (1985).

MEMORANDUM AND ORDER

On July 24, 1986, the Licensing Board issued what it styled an "initial decision" (LBP-86-23, 24 NRC 108) disposing of one of the two admitted contentions in this license amendment proceeding. The Board ruled in the applicant's favor on Contention (d), dealing with the formation of a steam film around the fuel rods.¹ The Board's decision authorized requested amendments to the technical specifications for operating licenses for Units 3 and 4 at the Turkey Point facility.²

The Board, however, retained jurisdiction over Contention (b), dealing with alleged shortcomings in one of the computer evaluation models, in order to obtain further information from the NRC staff concerning proposed additions and corrections to the models for the emergency core cooling system. Earlier, the Board had relied on these models in summarily disposing of Intervenor's Contention (b).³

No appeal has been taken from the Board's decision within the period prescribed by the Commission's Rules of Practice.⁴ We thus have the de-

¹ The onset of this steam film is defined as the "departure from nucleate boiling." When the film is established, there is a reduction in the capability for the transfer of heat from the fuel rods, with a resulting large increase in cladding temperature and a greater probability of cladding damage. See LBP-85-29, 22 NRC 300, 323-24 (1985).

² The notice of hearing included a proposal that the license amendments involve a "no significant hazards" determination pursuant to 42 U.S.C. 2239(a)(2)(A). If such determination is made, the Commission may issue an amendment and make it immediately effective notwithstanding any request for a hearing. The hearing, however, may take place after issuance of the amendment. *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-807, 21 NRC 1195, 1200 n.12 (1985). The Commission followed that procedure here. 49 Fed. Reg. 3364 (1984).

³ See LBP-85-29, 22 NRC at 310-20.

⁴ See 10 C.F.R. 2.762.

cision before us for our customary sua sponte review.⁵ On such review, we have found no errors that warrant corrective action.⁶

LBP-86-23 is *affirmed*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

⁵ See *Offshore Power Systems* (Manufacturing License for Floating Nuclear Power Plants), ALAB-689, 16 NRC 887, 890-91 & n.4 (1982). We had earlier deferred that review. See Order of August 19, 1986 (unpublished).

⁶ We have not reviewed the Licensing Board's summary disposition of Intervenor's Contention (b) because that matter remains in the Licensing Board's hands. See *Houston Lighting & Power Co.* (South Texas Project, Units 1 and 2), ALAB-799, 21 NRC 360, 369 (1985) (appeal boards generally do not review licensing board determinations that do not constitute a final resolution on the merits). At such time as the Board concludes all deliberations regarding that part of the case, its decision on Contention (b) will be subject to appellate review.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Gary J. Edles
Howard A. Wilber

In the Matter of

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

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

September 19, 1986

The Appeal Board decides the remaining portions of the applicant's appeal of two Licensing Board decisions in the emergency planning phase of this operating license proceeding, LBP-85-12, 21 NRC 644 (1985), and LBP-85-31, 22 NRC 410 (1985). The Board remands two of the three issues appealed for further clarification by the Licensing Board, and reverses the Licensing Board's determination on the third.

**EMERGENCY PLANS: REQUIREMENT FOR OPERATING
LICENSE**

A nuclear power plant is not allowed to operate at levels above five percent of its rated power unless the NRC finds, in accordance with 10 C.F.R. 50.47(a), that there is reasonable assurance that adequate measures for the protection of the public health and safety can and will be taken. Among other things, emergency response planning must make provision for the care of persons removed from the plume emergency planning zone (plume EPZ) should circumstances necessitate an evacuation.

ADJUDICATORY BOARDS: SCOPE OF REVIEW (OPERATING LICENSE PROCEEDING)

The Commission's regulations governing operating license proceedings generally limit an adjudicatory board's findings to the issues put in contest by the parties. 10 C.F.R. 2.760a. *See also Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-728, 17 NRC 777, 807, *review declined*, CLI-83-32, 18 NRC 1309 (1983).

LICENSING BOARD: SCOPE OF REVIEW (SUA SPONTE)

A licensing board may raise and resolve, *sua sponte*, "a serious safety, environmental, or common defense and security matter," should it determine such a serious issue exists. *Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1112 (1983). It may do so, however, only after invoking certain special procedures. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-675, 15 NRC 1105, 1115 (1982).

EMERGENCY PLANS: LICENSEE RESPONSIBILITIES

Both the Commission's regulations and planning guidance assign command and control responsibilities to licensee personnel. Perhaps most important, the initial determination of whether and when to alert public officials to an emergency situation rests with the utility. 10 C.F.R. 50.47(b)(5); 10 C.F.R. Part 50, Appendix E, §§ IV.D.1, IV.D.3.

EMERGENCY PLANS: LICENSEE RESPONSIBILITIES

Licensees have primary responsibility for accident assessment, including the evaluation of potential risk to the public health and safety and the preparation of recommendations concerning protective measures. *See* "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," NUREG-0654/FEMA-REP-1 (Rev. 1) (1980), § I.H.

EMERGENCY PLANS: LICENSEE RESPONSIBILITIES

The NRC Incident Response Plan provides that a licensee "has the immediate and primary continuing responsibility for limiting the consequences of an incident at a nuclear power reactor." In fact, a licensee is empowered to take "whatever action is deemed necessary to limit the consequences to public health and safety, even if that action violates the

NRC license technical specifications.” “NRC Incident Response Plan,” NUREG-0728, Rev. 1 (1983) at 4. And utility personnel are responsible for determining what information is given to government officials. *Cf. Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-697, 16 NRC 1265, 1269-70 (1982); *id.*, ALAB-698, 16 NRC 1290, 1312-13 (1982), *aff’d in pertinent part*, CLI-83-22, 18 NRC 299, 310 (1983).

EMERGENCY PLANS: LICENSEE RESPONSIBILITIES

The NRC Incident Response Plan expressly instructs licensees that “[l]imiting the consequences to public health and safety should take clear precedence over limiting financial loss or adverse publicity.” NUREG-0728 at 4.

EMERGENCY PLANS: NOTIFICATION REQUIREMENTS

The Commission’s regulations require that utilities establish a four-tier accident classification scheme. In the event of an emergency, licensees must advise government officials of the magnitude of the accident and offer recommendations on what protective measures should be taken. *See Three Mile Island*, ALAB-697, 16 NRC at 1269-70.

EMERGENCY PLANS: STATE AND LOCAL GOVERNMENT RESPONSIBILITIES

Emergency planning roles have always been assigned to reflect the duties and capabilities of the individual participants. Governmental entities were given emergency response roles because they had the legal authority and responsibility for such response, not because the Commission distrusted the objectivity of licensees. *See* 35 Fed. Reg. 19,567-68 (1970).

EMERGENCY PLANS: ROLE OF NRC STAFF

The NRC staff has largely an advisory and monitoring role in emergency planning, although it may, in some circumstances, also take direct action, such as making its own protective action recommendations. *See* “Agency Procedures for the NRC Incident Response Plan,” NUREG-0845 (1983) at II-12–II-13; NUREG-0728 at 4-6; *cf. Three Mile Island*, ALAB-698, 16 NRC at 1312-13.

EMERGENCY PLANS: LICENSEE RESPONSIBILITIES

The regulations and applicable regulatory guidance effectively rebut the notion that utility officials must be categorically excluded from exercising any command and control emergency responsibilities.

EMERGENCY PLANS: CONTENT (DEFICIENCIES IN)

Where compliance with each of the 16 express criteria of 10 C.F.R. 50.47(b) is absent, the Commission may nevertheless issue an operating license if the applicant can demonstrate "that deficiencies in the plans are not significant for the plant in question, that adequate interim compensating actions have been or will be taken promptly, or that there are other compelling reasons to permit plant operation." 10 C.F.R. 50.47(c)(1).

EMERGENCY PLANS: CONTENT (SUFFICIENCY)

Section 50.47(b)(1) of the Commission's regulations requires that offsite emergency response plans include an appropriate assignment of responsibilities to the licensee and state and local emergency response organizations. Similarly, NUREG-0654, which is the principal emergency planning guidance document prepared jointly by the NRC and the Federal Emergency Management Agency (FEMA), provides for the assignment of emergency response duties to the licensee and state and local organizations.

EMERGENCY PLANS: CONTENT (DEFICIENCIES IN)

Where, "for whatever reason," a particular jurisdiction has not completed an emergency plan or some portion of it, an "applicant [may] show that, because of other compensating factors, public health and safety will be adequately protected because of other plans or evidence of preparedness." *Union of Concerned Scientists*, DPRM-83-1, 17 NRC 719, 726 (1983). Cf. *Consolidated Edison Co. of New York* (Indian Point, Unit No. 2), CLI-83-16, 17 NRC 1006, 1013 (1983).

EMERGENCY PLANS: CONTENT (DEFICIENCIES IN)

A utility plan cannot be deemed to have shortcomings simply because a governmental body may perform various undescribed functions not required by the regulations. Moreover, the sufficiency of "interim compensatory actions" designed to accommodate for deficiencies such as the lack of a state plan need not necessarily provide precisely the same level

of protection that total correction of the deficiencies would offer. *Indian Point*, CLI-83-16, 17 NRC at 1010. See also CLI-86-13, 24 NRC 22, 30 (1986).

APPEARANCES

James N. Christman, Richmond, Virginia (with whom **W. Taylor Reveley, III**, **Donald P. Irwin**, **Kathy E.B. McCleskey**, and **Scott D. Matchett**, Richmond, Virginia, were on the briefs), for the applicant Long Island Lighting Company.

Fabian G. Palomino, Albany, New York, **Karla J. Letsche**, Washington, D.C., **Eugene R. Kelley**, Hauppauge, New York, and **Stephen B. Latham**, Riverhead, New York (with whom **David A. Brownlee**, **Michael J. Lynch** and **Kenneth M. Argentieri**, Pittsburgh, Pennsylvania, **Herbert H. Brown** and **Lawrence Coe Lanpher**, Washington, D.C., and **Martin Bradley Ashare**, Hauppauge, New York, were on the briefs), for the intervenors State of New York, Suffolk County, New York, and the Town of Southampton, New York.

Sherwin E. Turk and **Bernard M. Bordenick** for the Nuclear Regulatory Commission staff.

DECISION

The Licensing Board has rendered two partial initial decisions in the emergency planning phase of this operating license proceeding involving the Shoreham nuclear facility in Suffolk County, New York. Both decisions examined an emergency plan in which offsite emergency response procedures would be implemented by the Local Emergency Response Organization (LERO); a group composed of the applicant Long Island Lighting Company's (LILCO) personnel, federal agencies, and private contractors. In contrast with the typical emergency response plan, the Shoreham plan does not rely on county or state personnel.

In the first of its decisions, the Licensing Board resolved most of the contested issues in favor of LILCO. It also determined, however, that the applicant lacks the legal authority to implement material features of the plan, with the consequence that an emergency plan in conformity

with NRC regulations cannot be carried out.¹ In the second decision, the Board addressed the remaining issues.² These were primarily concerned with the adequacy of the Nassau Veterans Memorial Coliseum as a reception or "relocation" center for the monitoring, decontamination and transferring to sheltering facilities of evacuees from the area surrounding the Shoreham facility in the event of an emergency. Although the applicant prevailed on most of those issues as well, the Board ended its decision with the declaration that the applicant's emergency response plan is "fatally defective." The bases of this declaration were: (1) the Board's determination in its earlier decision that the applicant lacks the legal authority to implement its plan; and (2) the Board's belief that the opposition of both the State of New York and Suffolk County to the plan "has created a situation where at any given time it is not known whether the [p]lan would be workable."³

The applicant and the intervenors State of New York and Suffolk County took appeals from portions of both of these decisions.⁴ With the parties' acquiescence, we separated for expedited review the applicant's appeal on the legal authority and related questions decided by the Board in its first decision. In ALAB-818, we affirmed the Licensing Board's conclusions on those questions.⁵ More particularly, we determined, first, that federal law did not preempt those New York State statutes that prevented LILCO from implementing material aspects of its plan. Second, we concluded that LILCO had not demonstrated that its plan was amenable to ad hoc adoption by the appropriate governmental units in the event of an emergency (the so-called "realism" issue). Finally, we ruled that various traffic control actions ordinarily part of an evacuation plan but which LILCO lacked legal authority to undertake were material elements of an adequate emergency response (the so-called "immateriality" issue).

Our affirmance rendered academic the other issues presented by the various appeals from the two Licensing Board decisions. In taking review of ALAB-818, however, the Commission deferred its consideration of LILCO's appeal until we completed our review of the appeals filed by the intervenors.⁶ As a consequence, we promptly took up, and

¹ LBP-85-12, 21 NRC 644 (1985).

² LBP-85-31, 22 NRC 410 (1985).

³ *Id.* at 431.

⁴ In addition, the Town of Southampton appealed from portions of the second decision.

⁵ 22 NRC 651 (1985).

⁶ Commission Order of December 19, 1985 (unpublished).

resolved, that appeal.⁷ We generally rejected the intervenors' attack on the Licensing Board's resolution of a score of emergency planning matters, and largely upheld the Board's determinations. However, we remanded four issues to the Board for further proceedings.

To accord the Commission an opportunity to decide how it wished to proceed in light of our various determinations, we temporarily stayed further proceedings before the Licensing Board and announced our intention to hold in abeyance the three remaining issues raised by the LILCO appeal, pending further instructions from the Commission.⁸ Those issues involve (i) the monitoring of evacuees at the Nassau County Coliseum, (ii) an alleged conflict of interest by LILCO employees who occupy emergency planning roles, and (iii) the lack of a New York State emergency plan for Shoreham. In CLI-86-13, the Commission reversed our conclusions in ALAB-818 with respect to the "realism" and "immateriality" issues and remanded the proceedings to the Licensing Board for further exploration.⁹ The Commission determined that state and county officials would be obligated to assist in the case of an emergency at Shoreham and that each would respond on a "best effort" basis. In the Commission's judgment, such response "would utilize the LILCO plan as the best source for emergency planning information and options."¹⁰ On remand, the Licensing Board must examine whether such response will adequately protect the public. The Commission also directed us to reconsider our deferral of the three remaining issues.¹¹

To assist our effort, we asked the parties to provide us with their views as to the effect on the appeal of recently passed resolutions by the Nassau County Board of Supervisors.¹² Those resolutions void the designation of the Nassau County Coliseum as LILCO's relocation center and prohibit LILCO's use of facilities in Nassau County without prior approval by the Board of Supervisors. The intervenors responded that the resolutions provide additional bases for dismissing LILCO's appeal and affirming the Licensing Board's decision that the LILCO plan is defective.¹³ LILCO and the NRC staff argued that the resolutions do not

⁷ ALAB-832, 23 NRC 135 (1986).

⁸ *Id.* at 141-42, 162-63.

⁹ 24 NRC 22 (1986).

¹⁰ *Id.* at 31.

¹¹ *Id.* at 33.

¹² Order of July 28, 1986 (unpublished).

¹³ Views of Suffolk County, the State of New York, and the Town of Southampton Concerning Effect of Nassau County Resolutions on LILCO's Appeal of the ASLB's Concluding Partial Initial Decision (August 11, 1986).

affect the issues currently before us and urged us simply to rule on LILCO's appeal.¹⁴

We have evaluated the applicant's appeal in light of the record, including the parties' responses to our inquiry. As a threshold matter, we agree with LILCO and the staff that the appeal can be taken up now. On the merits, however, we find that we must remand two of the three issues for further clarification by the Licensing Board. We set forth our views in this regard in sections I and III. As explained in section II, we can nevertheless bring to a close litigation regarding the alleged conflict of interest. On that issue, we simply reverse the Licensing Board's determination.

I. MONITORING OF EVACUEES

A nuclear power plant shall not be allowed to operate at levels above five percent of its rated power unless the NRC finds, in accordance with 10 C.F.R. 50.47(a), that there is reasonable assurance that adequate measures for the protection of the public health and safety can and will be taken. Among other things, emergency response planning must make provision for the care of persons removed from the plume emergency planning zone (plume EPZ) should circumstances necessitate an evacuation. LILCO's emergency response plan provides for the monitoring, decontamination and sheltering of evacuees requiring such services. In reviewing the adequacy of LILCO's plan, the Licensing Board found:

LILCO has used an estimate of 20% of the population of the EPZ as the maximum number of persons who would require shelter in the event of an emergency at Shoreham. . . . The maximum population of the EPZ is 160,000, thus LILCO's planning is based on a maximum of 32,000 seeking shelter. LILCO did not justify how this number could be related to the number of persons who might seek monitoring. The Board finds that the number of persons expected to seek shelter in the event of a disaster is not necessarily the same as the number of persons who might seek monitoring in the event of a radiological accident.

We accept LILCO's planning basis for the number of evacuees who might seek shelter, be processed through the relocation center and . . . must thus be monitored. . . . The record is unclear as to how the Coliseum could accommodate the evacuees of the general population who will seek monitoring and processing, aside from those seeking shelter. We therefore find that LILCO's failure to plan for those

¹⁴ LILCO's Views on the Effect of the Nassau County Resolutions (August 11, 1986); NRC Staff Views on the Effects of Nassau County Board of Supervisors Resolutions Relating to Nassau Coliseum (August 11, 1986); LILCO's Reply to the "Views of Suffolk County, the State of New York, and the Town of Southampton Concerning Effect of Nassau County Resolutions on LILCO's Appeal of the ASLB's Concluding Partial Initial Decision" (August 18, 1986).

of the general population who seek only monitoring and processing constitutes a defect in the Plan.¹⁵

LILCO appeals from the Board's conclusion that, in addition to planning for the number of evacuees who are likely to seek sheltering, LILCO must now estimate and plan for the number of evacuees who are likely to come to the Coliseum for radiological monitoring and decontamination alone. LILCO claims that the Board's decision must be reversed because it addresses matters outside the scope of the issues admitted for litigation and imposes an obligation not justified by any relevant NRC emergency planning requirement or guidance. The NRC staff agrees with LILCO that the Board's determination falls outside the scope of the issues admitted for litigation. The intervenors support the Board's result.

For the following reasons, we return the matter to the Board so that it can consider in the first instance whether the issue was properly raised for litigation. First, the issue turns in part on the Licensing Board's intention when reopening the record — a matter on which we have difficulty resolving the ambiguities in the record but on which the Licensing Board can obviously speak with knowledge. Second, because the issue arose on appeal for the first time, the Licensing Board has not had an opportunity to address it. To help focus the issue on remand, we alert the Licensing Board to matters it should take into account when revisiting its earlier conclusion. We decline at this juncture to rule on LILCO's alternative argument that the obligation imposed by the Board runs afoul of applicable regulatory requirements.

The Commission's regulations governing operating license proceedings generally limit an adjudicatory board's findings to the issues put in contest by the parties.¹⁶ The intervenors tendered a 177-page document setting forth almost 100 separate offsite emergency planning contentions. Many of the contentions contained numerous subparts and all of them targeted alleged deficiencies in detail. In response to objections that the list of contentions was too long, the intervenors argued:

¹⁵ LBP-85-31, 22 NRC at 417. See also *id.* at 430-31.

¹⁶ 10 C.F.R. 2.760a. See also *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-728, 17 NRC 777, 807, review declined, CL1-83-32, 18 NRC 1309 (1983). A licensing board may nevertheless raise and resolve "a serious safety, environmental, or common defense and security matter" on its own. *Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1112 (1983). It may do so, however, only after invoking certain special procedures. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-675, 15 NRC 1105, 1115 (1982). The Licensing Board did not invoke those procedures in this case and no party suggests that the matter of radiation monitoring for those evacuees not seeking sheltering was raised on the Board's own initiative. The issue thus had to be injected into the case — if at all — as part of the intervenors' contentions.

The LILCO Plan is a lengthy, complex document which encompasses all aspects of offsite emergency planning. Intervenor's have reviewed the Plan in its entirety, and have identified a large number of specific deficiencies . . . in detail so that the bases for the contentions (both legal and factual) are set forth as specifically as possible.¹⁷

Five items — Contentions 24.O, 24.P, 74, 75 and 77 — dealt with alleged deficiencies in connection with the relocation centers. Three items — Contentions 16.I, 23.F and 76 — dealt with additional aspects of monitoring and decontamination.¹⁸ The Licensing Board admitted the five contentions dealing with relocation centers, but did not admit the three contentions dealing with monitoring and decontamination.¹⁹

In the usual case, we would simply examine the contentions as admitted to decide whether the Board's determination properly fell within the issues raised.²⁰ In this case, however, LILCO's emergency plan changed significantly during the course of the litigation and the Licensing Board expressly reopened the proceedings for new hearings to address some but not all of those changes. Thus, the intervenors' original submission cannot serve as the exclusive focus of examination. And the Licensing Board is best situated to decide one question hotly contested on appeal — i.e., whether the Board intended as part of its reopening to revisit the issue of LILCO's plan for evacuees who did not seek sheltering. The Licensing Board must now decide whether, in view of the evolution of the LILCO plan, the issue was reasonably embraced within the concerns presented for litigation.

The text of the proffered contentions will provide a necessary starting point.²¹ As noted earlier, the intervenors submitted a comprehensive array of contentions touching in detail upon every aspect of LILCO's offsite emergency plan. As to alleged deficiencies in connection with relocation centers, Contention 24.O argued essentially that a portion of the population would have no place to go because one of the primary designated centers — Suffolk Community College — was unavailable.²² Contention 74 alleged that two of the primary centers were impermissibly close to the boundary of the plume EPZ, while Contention 75 addressed the adequacy of the shelters.²³ Contention 24.P claimed that LILCO had

¹⁷ See Memorandum Regarding Revised Emergency Planning Contentions at 4, attached to Letter from Karla J. Letsche to Licensing Board (July 26, 1983).

¹⁸ See Revised Emergency Planning Contentions, at 27, 31 (Contention 16.I); 47, 51-52 (Contention 23.F); 55, 66-67 (Contentions 24.O and P); 153-56 (Contentions 74, 75, 76, 77), attached to Letter from Karla J. Letsche to Licensing Board (July 26, 1983).

¹⁹ Special Prehearing Conference Order of August 19, 1983 (unpublished) at 7, 13, 23.

²⁰ See, e.g., *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 241-42 (1986).

²¹ The contentions are set out in an appendix to LBP-85-12, 21 NRC at 975, 979, 1020-21.

²² See ALAB-832, 23 NRC at 157.

²³ *Id.* at 157-58.

no agreements with the American Red Cross (ARC) although it relied on the ARC to provide services at the relocation centers. And Contention 77 challenged the sufficiency of certain equipment used to measure thyroid contamination. The intervenors argue that there is general language in the contentions that was intended to permit inclusion of the issue. Contention 24.O, for example, alleges a failure by LILCO to arrange relocation centers for "anticipated evacuees." But, given both the breadth of, and level of detail in, the contentions, it may also be significant that the intervenors did not expressly challenge LILCO's alleged failure to estimate and plan for the number of evacuees who might need radiation monitoring and possible decontamination, even though they do not seek to be sheltered.

The Board should also canvass the direct testimony submitted in support of the contentions to help determine whether the matter was within the scope of the intervenors' concerns.²⁴ The intervenors seem to focus on the adequacy of arrangements for those evacuees who needed shelter. We find no discussion of a deficiency in LILCO's ability to accommodate evacuees who will need monitoring or decontamination but not sheltering. In fact, the only distinction among categories of evacuees set forth in the testimony was between "the potentially or actually contaminated evacuees, and those who are not contaminated."²⁵ The intervenors' proposed findings of fact and conclusions of law broadly challenge the adequacy of the relocation centers but specifically argue only that LILCO must make arrangements for the entire population of the EPZ, i.e., 160,000 people.²⁶

The Board must, of course, consider whether LILCO's change in plans affected the intervenors' ability to formulate their issues for litigation. In this connection, we note that two principal functions are performed by relocation centers. First, reception center functions include the registration, monitoring and decontamination of evacuees. Second, congregate care functions include the temporary housing, feeding and providing of first aid for uncontaminated evacuees. These functions may be conducted at the same or separate facilities.²⁷ As we explained in

²⁴ See Direct Testimony of David Harris and Martin Mayer on Behalf of Suffolk County Regarding Contentions 24.G, 24.K, 24.P, 73 and 75, fol. Tr. 9574, at 10-12, 24-30 [hereafter, "Harris/Mayer Testimony"]; Direct Testimony of Robert T. Kreiling on Behalf of Suffolk County Regarding Contention 24.O (March 2, 1984); Direct Testimony of Deputy Chief Inspector Richard C. Roberts on Behalf of Suffolk County Regarding Emergency Planning Contention 74 — Inappropriate Proximity of Proposed Relocation Centers to the Shoreham Plant (March 2, 1984); and Revisions to the Direct Testimony of David Harris and Martin Mayer on Behalf of Suffolk County Regarding Contention 75, fol. Tr. 14,870. The Kreiling and Roberts testimony was prefiled but appears not to have been introduced into evidence.

²⁵ Harris/Mayer Testimony at 29-30.

²⁶ Suffolk County and State of New York Proposed Findings of Fact and Conclusions of Law on Off-site Emergency Planning, Volume I (October 26, 1984) at 430-31.

²⁷ See Affidavit of Baldwin, *et al.*, fol. Tr. 15,991, at 1.

ALAB-832, LILCO's original emergency plan designated five facilities located in Suffolk County to serve as relocation centers.²⁸ Each facility was to provide both reception center and congregate care functions. From the outset it was clear that there could be individuals who would need monitoring and decontamination services, even if they did not also require sheltering. As the plan evolved, LILCO proposed to rely on separate relocation facilities — one or more large reception centers, where all radiation monitoring and decontamination activities would take place, and 50 smaller shelters or congregate care centers.²⁹ The Board should determine whether these subsequent revisions in the number, locale and function of the individual reception center and the congregate care centers raised new or unique concerns regarding the number of evacuees who would seek monitoring but not sheltering.

Under its revised approach, LILCO designated the Nassau Veterans Memorial Coliseum as its relocation or reception center, and the Board reopened the record "for the limited purpose of assessing the adequacy of LILCO's proffered evidence concerning the Nassau . . . Coliseum as a relocation center to be used in the event of an emergency at Shoreham."³⁰ As the Board explained in a supplemental order:

The reopening is limited in scope to [Contention 24.O]. It does not extend to the other contentions in the proceeding which bear on the topic of relocation.

* * * *

. . . [A]n oral hearing is needed to resolve the contested issue in Contention 24.O as to whether the designated relocation center, the Coliseum, is itself functionally adequate to serve as a relocation center for the anticipated general evacuees. *The number of general evacuees that can be expected to use a relocation center has already been litigated and that subject will not be reheard.* The Board will only consider evidence that goes primarily and directly to the question of whether the Coliseum is adequate for use as a relocation center.³¹

The Board's subsequent finding that LILCO had failed to demonstrate how many evacuees will seek monitoring but not sheltering, and how LILCO would provide for them, appears inconsistent with its exclusion of questions related to the number of "general evacuees" that can be expected to use the relocation center. It is possible, of course, that the Board declined to relitigate LILCO's planning basis because it had al-

²⁸ 23 NRC at 157-62.

²⁹ See Cordaro, *et al.*, fol. Tr. 14,707, at 15-16, 24-25; Tr. 14,792-807.

³⁰ Memorandum and Order Granting LILCO's Motion to Reopen Record (January 28, 1985) at 9 (unpublished).

³¹ Memorandum and Order (Reopening of the Record) (May 6, 1985) at 3-4 (unpublished) (emphasis added).

ready adopted the intervenors' assertion that any monitoring and decontamination facility must have the capability of processing all 160,000 people living in the EPZ. If that constitutes the basis for its finding that LILCO's plan is deficient, it should state so explicitly.³²

Finally, the Board must reexamine its conclusion in light of our determination, in ALAB-832, that the reopened proceedings should have been expanded to permit exploration of additional matters associated with the suitability of the Coliseum itself. In remanding the proceedings to the Licensing Board for additional evidentiary exploration, we observed that, although the relocation center contentions were cast in terms of lack of agreement evidencing permission for use of designated facilities as relocation centers, the intervenors' essential concern was whether those facilities were adequate to fulfill their purpose.³³ Because the intervenors' intent was to challenge the overall adequacy of the Coliseum, the reopening should have addressed all matters pertinent to use of the Coliseum in lieu of other relocation sites.³⁴ We realize, of course, that LILCO must now modify its plans because the Coliseum will be unavailable as a reception center. Presumably the Board will need to reexamine the adequacy of any new facility selected by LILCO. In this connection, the Board should consider whether the change in facility itself bears on the question of the need to plan for evacuees who seek monitoring but not sheltering.

II. CONFLICT OF INTEREST

Under LILCO's emergency plan, offsite emergency response procedures would be implemented by the Local Emergency Response Organization (LERO), a group that, as noted above, includes LILCO employees but does not include county or state personnel. Contention 11 asserted that LILCO employees who would occupy command and control positions in the event of an emergency are not sufficiently independent

³² During the course of the reopened hearing the intervenors argued that the only issue previously litigated was the number of evacuees that would seek shelter. Tr. 15,973. It appears that the number of evacuees likely to need monitoring but not sheltering was not actually litigated in the earlier stage. That would be immaterial if the issue should properly have been raised during the earlier phase of the case when LILCO's planning basis was under review. The staff claims that the intervenors have failed to question LILCO's planning basis for any relocation center and have failed as well to litigate LILCO's general planning basis irrespective of the specific relocation center selected. See Staff Brief (November 21, 1985) at 6 n.8. The staff concludes that "the reason for this failure is simply that the Intervenor had never previously perceived this issue to be within the scope of the admitted contentions." *Id.* The Licensing Board appears to disagree but had no opportunity to address this argument directly.

³³ 23 NRC at 162 n.104.

³⁴ We decided, for example, that problems arising from the geographic location of the Coliseum vis-à-vis various portions of the EPZ should have been included in the reopened proceedings. *Id.* at 161-62.

of LILCO and may experience a conflict between their obligation to the public and their loyalty to LILCO's financial and institutional interests. Such conflict arguably might affect the manner in which they perform their emergency responsibilities.³⁵

The crux of the intervenors' testimony was:

Individuals employed by a utility are simply too close to the source of the problem to maintain the objectivity and open-mindedness necessary to manage and control the response to an emergency involving a nuclear power plant. Utility employees could serve a valuable function as advisers in emergencies, since they are familiar with the commercial nuclear power systems. But this same familiarity leads to inevitable biases and mind sets that can lead to ineffective or unworkable emergency responses.

* * * *

. . . LILCO employees in command and control positions also lack objectivity in the roles assigned to them as LERO officials. By definition, objectivity requires that facts and conditions are received and dealt with without distortion by personal feelings, prejudices, or interpretations. Yet facts and conditions surrounding a radiological emergency at Shoreham necessarily impact the future existence, well being, profit and public perception of LILCO and LILCO's management. LILCO management level employees cannot help but interpret, judge and feel about those facts and conditions, at least in part, according to their positions in the company. Their relationship with LILCO, their employer, fundamentally and unavoidably compromises their ability to act objectively in the command and control functions assigned to them in the LILCO plan.³⁶

Apparently recognizing the potential for some conflict of interest, LILCO's witnesses testified that the emergency plan was structured to minimize the effect of individual biases or beliefs on the decisional process.³⁷ Among other things, no personnel holding command and control positions will have operational responsibilities with respect to Shoreham; U.S. Department of Energy personnel will be an integral part of the

³⁵ The full text of Contention 11 was:

The LILCO employees in command and control positions under the LILCO Plan may experience a conflict between LILCO's financial and institutional interest and the public's interest, which may substantially hamper their ability to perform the functions assigned to them in a manner that will result in adequate protection of the public. The Intervenor contend that LILCO employees will have a strong incentive to minimize the public's perception of the potential or actual danger involved in a radiological emergency in order to avoid engendering public or LILCO shareholder disapproval of LILCO, or anti-Shoreham sentiment. Thus, for example, they may not recommend an appropriate protective action in a prompt manner because to do so would be contrary to LILCO's financial interest in maintaining a public perception that Shoreham is not a source of danger. LILCO has failed to institute appropriate measures to ensure the independence of LERO personnel. Accordingly, there is no assurance that correct and appropriate command and control decisions will be made by LILCO employees.

See LBP-85-12, 21 NRC at 964.

³⁶ Purcell, *et al.*, fol. Tr. 10,727, at 12-13.

³⁷ Cordaro, *et al.*, fol. Tr. 10,196, at 11-20.

emergency response organization; and procedures and protective actions will be established in advance.³⁸ The principal advisor on protective actions, i.e., the Radiation Health Coordinator, is a consultant and not a LILCO employee.³⁹ A training program is used to reinforce the primacy of public protection.⁴⁰ An NRC staff witness testified that the Shoreham emergency response organization will function adequately.⁴¹

The Licensing Board essentially adopted the intervenors' position. The Board indicated that the regulations and Commission guidance "contemplate that command and control decisions will be made by officials of State and local governments during radiological emergencies."⁴² It found that LILCO had failed to demonstrate that its plan "gives a result comparable to that contemplated by the regulations."⁴³

We conclude that the Board erred in holding that the LILCO plan runs afoul of the Commission's regulatory requirements. Because we believe that the Board has misread the Commission's regulations and regulatory guidance, we find it unnecessary in reaching our decision to delve into the psychology of human response, which undergirded much of the evidence of record. Moreover, developments since the issuance of the Licensing Board's decision make it clear that the key aspect of the LILCO plan found objectionable by the Board — i.e., the exercise of decisional responsibility essentially by individuals with ties to the utility — will not be a feature of any plan likely to be implemented.

A. Reduced to essentials, the Board determined that the Commission's regulations require the type of independence that can result only when decisionmakers have no association with a utility; hence, LILCO's plan is inherently incapable of providing public protection comparable to that which would be offered if governmental officials were to participate. The Licensing Board, however, has misconstrued the regulatory requirements imposed by the Commission.

The conclusion that LILCO's plan is inherently flawed because it places important responsibilities in the hands of the utility runs counter to the entire emergency planning framework. Both the regulations and pertinent planning guidance already assign command and control responsibilities to licensee personnel.⁴⁴ Perhaps most important, the initial de-

³⁸ *Id.* at 28-33.

³⁹ *Id.* at 14.

⁴⁰ *Id.* at 29.

⁴¹ Schwartz, fol. Tr. 15,143, at 2-4.

⁴² LBP-85-12, 21 NRC at 686.

⁴³ *Ibid.*

⁴⁴ The intervenor witnesses defined "command and control" as the "authoritative direction of activities designed to mitigate the emergency"; command and control embraces "all those individuals who are expected to play some part in implementing the emergency contingency plans" Purcell, *et al.*, fol. Tr. 10,727, at 6-7.

termination of whether and when to alert public officials to an emergency situation rests with the utility.⁴⁵

Likewise, licensees have primary responsibility for accident assessment, including the evaluation of potential risk to the public health and safety and the preparation of recommendations concerning protective measures.⁴⁶ The NRC Incident Response Plan, prepared by the Office of Inspection and Enforcement, similarly provides that a licensee "has the immediate and primary continuing responsibility for limiting the consequences of an incident at a nuclear power reactor." In fact, a licensee is empowered to take "whatever action is deemed necessary to limit the consequences to public health and safety, even if that action violates the NRC license technical specifications."⁴⁷ And utility personnel are responsible for determining what information is given to government officials.⁴⁸ The Board has not explained how these critical roles differ in any material respect from the duties it believes can properly be assigned only to governmental officials.

At the hearing, the intervenors advanced the argument that telling the public that an accident occurred is not as significant as advising them that the accident resulted in radioactive releases that warrant protective action.⁴⁹ But they did not explain the present significance of this distinction, and we perceive none. The regulations, after all, require that utilities establish a four-tier accident classification scheme. In the event of an emergency, licensees must advise government officials of the magnitude of the accident and offer recommendations on what protective measures should be taken.⁵⁰ In our view, these obligations are tantamount to requiring a licensee to inform the public that certain protective action is required. The intervenor witnesses conceded as much, noting that any conflict of interest could equally affect such utility recommendations.⁵¹

⁴⁵ 10 C.F.R. 50.47(b)(5); 10 C.F.R. Part 50, Appendix E, §§ IV.D.1, IV.D.3.

⁴⁶ See "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," NUREG-0654/FEMA-REP-1 (Rev. 1) (1980), § I.H [hereafter, "NUREG-0654"].

⁴⁷ "NRC Incident Response Plan," NUREG-0728, Rev. 1 (1983) at 4 [hereafter, "NUREG-0728"]. The Incident Response Plan expressly takes into account the potential for conflict of interest by instructing licensees that "[l]imiting the consequences to public health and safety should take clear precedence over limiting financial loss or adverse publicity." *Ibid.*

⁴⁸ *Cf. Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit No. 1)*, ALAB-697, 16 NRC 1265, 1269-70 (1982); *id.*, ALAB-698, 16 NRC 1290, 1312-13 (1982), *aff'd in pertinent part*, CLI-83-22, 18 NRC 299, 310 (1983).

⁴⁹ Purcell, *et al.*, fol. Tr. 10,727, at 25-27.

⁵⁰ See *Three Mile Island*, ALAB-697, 16 NRC at 1269-70.

⁵¹ Purcell, *et al.*, fol. Tr. 10,727, at 26.

The intervenors also contended that the Commission allows licensees to exercise certain emergency response functions only because ultimate decisional responsibility will be in the hands of government officials; the intervenors claimed, in effect, that the Commission deliberately established a system of "checks and balances."⁵² They offered no evidence to support their theory, however, and we find none. To the contrary, the historical evidence reveals that emergency planning roles have always been assigned to reflect the duties and capabilities of the individual participants. Governmental entities were given emergency response roles because they had the legal authority and responsibility for such response,⁵³ not because the Commission distrusted the objectivity of licensees.⁵⁴ In our view, the regulations and applicable regulatory guidance effectively rebut the notion that utility officials must be categorically excluded from exercising any command and control responsibilities.⁵⁵

B. We also find that command and control authority of the type found objectionable by the Board is not likely to rest exclusively in the hands of the utility. Under the LILCO plan as proposed, the company is to undertake both those responsibilities ordinarily assigned to a licensee in case of an emergency and (in cooperation with DOE and private contractors) those that would normally fall to state or local government officials. Although the Board's decision is not entirely free of ambiguity, we interpret it to require decisional independence only as to those functions typically performed by governmental units.⁵⁶ As we noted in ALAB-818, however, New York State law prohibits private companies such as LILCO from performing certain functions in that latter category.⁵⁷ Thus, any plan that might eventually receive Commission approval must necessarily include individuals not operating under LILCO's aegis.

LILCO argued during an earlier phase of this litigation that state or local officials would respond in case of a genuine emergency. We were unprepared to accept that argument because no response plan involving

⁵² Tr. 10,755.

⁵³ See 35 Fed. Reg. 19,567-68 (1970).

⁵⁴ The Commission could have assigned such responsibilities to the NRC staff. Instead, the staff has largely an advisory and monitoring role, although it may, in some circumstances, also take direct action, such as making its own protective action recommendations. See "Agency Procedures for the NRC Incident Response Plan," NUREG-0845 (1983) at II-12-II-13; NUREG-0728 at 4-6. Cf. *Three Mile Island*, ALAB-698, 16 NRC at 1312-13.

⁵⁵ Except in one respect, the Licensing Board did not find that the particular individuals actually assigned to LERO would be unable to perform their jobs properly. (With regard to that exception, the staff's witness admitted that one LERO official expected to check with LILCO management before making a key decision; that individual, however, is no longer with the company.) LBP-85-12, 21 NRC at 682. Rather, its determination hinged on its belief that any individual affiliated with LILCO would be inherently subject to an unacceptable conflict of interest.

⁵⁶ The lack of independence challenged in *Contention 11* is limited to LERO personnel.

⁵⁷ 22 NRC at 660.

state or county officials had been submitted for review on the record and the LILCO plan was too complicated for ad hoc adoption by government officials in the event of an emergency.⁵⁸ However, in reversing that portion of ALAB-818 dealing with the so-called "realism" and "immateriality" issues, the Commission was prepared to assume that state and county officials would participate in emergency response on a "best effort" basis by relying on the LILCO plan as a source of emergency planning information and options.⁵⁹ In such circumstances, individuals not affiliated with LILCO, such as state and local officials, will presumably be involved in those discretionary command and control determinations normally the province of government and which the Licensing Board found to be subject to potential conflict of interest.

The Commission has remanded the proceeding to the Licensing Board so it can determine whether the "best effort" government response will be adequate to protect the public. This matter will be subject to further exploration. What seems clear from the Commission's remand, however, is that any plan ultimately approved must involve some form of governmental participation. In the circumstances, the intervenors' concerns over a possible conflict of interest, and the Board's determination in that regard, become largely academic.

III. LACK OF A STATE EMERGENCY PLAN

The procedure and criteria for evaluating the acceptability of a facility's emergency response planning and the minimum content of such planning are set out in 10 C.F.R. 50.47 and Appendix E to 10 C.F.R. Part 50. Where compliance with each of the 16 express criteria of 10 C.F.R. 50.47(b) is absent, the Commission may nevertheless issue an operating license if the applicant can demonstrate "that deficiencies in the plans are not significant for the plant in question, that adequate interim compensating actions have been or will be taken promptly, or that there are other compelling reasons to permit plant operation."⁶⁰

Section 50.47(b)(1) requires that offsite emergency response plans include an appropriate assignment of responsibilities to the licensee and state and local emergency response organizations. Similarly, NUREG-0654, which is the principal emergency planning guidance document prepared jointly by the NRC and the Federal Emergency Management

⁵⁸ *Id.* at 674-76.

⁵⁹ CLI-86-13, 24 NRC at 31. The Commission also assumed (as we had earlier found) that LILCO is prohibited from performing certain governmental functions. *Id.* at 30-31.

⁶⁰ 10 C.F.R. 50.47(c)(1).

Agency (FEMA),⁶¹ provides for the assignment of emergency response duties to the licensee and state and local organizations. Ordinarily, the State of New York itself would perform four functions: (1) dose projection based on release data communicated to State officials; (2) sampling in the 50-mile ingestion pathway emergency planning zone; (3) interdiction of contaminated foods; and (4) issuance of protective action recommendations via the radio and local emergency broadcast network.⁶² The State does not propose to perform these functions for the Shoreham reactor, however, because it opposes issuance of an operating license. The intervenors assert that there can thus be no compliance with the requirements of 10 C.F.R. 50.47(a)(2) or (b), or NUREG-0654, insofar as Shoreham is concerned.⁶³ The NRC staff agrees.

In approaching the matter, the Board explicitly distinguished between LILCO's *authority* under state or local law to take certain actions and its *capability* for implementing its plan. The Board separately determined that LILCO lacked the legal authority to undertake certain of its proposed actions but wished to examine "whether the Plan was adequate, within the regulatory requirements, aside from Applicant's authority to perform the operation."⁶⁴ From this perspective, it decided that LILCO could not comply with NRC regulations.

Its decision rested on two grounds. First, it construed the Commission's regulations and NUREG-0654 as foreclosing a finding that an adequate emergency response can be assured where governmental authorities fail to participate in planning or to commit themselves to respond in the event of an emergency. Specifically, the Board observed that "NRC's regulations and guidance are founded on a fundamental assumption that there will be an integrated approach to emergency planning among State and local governments and utilities."⁶⁵ It determined, in this connection, that the dispensation contained in section 50.47(c)(1) — allowing plant operation in the absence of strict adherence to all the requirements of 10 C.F.R. 50.47(b) where an applicant can demonstrate that compensating actions can be taken — was not intended to cover a

⁶¹ See *supra* note 46.

⁶² Cordaro and Weismantle, fol. Tr. 13,899, at 6-7.

⁶³ The full text of the intervenors' contention 92 is:

There is no New York State emergency plan to deal with an emergency at the Shoreham plant before this Board. (See Plan, Attach. 1.4.2.) In addition, the LILCO Plan fails to provide for coordination of LILCO's emergency response with that of the State of New York (assuming, *arguendo*, such a response would be forthcoming). (See FEMA Report at 1.) In the absence of a State emergency plan for Shoreham, there can be no finding of compliance with 10 C.F.R. §§ 50.47(a)(2), 50.47(b), or NUREG-0654 §§ I.E, I.F, I.H or II.

See LBP-85-12, 21 NRC at 1024 (footnote omitted).

⁶⁴ *Id.* at 649.

⁶⁵ *Id.* at 885.

situation where governmental authorities refused to participate at all in emergency planning. The Board recognized that NUREG-0654 permits a finding that an adequate state of emergency preparedness exists if weaknesses in one organization are identified and compensated for by another organization. But it concluded that such weaknesses had to exist only in discrete elements of the implementing guidance and not result from an absence of governmental support.⁶⁶

Second, the Board found that the public health and safety could not in any event be as well protected by LILCO acting alone as it could if LILCO acted in concert with governmental authorities. It nonetheless acknowledged that LILCO has the capability to perform the four specific tasks that have been identified as state functions.⁶⁷

We agree with the Licensing Board that, in terms, LILCO cannot satisfy section 50.47(b) or conform to the guidance in NUREG-0654. But in CLI-86-13, issued after the Board reached its decision under review here, the Commission expressly determined, in the context of reviewing LILCO's overall proposal, that a utility plan prepared without any governmental cooperation might pass muster under 10 C.F.R. 50.47(c).⁶⁸ In other words, contrary to the Board's determination, the lack of any coordination with the state does not preclude LILCO from attempting to demonstrate that it can meet the requirements of 10 C.F.R. 50.47(c)(1). Nor does it prevent the Commission from making the requisite finding pursuant to 10 C.F.R. 50.47(a) that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. As a consequence, the Licensing Board's determination cannot stand.

We believe that a remand is called for here so that the Licensing Board may determine anew whether LILCO's plan is satisfactory insofar as it relates to the fulfillment of the four state functions. On this score, we note that the Board did not identify any specific defect in LILCO's plan to substitute for state participation. Indeed, it indicated that LILCO has the capability to perform adequately each of the four functions that would be performed by the state if it were to participate. The Board rejected the LILCO alternative because it believed both that the State

⁶⁶ *Id.* at 884.

⁶⁷ *Id.* at 882-84.

⁶⁸ 24 NRC at 29. The Commission's pronouncement in this regard is consistent with its earlier observations. See, e.g., *Union of Concerned Scientists*, DPRM-83-1, 17 NRC 719, 726 (1983) (where, "for whatever reason," a particular jurisdiction has not completed a plan or some portion of it, an "applicant [may] show that, because of other compensating factors, public health and safety will be adequately protected because of other plans or evidence of preparedness"). Cf. *Consolidated Edison Co. of New York* (Indian Point, Unit No. 2), CLI-83-16, 17 NRC 1006, 1013 (1983) (Commission endorses a plan under which the State of New York and a utility took over and performed the functions that would normally be performed by the local emergency response organization).

might do things above and beyond the four functions addressed in the LILCO plan and that the government entities acting together with LILCO could somehow do the job better than LILCO acting alone. But it did not find it necessary to specify precisely how LILCO's plan was deficient, or how the state's participation would make it better, in view of its primary conclusion that LILCO could not comply with 10 C.F.R. 50.47(c) and NUREG-0654 — the conclusion later specifically rejected by the Commission.

The Board should now revisit its earlier decision in light of the Commission's determination that the lack of state cooperation does not per se render LILCO's plan inadequate. In this regard, the Board must take into account that the Commission's regulations establish the regulatory requirements. Contrary to the Board's apparent earlier belief, a utility plan cannot be deemed to have shortcomings simply because a governmental body may perform various undescribed functions not required by the regulations. Moreover, the sufficiency of "interim compensatory actions" designed to accommodate for deficiencies such as the lack of a state plan need not necessarily provide precisely the same level of protection that total correction of the deficiencies would offer.⁶⁹ On remand, the Licensing Board shall reexamine whether there are identifiable deficiencies in LILCO's ability to fulfill the four state functions so as to render the LILCO plan inadequate. If, however, the Board continues to believe that the insufficiencies in LILCO's plan result solely from either (i) LILCO's inability to do things not required by the regulations, or (ii) the State's capacity to provide a level of safety beyond that considered adequate, it must find that LILCO has prevailed on Contention 92.

⁶⁹ *Indian Point*, CLI-83-16, 17 NRC at 1010. See also CLI-86-13, 24 NRC at 30 ("[W]e might look favorably on the LILCO plan if there was reasonable assurance that it was capable of achieving dose reductions in the event of an accident that are generally comparable to what might be accomplished with government cooperation").

The Licensing Board's disposition of the three issues raised by LILCO on appeal in this phase of the proceeding is *reversed*. The proceeding is *remanded* so that the Licensing Board may reconsider its decision regarding the monitoring of evacuees and the lack of a New York State plan, in accordance with this opinion.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

**Christine N. Kohl, Chairman
Dr. Reginald L. Gotchy
Howard A. Wilber**

In the Matter of

**Docket Nos. 50-250-OLA-3
50-251-OLA-3
(Increased Fuel Enrichment)**

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

September 24, 1986

Upon conducting its sua sponte review, the Appeal Board affirms the Licensing Board's memorandum and order that summarily disposed of the only contention admitted for litigation in this operating license amendment proceeding.

APPEAL BOARDS: SUA SPONTE REVIEW

When no appeals are taken from a reviewable licensing board decision, an appeal board will review that decision sua sponte. *See Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-846, 24 NRC 409 (1986).

TECHNICAL ISSUES DISCUSSED

Neutron multiplication factor (k_{eff});
Optimum moderation.

MEMORANDUM AND ORDER

On August 25, 1986, the Licensing Board issued a memorandum and order granting the motion of licensee Florida Power & Light Company for summary disposition of the only contention admitted for litigation in this operating license amendment proceeding. *See* LBP-86-27, 24 NRC 255. Consequently, the Board also terminated the proceeding.

No appeals have been filed from either LBP-86-27 or the Licensing Board's Memorandum and Order of September 24, 1985 (unpublished), which modified somewhat the litigated contention. As is our practice, we have thus reviewed the Board's action *sua sponte*. *See Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-846, 24 NRC 409 (1986).

The license amendments here at issue will permit the storage of fuel of increased enrichment in both the new and spent fuel storage areas, and will add another neutron multiplication factor (k_{eff}) limit on the storage of new fuel in the event of an "optimum moderation" condition.¹ The Licensing Board stressed that the amendments are consistent with the pertinent NRC regulations and staff guidance for new and spent fuel storage. LBP-86-27, 24 NRC at 259.² That guidance assumes the existence of several uncertainties and has a number of built-in conservatisms. *Id.* at 259-60. Our *sua sponte* review has disclosed no reasonable basis for overturning the Licensing Board's conclusion that the k_{eff} limits for the Turkey Point new and spent fuel storage areas — and thus the staff's acceptance criteria — provide adequate protection for the public health and safety.

¹ For a discussion of k_{eff} , criticality, and optimum moderation, *see generally Consumers Power Co.* (Big Rock Point Nuclear Plant), ALAB-725, 17 NRC 562, 564 n.2, 565 (1983).

² As the Licensing Board explained, the staff's acceptance criterion for the storage of new fuel under flooded conditions is a k_{eff} of 0.95, and is 0.98 under optimum moderation. The criterion for spent fuel in flooded conditions with unborated water is 0.95. LBP-86-27, 24 NRC at 259. The criticality analysis performed by licensee, supplemented by its response to staff questions, shows that k_{eff} of stored new fuel for the conditions authorized by the license amendments sought here would be approximately 0.925, well within the staff's criteria. Criticality Analysis of the Turkey Point Plants Units 3 & 4 Storage Racks with Increased Enrichment (February 1984) at 18, attached to Letter from J.W. Williams, Jr., to Darrell G. Eisenhut (April 4, 1984). The analysis also showed that k_{eff} would not exceed the staff criterion during the planned storage of spent fuel. *Id.* at 10-16. (It is not clear whether this criticality analysis or the staff's September 5, 1984, Safety Evaluation was submitted to the Licensing Board in connection with its consideration of these particular license amendments. Both documents, however, have been publicly available since 1984.)

**LBP-86-27 is *affirmed*.
It is so ORDERED**

FOR THE APPEAL BOARD

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING 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. 82-471-02-OL)
(Onsite Emergency Planning
and Safety Issues)

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

September 15, 1986

The Licensing Board partially denies and partially grants Applicants' motion for summary disposition of an intervenor's contention and rules that written testimony be presented upon the surviving issue.

RULES OF PRACTICE: SUMMARY DISPOSITION

If a motion for summary disposition is filed shortly before the hearing is to commence and the responder does not complain that it would be required to divert substantial resources from the hearing in order to respond adequately, and, in fact, does file a response, the Licensing Board is not called upon to consider whether to summarily dismiss the motion.

RULES OF PRACTICE: SUMMARY DISPOSITION

Section 2.749(a) of 10 C.F.R. only permits a response to new facts and arguments presented in a statement filed in support of a motion for summary disposition.

RULES OF PRACTICE: SUMMARY DISPOSITION

While it is the movant, not the opposing party, which has the burden of showing the absence of a genuine issue as to any material fact, if the motion for summary disposition is properly supported, the opposition may not rest upon mere allegations or denials; rather, the answer must set forth specific facts showing that there is a genuine issue of fact. *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753 (1977); *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 453 (1980).

RULES OF PRACTICE: BRIEFS

Submissions to the licensing board must be complete and the board will not, and cannot be expected to, search for information incompletely given, or referenced, by any party.

TECHNICAL ISSUES DISCUSSED

Detailed Control Room Design Review
Safety Parameter Display System.

MEMORANDUM AND ORDER

(Denying in Part and Granting in Part Applicants' Motion for Summary Disposition of SAPL's Supplemental Contention 6)

Memorandum

I. BACKGROUND

In the Memorandum and Order (M&O) of September 13, 1982, LBP-82-76, 16 NRC 1029, 1040-41, the Board had admitted the State of New Hampshire (NH) Contention 10, and, inasmuch as the Seacoast Anti-Pollution League (SAPL) had joined in and adopted as its own Contention NH-10 and the basis therefor, at page 1083 the Hoyt Board permitted

SAPL to participate as a joint intervenor. In the M&O of July 21, 1986, LBP-86-22, 24 NRC 103, the Wolfe Board granted NH's motion to withdraw its Contention 10 but ordered that that contention be converted to and replaced by SAPL Supplemental Contention 6, which would reflect the identical wording and basis of former Contention NH-10.

On July 25, 1986, Applicants filed a motion for summary disposition of SAPL's Supplemental Contention 6 (formerly Contention NH-10) and on July 28 filed a statement of material facts not in dispute. On August 4, SAPL filed a response opposing Applicants' motion. On August 18, the Staff responded in support of the motion for summary disposition, and on August 28, 1986, SAPL filed an answer to the Staff's response.

II. DISCUSSION ¹

SAPL's Supplemental Contention 6 reads as follows:

The Seabrook Station control room design does not comply with general criteria 19 through 22 and 10 C.F.R. Part 50, Appendix A, and NUREG-0737, item I.D.1 and I.D.2.

The basis of this contention is to ensure that displays and controls added to the control room after the Detailed Control Room Design Review do not increase the potential for operator error. It is critical at Seabrook

¹ As a threshold matter, SAPL argued in its response of August 4, 1986, that Applicants' motion should be denied as being untimely filed because the Hoyt Board's M&O of September 13, 1982, at page 1095 prescribed a due date of February 12, 1983, for the filing of motions for summary disposition. However, the short of the matter is that, as of February 12, 1983, NH-10 was not ripe for summary disposition. In responses to the Applicants' and the Staff's interrogatories simultaneously filed on January 17, 1983, NH noted that the Applicants had neither performed a Detailed Control Room Design Review (DCRDR) as required by I.D.1 of NUREG-0737 nor designed a Safety Parameter Display System (SPDS) as required by I.D.2 of NUREG-0737. Even as of April 10, 1984, in supplementing its response to Applicants' interrogatories, NH stated that the DCRDR had not been completed and that, with respect to the SPDS, in the complete absence of any documentation of compliance, Applicants had not complied with I.D.2 of NUREG-0737. Moreover, as explicated in the M&O of August 14, 1986 (unpublished), as of September 9, 1985, when the Board (the Wolfe Board) was appointed to preside over all onsite emergency planning and safety issues, as a successor on such issues and as an independent Board, we could reconsider upon our own motion rulings by the previous Board. Since NH-10, a safety issue, was not ripe for summary disposition, we now rule that Applicants did not have to file a motion for summary disposition by February 12, 1983, and thus their instant motion is not untimely. Indeed, since we did not fix a time for the filing of motions for summary disposition in our M&O of July 25, 1986 (LBP-86-24, 24 NRC 132), at any time thereafter any party could file such a motion, subject to the condition in 10 C.F.R. § 2.749(a). Since SAPL did not complain that it would be required to divert substantial resources from the hearing in order to respond adequately to Applicants' motion and, in fact, did respond to the motion, we are not called upon to consider whether to summarily dismiss the motion.

In its answer of August 28, although noting that the Staff's response of August 18 failed to address the timeliness issue, SAPL proceeded to advance arguments beyond those presented in its response of August 4. The presentation of additional arguments was improper and we will not consider such additional arguments because § 2.749(a) only permits a response to new facts and arguments presented in any statement filed in support of a motion for summary disposition.

that the accident monitoring and control room be the optimum because of the difficulties inherent in carrying out protective actions for the population in the immediate vicinity of the plant.

In their motion for summary disposition, supported by a statement of material facts not in dispute and by the affidavit of Edward A. Sawyer,² Applicants asserted that the following material facts are not in dispute:³

1. NUREG-0737, item I.D.1 states that all licensees and applicants for operating licenses will be required to conduct a detailed control room design review (DCRDR) to identify and correct design deficiencies. It lists guideline documents issued or to be issued by the NRC, and discusses the NRR review of the Licensee's submittal.
2. NUREG-0737, item I.D.2 states that each applicant and each licensee shall install a safety parameter display system (SPDS).
3. Supplement 1 to NUREG-0737 (generic letter 82-33) was issued to present a distillation of the requirements and provide additional clarification for five items on NUREG-0737, including the DCRDR and SPDS. Therefore, Supplement 1 to NUREG-0737, not the NUREG itself, presents the requirements that have to be met to provide an acceptable Detailed Control Room Design Review program.
4. For this reason, PSNH designed its program to meet the requirements of Supplement 1 to NUREG-0737.
5. A multi-disciplined team, consisting of Program Manager, Human Factors consultant, Instrumentation and Control Engineer, and a Plant Shift Superintendent, was formed. This team was expanded as necessary to include other plant operators and other engineering disciplines for specific reviews.

² Mr. Sawyer is the program manager of the Seabrook Station Detailed Control Room Design Review (DCRDR), had been the Management Team Chairman of the Yankee Atomic Power Station DCRDR, and had been a management team member of the Vermont Yankee Nuclear Power Station DCRDR.

³ We note that NUREG-0737, "Clarification of TMI Action Plan Requirements," was issued in November 1980. Supplement 1 thereto was issued in January 1983, to provide additional clarification regarding, inter alia, the Safety Parameter Display Systems and Detailed Control Room Design Reviews. The NRC's generic letter of issuance stated that:

The enclosure [Supplement 1] does not specify a schedule for completing the requirements. It has become apparent, through discussions with owners' groups and individual licensees, that our previous schedules did not adequately consider the integration of these related activities. In recognition of this and the difficulty in implementing generic deadlines, the Commission has adopted a plan to establish realistic plant-specific schedules that take into account the unique aspects of the work at each plant. By this plan, each licensee is to develop and submit its own plant-specific schedule which will be reviewed by the assigned NRC Project Manager. The NRC Project Manager and licensee will reach an agreement on the final schedule and in this manner provide for prompt implementation of these important improvements while optimizing the use of utility and NRC resources. Supplement 1 stated at 1, 2, and 9, that:

The requirements for emergency response capabilities and facilities are being transmitted to licensees by this supplement and are being promulgated to NRC staff. The letter which forwards this supplement requests that licensees submit a proposed schedule for completing actions to comply with the requirements. Each licensee's proposed schedule will then be reviewed by the assigned NRC Project Manager, who will discuss the subject with the licensee and mutually agree on schedules and completion dates. The implementation dates will then be formalized into an enforceable document.

The proposal to formalize implementation dates in an enforceable document reflects the level of importance which the NRC staff attributes to these requirements.

Prompt implementation of an SPDS is a design goal and of primary importance. . . .

6. An extensive and comprehensive function and task analysis was performed to determine Instrumentation and Control requirements. This subject was discussed extensively in SBN-701, dated July 30, 1984, in a meeting held on October 30, 1984, and in SBN-748, dated January 7, 1985.

7. The I & C requirements developed as a result of this function and task analysis were compared against the actual Control Room instrumentation and controls. A control room survey and review was performed to identify deviations of the control room instrumentation and controls from accepted human factors principles. The potential Human Engineering Deficiencies (HEDs) were assessed and prioritized. These activities included survey, review, assessment and prioritization of all displays, including SPDS displays. The results of these efforts were also submitted to the NRC in various letters dated April 14, 1983, August 10, 1983, July 30, 1984, January 7, 1985, July 17, 1985, December 27, 1985, and February 20, 1986.

8. During the assessment process, the Review Team verified that the selected design improvements provided necessary corrections. A review performed by the Review Team after the majority of HED corrections were made verified that the improvements did not create new HEDs.

9. The NRC Staff, in Supplement 4 to the Seabrook SER, has concluded that "PSNH has conducted a DCRDR for Seabrook Station that satisfactorily meets the requirements of Supplement 1 to NUREG-0737."

In light of the above-set-forth undisputed material facts, Applicants urged that the DCRDR, including the review of human factors perspective of displays and of safety parameter display system displays, has been undertaken and the displays and controls added, or to be added, to the control room as a result of the DCRDR do not increase the potential for operator error. Therefore, Applicants requested that the Board grant the motion for summary disposition.

In its response of August 4, while stating that it is not prepared to accept the Applicants' above-set-forth material facts as undisputed, SAPL did not present any reasons for disputing them. Accordingly, we find that the displays and controls added, or to be added, to the control room as a result of the DCRDR do not increase the potential for operator error, and grant the motion for summary disposition, as supported by the Staff, with respect to this issue.

SAPL did argue, however, in its response of August 4 that Applicants had selectively dealt with only one sentence in the basis for the contention — i.e., Applicants had not discussed and shown that there is no disputed material fact with respect to the issue of whether the control room design and displays are at the optimum to protect the population in the immediate vicinity of the plant. SAPL asserted that there are four disputed issues of material fact: (1) whether additional parameter displays should appear on the Safety Parameter Display System (SPDS),⁴ (2)

⁴ With respect to the SPDS, SAPL is concerned that modifications thereto providing for additional displays for RHR flow, containment isolation, containment hydrogen concentration, steam generator ra-

Continued

whether the color coding of the Video Alarm System (VAS) should be made consistent with other control room CRTs prior to any operation, (3) whether a preliminary evaluation of the control room environment ought to be accomplished prior to fuel loading, and (4) whether certain Human Engineering Discrepancies involving control room furnishings and equipment storage should be evaluated prior to fuel loading.⁵ Accordingly, SAPL urges that there is no proper justification for allowing the Seabrook Station to operate at any power level prior to the completion of items needed to bring the facility into full compliance with the Commission's regulations.

In its response of August 18 supporting Applicants' motion for summary disposition,⁶ the Staff relied upon a statement of material facts as to which there is no genuine issue in dispute and upon the affidavit of Mr. Richard J. Eckenrode.⁷ With respect to the DCRDR, noting that § 18 of Supplement 4 to the SER concluded that Applicants had conducted that review which satisfactorily met the requirements of Supplement 1 to NUREG-0737 except in the following limited areas, the Staff asserted that these areas involve low-priority items from the standpoint of control room design. First, as to control room furnishing (desks, chairs, tables, files, etc.), since the installation of these furnishings in the control room is planned to be substantially identical to the installation previously reviewed in the control room simulator, the Staff asserted that any discrepancies that might be uncovered as to this low-priority item would be minor and thus any corrective action need not be completed until the first refueling outage.

SAPL barrenly argued, in its answer of August 28, without the support of an expert's affidavit, that, since telephones in the control room are not in the same location as those in the simulator, the phones were not in the optimum location from a human factors standpoint. The Staff

diation, and for stack monitoring, are not required by the Draft License to be effected until prior to restart following the first refueling outage. The Staff sent the Draft License No. NPF-56 to the parties on June 20, 1986. See note 8, *infra*.

⁵ With respect to the DCRDR, SAPL is concerned in that § 18 of Supplement 4 to the SER provides that any changes to the color-coding scheme, to control room furnishings, and to equipment storage may be resolved prior to startup from the first refueling outage, and in that final evaluation of the control room environment will be completed and reported to the NRC for confirmatory review within 1 year after commercial operation.

⁶ In passing, we note that the Staff argues that the issue of the timing for the completion of various items associated with the DCRDR and SPDS had not been raised in the original contention, and that, not having filed an amendment or a new contention, SAPL should not be allowed now to expand the contention. We agree with SAPL and conclude that the timing issue was implicitly raised in the contention, i.e., the contention in alleging noncompliance can be and is read to mean that operation should not be allowed until corrective actions are taken.

⁷ Mr. Eckenrode is a Human Factors Engineer in the Office of Nuclear Reactor Regulation, and had the lead responsibility for the NRC review of the Seabrook Station's compliance with NUREG-0737, items I.D.1 and I.D.2. He was the principal author of § 18 in Supplements 3 and 4 of the SER.

did not state that all the furnishings in the control room had to be installed in locations that were identical to those in the simulator, and SAPL does not explain why the current location of the phones would adversely impact upon the emergency notification scheme. In any event, SAPL stated that it was satisfied with Applicants' August 22, 1986 response to SAPL's interrogatories, wherein Applicants stated that resolutions for such "minor" HEDs would be implemented before initial criticality. Thus, there is no genuine issue of material fact here.

Second, as to operator protective and emergency equipment storage facilities, the Staff asserted that since these facilities have already been reviewed and judged adequate by the Applicants and since they will be installed and the adequacy thereof will be reviewed by the Staff and by the Applicants prior to fuel loading, only minor (if any) discrepancies are expected to be found, and thus any corrective action need not be completed until the first refueling outage.

SAPL argued in its answer of August 28 that there is an apparent inconsistency in Applicants' August 22 response to SAPL's interrogatories — i.e., in one response Applicants stated that resolutions of HEDs related to operator protective equipment and equipment storage would be resolved prior to initial criticality, but in another response Applicants asserted that there is not going to be any operator protective equipment because the ventilation system maintains control room habitability under all conditions. This alleged inconsistency presents no genuine issue of material fact because SAPL does not tell us what significant safety problems might arise if Applicants proceed one way or the other.

Third, as to the control room environment, the Staff asserted that, using a subjective basis of personal comfort, it has preliminarily evaluated the control room environment to determine if the potential exists for gross inadequacies (i.e., too much noise, uncomfortably hot temperatures). However, the Staff will not conduct and complete a final review (using objective measurements provided by NUREG-0700) until after the plant has been operating at full power, because the preoperational conditions may change during operation (i.e., the heat load during operation may raise the temperature, operating systems may raise the ambient noise level, etc.). Since the Staff does not expect any discrepancies to be major ones, it agreed to a schedule whereby, within 1 year of commercial operation, environmental measurements will be conducted and resolutions of deficiencies must be proposed.

We note that, in its answer of August 28, SAPL makes no effort whatsoever to address control room environment. In a broad-brushed, conclusional, and speculative manner it merely argues that it believes that reviews of the control room environment, as well as of the storage

of operator protective equipment and of control room furnishings may raise safety issues. Again, here, there is no genuine issue of material fact.

Fourth, as to the change in color coding on the Video Alarm System (VAS), the Staff stated that the Applicants have committed to revise the color scheme before commercial operation, which involves changing the color coding on the VAS to make that coding more consistent with the color coding on other computer monitors. The Staff asserted that since operators are trained to use the present color scheme, the use of the VAS prior to commercial operation should not present a problem, and that, after the revision is made, additional training should be minimal because the operators are already familiar with the color scheme used on the other monitors.

The Staff concluded that, with respect to the DCRDR, the Applicants have fulfilled the requirements of item I.D.1 of NUREG-0737 except for the narrow areas discussed above, and that those areas will be completed before the end of the first refueling outage.

In its answer of August 28, SAPL indicated it was satisfied with Applicants' response to SAPL's interrogatories, wherein Applicants indicated that they intended to correct the color-related HEDs in the VAS prior to initial criticality. Thus, there is no issue of material fact. SAPL continued, however, to urge that there is no acceptable justification for deferring improvements that will aid plant operators in monitoring plant conditions — i.e., in committing to banding indicators only by the end of the first refueling outage. We conclude, however, that SAPL has not indicated how banding of the indicators prior to operation at full power would enhance the ability of control room operators to prevent or cope with accidents, much less indicate how this banding is related to the VAS. Again, there is no genuine issue of material fact.

With respect to the SPDS, the Staff asserted that it is not considered a safety system, and that no operator actions are taken at the SPDS. Instead, the SPDS is used to direct operators to various other displays in the control room where corrective actions are to be taken if needed, and, in the absence of that system, operators can acquire the necessary information from these other displays. Further, the Staff asserted that, while it did not identify any serious safety questions in its review, it did conclude in § 18 of Supplement 4 to the SER that the Seabrook Station SPDS had not yet fully satisfied the applicable requirements of Supplement 1 to NUREG-0737 and that it would condition the license to require that final compliance be demonstrated before restart following the

first refueling outage.⁸ The Staff concluded that while the SPDS does not yet comply with NUREG-0737, Supplement 1, and that indeed five additional items will be listed in Supplement 6 to the SER, it does not believe that this noncompliance presents a serious safety problem at Seabrook. It urged that the motion for summary disposition should be granted since SAPL has never identified any safety problems that might arise in deferring improvements until the first refueling outage with respect to the SPDS.

While it is the movant, not the opposing party, which has the burden of showing the absence of a genuine issue as to any material fact,⁹ if the motion for summary disposition is properly supported, the opposition may not rest upon "mere allegations or denials"; rather, the answer must set forth specific facts showing that there is a genuine issue of fact.¹⁰ Here, the Applicants' motion (as supported by the Staff's response) was properly supported with respect to the DCRDR and shows the absence of a genuine issue as to any material fact. Other than raising the specter of the TMI-2 accident, other than citing NUREG-0660 for the argument that there are some items in the "NRC Action Plan Developed as a Result of the TMI-2 Accident" (such as control room design) that need to be implemented as quickly as they can be done correctly, and other

⁸ Draft License No. NPF-56 at C.9 provides:

Prior to restart following the first refueling outage, PSNH shall have operational a Safety Parameter Display System (SPDS) as described in PSNH's submittals dated January 6, 1986, and April 2, 1986, that shall include the following modifications:

1. Continuous display of the top level critical safety function summary at the assigned SPDS control room location,
2. Addition of, or satisfactory justification for not adding, RHR flow and hydrogen concentration parameters to appropriate SPDS screens,
3. Addition of a containment isolation status screen on SPDS, or improvement to the current containment isolation display to be satisfactorily recognizable from the assigned SPDS location in the control room,
4. Addition of a radiation monitoring screen to display at least steam generator (or steam line) and stack radiation,
5. Improvement of the Heat Sink screen for consistency in labeling, and the Subcriticality screen for mode dependency so as not to mislead operators, and
6. Addition of approved isolation devices between the Reactor Vessel Level Instrumentation System (RVLIS) and SPDS.

In passing, the Board notes that, in response to its letter of inquiry of August 21, 1986, the Staff advised on September 2 that a later draft license had been transmitted to the parties on August 20. Since the Staff's response to the Applicants' motion for summary disposition adverts only to the draft license sent to the parties on June 20, 1986, we only consider that earlier draft license.

⁹ *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753 (1977).

¹⁰ *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 453 (1980).

than reasserting its contention that the displays and controls in the control room must be at the optimum, SAPL has not demonstrated the existence of a genuine issue of material fact with respect to the DCRDR. We herewith do grant the motion and dismiss the DCRDR issue because the movant, as supported by the Staff, has shown that there is no genuine issue of fact — i.e., has sustained the burden of showing that, with respect to the DCRDR, there are no safety concerns and thus that corrective action, with respect to the limited areas discussed above, need not be completed until the first refueling outage.

However, while we agree with the Staff that SAPL has never identified any safety problems that might arise in deferring corrective actions with respect to the SPDS until the first refueling outage, neither the Applicants nor the Staff, in support, has sustained the basic, primary burden of showing that there is no genuine issue of material fact. The Applicants have not attempted to do so. The Staff barrenly asserted that the current noncompliance with NUREG-0737, Supplement 1, does not present a serious safety problem at Seabrook but does not explain its reasons. The Staff simply relied on the fact that NUREG-0737, Supplement 1, does not require implementation of the SPDS before full-power operation but, rather, permits implementation to be determined by a schedule that has been negotiated with the Staff (Staff's Response at 13 n.5; *also see supra* note 3).¹¹ The schedule reflected in Draft License No. NPF-56 at C.9 illustrates the low level of importance that the Staff attaches to the timely completion of the SPDS. Such a position, however, is not in accord with specific guidance in Supplement 1 to NUREG-0737 § 4.1.d, which states:

Prompt implementation of an SPDS can provide an important contribution to plant safety. The selection of specific information that should be provided for a particular plant shall be based on engineering judgment of individual plant licensees, taking into account the importance of prompt implementation.

With respect to the safety significance of the deficiencies in the SPDS, which the Staff asserted pose "no significant safety question" (Staff's Response at 12), the Staff did not even present a general explanation for this conclusion. Yet as to the first deficiency listed, the Staff provided a parenthetical note that isolation devices between the SPDS and Reactor Vessel Level Instrument System (RVLIS) are to protect the safety-related RVLIS. The Board is left to guess why the undetermined status, or availability, of the RVLIS does not present a safety issue, and why it

¹¹ Staff does not argue, and we are unaware, that any scheduling agreement arrived at by the Staff and an applicant pursuant to Supplement 1 is not properly subject to challenge and to judicial review.

need not be corrected prior to operation at full power. We are also left to speculate as to how operators can rely on acquiring RVLIS data from either the display at the SPDS or that on the control room console if availability of the RVLIS itself cannot be relied upon. The lack of explanation applies to all 11 items of noncompliance with Supplement 1 to NUREG-0737.

Supplement 1 also was cited by the Staff as not requiring implementation of the SPDS before full-power operation (Staff's Response at 13 n.5), without reference to where in that document such delay in implementation was permitted. While perhaps language somewhere in that document might support the Staff's interpretation, we refuse to do the homework for any party.¹²

Order

1. The Board partially grants the motion for summary disposition in the following respects:

- a. The displays and controls added, or to be added, to the control room as a result of the DCRDR do not increase the potential for operator error,
- b. While all items addressed in the DCRDR are not currently at an optimum, i.e., incomplete, and corrective action is to be deferred until the next refueling outage, there is reasonable assurance that the safety of the population in the immediate vicinity of the plant will be protected.

2. The Board partially denies the motion for summary disposition in the following respect: since the SPDS is not currently at an optimum, i.e., incomplete, in light of the deficiencies which are listed in Draft License No. NPF-56 at C-9 and in light of five additional deficiencies which will be listed in Supplement 6 to the SER, there is no reasonable assurance that, in deferring improvements to the SPDS until the first refueling outage, the safety of the population in the immediate vicinity of the plant will be protected.

3. With respect to ¶ 2, above, SAPL may and the Staff and/or Applicants shall present written explanatory testimony upon the issue of whether or not, in light of the fact that the SPDS is not currently at an optimum, i.e., incomplete, because of the aforementioned deficiencies,

¹² Parties are reminded that pleadings submitted to this Board must be complete and that the Board will not, and cannot be expected to, search for information incompletely given, or referenced, by any party.

there is reasonable assurance that, in deferring improvements to the SPDS until the first refueling outage, the safety of the population in the immediate vicinity of the plant will be protected.¹³

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Sheldon J. Wolfe, Chairman
ADMINISTRATIVE JUDGE**

**Jerry Harbour
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 15th day of September 1986.**

PARTIAL DISSENT

I concur with the majority of the Board to grant the motion for summary disposition regarding the DCRDR. I disagree with the majority in granting the motion for summary disposition only in part regarding the SPDS. I would have granted the entire motion for summary disposition.

It will be useful to provide some background information. The safety parameter display system (SPDS) is used to provide operators with a concise display of information on some critical plant variables. The Staff asserts that it does not consider it to be a safety system and that no operator actions are to be taken at the SPDS. It is used to direct operators' attention to other displays in the control room where corrective actions are to be taken. (Eckenrode Affidavit, ¶ 11) The specific requirements for the SPDS are given in NUREG-0737, Supplement 1, § 4.1.

Applicants have now installed an interim SPDS. In reviewing the documentation with Applicants regarding the interim SPDS, Staff did not identify any serious safety questions but did conclude that the SPDS is not yet complete. The operators need to acquire some information from other displays. The Staff has concluded that the present SPDS in the

¹³ During the course of a conference call on September 10, 1986, the Board advised counsel as to the contents of this Order, and, upon inquiry by counsel for Massachusetts, the Board ruled that, as an interested State, Massachusetts may present written testimony upon this issue.

Seabrook plant can be used to provide operators with adequate information about the status of the plant and will be acceptable as an interim measure. The SPDS in its current design will not increase the potential for operator error in the event of an abnormal occurrence at Seabrook. NUREG-0737, Supplement 1, does not require that the SPDS be completely implemented before full-power operation.

The incomplete items are listed in ¶ 15 of Staff's August 18 response to Applicants' Motion for Summary Disposition. Staff reviewed the matter of implementation with Applicants and agreed that the incomplete items must be implemented by the end of the first refueling outage. This scheduling procedure is in compliance with the requirements stated in NUREG-0737, Supplement 1.

Some additional open items were noted by Staff in § 15 of its August 18 response. These are to be discussed in Supplement 6 of the SER. The Staff will require that the Applicants must either satisfactorily resolve these open items or demonstrate to the Staff's satisfaction, before the end of the first refueling outage, that the open items will not degrade the performance of the SPDS.

SAPL states in its August 4 response to Applicants' Motion for Summary Disposition, at page 3, that the genuine issues of material fact in dispute with regard to this contention are:

- (1) whether additional parameter displays should appear on the Safety Parameter Display System (SPDS),
- (2) whether the color coding of the Video Alarm System (VAS) should be made consistent with other control room CRTs prior to any operation,
- (3) whether a preliminary evaluation of the control environment ought to be accomplished prior to fuel loading, and
- (4) whether certain Human Engineering Discrepancies involving control room furnishings and equipment storage should be evaluated and resolved prior to fuel loading.

SAPL states at page 4 that there is no dispute that these things need to be done to comply with NUREG-0737 items I.D.1 and I.D.2. The NRC Staff is requiring that the missing items be either accomplished, or that sufficient justification for not taking action be provided, prior to restart after the first refueling outage. Contrary to NUREG-0737 and Supplement 1, SAPL, at page 5, believes that there is no proper justification for allowing the Seabrook Station to operate at any power level prior to completion of items needed to bring the facility into full compliance with the Commission's regulations.

In its response to Applicants and Staff, SAPL has not identified any safety problem associated with deferring the improvements until the end

of the first refueling outage. It is noted that NUREG-0737, Supplement 1, does not explicitly require the SPDS to be optimal.

After thorough consideration of Applicants' motion for summary disposition of Contention SAPL Supplement 6 (formerly NH-10), and the responses thereto by Staff and SAPL, I would grant the entire motion for summary disposition including the SPDS. In reaching this conclusion, notice is taken of the Commission's Statement of Policy: Further Commission Guidance for Power Reactor Operating Licenses, 45 Fed. Reg. 85,236 (Dec. 24, 1980) which explains that NUREG-0737 now represents the core of the substantive requirements of the post-TMI-2 Action Plan. This was followed by NUREG-0737, Supplement 1, for purposes of clarification. It reflects that some requirements, especially the implementation of schedules, were made more flexible. Section 3.5 states that:

Specific implementation plans and reasonable, achievable schedules for improvements that will satisfy the requirements will be established by agreement between the NRC Project Manager and each individual licensee.

In the absence of the State of Massachusetts' Seabrook Radiological Emergency Plan, the Applicants may find it to be practical and sensible to complete the SPDS during the Massachusetts interval of delay instead of prior to restart after the first refueling outage.

Emmeth A. Luebke
ADMINISTRATIVE JUDGE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Herbert Grossman, Chairman
Richard F. Cole
A. Dixon Callihan

In the Matter of

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

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

September 18, 1986

Licensing Board issues a Memorandum and Order authorizing the issuance of a license to Applicant to load fuel and conduct certain precriticality testing upon a showing that the facility will remain subcritical without any reliance on the electrical system that is in issue in the proceeding.

OPERATING LICENSE: FUEL LOADING AND PRECRITICALITY
TESTING

Under 10 C.F.R. § 50.57(a), a license permitting activities short of full-power operation may be issued notwithstanding the pendency of a contested operating license proceeding.

OPERATING LICENSE: FUEL LOADING AND PRECRITICALITY TESTING

Where an application for a § 50.57(c) license is opposed, the licensing board must determine whether any of the contentions already admitted in the proceeding are relevant to the requested license and, if they are, make findings under § 50.57(a) on matters as to which there is a controversy.

OPERATING LICENSE: FUEL LOADING AND PRECRITICALITY TESTING

Where a licensing board finds that already-admitted contentions are not relevant to the requested less-than-full-power license, the board does not make § 50.57(a) findings, but authorizes the Director of Nuclear Reactor Regulation to do so.

OPERATING LICENSE: FUEL LOADING AND PRECRITICALITY TESTING

Where intervenors make no showing that any admitted contention raises a safety matter with regard to the requested fuel loading and precriticality testing license, they have failed to establish that the contention is relevant because they have not raised any matters on which the board can make findings under § 50.57(a) adverse to applicant.

MEMORANDUM AND ORDER **(Authorizing Fuel Loading and Precriticality Testing)**

Applicant, Commonwealth Edison Company, filed a motion, pursuant to 10 C.F.R. § 50.57(c), requesting this Board to authorize the Director of Nuclear Reactor Regulation, upon making the applicable findings required by 10 C.F.R. § 50.57(a), to issue a license to Applicant to load fuel and conduct certain precriticality testing of the Braidwood Station, Unit 1. Applicant relies upon supporting affidavits to the effect that the Applicant will carry out its fuel loading and precriticality testing activities in a manner that will ensure that the facility remains subcritical without any reliance on electrical systems or circuitry under accident and transient conditions.

Staff supports Applicant's request and adds its own affidavits indicating that Staff has evaluated Applicant's ability to perform fuel loading and precriticality testing without reliance upon the electrical equipment

for protection of the health and safety of the public. Staff's affidavits indicate that the only threat to public health and safety in the performance of the proposed fuel loading and precriticality testing arises from an inadvertent criticality in the core and that this inadvertent criticality will not occur if a boron concentration of 2000 parts per million (ppm) in the core coolant is maintained. Applicant has committed itself to special administrative procedures that will assure that the boron concentration does not go below 2000 ppm, to be included as a license condition to any fuel loading and testing license, and to be monitored by the NRC Staff.

Intervenors, Bridget Little Rorem, *et al.*, however, oppose Applicant's motion to load fuel and conduct precriticality testing on the ground that their quality control contention asserts that the quality of the Applicant's electrical installations is indeterminate, and that since Applicant must utilize its electrical system in these operations, albeit not necessarily to *safely* conduct these operations, Intervenors' contentions are "relevant to the activity to be authorized" under § 50.57(c), and the Board must make findings specified in § 50.57(a). Included in § 50.57(a) are findings that construction of the facility and its operation have been, or will be, in conformity with the construction permit and application, and that there is reasonable assurance that the activities authorized by the operating license can be conducted without endangering the health and safety of the public and in compliance with the regulations in 10 C.F.R. Part 50. Intervenors further contend (Opposition at 8-10) that they are entitled to a hearing on the matters to be found under § 50.57(a) and that the nature of the issues to be heard would be no different from the issues on the merits of Intervenors' contentions. Intervenors state that, as a practical matter, the evidence to be adduced in the main hearing and any § 50.57(c) hearing might be identical, and that separate hearings would only be duplicative, although Intervenors would not oppose separate hearings if Applicant can show that they would not be duplicative and wasteful. *Id.* at 10.

We grant Applicant's motion and authorize the Director of Nuclear Reactor Regulation to make appropriate findings on the matters specified in § 50.57(a) and to issue a license for the requested operation within the parameters specified by Applicant in its motion and supporting affidavits, and by Staff in its response and supporting affidavits.

MEMORANDUM

Section 50.57(c) allows an applicant in a contested OL proceeding to move the licensing board to authorize the issuance, by the Director of

Nuclear Reactor Regulation ("Director"), of a license permitting activities short of full-power operation, notwithstanding the pendency of safety contentions before the licensing board. The regulation was promulgated to provide explicitly for early consideration of facility testing in the event of a contested hearing on the issuance of a license for full-power operation. 36 Fed. Reg. 8862 (May 14, 1971). Thus the regulation affords relief to an applicant when the pendency of hearings before a licensing board threatens to delay the applicant's fuel loading and testing schedule. That is the situation in which the Applicant in this proceeding finds itself at the present time. Applicant is scheduled to begin loading fuel in Braidwood Unit 1 on September 30, 1986 (O'Connor, Tr. 10,102); and it has become clear that on the present hearing schedule an initial decision cannot issue by that date.

Section 50.57(c) provides that when no party to the proceeding opposes the motion, the licensing board shall issue an order authorizing the Director to make the requisite findings under § 50.57(a) and to grant a license for the requested operation. The board's issuance of such an order is not automatic, however, when a party contests the motion. Section 50.57(c) provides that the licensing board's action on the motion 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." To safeguard these rights, any party may oppose the motion by asserting that the § 50.57(a) findings cannot be made for the requested authority because its contention is relevant to those operations and must therefore be resolved prior to the issuance of the § 50.57(c) license.

In that case, the licensing board must determine whether the contention is in fact relevant to the requested operation, and if it finds that the contention is relevant, § 50.57(c) provides that the board itself make those § 50.57(a) findings "as to which there is a controversy" because of the pendency of a relevant contention. The Director is still responsible for making the other § 50.57(a) findings. If the licensing board finds that the admitted contentions are not relevant to the requested operation, and therefore need not be resolved before the requisite § 50.57(a) findings can be made, the board does not make any § 50.57(a) findings, but authorizes the Director to do so. 10 C.F.R. § 50.57(c); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-81-5, 13 NRC 226, 233 (1981); see also *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-83-27, 18 NRC 1146, 1149-50 (1983).

It is thus apparent that the regulatory scheme set forth in § 50.57(c) preserves, but does not expand, the existing rights of the parties and the

existing jurisdiction of the licensing board. The right of an intervenor to contest the issuance of an operating license is defined by the contentions already admitted by the licensing board. The board's jurisdiction is limited to determining the admitted contentions and any additional issues which the board raises *sua sponte* through the procedures specified by the Commission.

To the extent that a party's admitted contentions are relevant to the requested operation, § 50.57(c) requires the licensing board, at that party's request, to resolve them before authorizing the Director to issue the limited operating license. Matters not raised by existing contentions concerning the motion for limited operation are outside the scope of the proceeding, and § 50.57(c) provides that the Director make the necessary findings on such matters. Thus a § 50.57(c) motion is not an opportunity for the admission of new contentions aimed at the limited operation sought by the Applicant. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-81-5, 13 NRC 361, 362 (1981); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-728, 17 NRC 777, 801 n.72 (1983); *Diablo Canyon*, LBP-81-5, *supra*.

Since Intervenors have opposed Applicant's motion, the Board must determine whether Intervenors' contentions are relevant to the activity to be authorized and, if so, make findings on the matters specified in § 50.57(a) as to which there is a controversy.

We begin our consideration with Applicant's assertion (Motion at 10) that its affidavits demonstrate conclusively that Applicant will carry out its fuel loading and precriticality testing activities in a manner that will ensure that Braidwood Unit 1 remains subcritical without any reliance on electrical systems or circuitry under accident and transient conditions. Therefore, Applicant further states, Intervenors' QC inspector harassment contention is wholly irrelevant to the activities for which the Applicant is seeking authorization.

But, according to Intervenors (Opposition at 4), the threshold of relevance under § 50.57(c) is not merely whether, as Applicant suggests, the pending contention is relevant to the *safe* conduct of the proposed activity. Instead, Intervenors further suggest, the relevance concern is broader: whether the pending contention is relevant to the conduct of the proposed activity. Since the proposed activity would make use of the electrical system, the pending contention, which asserts that the electrical system is indeterminate, must be relevant to the proposed fuel loading and precriticality testing activities, according to Intervenors.

In making their argument that Applicant's mere use of the electrical system in the contemplated activity makes Intervenors' quality control

contention relevant, Intervenor's rely heavily (*id.* at 5) on the nature of the findings that the Board might have to make under § 50.57(a). The crux of their argument is their statement that "those findings are *not* limited only to 'safety'" (emphasis in original). Intervenor's point out that certain of the findings specified in § 50.57(a), do not specifically mention safety: e.g., construction of the plant and its operation must be found to be in conformity with the construction permit and the application as amended. Similarly, Intervenor's argue that Applicant must meet certain General Design Criteria of Appendix A of 10 C.F.R. Part 50 and Technical Specifications prepared in accordance with requirements of 10 C.F.R. § 50.36, and that Intervenor's are entitled to a hearing on whether those General Design Criteria and Specifications have been met.

We do not agree with Intervenor's that the findings that the Board must make under § 50.57(a), or with regard to the General Design Criteria or Technical Specifications, are not limited to safety. As we understand the legislative and regulatory requirements, all of the Board's findings under Part 50 are in the context of the public health and safety.¹ If, for example, we were to determine that Applicant's construction or operation of the plant departs from the requirements of the construction permit application, as amended, General Design Criteria, or Technical Specifications, but does not depart in any manner that has an adverse impact on the public health or safety, our ultimate findings would be that the plant's construction or operation is in substantial conformity with the requirements. As we understand it, any deviation from these requirements, to the extent that they do not affect the public health or safety, would have no adverse consequence on the granting of the operating license.

In the view of the Board, the test for relevancy, under § 50.57(c) as in general, is whether, if the matters were heard, they could result in a finding adverse to the other party — in this case under § 50.57(a). Since only matters inimical to the public health or safety can be decided adversely to Applicant under § 50.57(a), and Intervenor's have made no showing that their admitted contention raises a safety matter with regard to fuel loading and precriticality testing, they have failed to establish that the contention is relevant to the requested license.

Stated another way, Intervenor's have raised no matters with respect to the proposed fuel loading and precriticality testing on which, if the matters are taken to be proven, the Board could make findings under § 50.57(a) adverse to Applicant.

¹ We do not consider in this discussion findings that might be required by 10 C.F.R. Part 51 relating to the National Environmental Policy Act of 1969, since no environmental contentions have been admitted in this proceeding.

We have given due consideration to *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-84-8, 19 NRC 1154 (1984), in making our determination. Had Intervenor here made some showing that the use of an indeterminate electrical system in the fuel loading and precriticality testing would depart in some manner from the General Design Criteria or Technical Specifications that might have an adverse impact upon the public health or safety, we might have been persuaded that Applicant should be required to apply for an exemption from those requirements under 10 C.F.R. § 50.12(a), before we could make our determination under § 50.57(c) that its contention is not relevant to the activity to be authorized. Presumably, such a showing was made in *Shoreham*,² either in the oral argument or in the written filings that preceded and followed the oral arguments. See 19 NRC at 1155. No such showing was made here and we need not require that Applicant pursue the exemption route under § 50.12(a).

ORDER

For all of the foregoing reasons and based upon a consideration of the entire record in this matter, it is, this 18th day of September 1986,

ORDERED:

1. That the Director of Nuclear Reactor Regulation is authorized to make all appropriate findings required under 10 C.F.R. § 50.57(a) with regard to Applicant's (Commonwealth Edison Company's) request for a license permitting Applicant to load fuel in Braidwood Unit 1 and conduct precriticality testing of the unit,

2. That the Director is authorized to issue a license for the requested operation, subject to his findings and within the parameters established by Applicant in its Motion for Authorization, and supporting affidavits, dated August 18, 1986, and in NRC Staff's Response to Applicant's Motion, and supporting affidavits, dated September 9, 1986,

3. That the granting of a license as herein authorized shall have no bearing on Applicant's right to any further license under 10 C.F.R. §§ 50.56 or 50.57,

4. That this Order become effective immediately, and

² In *Shoreham* the § 50.57(c) application involved a request for a low-power operating license rather than a mere request for fuel loading and precriticality testing.

5. That any party may take an appeal of this Order within ten (10) days after service thereof by filing a notice of appeal and following the briefing schedule prescribed by 10 C.F.R. § 2.762.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Herbert Grossman, Chairman
ADMINISTRATIVE JUDGE**

**Richard F. Cole
ADMINISTRATIVE JUDGE**

**A. Dixon Callihan
ADMINISTRATIVE JUDGE**

**Bethesda, Maryland
September 18, 1986**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Helen F. Hoyt, Chairperson
Dr. Richard F. Cole
Dr. Jerry Harbour

In the Matter of

Docket Nos. 50-352-OL
50-353-OL

PHILADELPHIA ELECTRIC
COMPANY
(Limerick Generating Station,
Units 1 and 2)

September 5, 1986

In this Supplement to its Third Partial Initial Decision, the Licensing Board resolves a remanded issue concerning reasonable assurance of the availability of bus drivers to evacuate students in the event of a radiological emergency.

EMERGENCY PLANNING

Licensee's arrangements for maintaining a pool of 200 or more bus drivers to assist in an evacuation of the school districts, in conjunction with plans and resources already in place that would be utilized by responsible county and school district authorities, meet the requirements of 10 C.F.R. § 50.47, and Appendix E to 10 C.F.R. Part 50, as well as the criteria of NUREG-0654, and provide reasonable assurance that adequate protective measures for those school districts can and will be taken in the event of a radiological emergency.

APPEARANCES

Troy B. Conner, Jr., Esq., Robert M. Rader, Esq., and Nils N. Nichols, Esq., of Conner & Wetterhahn, P.C., Washington, D.C., for Philadelphia Electric Company.

Benjamin H. Vogler, Esq., Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, D.C., for the NRC Staff.

Mark L. Goodwin, Esq., Pennsylvania Emergency Management Agency, Harrisburg, Pennsylvania, for the Commonwealth of Pennsylvania.

Michael Hirsch, Esq., Office of the General Counsel, Federal Emergency Management Agency, Washington, D.C., for FEMA.

Maureen Mulligan and David Stone, for Limerick Ecology Action.

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SUPPLEMENT TO THIRD PARTIAL INITIAL DECISION

(On Offsite Emergency Planning Contentions)

I. INTRODUCTION

This is a supplement to the Third Partial Initial Decision ("PID"), issued on May 2, 1985, by this Atomic Safety and Licensing Board ("Licensing Board" or "Board") after consideration of offsite emergency planning issues in the operating license proceeding for the Limerick Generating Station, Units 1 and 2 ("Limerick").¹ The Third PID disposed of all offsite emergency planning contentions except those raised by the inmates of the State Correctional Institution at Graterford,² in favor of Applicant Philadelphia Electric Company (now Licensee).

Following the conclusion of all hearings on contested issues, the Licensing Board authorized the Director of Nuclear Reactor Regulation to issue full-power operating licenses for Limerick, consistent with the Board's decisions in this case and upon making requisite findings with respect to matters not embraced in its decisions.³ The Commission thereafter denied motions to stay the effectiveness of the Licensing Board's decisions on offsite emergency planning and preparedness and ordered that the authorization for issuance of a full-power license be made immediately effective.⁴ Various parties have appealed the Commission's action to the U.S. Court of Appeals for the Third Circuit. Those appeals have been consolidated and held in abeyance pending completion of final agency action by the Commission in this proceeding.⁵

In the interim, the Appeal Board reviewed this Board's Third PID, which it affirmed in ALAB-836, with two exceptions.⁶ As to the first matter, the Appeal Board required the NRC Staff to verify establishment of additional traffic control measures at one point along the perimeter of

¹ See LBP-85-14, 21 NRC 1219 (1985).

² Emergency planning and preparedness for the inmates was the subject of our Fourth PID in LBP-85-25, 22 NRC 101 (1985). The Fourth PID found in favor of Applicant on all issues but has been remanded on the issue of adequacy of the communication system to be used in an emergency at the SCIG (ALAB-845, 24 NRC 220 (1986)).

³ LBP-85-25, *supra*, 22 NRC at 116. Although the hearings on contested issues involved both Units 1 and 2 of Limerick, a full-power operating license was issued only for Unit 1 inasmuch as Unit 2 has not yet been completed.

⁴ CLI-85-15, 22 NRC 184 (1985).

⁵ See generally, *Limerick Ecology Action, Inc. v. NRC*, No. 85-3431; *Martin v. NRC*, No. 85-3444; *Anthony v. NRC*, No. 85-3606; and *Limerick Ecology Action, Inc. v. NRC*, No. 86-3314.

⁶ See ALAB-836, 23 NRC 479 (1986). On July 24, 1986, the Commission declined to review ALAB-836.

the plume exposure pathway emergency planning zone ("EPZ") for Limerick.⁷ No further action by this Board was ordered on this matter.

On the second matter, the Appeal Board held that two driver surveys conducted by the Superintendents of the Spring-Ford Area and Owen J. Roberts School Districts "raise[d] a legitimate question whether there is reasonable assurance that an adequate number of drivers would respond in an emergency" related to Limerick.⁸ Therefore, the Appeal Board remanded for further hearings before this Board relating to its finding as to "reasonable assurance of the availability of an adequate number of bus drivers to evacuate students in the Spring-Ford and Owen J. Roberts School Districts."⁹

By Order dated May 22, 1986 (unpublished), this Board directed Licensee, as the party with the burden of proof, to submit its proposal for resolution of the remanded issue, which Licensee filed on June 16, 1986. In its Order, the Board invited comments on the proposal by the other parties, which were also filed. At a conference call on July 17, 1986, the Board and parties discussed, *inter alia*, a schedule for a hearing and designation of witnesses. On July 21, 1986, the Board issued a Notice of Hearing and an Order (unpublished) establishing a schedule for filing testimony, the conduct of evidentiary hearings, and filing of proposed findings of fact and conclusions of law by the parties. A hearing was held on August 18 and 22, 1986, in Philadelphia, Pennsylvania, on the remanded issue.

Proposed Findings of Facts and Conclusions of Law were filed by the Licensee, NRC Staff, Commonwealth of Pennsylvania, and the Intervenor, LEA. In its Proposed Findings of Fact and Conclusions of Law in its Findings (Nos. 1-3 (pages 1-3)), LEA raised objections to the scheduling of the hearing and complained that it "suffers certain disadvantages in the accelerated hearing process, including reduced preparation time and time for filings. . . ." However, this complaint is not supported by the record. Indeed, LEA, who did not file any prefiled testimony, inserted personal activities of one of its representatives as early as the July 17, 1986 conference as a bar to preparation for a hearing to be held more than a month later. Mulligan, Tr. 21,139, 21,153. LEA now complains that it could not sample drivers "from a universe of 570 . . ." because PECO reduced the number of volunteers it was providing from 570 to about 200 names. LEA had agreed that it wanted to sample ten of PECO's employees who would be bus driver volunteers. Tr. 21,147, lines

⁷ *Id.* at 497, 522.

⁸ *Id.* at 518-19.

⁹ *Id.* at 522.

8-15. How the reduction in number of volunteers was material is unexplained. No PECO employees were apparently ever deposited; no representation was made in the hearings of August 18 or August 22 that LEA selected ten driver applicants or ever contacted them. The Board notes here these acts as indicative of this Intervenor's raising concerns and then having been provided with the opportunity to prepare its case, making inaccurate claims that the very opportunity to prepare is the source of yet another problem. This Intervenor had ample time to have prepared but did little to provide support for its concerns. Although it is clear to all that the Licensee has the burden of proof, an Intervenor after raising a concern must at least provide something, no matter how small, to explain and support the basis of its concern.

LEA misstated the basis of this remand as being concerned with a "properly conducted statistical survey which caused this bus driver issue to be remanded in the [first] place." LEA Proposed Findings at 2. The Board, however, has interpreted the remand as a concern of the Appeal Board in ALAB-836 that bus drivers be available for the two school districts in sufficient numbers to effect the evacuation, and this we have done. As to the adequacy of bus driver availability, the Appeal Board found a deficiency in the record *only* with regard to the number of bus drivers for the Owen J. Roberts and Spring-Ford Area School Districts.¹⁰ Thus, this Board was not required or authorized by the Appeal Board to explore anew the adequacy of bus driver availability for school districts other than Owen J. Roberts and Spring-Ford.

Nor was the Board to take further evidence on the adequacy of buses, as distinct from the availability of drivers, necessary to evacuate the two school districts at issue. For all school districts within the Limerick EPZ, including the Spring-Ford Area and Owen J. Roberts School Districts, the Appeal Board has upheld the findings of this Board that there is reasonable assurance of enough buses to evacuate schools in Montgomery County and Chester County.¹¹ Therefore, the Board in this limited remand hearing sustained as proper the parties' objections to questions by LEA which exceeded the scope of this proceeding.

¹⁰ *Id.* at 515-20.

¹¹ *Id.* at 512-15.

II. FINDINGS OF FACT

A. Development of Licensee's Volunteer Employee Bus Driver Pool

1. Plans to evacuate the Spring-Ford Area and Owen J. Roberts School Districts are two aspects of the overall efforts by Commonwealth, county, and local officials, assisted by Licensee and its consultants, to maintain adequate emergency planning and preparedness for Limerick. Boyer and Bradshaw, ff. Tr. 21,189, at 1.

2. Since the close of the record relating to the offsite emergency planning phase of the proceeding, Licensee has continued to cooperate with Commonwealth, county, and local officials in developing additional emergency response resources for all aspects of planning and preparedness. These efforts have included the enlistment of Licensee's employees who have stated a willingness to participate as volunteers in implementing various aspects of the offsite plans. *Id.* at 2.

3. Following the Appeal Board's remand as to whether an adequate number of drivers would be available for the Spring-Ford Area and Owen J. Roberts School Districts, the Licensee's representatives discussed how to resolve the remanded issue with the responsible county and Commonwealth officials. *Id.* at 2-3.

4. Timothy R.S. Campbell is the Director of Emergency Services for Chester County, and A. Lindley Bigelow is the Coordinator of Emergency Preparedness for Montgomery County. Both officials previously testified in this proceeding with regard to offsite emergency planning and preparedness for their respective counties. As a result of the remand, Mr. Campbell and Mr. Bigelow met with Licensee's representatives and corresponded by telephone with Pennsylvania Emergency Management Agency (PEMA) representatives as to the provision for drivers for the Spring-Ford Area and Owen J. Roberts School Districts. Campbell, Tr. 21,229-30; Bigelow, Tr. 21,231-32.

5. At a meeting on June 5, 1986, with Licensee's representatives, Mr. Campbell and Mr. Bigelow determined that an immediate solution would be for volunteer Licensee employees to qualify and act as bus drivers until the counties or the Commonwealth have obtained drivers from other sources. Mr. Campbell decided that the designated marshalling center for volunteers to drive buses for Chester County would be in the Exton area at the Exxon Systems facility in Lionville. Mr. Bigelow decided that the designated marshalling center for Montgomery County would be the Licensee's Berwyn Transportation Center. The matter was then discussed with Ralph J. Hippert, Director of Plans and Preparedness, PEMA, who agreed to the proposal as an immediate solution.

Boyer and Bradshaw, ff. Tr. 21,189, at 2-3; Boyer, Tr. 21,194; Hippert, ff. Tr. 21,265, at 2; Campbell, Tr. 21,230; Bigelow, Tr. 21,232.

6. In Pennsylvania, a Class 4 driver's license is required for operation of a school bus. There are three prerequisites for obtaining a Pennsylvania Class 4 license: (1) possession of a Class 4 learner's permit which requires passing a physical examination; (2) classroom and vehicle training; and (3) passing a driver's examination administered by the State Police. Boyer and Bradshaw, ff. Tr. 21,189, at 3.

7. In order to determine the number of employees who potentially might wish to volunteer to drive school buses in the event of an emergency, Licensee collated a list of volunteer employees who could respond to bus marshalling centers within a reasonable period. *Id.*

8. Each volunteer was asked to execute a volunteer sheet. The supervisors of the volunteers were asked to estimate how long it would take the volunteers to reach the marshalling centers, based upon their knowledge of their personnel's work locations. *Id.* at 3-4.

9. Based upon discussions with Licensee's representatives, the responsible planning agencies agreed that a total of 200 employee volunteers, to be used by both Montgomery and Chester Counties, would be more than sufficient to meet any anticipated need for the Owen J. Roberts and Spring-Ford Area School Districts. A list of the names of the remaining volunteer employees is being maintained on file so that in the event they may be needed as replacements for those already trained, they can be made available. *Id.* at 4; Boyer, Tr. 21,195.

B. Estimated Need for Additional Drivers

10. The witnesses proffered by the parties differed to some degree in their calculation of the potential for unmet driver needs in the Spring-Ford Area and Owen J. Roberts School Districts. Ralph J. Hippert, now the Director of the Office of Plans and Preparedness for PEMA, previously testified in this proceeding on offsite emergency planning and preparedness by the Commonwealth for Limerick. As the responsible PEMA official, Mr. Hippert calculated the potential bus driver shortage for the Spring-Ford Area and Owen J. Roberts School Districts by consulting their respective plans and determining the number of buses available to those school districts. He then compared the number of available buses with the results of the bus driver surveys previously conducted by those school districts. By subtracting the number of drivers surveyed who had explicitly stated that they would participate in an emergency from the number of buses available to each district, he determined the potential driver shortage. Hippert, Tr. 21,275-77.

11. Based on his examination of the current Spring-Ford Area School District emergency plan, and assuming the validity of a bus driver survey of the Custer Bus Company conducted by Spring-Ford Superintendent Welliver, Mr. Hippert calculated that Spring-Ford would experience a shortage of no more than twenty-eight drivers in the event of a school evacuation because of a radiological accident at Limerick. Hippert, ff. Tr. 21,265, at 1.

12. Based on his examination of the current Owen J. Roberts School District plan, and assuming the validity of a bus driver survey conducted at the request of the Owen J. Roberts Citizens Task Force of the Gross Bus Company drivers, Mr. Hippert calculated that Owen J. Roberts would experience a shortage of eight bus drivers if a school evacuation were necessary. *Id.* at 2.

13. Thus, accepting the results of the bus driver surveys for the Spring-Ford Area and Owen J. Roberts School Districts, Mr. Hippert determined that there would be a shortage of thirty-six drivers for the buses routinely provided by the two bus companies surveyed. Licensee's employee driver pool is more than five times this number. *Id.*; Hippert, Tr. 21,266-67.

14. Another calculation of the maximum number of bus drivers who would be required to replace regularly assigned drivers for the Spring-Ford Area and Owen J. Roberts School Districts in the event of an emergency at Limerick is the difference between the number of previously surveyed drivers who explicitly stated that they would drive buses in an emergency and the total driver force for those districts. This results in a maximum unmet need of fifty-two bus drivers for the two school districts and produces about a 4:1 ratio between Licensee's volunteer drivers and unmet driver needs for Spring-Ford and Owen J. Roberts. Asher and Kinard, ff. Tr. 21,279, at 3; Kinard, Tr. 21,284-85. FEMA would find satisfactory an arrangement for a volunteer driver pool which would provide a 1:1 ratio between volunteers and reported unmet needs for drivers. Kinard, Tr. 21,284.

15. Licensee has coordinated its bus driver employee efforts with the Chester County Department of Emergency Services and the Montgomery County Office of Emergency Preparedness. Both counties have agreed to the program for the use of Licensee's employee volunteers to receive Class 4 bus driver training and respond in the event of a radiological emergency at Limerick and will enroll the volunteers as emergency management volunteers. Boyer and Bradshaw, ff. Tr. 21,189, at 4-5; Campbell, Tr. 21,246, 21,230-31; Bigelow, Tr. 21,232, 21,249.

C. Employee Bus Driver Training and Qualification

16. Initially, instructor training was provided by the Chester County Intermediate Unit, which is a regional governmental cooperative that provides services to local school districts. Licensee and vendor employees received training as instructors which qualifies them to teach other driver volunteers. Training of twenty-one instructors began July 15, 1986, and was completed July 23, 1986. These instructors have conducted classroom training of other volunteers in groups of approximately thirty. The State Police have conducted Class 4 driver tests at Berwyn. The training of all volunteers has included the same training offered drivers for all school districts and school bus providers. (See Appl. Exh. E-64, Training Module for Bus Drivers.) Boyer and Bradshaw, ff. Tr. 21,189, at 5.

17. The schedule for training and testing is as follows: two groups totaling fifty-four volunteers completed training August 8, 1986; two other groups totaling forty-seven completed training on August 15, 1986; and four other groups totaling sixty-six will have completed training in August 1986. The remainder totaling thirty-three will complete training in September 1986, subject to possible unavailability due to illness or other reason. Driver testing sessions were conducted by the State Police on August 11 and 18, 1986, and groups of twenty-three and thirty-five volunteers were issued Class 4 licenses. Forty-five were scheduled for driver testing on August 25, 1986. As of August 22, 1986, 155 had completed training. Driver testing will continue into September as classroom training is completed. Boyer and Bradshaw, ff. Tr. 21,189, at 5; Boyer, Tr. 21,197; Boyer, Tr. 21,296.

18. Licensee anticipates that approximately three-quarters of the 200 volunteer driver pool will be trained, tested, and qualified by the end of August, i.e., prior to the start of school after Labor Day. Driver testing of others who could not be scheduled because of work assignments or vacations will be completed in early September. Boyer, Tr. 21,197-98. Licensee expects to have the total pool of 200 employee volunteers trained and qualified by mid-September. Boyer, Tr. 21,198, 21,217.

19. At the hearing, the responsible FEMA officials reviewed Licensee's driver training and qualification schedule and expressed their professional opinion that FEMA's conclusions of reasonable assurance would not be affected by the updated testimony on driver training and testing provided by Licensee. Kinard, Tr. 21,289. In the judgment of those officials, there is no problem if less than the total of 200 volunteer employees are trained and qualified by the start of school in 1986. Kinard, Tr. 21,283.

D. Time Response Estimates

20. Since the 200 volunteers could be used for either Chester or Montgomery County, Licensee has developed estimates of the time required for the volunteers to report to both Exxon and Berwyn. Licensee determined that 55 could reach Exxon (in Chester County) in 30 minutes or less; an additional 111 within 30 to 60 minutes; and 34 more within 60 to 90 minutes. For Berwyn (in Montgomery County), 148 would be available in 30 minutes or less; an additional 27 within 30 to 60 minutes; and 25 within 90 minutes. Boyer and Bradshaw, ff. Tr. 21,189, at 6.

21. In soliciting volunteers, Licensee attempted to select as many volunteers as reasonable from its Berwyn Transportation Center, because those volunteers would be immediately available. Boyer, Tr. 21,213-14. Fifty-five volunteers of the 200 driver pool are regularly stationed at Berwyn and would therefore be immediately available. Boyer and Bradshaw, ff. Tr. 21,189, at 6. In the event of an emergency at Limerick, Chester and Montgomery Counties will contact Licensee so that drivers will be in place, even before the counties have determined whether any unmet need exists. Campbell, Tr. 21,245; Bigelow, Tr. 21,247.

22. As volunteers, Licensee's employees are county emergency workers and it is therefore the responsibility of the county to transport the volunteers to bus locations. Nonetheless, Licensee will coordinate with each county and assist upon request in transporting its volunteer drivers to the buses. Boyer, Tr. 21,215; Kankus, Tr. 21,217. LEA solicited testimony regarding buses which may be taken home by a number of the regularly assigned drivers for the Owen J. Roberts School District. Dr. Claypool confirmed in his testimony that he had, however, considered this particular practice in evaluating the bus driver survey results and calculating overall bus driver needs. Claypool, Tr. 21,339, 21,341. The number of buses reported as available from the Gross Bus Company in the Owen J. Roberts School District RERP, dated December 30, 1985, is 26 (out of 43). Hippert, ff. Tr. 21,265, at 2.

E. Ongoing Availability of Licensee's Employee Bus Driver Pool

23. Licensee has committed to Montgomery and Chester Counties that it will make its bus driver employee volunteers available under the arrangements discussed above until provision is made by the responsible planning authorities for bus driver personnel from other sources. Accordingly, Licensee's arrangements will remain in full force and effect until notification that Licensee's employee volunteers are no longer required. Boyer and Bradshaw, ff. Tr. 21,189, at 6; Boyer, Tr. 21,221,

21,227; Hippert, ff. Tr. 21,265, at 3. Each volunteer employee understands that he is agreeing to be available indefinitely until replaced by some other source of drivers. Boyer, Tr. 21,218.

24. Licensee's Director of Emergency Preparedness will be advised by the Personnel Department whenever a volunteer retires, dies, or otherwise leaves the employment of the Company. Kankus, Tr. 21,224. Also, Licensee's bus driver volunteer list will be reviewed periodically in a manner similar to which Licensee's onsite emergency worker list is routinely reviewed. This will ensure that individual employees are contacted by their supervisors to determine that they continue to be available for volunteer service. Volunteer lists for offsite emergency plans are updated on an annual basis and Licensee will probably follow the same schedule for its bus driver volunteers. *Id.*

25. Licensee intends to continue its training and qualification program to obtain about 220 Class 4 drivers. This will provide a reserve to replace volunteers who transfer, retire, or are otherwise unavailable. Boyer, Tr. 21,212, 21,220.

26. In his capacity as an employee and Senior Vice President-Nuclear of the Philadelphia Electric Company, Mr. Boyer has had extensive experience with its employees. He expressed confidence that if an employee has stated that he will participate in an emergency response by driving a bus in the event that school evacuation is required, he will do so. Boyer, ff. Tr. 21,189, at 6.

27. FEMA testified that the volunteer driver pool made available by Licensee and agreed to by PEMA provides reasonable assurance that, in the event of an emergency at the Limerick Generating Station, an adequate number of volunteers will be available to fill any unmet needs for bus drivers in the Owen J. Roberts and Spring-Ford Area School Districts. Asher and Kinard, ff. Tr. 21,279, at 4; Tr. 21,282-83.

28. Dr. Welliver on behalf of the Spring-Ford Area School District and Dr. Claypool on behalf of the Owen J. Roberts School District testified that they had discussed their bus driver surveys with their respective county planning representatives and received adequate assurance that a sufficient number of drivers would be provided in the event of an emergency. Welliver and Claypool, Tr. 21,316-18. An early dismissal of students to their homes by the Owen J. Roberts School District, preliminary to an actual evacuation order, would utilize the school district's regularly assigned drivers and buses, and would not rely on Licensee volunteers to drive the buses. Claypool, Tr. 21,322-26. Hence, the Board finds that this procedure is not relevant to bus driver availability to carry out an evacuation ordered by the responsible Commonwealth or county official.

29. Based on the arrangements by Licensee to make available a pool of 200 volunteer employee drivers, there will be far more than enough volunteer bus drivers to provide support to the Chester County and Montgomery County emergency planning agencies as needed for the Owen J. Roberts and Spring-Ford Area School Districts in the event regularly assigned drivers fail to respond. Boyer and Bradshaw, ff. Tr. 21,189, at 6-7; Hippert, ff. Tr. 21,265, at 3; Hippert, Tr. 21,267-68; Asher and Kinard, ff. Tr. 21,279, at 4.

F. Additional Sources of Bus Drivers

30. Even before creation of Licensee's volunteer employee driver pool, Montgomery and Chester Counties could have satisfied any unmet needs of the Spring-Ford Area and Owen J. Roberts School Districts, respectively, from other sources. Bigelow and Campbell, Tr. 21,263.

31. While the availability of volunteer bus drivers from Licensee's employee force provides reasonable assurance of bus driver availability for the Spring-Ford Area and Owen J. Roberts School Districts, Licensee's provision of its volunteer employees as bus drivers is but one tool of many that will be utilized by the counties to meet the unmet needs of their municipalities. Because emergency planning is a dynamic process, other resources may become available. Campbell, Tr. 21,237-38.

32. The Montgomery County Office of Emergency Preparedness has surveyed all bus providers, public and private, in Montgomery County. It has either written or verbal assurances that those providers will, to the best of their availability, provide buses and drivers upon request. Bigelow, Tr. 21,254. On this basis, the current Montgomery County plan lists total resources for all school districts in the EPZ and their bus providers as 1783 vehicles with 1919 full- or part-time drivers. These reported assets far exceed evacuation requirements of 534 vehicles and drivers for the entire transportation-dependent population of Montgomery County within the Limerick EPZ. Hippert, ff. Tr. 21,265, at 4; Bigelow, Tr. 21,254.

33. Similarly, other arrangements could be made for Chester County schools within the Limerick EPZ to optimize utilization of school district bus and driver resources and thereby eliminate the necessity for Licensee's driver pool. The Director of Emergency Services for Chester County is conducting a survey to obtain additional volunteer drivers from fire companies whose personnel are not otherwise assigned responsibilities under their municipality's emergency plan. Bradshaw, Tr. 21,221; Campbell, Tr. 21,238.

34. The Downingtown School District lies outside the EPZ, but has students who live within the EPZ. Downingtown is under contract with a private bus company for fifty-seven buses. By delaying its normal dismissal time, Downingtown could make its buses and drivers available to satisfy any shortage for the Owen J. Roberts School District. Indeed, Downingtown's bus provider is already under agreement with Chester County to supply school buses and drivers upon request. Hippert, ff. Tr. 21,265, at 4-5; Campbell, Tr. 21,252-53; Appl. Exh. E-51.

G. Alleged Conflicts in Volunteer Responsibilities

35. LEA raised the potential for conflicting responsibilities if some employee volunteer drivers have already agreed to serve as a volunteer in some other capacity in a radiological emergency. The Board is satisfied, however, that Licensee has adequately ensured against this contingency. As volunteer employee forms came in from the various field offices, they were reviewed at Licensee's headquarters against current municipal emergency plans to determine whether any volunteer driver was already a volunteer at any municipal emergency operations center. Kankus, Tr. 21,201; Bradshaw, Tr. 21,209.

36. As to other forms of volunteer service, such as a radio operator, ambulance driver, or fireman, there is no potential problem with dual responsibilities in the event of a radiological emergency at Limerick. During bus driver training, the instructors discuss various offsite emergency responsibilities with the trainees. To date, with about half of all volunteers trained, the instructors have not encountered a single instance in which a trainee has a conflicting responsibility. Bradshaw, Tr. 21,209.

37. Additionally, it is not Licensee's policy to release its employees to perform volunteer services in their home towns, for example, to fight fires. Kankus, Tr. 21,204; Bradshaw, Tr. 21,209-10. Therefore, local fire companies, ambulance services, and the like are not presently including Licensee's employees as those who would be available under local emergency plans. Kankus, Tr. 21,205.

H. Conclusion

38. Based on the evidentiary record before us, this Board finds reasonable assurance that, in the event of a radiological emergency at the Limerick Generating Station, there will be an adequate number of bus drivers to effectuate an evacuation of the Owen J. Roberts and Springfield Area School Districts.

III. CONCLUSIONS OF LAW

In reaching this Decision, the Board has considered all the evidence of the parties and the entire record of this proceeding on the remanded bus driver availability issue, including all proposed findings of fact and conclusions of law filed by the parties. Based upon a review of that record and the foregoing Findings of Fact, which are supported by reliable, probative, and substantial evidence, the Board, with respect to the issue in controversy before us, reaches the following conclusion pursuant to 10 C.F.R. § 2.760a:

Licensee's arrangements for maintaining a pool of 200 or more bus drivers to assist in an evacuation of the Owen J. Roberts and Spring-Ford Area School Districts, in conjunction with plans and resources already in place that would be utilized by the responsible county and school district authorities, meet the requirements of 10 C.F.R. § 50.47, and Appendix E to 10 C.F.R. Part 50, as well as the criteria of NUREG-0654, and provide reasonable assurance that adequate protective measures for those school districts can and will be taken in the event of a radiological emergency.

IV. ORDER

WHEREFORE, in accordance with the Atomic Energy Act of 1954, as amended, and the Rules of Practice of the Commission, and based on the foregoing Findings of Fact and Conclusions of Law, IT IS ORDERED that:

Pursuant to 10 C.F.R. § 2.760(a) of the Commission's Rules of Practice, this Supplement to the Third Partial Initial Decision will constitute the final decision of the Commission forty-five (45) days from the date of issuance, unless an appeal is taken in accordance with 10 C.F.R. § 2.762 or the Commission directs otherwise. *See also* 10 C.F.R. §§ 2.764, 2.785, and 2.786.

Any party may take an appeal from this Decision by filing a Notice of Appeal within ten (10) days after service of this Decision. 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. *See* 10 C.F.R. § 2.762(c).

IT IS SO ORDERED.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

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

**Richard F. Cole
ADMINISTRATIVE JUDGE**

**Jerry Harbour
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 5th day of September 1986.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. Jerry Harbour
Gustave A. Linenberger

In the Matter of

Docket Nos. 50-329-OL&OM
50-330-OL&OM
(ASLBP Nos. 78-389-03-OL
80-439-02-SP)

CONSUMERS POWER COMPANY
(Midland Plant, Units 1
and 2)

September 26, 1986

Upon motion by Consumers Power Company to dismiss the operating license (OL) proceeding and to terminate the Order of Modification (OM) proceeding, the Licensing Board dismisses the OM proceeding as moot (subject to a condition) and defers action on the motion insofar as it seeks dismissal of the OL proceeding, pending preparation by the Staff of an environmental assessment and consideration of that assessment by parties and the Board.

LICENSING BOARD: DELEGATED AUTHORITY

After issuance of a Notice of Hearing in a proceeding, a licensing board may impose terms or conditions on the withdrawal of an application and dismissal of a proceeding. Where no hearing is requested on an application, withdrawal of that application is within the jurisdiction of the Staff. 10 C.F.R. § 2.107(a).

NEPA: ENVIRONMENTAL ASSESSMENT

The NRC Staff must prepare an Environmental Assessment pursuant to 10 C.F.R. § 51.21 on the requested withdrawal of an operating license application.

RULES OF PRACTICE: MODIFICATION OF CONSTRUCTION PERMITS

A proceeding involving the proposed enforced modification of construction permits becomes moot when the NRC Staff (the party initially seeking relief under a Modification Order) and other parties no longer seek further relief under such order.

MEMORANDUM AND ORDER **(Motion to Dismiss/Terminate Proceedings)**

Pending before this Board is a motion by Consumers Power Co. (CPC) to dismiss the operating license (OL) proceeding and to terminate the Order of Modification (OM) proceeding for the Midland facility. For reasons set forth below, we are dismissing the OM proceeding as moot and are deferring action on the motion insofar as it seeks dismissal of the OL proceeding.

I. BACKGROUND

There are two adjudicatory proceedings involving the Midland Plant, Units 1 and 2, which are presently before this Board. The first is CPC's application for operating licenses for that facility (OL proceeding). The Notice of Hearing for that proceeding was published on October 18, 1978 (43 Fed. Reg. 48,089), and was supplemented by our Special Prehearing Conference Order dated February 23, 1979 (unpublished), which accepted a number of contentions for litigation. The second proceeding arose out of the Staff's "Order Modifying Construction Permits," dated December 6, 1979 (OM proceeding). That adjudicatory proceeding formally commenced through a Notice of Hearing published on March 20, 1980 (45 Fed. Reg. 18,214); supplemented by an "Amended Notice of Hearing" published on May 28, 1980 (45 Fed. Reg. 35,949) and by our initial rulings on contentions at the special prehearing conference of September 10, 1980 (Tr. 398). Because the issues in the OM proceeding were factually similar to several issues previously accepted for litigation in the

OL proceeding, at the request of CPC we consolidated the OM proceeding with relevant issues in the OL proceeding. Prehearing Conference Order Ruling on Contentions and on Consolidation of Proceedings, dated October 24, 1980 (unpublished).¹

By letter dated September 10, 1984 (which confirmed an earlier telephone communication); CPC advised that in late July 1984 it had determined to halt all construction at Midland because of its inability at that time to finance the project. CPC did not withdraw its OL application or "surrender" its construction permits because its plans were not definite and it wished to "preserve its options." For that reason and despite the potential mootness of the issues before us (on which we had not yet ruled), we issued a Partial Initial Decision on some of the technical issues that had been extensively litigated and, if the project should ever be revived, might have some continuing applicability. LBP-85-2, *supra*.

CPC has now determined that it will not attempt to restart construction and will abandon the Midland Plant as a nuclear project. On July 11, 1986, it filed a motion seeking authorization to withdraw its operating license application, dismissal of the OL proceeding, and termination of the OM proceeding as soon as CPC's withdrawal of its request for extension of its construction permits (pending before the NRC Staff) becomes effective ("Motion"). Simultaneously, CPC filed with the Appeal Board a motion for termination of that Board's jurisdiction over certain aspects of the Midland proceeding.²

Upon receipt of CPC's Motion, we posed four questions bearing upon the Motion to the parties. Order (Responses to Motions to Dismiss/Terminate Proceedings), dated July 16, 1986 (unpublished). One of these questions concerned the requested termination of the OM proceeding; the other three questions bore on the environmental aspects of the requested dismissal of the OL proceeding.

On August 15, 1986, CPC filed its response to our four questions. On August 25, 1986, the NRC Staff filed its response both to CPC's Motion and to the questions we had posed. Neither the present Intervenor nor the State of Michigan has responded either to CPC's Motion or to our questions.

¹ A more complete procedural history of the two proceedings appears in our Partial Initial Decision (Remedial Soils Issues), dated January 23, 1985, LBP-85-2, 21 NRC 24, 30-35, 114-22, *vacated as moot*, ALAB-842, 24 NRC 197 (1986), *review declined by Commission*, Memorandum to Board and Parties dated September 12, 1986 (unpublished).

² The only one of these aspects bearing on matters before this Board was the Appeal Board's *sua sponte* review of LBP-85-2, *supra*, which had not been appealed by any party.

In the meantime, the Appeal Board granted CPC's motion for termination of that Board's jurisdiction. In doing so, it vacated LBP-85-2.³ The Appeal Board stated that this Board was now free to consider CPC's withdrawal/termination Motion; and it directed us, in considering the Motion, "to determine whether any conditions should be imposed upon" any termination or dismissal. ALAB-842, *supra*, 24 NRC at 199.

With respect to conditions, we are governed in both proceedings by 10 C.F.R. § 2.107(a), which provides:

§ 2.107 Withdrawal of application.

(a) The Commission may permit an applicant to withdraw an application prior to the issuance of a notice of hearing on such terms and conditions as it may prescribe, or may, on receiving a request for withdrawal of an application, deny the application or dismiss it with prejudice. Withdrawal of an application *after the issuance of a notice of hearing* shall be on such terms as the presiding officer may prescribe.

(Emphasis supplied.) As indicated above, notices of hearing have been issued in both the OL and OM proceedings. We will deal with the requested dismissal or termination of the two proceedings *seriatim*.

II. OL PROCEEDING

In its Motion seeking dismissal of the OL proceeding, CPC asserts (with supporting affidavit) that the plant is inoperable as a reactor, and no further steps are necessary to disable it as a nuclear utilization facility. It states that steps were taken to stabilize the site after the 1984 halt of construction. Further, it expresses its intent to convert the facility to a combined-cycle gas-fired generating plant, although it concedes that it has not yet received the necessary regulatory approvals for that course of action. In that connection, it asserts that such facility will utilize the existing cooling pond and associated facilities; that CPC has developed and implemented a cooling pond maintenance program which the Michigan Department of Natural Resources has approved; that CPC maintains its NPDES permit; and that no further site environmental alterations are necessary.

CPC seeks dismissal of the OL proceeding "without prejudice" and without any further conditions. In responding to our questions, however, CPC notes that licensing boards have typically adopted conditions agreed upon by the Applicant and the Staff as part of a termination

³ Such action was in accord with Appeal Board rulings in other cases. While the vacating of our Partial Initial Decision deprives that decision of precedential significance, we believe that the discussion and rulings therein were correct and may serve as useful guidance in some contexts. See also note 1, *supra*.

order, leaving supervision of implementation to the Staff (CPC August 15, 1986 Response at 8).

In responding to CPC's Motion and our questions, the Staff has indicated that it is in the process of preparing an environmental assessment pursuant to 10 C.F.R. § 51.21 concerning the proposed withdrawal of the operating license application. By letter dated August 21, 1986, the Staff posed questions to CPC on the environmental aspects of project termination.⁴ It indicates that environmental conditions, if necessary, will be designed to ensure the stabilization of the site. The Staff recommends that we hold CPC's Motion in abeyance pending completion of the Staff's review of CPC's stabilization plan and the receipt of the views of interested parties.

As noted above, CPC recognizes that licensing board adoption of termination conditions agreed upon by an Applicant and the NRC Staff would be appropriate. Through its preparation of an environmental assessment, the Staff is developing conditions which it believes appropriate for a termination order. Under those circumstances, and absent any current recommendations by the Intervenor or the State of Michigan, we agree with the Staff that (insofar as the OL proceeding is concerned) we should defer action on CPC's Motion, pending preparation of the Staff's assessment and receipt of comments (if any) on that assessment by other parties (including CPC). We are adopting that course of action. Parties may file with us comments on the Staff's assessment within 30 days after service of such assessment.

III. OM PROCEEDING

The OM proceeding is a type of enforcement proceeding brought by the NRC Staff pursuant to 10 C.F.R. § 2.204. The Staff sought to amend the outstanding construction permits to incorporate certain remedial provisions for correcting onsite soils settlement conditions and the management activities which allegedly led to those conditions. The Modification Order, issued on December 6, 1979, would have become effective absent a request for a hearing by CPC. CPC in fact requested the hearing. The relief spelled out in the Modification Order is the maximum to which CPC could be subject in the OM proceeding. *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438 (1980). If CPC had not requested a hearing, that maximum relief would have been imposed. 10 C.F.R. § 2.204.

⁴ Copies of these questions have been provided to the Board and parties.

In our Memorandum and Order dated April 30, 1982, LBP-82-35, 15 NRC 1060, we put into effect, on an interim basis, certain of the relief sought under the Modification Order. On May 26, 1982, the construction permits were amended to incorporate (as Amendment No. 3) the conditions specified by LBP-82-35. Among other matters, those conditions required CPC to obtain Staff approval before undertaking soils-related construction activities. We left those conditions in effect in LBP-85-2, *supra*.

In seeking to terminate the OM proceeding, CPC indicates that, by letter to the Staff dated July 1, 1986 (copies of which were served upon us and the parties), it has requested withdrawal of its pending prior request for extensions of the construction completion dates set forth in its construction permits.⁵ (Because no hearing was requested with respect to the extensions, withdrawal of that application is within the jurisdiction of the Staff, not a licensing board.) CPC reasons that, when its withdrawal request is granted by the Staff, its construction permits will be deemed to have expired or lapsed; and that, since the only relief available in the OM proceeding is construction permit amendment, the lapse of the permits renders the OM proceeding moot. CPC asks us, upon notification by the Staff that CPC's withdrawal request has been granted, to terminate the OM proceeding as moot.

Inasmuch as the Staff was the party seeking the construction permit modification in the OM proceeding, and thus could provide insight as to whether the OM proceeding is truly moot, we posed a question to the parties in our July 16, 1986 Order, *supra*, inquiring whether CPC's Motion (with respect to the OM proceeding) might be regarded as a withdrawal of CPC's request for a hearing, thus resulting in an amendment of the construction permits (at least on a *pro forma* basis) to incorporate the terms sought by the Modification Order. In their responses, both CPC and the Staff oppose terminating the OM proceeding in that manner.

CPC asserts that enforced withdrawal of CPC's request for an OM hearing would be both inappropriate and potentially prejudicial to CPC. It stresses that we have already found in substance that there was an adequate basis for the Modification Order (Tr. 1174) and that, in LBP-82-35, *supra*, we granted all of the substantive relief sought by the Order (eliminating only some of the procedural provisions that we had found unnecessary). See LBP-85-2, *supra*, 21 NRC at 35. CPC stresses that the Order imposed as a result of LBP-82-35 (incorporated as Amendment 3 of the

⁵ That prior request, filed on September 11, 1984, sought to extend the completion dates of Units 1 and 2 from December 1, 1984, and July 1, 1984, respectively, to December 1, 1989, and July 1, 1989. Although the Staff has not acted on the request, the construction permits remain in effect pursuant to 10 C.F.R. § 2.109.

construction permits) has never been rescinded. On the other hand, CPC points out that there were facts alleged in the Modification Order which have not been covered by any stipulations and which have neither been admitted by CPC nor litigated; and that any *de facto* admission, which might attach to our placing the Modification Order fully into effect, might harm CPC in other fora in which proceedings are pending or might arise in the future.

For its part, the Staff finds no reason to require the issuance of an amendment to an expired or expiring permit. It states that CPC is not withdrawing its hearing request because it agrees with effectiveness of the enforcement order imposed by us in LBP-82-35. The Staff adds that we need not wait to terminate the OM proceeding until the Staff acts on CPC's request for withdrawal of the construction permit extensions. The Staff states that we may impose conditions subject to Staff review (and, presumably, Staff enforcement).

Given the Staff's acknowledgment (as the party initially seeking the effectiveness of the Modification Order) that it is no longer seeking further relief under that Order, and absent opposition by any party to the proposed dismissal, we regard the OM proceeding as moot. We are thus able to dismiss it at this time on that basis.

As for conditions, we note that a considerable amount of construction work was commenced, although not completed, to alleviate the soils conditions which gave rise to the Modification Order. As one example, the auxiliary building underpinning is only partially complete. We would expect the Staff to assure that partially completed structures would cause no danger to the public or to site users. For the imposition of such conditions at this stage of the OL proceeding, the Staff's (and our) authority in this regard stems from environmental responsibilities, not from public health and safety responsibilities under the Atomic Energy Act. Since our environmental responsibilities in the OL proceeding encompass these matters, our dismissal of the OM proceeding does not deprive us of jurisdiction to impose further conditions of this type, should they be warranted.

Finally, both CPC and the Staff have relied upon the continued effectiveness of the conditions included in Amendment 3 to the construction permits and imposed by virtue of LBP-82-35, *supra*, as a reason for not treating CPC's Motion as a withdrawal of its hearing request. At this point, we have no way of knowing whether CPC will receive necessary regulatory approvals to convert the Midland Plant to a combined-cycle gas-fired generating facility. We also are unsure whether CPC, if it should change its plans, could seek to resurrect its expired construction permits. Cf. *Texas Utilities Electric Co.* (Comanche Peak Steam Electric

Station, Unit 1), CLI-86-4, 23 NRC 113 (1986). In any event, we strongly believe that, if further construction under the construction permits were to take place, Amendment 3 should remain in effect. Our dismissal of the OM proceeding is conditioned on the continuing effectiveness of Amendment 3 to the extent further activities are undertaken under the construction permits.

For the reasons stated, and on the basis of the entire record, it is, this 26th day of September 1986,

ORDERED:

1. That the OM proceeding is *dismissed* as moot, subject to the condition set forth above.

2. That action on CPC's Motion seeking authorization to withdraw the OL application and dismissal of the OL proceeding is *deferred* pending preparation by the Staff, pursuant to 10 C.F.R. § 51.21, and consideration by this Board of an environmental assessment.

3. Parties shall have 30 days from the date of service of the Staff's environmental assessment to provide comments to us on that assessment. (At the Staff's request, we will permit the Staff to reply to any such comments.)

4. In accordance with 10 C.F.R. §§ 2.760, 2.762, 2.764, 2.785, and 2.786, insofar as this Order dismisses the OM proceeding, it shall become effective immediately and will constitute the final decision of the Commission thirty (30) days after issuance hereof, subject to any review pursuant to the above-cited Rules of Practice. Any party may take an appeal from the rulings applicable to the OM proceeding by filing a Notice of Appeal within ten (10) days after service of this Memorandum and Order. Each appellant must file a brief supporting its position on appeal within thirty (30) days after filing its Notice of Appeal (forty (40) days if the Staff is the appellant). Within thirty (30) days after the period has expired for the filing and service of the briefs of all appellants (forty (40) days in the case of the Staff), a party who is not an appellant may file a brief in support of, or in opposition to, any such appeal(s). A responding

party shall file a single, responsive brief *only*, regardless of the number of appellants' briefs filed.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Jerry Harbour
ADMINISTRATIVE JUDGE**

**Gustave A. Linenberger
ADMINISTRATIVE JUDGE**

**Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket Nos. 50-275
50-323

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

September 30, 1986

The Director of Nuclear Reactor Regulation denies a request by the Government Accountability Project, filed on behalf of Timothy J. O'Neill and James L. McDermott, that further licensing actions be deferred or the licenses be suspended for the Diablo Canyon facilities pending resolution of numerous allegations of inadequate design, construction, and management of the facilities and intimidation of personnel by Licensee management.

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

INTRODUCTION AND BACKGROUND

Thomas Devine of the Government Accountability Project (GAP), on behalf of Timothy J. O'Neill and James L. McDermott, filed a request on July 27, 1984, pursuant to 10 C.F.R. § 2.206 of the Commission's regulations, that the Nuclear Regulatory Commission (NRC) defer further licensing actions on the Diablo Canyon Nuclear Power Plant (Diablo Canyon, the Plant). Specifically, the Petitioners requested that the authorization of commercial operation of Unit 1 and further licensing actions on Unit 2 be deferred pending the completion of specific items for

which relief was requested. Supplemental documents were filed by the Petitioners on July 29, 30, and 31, 1984; an Amendment to the Petition was filed on November 16, 1984, and a Supplement to the Petition was filed on March 14, 1985. In accordance with the Commission's usual practice, the Petitioners' request was referred to the Staff for appropriate action. The bases for the requested actions are numerous allegations, contained in affidavits by individuals, relating to alleged inadequate design, construction, and management of Diablo Canyon, in particular with respect to quality assurance program implementation practices, alleged personnel intimidation by the Licensee management, and alleged improper investigation and evaluation of allegations by the NRC Staff.

On August 20, 1984, the Director, Office of Nuclear Reactor Regulation, issued an Interim Decision regarding the Petition of July 27, 1984. See DD-84-19, 20 NRC 773 (1984). The decision denied the aspects of the petition dealing with the requested deferral of any licensing action on Diablo Canyon, and stated that a final determination regarding the circumstances of the termination of the employment of Mr. O'Neill and Mr. McDermott with a contractor for the Pacific Gas and Electric Company (PG&E) would be made upon completion of investigations by the Office of Investigation (OI).

On January 11, 1985, the Director responded to the November 16, 1984 Amendment to the Petition and concluded that the Amendment did not reveal any new information necessitating a major reinvestigation of the Diablo Canyon plant or circumvention of the NRC's Region V office (this aspect was discussed in detail in a letter, dated September 24, 1984, from the NRC's Executive Director for Operations to Thomas Devine of GAP).

On April 16, 1985, the Director responded to the Supplement of March 15, 1985, to the Petition. In a letter dated May 15, 1985, the Director provided a status of the NRC's investigations, reviews, and evaluations of all allegations. The letter stated that allegations concerning improper conduct by the NRC Staff had been referred to the NRC's Office of Inspector and Auditor (OIA), allegations concerning harassment and intimidation of workers at the plant had been referred to the NRC's Office of Investigations (OI), and that the status of the Staff's evaluation of individual allegations, in particular the technical aspects, was documented in Supplement No. 28 (SSER-28) to the Staff's Safety Evaluation Report (NUREG-0675). In summary, the letter concluded that complete resolution of all allegations was not necessary prior to the licensing of Unit 2 and that there was no need for an immediate suspension of the Unit 1 operating license.

CONSIDERATION OF ALLEGATIONS IN DIABLO CANYON LICENSING

The Staff evaluation of allegations submitted by GAP and other sources since early 1983, including concerns regarding small- and large-bore piping and pipe supports, has been documented throughout the licensing process for Diablo Canyon Units 1 and 2 in the following Supplements (SSERs) to the Staff's Safety Evaluation Report (NUREG-0675): SSER-21 (December 1983), SSER-22 (March 1984), SSER-25 (July 1984), SSER-26 (July 1984), SSER-28 (August 1985), SSER-30 (April 1985), and SSER-33 (May 1986).

The NRC Staff briefed the Commission on the status of its evaluation of allegations prior to the Commission's decisions regarding the major licensing steps for Diablo Canyon Units 1 and 2. In its Memorandum and Order dated August 10, 1984, the Commission authorized issuance of a full-power license for Unit 1. *See* CLI-84-13, 20 NRC 267 (1984). The decision included the following considerations:

- (1) Regarding allegations on small- and large-bore piping and pipe supports, including license conditions resulting, in part, from concerns expressed by an NRC inspector, the Commission accepted the Staff and Advisory Committee on Reactor Safeguards (ACRS) conclusions that these matters had been adequately resolved for issuance of a full-power license.
- (2) Regarding more than 1400 allegations, including those that had been filed by petitions under § 2.206, the Commission determined that a full-power license need not be deferred pending the final resolution of outstanding allegations.
- (3) regarding allegations of harassment and intimidation, the Commission accepted the Staff's finding that there was no widespread pattern of purposeful harassment and intimidation; accepted the Staff's approach for continuing investigations by OI and OIA; and concluded that there was no need to defer the full-power decision.

The Unit 1 full-power license DPR-80 was issued on November 2, 1984.

On April 23, 1985, the Staff briefed the Commission on matters relating to the issuance of a low-power license for Unit 2, including allegations and their significance on low-power operation. The Staff concluded that none of them, received as of that date, were of such safety significance as to defer the proposed licensing action. The Commission, in its Memorandum and Order dated April 23, 1985 (unpublished), authorized

the issuance of the low-power license for Unit 2. The Unit 2 low-power license was issued on April 26, 1985.

On August 1, 1985, the Staff briefed the Commission on matters relating to the issuance of a full-power license for Unit 2, including allegations and their significance on full-power operation. The Staff concluded that none of them received as of that date were of such safety significance as to defer the proposed licensing action. The Commission, in its Memorandum and Order dated August 1, 1985, accepted the Staff's determination and authorized issuance of a full-power license for Unit 2. See CLI-85-14, 22 NRC 177 (1985). The Unit 2 full-power license was issued on August 26, 1985.

EVALUATION OF PETITION

The Commission found the Staff's evaluation acceptable, did not defer any licensing action on Diablo Canyon Units 1 and 2 pending any further evaluation, and authorized issuance of the licenses. With the issuance of SSER-33 in May 1986, the Staff's evaluation of the technical aspects of all allegations has been completed and documented in SER Supplements referenced above. The Staff has concluded that the technical concerns raised in the allegations have all been resolved and that no further action is required regarding the safety of the plant.

As documented in SSER-22, allegations of intimidation and harassment of workers at the plant were considered by the Staff. The Staff took specific action to assess whether these conditions were a widespread problem or concern at Diablo Canyon. The Staff effort on Diablo Canyon allegations involved several thousand Staff man-hours on site interfacing with hundreds of Licensee and contractor personnel at all levels, including specifically questioning about 250 site personnel regarding pressures to "cut corners," intimidation, harassment, or freedom to bring forth safety- and quality-related concerns. During the course of its resolution of these allegations over the past 3 years, the Staff did not detect an attitude to suppress employee concerns or corrupt the effectiveness of those controls the NRC depends upon to ensure quality and safety. The various technical concerns, including the concerns on quality control, that were raised by the allegor as a basis for intimidation and harassment, were reviewed and found to be either unsubstantiated or insignificant from a safety standpoint, as documented in SSER-33. The Office of Investigations has determined not to pursue these investigations based on the priority of other investigations, resources, and available information concerning the allegations. On the basis of all of the above, the Staff has

concluded that further action concerning the alleged intimidation and harassment is not warranted.

As stated in the SER Supplements cited above and as discussed at the various Commission briefings, certain concerns, related to alleged improper conduct by NRC Staff in its investigation and evaluation of allegations, had been referred to the NRC's Office of Inspector and Auditor. The Office conducted a review of the NRC's allegation management effort, including a detailed examination of the processing of allegations by the Staff and interviews with allegeders regarding the NRC Staff conduct. The Office concluded that while numerous problems were encountered in dealing with allegeders and processing their concerns, overall the NRC Staff did a credible job of managing the vast number of allegations. See (1) Report to the Commission, "Review of Allegations Management for Diablo Canyon," NRC Office of Inspector and Auditor, March 1986; and (2) Report of Investigation, "Diablo Canyon — Allegations of Misconduct by NRC Employees," NRC Office of Inspector and Auditor, October 21, 1985.¹ The Staff has concluded that these allegations do not pertain to the safety of the plant and do not provide a basis to take any licensing action.

In the Petition of July 27, 1984, the Petitioners requested investigations by an Inspector General at a government agency outside the NRC into the NRC Staff's handling of allegations. A request for such an investigation, particularly one for an investigation of internal NRC personnel matters, does not fall within the class of requests contemplated by § 2.206. See *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), DD-84-16, 20 NRC 161, 164 n.3 (1984). Section 2.206 contemplates requests to institute enforcement proceedings with respect to a license. These allegations; therefore, are not considered to be appropriate for a petition. In any event, as noted above, the NRC Office of Inspector and Auditor, which is similar to an Inspector General office, has reviewed Staff actions in this case.

CONCLUSION

The Petitioners base their request for relief on numerous allegations regarding inadequate and/or improper design, construction, and management of the Diablo Canyon plant, in particular with respect to quality assurance program implementation practices; alleged personnel intima-

¹ Both reports were enclosures to a letter, dated June 11, 1986, from Nunzio J. Palladino, Chairman, Nuclear Regulatory Commission, to Edward J. Markey, Chairman, Subcommittee on Energy Conservation and Power, Committee on Energy and Commerce, U.S. House of Representatives.

tion by the Licensee management; and alleged improper investigation and evaluation of allegations by the NRC Staff. The Staff has completed its evaluation of the technical aspects of all allegations and concludes that no issues remain unresolved which either individually or collectively require any licensing action on Unit 1 or Unit 2. The Staff did not detect any widespread company attitude, either deliberate or inadvertent, to suppress employee concerns by intimidation or harassment and concludes that the alleged harassment or intimidation circumstances do not collectively or individually require any license action for either Unit 1 or 2. The issues concerning alleged improper conduct by the Staff in its investigation and evaluation of allegations, while not considered to be appropriately the subject of a petition under § 2.206, have been reviewed; the Staff has concluded that none of the allegations pertain to the safety of the plant. Therefore, the Petitioner's request for specific relief to be taken prior to or subsequent to any licensing decision on Diablo Canyon Units 1 and 2 is *denied*. A copy of the Decision will be filed with the Secretary for the Commission's review in accordance with 10 C.F.R. § 2.206(c).

Richard H. Vollmer, Acting
Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland,
this 30th day of September 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. 40-8027-MLA

**SEQUOYAH FUELS
CORPORATION
(Sequoyah UF₆ to UF₄
Facility)**

October 3, 1986

The Commission declines to accept the presiding officer's recommendation to convert an ongoing, informal materials license adjudicatory proceeding into a formal, trial-type adjudication.

RULES OF PRACTICE: DUE PROCESS

Constitutional due process is not violated in a materials license amendment proceeding if there is no demonstration of specific health, safety, or environmental concerns that constitute a deprivation of liberty or property; the factual issues involved are of a technical nature and can be evaluated fully and fairly without a trial-type presentation; and additional procedures are unlikely to aid the factfinding process, but rather would create an increased government burden.

**RULES OF PRACTICE: HEARING REQUIREMENT
(MATERIALS LICENSE)**

Unlike the Commission's previous environmental regulations, 10 C.F.R. § 51.52(b)(1) (1983), the current environmental regulations contain

no direction about what type of hearing need be held for any Staff environmental finding regarding a materials licensing action. 10 C.F.R. § 51.104 (1986).

RULES OF PRACTICE: COMMISSION DISCRETION TO DIRECT PUBLIC PROCEEDINGS

The Commission sees no need to exercise its discretion under the public interest standards of 10 C.F.R. §§ 2.104(a) and 2.105(a)(7) and invoke formal procedures to govern a proceeding when the central factor that intervenors suggest compels the Commission to use a trial-type adjudication has little direct relevance to that proceeding.

ORDER

By memorandum to the Commission dated July 3, 1986, Administrative Judge John H Frye, III, the presiding officer for this informal adjudicatory proceeding, suggested that we convert the hearing into a formal, trial-type adjudication under the procedures set forth in 10 C.F.R. Part 2, Subpart G. Also before us are filings by Applicant Sequoyah Fuels Corporation ("SFC") and the NRC Staff asserting that a formal hearing is unnecessary and submissions by intervenors Environmental Action ("EA"), Carlisle Area Residents Association ("CARA"), and Citizens' Action for a Safe Environment ("CASE") supporting Judge Frye's suggestion that a formal proceeding be convened.

After reviewing Judge Frye's memorandum and the filings by SFC, the NRC Staff, and the three intervenor groups, the Commission has determined that, as a matter of law, a formal hearing is not required in this instance. Moreover, after carefully reviewing the circumstances of this case, the Commission declines again to exercise its discretion to apply its procedures governing formal adjudications to this particular licensing proceeding.

I. BACKGROUND

By order dated July 24, 1985 (unpublished), the Commission convened an informal adjudicatory proceeding to consider the hearing petitions of various groups and individuals who wished to challenge the SFC's request for an amendment to its existing nuclear source material license that would authorize it to operate a facility to convert uranium

hexafluoride (UF₆) to uranium tetrafluoride (UF₄). On January 4, 1986, a few days before the presiding officer was scheduled to conduct an oral hearing regarding the amendment request, an accident occurred at SFC's existing UF₆ production facility. When an overfilled UF₆ transportation cylinder was heated to remove the excess material, the cylinder ruptured and UF₆ was dispersed into the atmosphere. As a consequence of the reaction of the UF₆ with moisture in the atmosphere, hydrofluoric acid was released, which resulted in the death of one worker and injuries to other employees. In addition, this moisture reaction caused the release of uranyl fluoride that resulted in some small onsite and offsite radiological exposures.

Subsequently, concern over the accident caused several parties to the proceeding to file requests with the Commission and the presiding officer that a formal rather than an informal adjudicatory proceeding be convened to consider SFC's request to operate a UF₆ conversion facility. In response to the Commission's directive that all such motions be considered initially by the presiding officer, Judge Frye undertook an examination of whether to suggest that the Commission approve the use of additional procedures in the informal adjudicatory proceeding.¹

A. Presiding Officer's Memorandum

In his July 3 memorandum, Judge Frye concluded that a formal, Subpart G proceeding should be instituted with respect to SFC's UF₆ conversion facility application. According to Judge Frye, the circumstances of the January 1986 accident at the SFC facility converted what otherwise were "generalized" intervenor health, safety, and environmental concerns about the operation of the UF₆ conversion facility and thus not liberty or property interests subject to due process protections, *see City of West Chicago v. NRC*, 701 F.2d 632, 645 (7th Cir. 1983), into "specific" concerns that must be afforded such protection. Further, Judge Frye stated, a formal hearing is necessary to protect these interests because in addition to disputes over technical matters, the issues that must be addressed involve factual disputes over management competence and effectiveness that are most susceptible to appropriate resolution through the use of formal, trial-type procedures such as cross-examination of witnesses by the parties.

¹ In its July 24, 1985 order convening this proceeding, the Commission provided that

[i]f . . . the presiding officer believes that additional procedures are necessary to ensure the full development of the agency record or to resolve any material factual issues that could not be resolved through the procedures set forth in this order, he should seek authority from the Commission to implement any additional procedures.

Order at 5.

Judge Frye also asserted that, in contrast to the *West Chicago* proceeding, significant safety issues were involved in this instance, including the demonstrated hazard of handling UF₆ with the possibility of offsite consequences, the similarities between the processes employed at the proposed UF₆ conversion facility, and the existing UF₆ production facility, and the fact that the same management organization will operate both facilities. In addition, Judge Frye declared, the Commission's prior practice, as evidenced by its unpublished order providing for a formal hearing on the decommissioning of Kerr-McGee's West Chicago site, *Kerr-McGee Chemical Corp.* (West Chicago Rare Earths Facility), No. 40-2061 (Comm. Nov. 3, 1983), provided clear authority for the institution of a formal proceeding in this instance. Finally, Judge Frye stated that institution of a formal proceeding in this instance would not create a precedent that would overtax agency resources since there is only one other facility of this type to which the precedent would apply. Thus, he concluded, special circumstances existed in this instance sufficient to cause him to recommend to the Commission that a formal hearing be provided on the licensing of the UF₆ facility.

B. SFC's Response

In a response dated July 15, 1986, SFC questioned the bases for Judge Frye's conclusions. The presiding officer's concerns about the similarity of the operations at the existing UF₆ production facility and at the proposed UF₆ conversion facility are misplaced, SFC declared. According to SFC, the process at the UF₆ conversion facility involves only unloading UF₆ cylinders filled and weighed twice by the Department of Energy rather than filling cylinders, the operation that resulted in the January 1986 accident, and the proposed heating process for unloading the UF₆ at the conversion facility is substantially different from the operation that resulted in the cylinder rupture at the production facility. Moreover, SFC asserted, the various concerns raised by intervenors relating to the operation of the UF₆ conversion facility are technical in nature such that they can be dealt with in the context of an informal adjudicatory proceeding.

Also unfounded, SFC contended, is the presiding officer's suggestion that threat of offsite consequences required that a formal hearing be instituted. According to SFC, if the threat of offsite consequences is to be a bellwether factor in determining whether to convene a formal hearing, informal hearings will never be held. This is so, SFC declares, because intervenor standing in licensing cases also rests in large part on the issue of offsite accident consequences. If the presiding officer's analysis pre-

vails, SFC asserts, a formal hearing will be required any time an intervenor can establish it has standing with respect to a proposed licensing action.

Finally, in challenging the presiding officer's recommendation, SFC stated that the intervenor allegations concerning management competence did not require a formal hearing because they were neither substantial nor concrete; that the presiding officer's reliance on the accident as a basis for convening a formal hearing is a departure from the procedures he previously established under which he had not yet concluded to what extent the accident was relevant to the UF₆ conversion facility proceeding; and that the presiding officer did not consider the national security and economic consequences of his recommendation. Consideration of these points, SFC declared, also mandated that Judge Frye's recommendation be rejected.

C. NRC Staff Response

Following receipt of the SFC response, by memorandum dated July 25, 1986, the Office of the General Counsel invited the NRC Staff, which is not a party to this proceeding, to present its views concerning Judge Frye's recommendation and the SFC response. In its filing dated July 28, 1986, the Staff questioned the technical basis for Judge Frye's recommendation, also stating that the procedure for heating cylinders for the UF₆ conversion facility is very different from the one used at the UF₆ production facility at the time of the accident and that the possibility of overfilling a cylinder, the event that precipitated the accident, was not present because the cylinders would be received full and would be unloaded.

The NRC Staff also declared that Judge Frye's reliance on the Commission's unpublished *West Chicago* decision was misplaced because that decision rested upon a Staff finding that decommissioning of the West Chicago facility was a major federal action triggering the need for an environmental impact statement. In this instance, the Staff noted, it has concluded after conducting an environmental assessment that no significant impact is involved so that no environmental impact statement is needed, thereby distinguishing this case from that *West Chicago* decision.

D. Intervenor Responses

By filings dated August 4, 1986, intervenors EA, CARA, and CASE responded to the filings by SFC and the NRC Staff. EA asserted that SFC's and the NRC Staff's discussions of the differences between the

UF₆ production facility and the UF₆ conversion facility are irrelevant since SFC management competence, the most important facet of safe plant operation, is a matter applicable to both operations and is best explored in the context of a formal adjudication. EA further stated that formal discovery procedures are necessary in order for intervenors to be able to have access to all materials that form the basis for SFC's authorization request. In addition, EA questioned the NRC Staff's attempt to distinguish the Commission's *West Chicago* decommissioning decision on the basis that it involved an unpublished opinion that cannot be used as precedent. Also without merit, EA concluded, are SFC's attempts to rely on construction costs and national security as reasons for an informal hearing as well as SFC's objection to Judge Frye's reliance upon the accident as cause for a formal hearing prior to receiving both SFC's and the Staff's analysis of the accident's implications for the informal proceeding. Finally, EA suggested, due process considerations require a formal hearing since serious safety questions are involved and since instituting a formal hearing will not overtax agency resources.

In its responsive filing, CASE likewise contested SFC's reliance upon national security and construction costs and its suggestion that Judge Frye should not rely on the accident as a basis for recommending a formal hearing. CASE also challenged the NRC Staff's technical basis for distinguishing the UF₆ production facility from the UF₆ conversion facility and notes that the central issue of management competence and integrity is applicable to both facilities. In addition, CASE asserted that discovery is necessary to allow it to have access to the information that SFC relies upon to support its application and that cross-examination is necessary to develop fully the record on factual disputes. A formal proceeding also is mandated by due process and public interest considerations, according to CASE, because of the specific private interests involved in this instance and the threat of offsite consequences from facility operation.

CARA, echoing the positions taken by EA and CASE, submitted that the issue of management competence is an important one requiring consideration in a formal proceeding.

II. ANALYSIS

The central question before the Commission is whether, as a result of the January 1986 accident, circumstances now exist with respect to SFC's application to operate a UF₆ conversion facility that counsel that the procedures for conducting a formal adjudicatory proceeding found in

10 C.F.R. Part 2, Subpart G, should be used in the proceeding convened to consider SFC's amendment request. We appreciate the effort and attention directed to the question by the parties and the NRC Staff, and we are especially appreciative of Judge Frye's thoughtful analysis. But, after reviewing Judge Frye's recommendation and the filings from SFC, the NRC Staff, and intervenors EA, CASE, and CARA, we have concluded that neither due process, prior Commission practice, nor the public interest requires that the hearing be conducted in accordance with Subpart G procedures.

A. Due Process Considerations

The Atomic Energy Act does not in itself mandate formal, trial-type hearings in cases of this type. *City of West Chicago v. NRC*, 701 F.2d 632, 641-45 (7th Cir. 1983). Nonetheless, the submissions before the Commission assert that formal hearings are required in this instance as a matter of constitutional due process. A party's due process entitlement to a hearing concerning a proposed government action and the type of hearing to which the party is entitled are governed by a balancing of three distinct factors: first, the private interest affected by the official action; second, the probable value, if any, of additional or substitute procedural safeguards; and third, the Government's interest, including the function involved and the fiscal and administrative burdens that additional or substitute procedural requirements would entail. *Mathews v. Eldridge*, 424 U.S. 319, 335 (1976). In its previous decision in *Kerr-McGee Corp.* (West Chicago Rare Earths Facility), CLI-82-2, 15 NRC 232 (1982), *aff'd*, *City of West Chicago v. NRC*, 701 F.2d 632 (7th Cir. 1983), the Commission balanced these factors and declared that for materials licensing cases, hearings using the formal adjudicatory procedures set forth in Subpart G of Part 2 were not warranted. After reviewing these factors in this case, we fail to find any basis for reaching a different conclusion.

As to the first factor, the judicial recognition in *West Chicago*, 701 F.2d at 645, that "generalized health, safety and environmental concerns do not constitute liberty or property subject to due process protection" has been labeled by the presiding officer and the intervening parties as no longer applicable. They assert the January 1986 accident has made the concerns being expressed about safe operation of the SFC UF₆ conversion facility sufficiently real and specific to make them liberty or property interests subject to due process protection. We cannot agree.

The accident undoubtedly has sharpened the focus of intervenor concerns; however, it has not converted those concerns into constitutionally protected interests. Intervenors' questions about the proper management

and operation of the UF₆ conversion facility are vastly different from claims that favorable agency action on the SFC application would result in property located near the facility being taken or the use of it so drastically regulated as to destroy its value, the type of deprivation that might qualify for due process protection. See *BAM Historic District Association v. Koch*, 723 F.2d 233, 237 (2d Cir. 1983). Similarly, we are unable to conclude that any asserted right to a "freedom" from plant operation, which intervenors complain may have detrimental impacts upon the quality of the local environment, is a "liberty" interest subject to constitutional due process protections. See *id.*² It thus remains doubtful that intervenors have demonstrated any private interests that merit constitutional due process protection so as to provide any right to hearing procedures beyond those afforded by the Commission under § 189a of the Atomic Energy Act, 42 U.S.C. § 2239(a).³

Intervenors' assertions of a due process right to a hearing with formal, trial-type procedures fair little better under the second factor in the *Mathews v. Eldridge* balance — the probable value of additional procedural safeguards. The parties dispute the extent to which the various operational processes of the UF₆ production facility and the UF₆ conversion facility are similar so as to raise safety concerns after the January 1986 accident that require a formal hearing for resolution. However, as was suggested in the Commission's *West Chicago* decision, 15 NRC at 259-60, such questions about the adequacy of operational procedures and equipment are largely technical questions, the resolution of which lie in engineering and scientific submissions that can be evaluated fully and fairly without a trial-type presentation. This same analysis applies to concerns about the competence of management to operate a facility in a manner that protects the public health and safety. The question of management competence as a barometer for measuring the likelihood of safe

² In *BAM Historical Dist. Ass'n v. Koch*, the U.S. Court of Appeals for the Second Circuit, after concluding that no constitutional property or liberty interests were implicated by a city plan to locate a shelter for the homeless in the complainants' neighborhood, declared that due process does not impose either an Administrative Procedure Act to regulate every governmental action nor an Environmental Policy Act to regulate those governmental actions that may affect the quality of neighborhood life. Whether notice and hearing procedures should be instituted to broaden public participation in governmental decisions of the sort challenged in this case remains a matter for consideration by . . . legislative bodies.

723 F.2d at 237.

³ Under § 189a, intervenors with standing and litigable contentions do have a statutory right to a hearing with respect to SFC's licensing proposal. However, as the Supreme Court noted in *Olim v. Wakinekona*, 461 U.S. 238, 250 n.12 (1983), "an expectation of receiving process is not, without more, a liberty interest protected by the Due Process Clause."

It should be added that under the Supreme Court's ruling in *O'Bannon v. Town Court Nursing Center*, 447 U.S. 773 (1980), as discussed in the Commission's *West Chicago* decision, 15 NRC at 257-58, there also appears to be no deprivation of due process interests involved in this instance since the fifth amendment's protections do not apply to the indirect adverse effects of governmental action.

facility operation, while not a classic scientific or engineering issue, nonetheless is a matter that generally involves the agency's technical judgment about the adequacy of the structure and qualifications of applicant's management as it impacts upon the applicant's ability to conduct its proposed activities in compliance with regulatory requirements for the protection of the public health and safety.⁴ Thus, with regard to intervenor challenges either to the operational and hardware aspects of the SFC application or to the general competence of SFC's management organization to conduct operations properly, we find that providing for additional, trial-type procedures such as oral cross-examination will not add appreciably to the factfinding process.⁵

Looking finally to the factor of administrative burden, we cannot accept the presiding officer's assertion that convening a formal hearing will not add appreciably to the administrative burden involved in conducting the necessary adjudicatory proceedings. Judge Frye is correct that there are only two UF₆ production facilities and two UF₆ conversion facilities; however, his conclusion that this demonstrates there will be little administrative burden in providing formal hearings overlooks the obvious. To whatever extent the distinctions between one materials license and another is of any relevance in determining what process is due,⁶ we see little basis for distinguishing this facility from the other fifty

⁴ As the Supreme Court stated in *Mathews v. Eldridge*, 424 U.S. at 344, "due process rules are shaped by the risk of error inherent in the truth finding process as applied to the generality of cases, not the rare exceptions." Our ruling on the due process implications of intervenors' assertions concerning technical and management competence issues is based on our assessment of the appropriate procedures for consideration of such issues in the overwhelming majority of cases. The procedural implications of the circumstances of a particular case are most appropriately given consideration under the public interest standard of 10 C.F.R. §§ 2.104(a), 2.105(a)(7).

⁵ In so stating, the Commission notes that applicant SFC has a continuing duty to keep its application up to date in terms of the documentation upon which it bases its request for licensing action and to see that any application changes are made available to the parties to this adjudication in whatever manner the presiding officer may direct.

With respect to appropriate informal procedures, the Commission also notes, as was recognized in the presiding officer's November 1985 order establishing hearing procedures for this case, *Sequoyah Fuels Corp.* (Sequoyah Facility), No. 40-8027-MLA, slip op. at 18-19 (Admin. Judge Nov. 5, 1985), and the more recent order of the presiding officer in the informal proceeding relating to a Babcock and Wilcox facility, *Babcock & Wilcox* (Parks Township, Pennsylvania, Volume Reduction Facility), LBP-86-19, 23 NRC 825, 842 (1986), that traditional trial-type cross-examination by the parties generally is not allowed under the procedures governing oral presentations in informal proceedings. Instead, the parties are permitted at appropriate times to suggest questions relating to a witness' prefiled and later supplemental oral testimony. Thereafter, it is in the presiding officer's discretion to pose or allow the sponsoring party to pose any of those questions the presiding officer finds appropriate. Of course, the presiding officer also has the authority to act *sua sponte* to request whatever information and pose whatever questions he or she finds appropriate.

⁶ In fact, the Commission's determination regarding the public interest seemingly provides the appropriate means of considering the procedural implications of such distinctions.

or so major fuel cycle facilities currently subject to NRC licensing authority that arguably would be subject to due process protections if the intervenors' assertions of liberty or property rights are accepted. This, in turn, creates the likelihood of numerous licensing actions subject to formal hearings with the same possibility for extra cost and delay in each proceeding that was of concern to the Commission in the *West Chicago* decision. 15 NRC at 261-62. We find that the validity of our conclusion in that instance — that there is a substantial governmental interest in being able to conduct informal hearings in materials licensing cases — is not in any way negated by the circumstances here.

Thus, after considering the factors in the Supreme Court's due process analysis, we have determined that as a matter of law the informal procedures afforded intervenors under § 189a gave them all the process they are due.

B. Prior Commission Practice

In his memorandum, Judge Frye declares that the Commission's unpublished order convening a formal adjudication to consider hearing requests relative to the decommissioning of the Kerr-McGee's West Chicago thorium ore milling facility provides a "clear parallel" for similar action in this instance. We find that Judge Frye's reliance on the Commission's unpublished West Chicago decommissioning decision is misplaced.

As the NRC Staff points out, the basis for that decision was the agency's since-amended environmental regulation, 10 C.F.R. § 51.52(b)(1) (1983), that required a formal hearing with respect to any proposed materials licensing action for which an environmental impact statement was prepared. In contrast to the *West Chicago* case, the NRC Staff in this instance has determined that no impact statement need be prepared. Further, unlike the previous environmental regulations, the current regulations contain no direction about what type of hearing need be held for any Staff environmental finding regarding a materials licensing action. Compare 10 C.F.R. § 51.52(b)(1), (d) (parties to licensing proceeding may take position on environmental matters in accordance with Part 2, Subpart G) with 10 C.F.R. § 51.104 (1986) (parties to licensing proceeding may take position on environmental matters in accordance with provisions of Part 2 applicable to that proceeding or in accordance with the notice of hearing). Thus, that decision has no relevance to the instant situation.

C. Public Interest Considerations

Intervenors also have insisted that, due process considerations aside, the Commission should exercise its discretion under 10 C.F.R. §§ 2.104(a), 2.105(a)(7), to convene a formal proceeding in this instance. After considering the matter carefully, we have determined it would be inappropriate to do so.

The central factor that intervenors suggest compels the Commission to use a trial-type adjudication — the circumstances of the January 1986 accident at the SFC UF₆ production facility — has little direct relevance to this UF₆ conversion facility proceeding. As both SFC and the NRC Staff point out, the operational aspects of the UF₆ conversion facility are markedly different from those used at the UF₆ production facility at the time of the incident. Moreover, to the extent there are issues about the technical aspects of the conversion facility's operations or hardware or about management competence that arise from the circumstances of the accident, as we indicated earlier those can be adequately dealt with through the use of informal procedures that will not engender the delay and additional expense for all parties and the agency that may result from the imposition of formal procedures. As such, we see no need to invoke Subpart G's procedures to govern the entire proceeding.

Accordingly, for the reasons stated in this order, the presiding officer's recommendation that a formal adjudicatory hearing under 10 C.F.R. Part 2, Subpart G, be convened with respect to this proceeding is not accepted.⁷

⁷ We note that, on the basis of prior practice in this proceeding, the Commission can anticipate, although it does not necessarily invite, any number of "Motions to Reconsider" this decision. Such motions must be filed within 10 days of the date of this decision. Under no circumstances should the filing of any such motion be considered grounds for the presiding officer to delay further proceedings in either the UF₆ conversion proceeding or the waste disposal proceeding.

Commissioner Asselstine disapproved this order. Commissioner Bernthal disapproved it in part. Both have additional views which are attached.

It is so ORDERED.

For the Commission⁸

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 3rd day of October 1986.

SEPARATE VIEWS OF COMMISSIONER ASSELSTINE

I do not agree with the Commission's Order. I would have found that, in the unique circumstances of this case, the public interest would be best served by applying formal hearing procedures to the litigation of the pending hearing requests.

VIEWS OF COMMISSIONER BERNTHAL

I agree with the majority that there is no legal requirement that a formal adjudicatory hearing be convened in this matter. However, as a policy matter, I would not have dismissed out of hand the possibility that there might be one or more issues deserving consideration in a more formal context.

I would therefore have required the intervenors to demonstrate, as a threshold matter, that there are genuine issues of material fact regarding the relationship of the January 4 accident and the proposed new conversion facility. A formal hearing should have been convened on any issue for which the appropriate threshold requirement was met.

⁸ Chairman Zech was absent for the affirmation of this item. If he had been present he would have approved it. In order to allow the will of the majority to prevail, Commissioner Asselstine did not participate in the affirmation session.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket Nos. 50-352
50-353

**PHILADELPHIA ELECTRIC
COMPANY**

**(Limerick Generating Station,
Units 1 and 2)**

October 16, 1986

The Commission vacates ALAB-840 (24 NRC 54 (1986)) in which the Appeal Board denied Intervenors' motion to disqualify Licensee's counsel and to reopen the record on offsite emergency planning. The Commission concludes that the Appeal Board lacked jurisdiction to address the merits of the motion. The Commission further rules that the criteria required to reopen the record have not been satisfied and that Petitioners have not demonstrated disqualification of counsel is warranted. Accordingly, it denies Intervenors' motion.

APPEAL BOARD: JURISDICTION

Where the Appeal Board has issued its opinion on a contention, it lacks jurisdiction to consider a subsequently filed motion seeking relief based on allegations that the process leading to the Appeal Board ruling was tainted. Only the Commission has jurisdiction to rule on the motion under those circumstances.

RULES OF PRACTICE: *EX PARTE* COMMUNICATIONS

Under 10 C.F.R. § 2.780(c) if an *ex parte* filing is received by an adjudicatory official, the normal remedy is to serve the document on the other parties to the proceeding. In cases where there have been egregious *ex parte* communications, sanctions against a party, or its representative, may be imposed under 10 C.F.R. § 2.713, or an order to show cause under 5 U.S.C. § 557(d)(1)(D) may be issued directing the party to explain why its party's claim or interest in the proceeding should not be denied or otherwise adversely affected.

MEMORANDUM AND ORDER

I. BACKGROUND

On June 25, 1986, Robert L. Anthony and Friends of the Earth ("Anthony/FOE") filed a motion with both the Commission and the Atomic Safety and Licensing Appeal Board ("Appeal Board") requesting that (1) the law firm of Conner and Wetterhahn be barred from further representation of Philadelphia Electric Company ("PECo") in this proceeding; and (2) the record on offsite emergency planning be reopened, and a new record developed to replace the existing record on that subject.

Anthony/FOE argued that this relief was required because the Appeal Board's and Commission's consideration of offsite emergency planning issues had been tainted as a result of the Washington Legal Foundation's submission to the NRC of a "working paper" entitled "Offsite Emergency Planning for Nuclear Power Plants: A Case of Governmental Gridlock." That document had been prepared for the Washington Legal Foundation by Robert M. Rader, an attorney in the law firm of Conner and Wetterhahn and one of the counsel for PECO in this proceeding. In the working paper, Rader expressed views critical of NRC's emergency planning requirements for nuclear power plants, and specifically addressed issues related to the NRC's treatment of offsite planning for the Limerick facilities.

Anthony/FOE claimed that the views set forth in the working paper reflected PECO's views and that the company had not disassociated itself from the submission of the paper. Petitioners argued that under the circumstances the submission of the paper to the NRC constituted an *ex parte* communication aimed at "putting unethical and prejudicial pressure on the Commission and the NRC licensing hearing and appeal process, outside of NRC regulations and the record." Petitioners argued that the

appropriate remedy for this alleged misconduct is to disqualify the law firm and generate a new record on offsite emergency planning.

In ALAB-840, 24 NRC 54 (1986), the Appeal Board addressed the motion. In response to PECO's challenge to its jurisdiction to rule on the filing, the Appeal Board found that it had jurisdiction to rule on the requested disqualification of the law firm and on whether its appellate review had been tainted by the submission of the working paper. It held that it lacked jurisdiction to rule on whether the Commission's process had been tainted. The Appeal Board left that issue for the Commission to resolve. It then rejected those claims of Anthony/FOE over which it had jurisdiction.

Anthony/FOE petitioned the Commission to review ALAB-840 arguing that the Appeal Board erroneously rejected their arguments. PECO, while continuing to argue that the Appeal Board did not have jurisdiction to rule on the motion, agrees with the Appeal Board's rejection of Petitioners' claims. It requests that the Commission vacate the decision as an unwarranted exercise of Appeal Board authority. The NRC Staff suggests that the only action required is the denial of the petition for review.

II. JURISDICTION

The Commission has concluded that the Appeal Board did not have jurisdiction to rule on the Anthony/FOE motion. In ALAB-840 the Appeal Board recognized that its jurisdiction over most offsite emergency planning issues had passed to the Commission with the issuance of ALAB-836, 23 NRC 479 (1986), a decision that addressed all offsite emergency planning issues except those relating to the State Correctional Institution at Graterford ("Graterford"). The Appeal Board noted that while it still had jurisdiction over the issues relating to Graterford, as well as the school bus driver availability issue remanded to the Licensing Board in ALAB-836, none of those issues was the subject of the Anthony/FOE allegations. The Appeal Board did not rely on its authority on these unrelated matters as grounds for jurisdiction over the motion.

The Appeal Board instead based its jurisdiction on a novel theory. It found that the thrust of Anthony/FOE's motion challenged the process that led to the Appeal Board's issuance of ALAB-836. Anthony/FOE maintain that the submission of the Washington Legal Foundation working paper somehow compromised that process. The Appeal Board asserted that:

Where a question has been raised about the integrity of the decisionmaking process, the decisionmaker necessarily retains residual power to address such matter when requested, notwithstanding that jurisdiction over the underlying substantive claims themselves now lies elsewhere. *Cf. Massachusetts Bay Telecasters, Inc. v. Federal Communications Commission*, 261 F.2d 55, 67 (D.C. Cir. 1958), *modified on other grounds*, 295 F.2d 131, *cert. denied*, 366 U.S. 918 (1961) (decisionmaker itself should determine initially questions concerning improper influence on its decisions). Hence, to the extent that Anthony/FOE's petition suggests a taint on the process that resulted in the issuance of ALAB-836, we do indeed have jurisdiction to address the petition.

24 NRC at 58-59 (footnote omitted).

The Commission does not agree with the Appeal Board's analysis of the jurisdictional issue. There is no support for it in NRC case law and we are unaware of any federal judicial decision that would support such an approach. *Massachusetts Bay Telecasters* cited by the Appeal Board is not persuasive authority. In that case, information relating to possible *ex parte* communications came to light while review of the agency decision was pending before the court. The court referred the matter back to the Federal Communications Commission because it desired the agency's expert views before ruling, not because the agency retained inherent residual power to rule on the allegation. That is an entirely different situation than that presented in the instant case.

Accordingly, the Appeal Board did not have jurisdiction to rule on the motion to reopen the record. Therefore, the Commission is vacating ALAB-840 and will now address the merits of the Anthony/FOE motion.

III. MOTION TO DISQUALIFY COUNSEL

The thrust of Intervenor's disqualification request is that the submission of the Washington Legal Foundation working paper to the Commission constituted an improper *ex parte* contact implicitly sanctioned by PECO. The alleged purpose of the communication according to Intervenor was to put "unethical and prejudicial pressure on the Commission and the NRC licensing hearing and appeal process, outside of the NRC regulations and the record."

Disqualification of counsel generally is a remedy imposed only in extraordinary circumstances. Based on our review of the record, disqualification of Conner and Wetterhahn is not warranted. First, based on the existing record it is not possible to determine whether the submission of the working paper to the NRC by the Washington Legal Foundation constitutes an *ex parte* communication. That organization is not a party

to this proceeding and conceivably it might not be covered by the *ex parte* rules here because it may not be an "interested person."¹

Even if the submission were to be considered an *ex parte* communication, disqualification would not be warranted. Under the Commission's regulation, 10 C.F.R. § 2.780(c), if an *ex parte* filing is received by an adjudicatory official, the normal remedy is to serve the document on the other parties to the proceeding. This was done here.

In egregious cases, sanctions against a party or its representative could be imposed under 10 C.F.R. § 2.713 if the Commission found that the party submitting the *ex parte* communication is "guilty of disorderly, disruptive, or contemptuous conduct." The Commission under 5 U.S.C. § 557(d)(1)(D) could also require the party to show cause why its claim or interest in the proceeding should not be denied or otherwise adversely affected because of an *ex parte* communication. We decline here to impose such sanctions. Petitioners have merely asserted generalized allegations that the appellate process has been "prejudiced hopelessly" by the "unethical pressure" and "destructive tactics" of PECO's counsel. However, they have made no attempt to demonstrate how rulings of the Appeal Board or the Commission on specified issues could have been prejudiced by the submission of the working paper. Indeed, the Appeal Board specially noted that it did not receive the working paper until after it had issued ALAB-836, the decision in question. ALAB-840, 24 NRC at 62. Although the Commission had the working paper during the period it was considering whether to take review of ALAB-836, the Commission did not rely on the document in evaluating that Appeal Board decision. Under the circumstances, we are denying the motion to disqualify counsel.

IV. MOTION TO REOPEN THE RECORD

The Commission's recently promulgated regulation, 10 C.F.R. § 2.734, sets forth the criteria applied by the Commission in ruling upon motions to reopen a record. Those criteria are: (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; and (3) the motion must demonstrate that a materially different result would be or

¹ 5 U.S.C. § 557(d)(1)(A) provides that the ban against submitting "*ex parte* communications applies to an interested person outside the agency."

would have been likely had the newly proffered evidence been considered initially.²

Here there is no doubt that the motion was timely filed. The Washington Legal Foundation working paper was served on the parties to the Limerick proceeding on June 2, 1986. The motion to reopen was filed on June 25, 1986. The other criteria, however, have not been met and therefore the Commission is denying the motion to reopen the record.

Petitioners have not raised a significant safety or environmental issue because they have not demonstrated how the working paper rendered the present offsite emergency plans unworkable or how the working paper has adversely affected plant safety. In the absence of such a showing, Petitioners have failed to demonstrate that the working paper contains new information that would have likely caused the NRC adjudicatory tribunals to reach a materially different result.

Finally, the courts have made clear that the submission of an *ex parte* communication does not automatically require vacating an agency decision. In making the determination whether its decisionmaking process had been irrevocably tainted by the *ex parte* communication so as to make the ultimate judgment of the agency unfair, several factors are to be evaluated. These include the gravity of the *ex parte* communication, whether the contacts could have influenced the agency's decision, whether the party making the contacts benefited from the agency's final decision, whether the contents of the communications were known to the other parties to the proceeding, and whether vacation of the agency's decision would serve a useful purpose. *Professional Air Traffic Controllers Organization v. Federal Labor Relations Authority*, 685 F.2d 547, 564-65 (D.C. Cir. 1982).

As noted previously, it is questionable whether the Washington Legal Foundation's submission is an *ex parte* communication. In any event it was served on the other parties to the proceeding and there has been no showing that the document influenced the agency's decisions on offsite emergency planning or that PECO benefited from the submission. Moreover, Anthony/FOE have not demonstrated that reopening the record would be useful for they have not shown that a new proceeding would produce significant new information on the offsite emergency planning contentions litigated in this proceeding. Thus, the motion to reopen is denied.

² Although this regulation was not in effect at the time the Anthony/FOE motion to reopen the record was filed, it is being applied here because its use will not prejudice any party. See *Bradley v. Richmond School Board*, 416 U.S. 696, 711 (1974). Also the new regulation essentially codified agency case law.

Commissioner Carr participated in §§ I and II. He did not participate in §§ III and IV because he was not a member of the Commission at the time it considered whether to take review of ALAB-836.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 16th day of October 1986.

SEPARATE VIEWS OF COMMISSIONER ASSELSTINE

I agree with those portions of the Commission's Order that dispose of the motion to disqualify counsel and the motion to reopen the record. However, I believe that the Appeal Board had jurisdiction to consider the Anthony/FOE motion. I do not, therefore, join in that portion of the Commission's Order that decides the jurisdiction issue.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. 40-8027-MLA

**SEQUOYAH FUELS
CORPORATION
(UFG Production Facility)**

October 30, 1986

The Commission denies petitions by several groups and individuals for a hearing on an order of the NRC Office of Inspection and Enforcement which modifies the existing license for the facility, but which does not authorize restart, on the ground that the petitions present concerns outside the scope of the proceedings as defined by the enforcement order.

ATOMIC ENERGY ACT: HEARINGS (ENFORCEMENT ACTION)

The Commission acts well within the range of discretion afforded it by § 189a of the Atomic Energy Act in declining to afford a hearing with respect to an enforcement order on issues relating to the adequacy of the order to address any perceived problems or relating to the implementation of the order's terms. *Bellotti v. NRC*, 725 F.2d 1380 (D.C. Cir. 1982).

ENFORCEMENT ACTIONS: SCOPE OF PROCEEDINGS

The Commission may limit the issues in enforcement proceedings to whether the requirements imposed in an enforcement order are supported by the factual findings made in the order.

ENFORCEMENT ACTIONS: SURVEILLANCE OF FACILITY OPERATIONS (UNLICENSED THIRD PARTY)

Under the terms of an enforcement order providing that an independent third-party organization can make operational recommendations to the licensee, which retains full responsibility for safe facility operation, the organization, in performing surveillance and inspection functions with residual power to halt operations if it finds health and safety problems, does not take operational control over the facility or require licensing by the agency.

ORDER

Pending before the Commission is the October 16, 1986 petition of Environmental Action of Tulsa, Carlisle Area Residents Association, National Water Center, Citizens' Action for a Safe Environment, Barbara Synar, Charles Gourd, and Ed Henshaw ("Joint Petitioners") and the October 23, 1986 petition of Native Americans for a Clean Environment Client Council ("NACE"). Both petitions request a hearing relative to an October 2, 1986 agency enforcement order regarding the Sequoyah Fuels Corporation ("SFC") uranium hexafluoride (" UF_6 ") production facility near Gore, Oklahoma. By filings dated October 21 and October 28, 1986, SFC and the NRC Staff responded to the hearing requests, arguing in their submissions that neither Joint Petitioners nor NACE is entitled to a hearing under the terms of the order because they will not be adversely affected if the order is sustained. For the reasons set forth in this Order, the Commission has determined that, on the basis of the matters Joint Petitioners and NACE seek to raise with respect to the October 2 order, they indeed are not adversely affected by the terms of the order and therefore do not present claims that are subject to adjudication under § 189a of the Atomic Energy Act, 42 U.S.C. § 2239(a). The Commission also finds that a discretionary hearing is not appropriate in this instance. The hearing requests of Joint Petitioners and NACE thus are denied.

I. BACKGROUND

Shortly before noon on January 4, 1986, an accident occurred at SFC's UF_6 production facility when an overfilled UF_6 transportation cylinder was heated to remove the excess material, causing it to rupture and disperse UF_6 into the atmosphere. Moisture in the atmosphere reacted with the UF_6 , which caused the formation of hydrofluoric acid.

Exposure to this corrosive substance resulted in the death of one worker and injury to several other employees. In addition, the release of uranium compounds led to some small onsite and offsite radiological exposures.

By the evening of January 4, the first members of an NRC investigation team were at the SFC facility and, in coordination with other federal and state agencies, began investigations that continued over the next several months in an effort to discover the cause of the accident and assess the accident's health and safety consequences. By letter dated January 9, 1986, SFC agreed to suspend operations at the facility and not to restart the facility without the concurrence of the NRC. This and a number of other commitments were incorporated in a January 17, 1986 Confirmation of Action letter from the NRC Region IV Administrator to SFC that reiterated SFC's voluntary agreement not to operate the SFC facility until such time as the agency gave its concurrence. As a result, the agency did not find it necessary to take immediate action by means of a formal enforcement order under 10 C.F.R. § 2.202 to suspend SFC's license to operate pending the completion of the investigations into the accident.

Investigation reports were issued in February and March 1986 that provided detailed assessments of the causes (NUREG-1179) and health consequences (NUREG-1189) of the January 1986 accident. Although SFC sought NRC concurrence to restart the facility in May 1986, the NRC Staff rejected this request and sought additional analyses and information concerning a number of different matters including plant and equipment modifications, the Licensee's revised training program, its operational procedures upgrade program, and its management of quality assurance program.

Thereafter, upon review of SFC responses and the results of several additional Staff inspections of the facility, the NRC Staff concluded that if the UF₆ production facility was to be permitted to resume operations, various of the commitments made by SFC should become formal license requirements that had to be met by the Licensee and that additional oversight of facility operations was necessary to aid the NRC Staff in its efforts to ensure that SFC would comply with all Commission requirements. As a consequence, on October 2, 1986, the Director of the Office of Inspection and Enforcement issued an order imposing a number of changes or additions to SFC's existing facility license with regard to plant operations, management qualifications, employee training, and other matters.

The order also requires that SFC retain an independent oversight organization to perform auditing and surveillance functions during plant operations that will augment, but not replace, the NRC's inspection ca-

pabilities and aid in ensuring safe plant operation. The organization is to have an in-depth knowledge of chemical plant operations, radiation hazards associated with uranium processing, NRC regulatory requirements, and quality assurance measures. It will maintain a 24-hour daily surveillance of plant operations to ensure compliance with all procedural and regulatory requirements and is to bring to the immediate attention of NRC Region IV any conditions it believes are unsafe or not in compliance with NRC requirements. The organization also is to provide the Region IV Administrator with periodic written recommendations about improvements to facility programs and processes and SFC must provide a written response to the Regional Administrator regarding its adoption or rejection of those recommendations, with an explanation of the reasons for any rejection. Further, the order specifically states that the Licensee retains full responsibility for the safe operation of the facility, although it does provide that the organization is to be given authority by SFC to order immediate shutdown of any plant operations if the organization, in its independent judgment, finds such action is necessary to protect public health and safety. NRC approval of the independent organization and SFC's work statement for the organization are required before restart.

The requirements imposed by the order were made immediately effective; however, the order specifically declared that it did not authorize restart of the SFC facility.¹ The order also stated that SFC or any other person "adversely affected" by its terms could request a hearing at which the issue to be considered would be "whether this Order should be sustained." Order at 15.

¹ At a public meeting on October 16, 1986, the Commission heard presentations from SFC, Joint Petitioners Environmental Action of Tulsa and National Water Center, NACE, the Arkansas Peace Center, and the NRC Staff relative to a determination about whether to accept a Staff recommendation that it be allowed to give agency concurrence to a restart of the UF₆ production facility. In addition to these presentations, the Commission had before it a detailed Safety Evaluation Report from the NRC Staff relating to the restart of facility operations, the October 2 order at issue here, and the decision of the Director of the Office of Inspection and Enforcement denying the requests of Joint Petitioners National Water Center, Citizens' Action for a Safe Environment, and Carlisle Area Residents Association, and NACE and others under 10 C.F.R. § 2.206 to institute a show-cause proceeding to suspend SFC's license to operate the UF₆ production facility (DD-86-13, 24 NRC 587 (1986)). Following the presentations, by a vote of 5-0, the Commission gave its approval to the Staff recommendation to restart the facility. At present, SFC is still in the process of demonstrating to the NRC Staff that it is in compliance with the requirements imposed by the October 2 order. It is the Commission's present understanding that SFC may be ready to resume operations early in the week of November 3, 1986, if NRC concurrence, which has not yet been given, is forthcoming.

II. DISCUSSION

A. Joint Petitioners' Hearing Request

In their October 16 hearing request, Joint Petitioners assert they are adversely affected by the terms of the order that require the Licensee to retain an independent organization to perform auditing and surveillance functions. Specifically, Joint Petitioners claim that they are entitled to a hearing because in their view:

1. The provisions of the order relating to an independent surveillance organization place Petitioners in danger because responsibility to ensure compliance with licensing requirements resides in an unlicensed, third party.
2. The order establishes as the scope of the agency's enforcement action the "broad issue of management competence and character" and "management improvement," issues that must be explored fully in order to determine whether the requirements imposed by the NRC are a sufficient response to their concerns about SFC management.
3. The specific provisions of the order do not make the plant safer.

It is apparent that the issues Joint Petitioners seek to raise fall outside the scope of the proceeding as it is properly defined by the order.² Joint Petitioners first assert that they are adversely affected by the October 2 order's provisions requiring third-party auditing and inspection of the Sequoyah facility because the Commission has found SFC "qualified to operate the plant only by delegating existing license responsibility to ensure compliance with the license, NRC regulations and the Atomic Energy Act, to an unlicensed third party who need not meet license qualifications under the Atomic Energy Act or NRC regulations," thereby placing "its members and the surrounding community in extraor-

² Previously, the Commission has indicated that the scope of any adjudicatory proceeding relating to an enforcement action may be limited to whether the facts stated in the order are true and whether the remedy selected is supported by those facts. *Boston Edison Co.* (Pilgrim Nuclear Power Station), CLI-82-16, 16 NRC 44, 45-46 (1982), *aff'd*, *Bellotti v. NRC*, 725 F.2d 1380 (D.C. Cir. 1982); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438, 441-42 (1980). Despite Joint Petitioners' suggestions to the contrary, it is apparent that the order in this case limits the proceeding in just this way. The order briefly describes the January 4 accident and Licensee and agency efforts to respond to that incident through investigations, inspections, and facility improvements. Noting that the agency's efforts have resulted in the identification of various regulatory violations and Licensee deficiencies, the order then outlines the requirements that Licensee must comply with if it is to be allowed to resume its operations at the Sequoyah facility. Finally, the order states that in any hearing on the order, the issue will be whether the order should be sustained. The order thus limits the issues to be considered in any adjudicatory hearing to whether the requirements imposed are supported by the factual findings made in the order.

dinary danger.”³ Petition for Hearing at 2. Initially, we note that since the order does not authorize restart of the facility, the order itself would create a danger only if restart and a third-party inspection program is more dangerous than restart alone. Given the terms of the order, which impose the requirement for independent, third-party inspection as an additional safeguard to aid the NRC Staff in carrying out its existing inspection and enforcement responsibility but retain full Licensee responsibility for conducting operations in a safe manner consistent with all license conditions and other regulatory requirements, the Joint Petitioners’ conclusory assertion of “danger” is totally inadequate to establish any adverse effect from the terms of the order.

In fact, the real focus of Joint Petitioners’ concern about the “danger” supposedly created by the order appears to be with the adequacy and implementation of the third-party inspection program that the order requires the Licensee to establish. Yet, as pointed out in *Bellotti v. NRC*, *supra*, to allow the litigation of adequacy and implementation issues “would result in a hearing virtually as lengthy and wide-ranging as if [Petitioners] were allowed to specify the relevant issues themselves.” If Joint Petitioners wish to contest the implementation of the inspection program established pursuant to the October 2 order, the appropriate forum is a petition under 10 C.F.R. § 2.206.⁴

Joint Petitioners also assert that their general concerns about SFC management competence, character, and improvement are litigable because agency concerns about SFC management were part of the factual predicate for the order. It is apparent, however, that this is exactly the type of attempt to expand the scope of an enforcement proceeding that the narrowly drawn order in this instance is intended to and properly does preclude. The issue with regard to the October 2 order is not “management competence” or “management improvement” as Joint Petitioners seem to assert; rather, it is whether the agency’s findings relevant to SFC management are supported and sufficient to sustain the particular requirements the order imposes upon the Licensee in response to those findings. The question whether other, more stringent requirements might

³ Joint Petitioners also characterize the order as “authoriz[ing] plant operation upon compliance with certain technical commitments [sic], despite a general finding that the licensee lacks the fundamental qualification of competence and character.” In fact, as was pointed out earlier, the order explicitly states that it “does not authorize restart” of plant operations. Order at 5. Further, while the order makes it clear there is a need for significant improvement in the Licensee’s control and supervision of licensed activities, there was no “general finding” of fundamental lack of management competence or character.

⁴ Joint Petitioners’ expressed concern that the third party will be “unlicensed” is an indication of this focus. As is explained more fully *infra*, “licensing” of the organization is neither required nor appropriate. In fact, what Joint Petitioners seem to question is the adequacy of the process by which the NRC Staff will review the third-party organization and the plan under which it must operate, a matter that is outside the proceeding.

be warranted is not presented by that order, and it therefore is not a proper issue for a hearing on the order. Again, to accept Joint Petitioners' definition of the issues "would result in a hearing virtually as lengthy and wide-ranging as if [Petitioners] were allowed to specify the relevant issues themselves." *Bellotti v. NRC, supra*, 725 F.2d at 1382. As the District of Columbia Circuit recognized in *Bellotti*, the Commission acts well within the range of discretion afforded it by § 189a of the Atomic Energy Act in declining to afford a hearing with respect to such issues in the context of an enforcement order.⁵

The Commission also rejects Joint Petitioners' related argument that they are entitled to a hearing to assert that the order does not make the Sequoyah facility safer. First, it is not clear how they are adversely affected by an order that does not make the Sequoyah Fuels facility safer, so long as it does not make it less safe. In addition, although this complaint may not state a specific plea for additional requirements, the mere assertion that the order does not make a facility "safer" (i.e., it is ineffectual but not harmful) suggests a plea for other procedures that Joint Petitioners' believe would make the facility safer. The D.C. Circuit recognized in *Bellotti* that "one who . . . wishes to litigate the need for still more safety measures, perhaps including the closing of the facility, will be remitted to section 2.206's petition procedures." 725 F.2d at 1380. Thus, this is the kind of hearing issue that the *Bellotti* court indicated the Commission is free to preclude.

B. NACE's Hearing Request

In its hearing petition,⁶ NACE raises several additional concerns relative to the third-party surveillance provisions of the October 2 order that it asserts "adversely affect" its members:

1. The provisions of the order relating to an independent, third-party organization gives that organization operational control over the facility, thereby removing SFC's motivation to run the facility safely.

⁵ Joint Petitioners' attempt to distinguish the D.C. Circuit's *Bellotti* decision on this point is not convincing. The order of October 2, like the order in *Bellotti*, precludes the litigation of questions of the adequacy of the agency's proposed changes. Indeed, the orders are identical insofar as they define and limit the scope of the hearing to whether the requirements imposed on the Licensee should be sustained.

⁶ The petition of NACE was filed 1 day after the deadline for hearing petitions established in the October 2 order. NACE in its petition does not specifically address all the factors in § 2.714(a) relative to late-filed petitions to intervene so as to justify acceptance of its filing. Nonetheless because we find that NACE's petition should be denied because it has not demonstrated any interest adversely affected by the order, we need not address the additional question of whether its petition also should be denied as late-filed.

2. Since the root problems that caused the January 4 accident have never been investigated properly, it is impossible to determine whether the order solves anything, leaving a realistic possibility that the order exacerbates the problems.
3. The order provided a basis for other regulatory activity impacting upon the restart of the SFC facility, including the denial of a NACE § 2.206 petition to suspend SFC's license and the Commission's approval of Staff's recommendation to give agency concurrence to restart, and restart adversely affects NACE.

Any assertion by NACE that the October 2 order's provisions imposing the third-party surveillance organization will cause SFC to lose operational control over the facility is without substance. By the order's terms, it is apparent that the third-party surveillance organization does not take "operational" control of the facility. Rather, the organization is to exercise surveillance and inspection functions similar to those of the NRC, with a similar residual authority to halt operations if it finds a health and safety problem.⁷ Its only other real input into the operational process is to make recommendations to SFC, which the Licensee is free to accept or reject, at least so long as it can justify the rejection of any recommendation to the NRC, which, in turn, has the authority to convert such a recommendation into a requirement by imposing it as an operational condition. Just as the NRC is not the "operator" of the facility over which it has inspection and enforcement authority, so too the third-party organization will not be responsible for "operation" of the Sequoyah plant and does not need to be licensed under the Atomic Energy Act or Commission regulations. Additionally, the order specifically states that full responsibility for safe facility operation rests solely with SFC as the Licensee.⁸ NACE thus has no basis for asserting that it is adversely affected by the order's provisions in this regard.

NACE's second assertion of "adverse effect" arising from the order, based upon the agency's supposed failure to discover and address the root causes of the accident in the order, likewise fails as a viable ground for convening a hearing on the October 2 order. While expressed as a concern about the order, in fact it has nothing to do with the order's terms; rather, NACE is challenging the agency's process for investigation of the accident, a challenge already expressed in its § 2.206 petition.

⁷ In making this comparison, we do not mean to suggest that the third-party organization is assuming the NRC's regulatory oversight and inspection functions. The Commission will continue to monitor and inspect licensed operations at the Sequoyah Fuels facility to ensure adequate protection of public health and safety.

⁸ In fact, this NACE concern about the third-party inspection program really is one that relates to the implementation of the order, which clearly goes beyond the narrow hearing issue of whether the terms of the order should be sustained.

The order has nothing to do with, and clearly does not provide, an alternative vehicle for NACE to gain an agency hearing on the denial of that petition.

So too, NACE's third concern is really about matters that the order does not address, that is, whether NACE's § 2.206 petition should have been granted and whether the Commission's acceptance of Staff's recommendation to give agency concurrence to facility restart was appropriate. The order says nothing about the validity of the § 2.206 petition and by its explicit terms, does not provide for restart of the facility. In asserting that the order provides a vehicle for the litigation of the validity of any action other than the imposition of the particular requirements set forth in the order, NACE simply is attempting to go into matters beyond the limited issue of whether the order should be sustained, which the *Bellotti* decision establishes it cannot do.

We thus find no basis for NACE's assertion that it is adversely affected by the order so as to be entitled to a hearing.

III. A DISCRETIONARY HEARING IS NOT APPROPRIATE

Finally, in light of the issues Joint Petitioners and NACE seek to raise, the Commission also finds no reason to convene a discretionary hearing. See *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 616-17 (1976). The NRC Staff will give full and fair consideration to any specific concerns regarding the implementation of the third-party inspection program of which it is made aware either through the procedures under § 2.206 or otherwise. Thus, we find no basis provided in the petition for hearing that causes us to exercise our discretion to convene a hearing with respect to the provisions of the October 2 order that require the establishment of a third-party inspection program, which we again emphasize, is designed to supplement, not replace, the NRC's existing regulatory program for oversight of the SFC facility and which leaves in the hands of the Licensee the ultimate responsibility for safe facility operation.

Petitioners' request for a hearing is denied.
It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 30th day of October 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket Nos. 50-440-OL
50-441-OL

CLEVELAND ELECTRIC
ILLUMINATING COMPANY, *et al.*
(Perry Nuclear Power Plant,
Units 1 and 2)

October 30, 1986

The Commission denies the State of Ohio's petition to intervene as a nonparty interested State in the licensing proceeding after closing of the adjudicatory record.

RULES OF PRACTICE: APPELLATE REVIEW

A state has no right to participate in administrative appeals when it has not participated in the underlying hearing. *See, e.g., Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-583, 11 NRC 447 (1980).

RULES OF PRACTICE: NONTIMELY INTERVENTION

A state or party seeking to enter a proceeding must take the proceeding as it finds it. *See, e.g., Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-600, 12 NRC 3, 8 (1980).

RULES OF PRACTICE: NONTIMELY INTERVENTION

After closing of the adjudicatory record, a nonparty interested State which has petitioned to intervene under 10 C.F.R. § 2.715(c) "to introduce evidence [and] interrogate witnesses" can participate in the formal adjudicatory proceeding only if it can meet the stringent standards for reopening the record and filing late-filed contentions. *See, e.g., Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-728, 17 NRC 777, 801-02 (1983).

MEMORANDUM AND ORDER

On September 5, 1986, the State of Ohio filed with the Commission a petition to intervene as a nonparty interested State. *See* 10 C.F.R. § 2.715(c). Ohio stated that it wished to participate in consideration of issues such as the adequacy of the offsite evacuation plans for Perry. Applicants and the NRC Staff opposed Ohio's petition. In its reply to Applicants' opposition, Ohio stated that, although its petition came at a late point in the Perry licensing proceedings, it believed it could aid the Commission in its effectiveness review.

The Commission has allowed Ohio to participate in its informal review of uncontested issues, and the State's concerns are being considered by the Commission as part of its review of uncontested issues. The Commission agrees with Ohio that such participation enhances state, NRC, and licensee communication and cooperation. Moreover, in keeping both with the spirit of the State's request, and with the spirit of federal-state cooperation which underlies § 274(l) of the Atomic Energy Act, we anticipate that the State would continue informally to discuss its concerns with the NRC Staff.

However, to the extent that Ohio is requesting to intervene under 10 C.F.R. § 2.715(c) in the formal adjudicatory proceeding, that eleventh hour request, filed on the eve of a Commission licensing decision, is denied. Clearly, a state has no *right* to participate in administrative appeals when it has not participated in the underlying hearing. *See, e.g., Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-583, 11 NRC 447 (1980). In this case, the extreme untimeliness of Ohio's intervention request alone supports our denial of its request. Even were the Commission to allow late intervention as a matter of discretion, a party or state seeking to enter a proceeding must take the proceeding as it finds it. *See, e.g., Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-600, 12 NRC 3, 8

(1980). Since the record in this proceeding was closed when the State filed its intervention motion, the State could participate in the adjudicatory proceeding "to introduce evidence [and] interrogate witnesses," as the State requests, only if it could meet the stringent standards for reopening the record and filing late-filed contentions. *See, e.g., Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-728, 17 NRC 777, 801-02 (1983). The State of Ohio has presented nothing to demonstrate that it might be able to meet those standards. Accordingly, the State's petition for intervention and participation in the adjudicatory proceeding must fail.

Commissioner Asselstine's separate views are attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK

Secretary of the Commission

Dated at Washington, D.C.,
this 30th day of October 1986.

SEPARATE VIEWS OF COMMISSIONER ASSELSTINE

I do not disagree with the Commission's decision to deny the request of the State of Ohio to intervene in the formal adjudicatory proceeding for the Perry Plant. I agree that, as it relates to reopening the record, the State's request falls short.

However, the State's filings appear to indicate that Ohio is primarily interested in advising the Commission in its immediate effectiveness review of the Perry license rather than in litigating issues. The State seems really to be seeking an informal advisory status. The Commission is willing to permit limited informal participation by the State. For example, the Commission heard from representatives of Governor Celeste several months ago and is willing to allow the Staff to work with Ohio to resolve the State's emergency planning concerns. The Commission is not willing, however, to provide the State with a continuing opportunity to advise the Commission on its immediate effectiveness review.

As the Commission notes, § 274 of the Atomic Energy Act evinces a congressional intent that there be federal-state cooperation and that states be accorded a somewhat "preferred" status in our licensing proceedings.

In keeping with the spirit of § 274, I believe that we should provide the State of Ohio with a continuing opportunity to advise the Commission informally on the Perry proceeding. At a minimum, the Commission should hear from the Governor's representatives once again before voting on the Perry license. It has been several months since we last heard from the State, and it would be useful to hear about the status of Ohio's efforts on emergency planning.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Gary J. Edles, Chairman
Dr. W. Reed Johnson
Thomas S. Moore

In the Matter of

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

**HOUSTON LIGHTING AND
POWER COMPANY, *et al.***

**(South Texas Project,
Units 1 and 2)**

October 8, 1986

Finding no errors that warrant corrective action, the Appeal Board affirms on *sua sponte* review two partial initial decisions that found that the applicants possess adequate managerial character and competence, resolved certain safety issues in the applicants' favor, and, as a consequence, authorized issuance of operating licenses for Units 1 and 2 of the South Texas Project.

APPEAL BOARDS: *SUA SPONTE* REVIEW

When no appeals are taken from a reviewable licensing board decision, an appeal board will review that decision *sua sponte*. See *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-846, 24 NRC 295 (1986).

APPEAL BOARDS: *SUA SPONTE* REVIEW

An appeal board's affirmance on *sua sponte* review of a licensing board decision only connotes agreement with the ultimate resolution of those issues crucial to the result reached. See *Consumers Power Co.* (Big Rock Point Plant), ALAB-795, 21 NRC 1 (1985); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), ALAB-713, 17 NRC 83 (1983).

MEMORANDUM AND ORDER

On June 13, 1986, and August 29, 1986, the Licensing Board issued partial initial decisions in this operating license proceeding. See LBP-86-15, 23 NRC 595; LBP-86-29, 24 NRC 295. Essentially, the Board found that the applicants possess adequate managerial character and competence to operate the South Texas Project. It also resolved certain safety issues in the applicants' favor. As a consequence, it authorized issuance of operating licenses for Units 1 and 2 of the South Texas Project.

No appeals have been filed with respect to either decision.¹ We thus have them before us for our customary *sua sponte* review. See *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-846, 24 NRC 409 (1986).² Although we do not necessarily endorse everything stated therein, we find no errors that warrant corrective action. Accordingly, the Licensing Board's decisions are affirmed. As we have observed in the past, our affirmance only connotes agreement with the ultimate resolution of those issues crucial to the result reached. See *Consumers Power Co.* (Big Rock Point Plant), ALAB-795, 21 NRC 1 (1985); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), ALAB-713, 17 NRC 83 (1983).

¹ The Board divided the overall proceeding into phases, and we have affirmed certain aspects of an earlier partial initial decision. See ALAB-799, 21 NRC 360 (1985), *aff'g in part*, LBP-84-13, 19 NRC 659 (1984).

² We earlier deferred our *sua sponte* review of the first decision until the second was issued. See Order of July 10, 1986 (unpublished).

LBP-86-15 and LBP-86-29 are *affirmed*.
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

**Alan S. Rosenthal, Chairman
Dr. W. Reed Johnson
Thomas S. Moore**

In the Matter of

Docket No. 50-289-EW

**EDWARD WALLACE
(Three Mile Island Nuclear
Station, Unit 1)**

October 9, 1986

Finding that the express terms of the Commission's notice of hearing establishing this special proceeding dictated the result reached, the Appeal Board affirms the order of the Administrative Law Judge. That order terminated the proceeding and removed an existing requirement that the current holder of the operating license for Unit 1 of the Three Mile Island Nuclear Station notify the Commission before returning the subject employee to a responsible position at that facility.

APPEARANCES

**Thomas Y. Au and Barry M. Hartman, Harrisburg, Pennsylvania, for the
Commonwealth of Pennsylvania.**

**Michael B. Himmel and Alain Leibman, Woodbridge, New Jersey, for
Edward Wallace.**

Mary E. Wagner for the Nuclear Regulatory Commission staff.

DECISION

Before us is the appeal of the Commonwealth of Pennsylvania from the August 19, 1986 order of the Administrative Law Judge in this special proceeding involving Edward Wallace.¹ That order terminated the proceeding. In addition, it removed an existing requirement that the General Public Utilities Nuclear Corporation, the current holder of the operating license for Unit 1 of the Three Mile Island Nuclear Station, notify the Commission before returning Mr. Wallace to a responsible position at that facility.²

In essence, Pennsylvania's claim is that the proceeding should have gone forward notwithstanding the facts that (1) no one — including the Commonwealth — sought to intervene in opposition to Mr. Wallace;³ and (2) the NRC staff was content to have the notification requirement lifted. We agree with Mr. Wallace and the staff that the claim is devoid of merit. As concluded by the Administrative Law Judge in his August 19 order, it is manifest that, in the circumstances of the case, the challenged result was compelled by the express terms of the Commission's notice of hearing establishing the proceeding. In relevant part, the notice stated that "[i]f no person intervenes against Wallace and NRC Staff does not advocate a position against Wallace, then the proceeding shall be terminated and the TMI-1 notification requirement as to Wallace shall be removed."⁴

¹ See ALJ-86-3, 24 NRC 321.

² See *Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit 1)*, CLI-85-2, 21 NRC 282, 323 (1985).

³ For its part, the Commonwealth filed a petition under 10 C.F.R. 2.715(c) for leave to participate in the proceeding as an "interested State." Commonwealth of Pennsylvania's Petition for Leave to Participate as an Interested State (June 30, 1986). As permitted by section 2.715(c), the petition informed the Licensing Board (at 2) that "[t]he Commonwealth is not now advocating a position against Mr. Wallace."

It scarcely should require emphasis that the Commonwealth's decision to follow this course was entirely voluntary. Had it been prepared to take a position adverse to Mr. Wallace (i.e., to oppose the removal of the notification requirement applicable to him), the Commonwealth could have sought the status of a full party to the proceeding through the vehicle of a petition for leave to intervene filed under 10 C.F.R. 2.714(a). See, e.g., *Project Management Corp. (Clinch River Breeder Reactor Plant)*, ALAB-354, 4 NRC 383 (1976).

⁴ *General Public Utilities Nuclear Corp. (Three Mile Island Nuclear Station, Unit 1)*, CLI-86-9, 23 NRC 465, 472 (1986).

That explicit directive is just as binding upon us as it was upon the Administrative Law Judge. Any dissatisfaction that the Commonwealth may have with it must now be addressed to the Commission itself.

Affirmed.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

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

In the Matter of

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

GEORGIA POWER COMPANY,
et al.

(Vogtle Electric Generating
Plant, Units 1 and 2)

October 16, 1986

The Appeal Board grants the applicants' motion to dismiss an intervenor's appeal in this operating license proceeding because that intervenor had earlier withdrawn from the proceedings and had thus waived its appeal rights.

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

Parties may not dart in and out of licensing proceedings on their own terms and at their convenience and still expect to enjoy the benefits of full participation without the responsibilities. *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-691, 16 NRC 897, 907 (1982), *review declined*, CLI-83-2, 17 NRC 69 (1983). *Cf. Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 252 (1986). Once a party effectively withdraws from a proceeding, its appeal rights are waived. *Midland*, 16 NRC at 907.

APPEARANCES

Bruce W. Churchill and David R. Lewis, Washington, D.C., for applicants Georgia Power Company, et al.

Tim Johnson, Atlanta, Georgia, for Campaign for a Prosperous Georgia.

Bernard M. Bordenick for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

Applicants, Georgia Power Company, et al., move to "strike" (i.e., dismiss) the September 8, 1986, Notice of Appeal of Campaign for a Prosperous Georgia (CPG). CPG's appeal is from the Licensing Board's August 27, 1986, partial initial decision in this operating license proceeding, LBP-86-28, 24 NRC 263, and from earlier unspecified Board rulings.¹ Applicants argue that CPG voluntarily withdrew from this proceeding in March of this year and therefore has no right to appeal. The NRC staff supports the motion; CPG opposes it in a pleading filed beyond the prescribed time limit.² For the reasons set forth below, we grant the motion and dismiss CPG's appeal.

Our precedent makes clear that "[p]arties may not dart in and out of proceedings on their own terms and at their convenience and still expect to enjoy the benefits of full participation without the responsibilities." *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-691, 16 NRC 897, 907 (1982), *review declined*, CLI-83-2, 17 NRC 69 (1983). *Cf. Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-845, 24 NRC 220, 252 (1986). Once a party effectively withdraws from a proceeding, its appeal rights are waived. *Midland*, 16 NRC at 907. The issue here is thus a simple, factual one: whether CPG's actions constituted a voluntary withdrawal from the proceeding so as to extin-

¹ Intervenor Georgians Against Nuclear Energy (GANE) has also appealed the Licensing Board's partial initial decision and other unidentified rulings. GANE's appeal is not at issue here.

² Applicants served their motion to strike on CPG's representative on September 19, 1986. See Applicants' Supplemental Certificate of Service (Sept. 22, 1986). Under the Commission's Rules of Practice, CPG's reply to the motion was to be filed (i.e., mailed) no later than October 6, 1986. See 10 C.F.R. §§ 2.730(c), 2.710, 2.712(d)(3). CPG's reply to applicants' motion is contained within its brief on the merits of its appeal. This brief is accompanied by a certificate of service dated October 8 and post-marked October 9, 1986. Thus, CPG's reply to the motion to strike is clearly out of time (without explanation). Under the Rules, we could find CPG in default and grant applicants' motion on that ground alone. See 10 C.F.R. § 2.707. In view of our decision here, however, such action is unnecessary.

guish its appeal rights.³ The record leaves no room to doubt that the answer to that question is “yes.”

CPG was originally granted intervenor status and had several contentions admitted for litigation. *See* LBP-84-35, 20 NRC 887 (1984). In its opening statement on the very first day of hearing on those contentions before the Licensing Board, CPG took the opportunity to express unequivocally its dissatisfaction with and contempt for the NRC’s entire licensing process. Tr. 229-40. Before abruptly leaving the hearing room, CPG’s representative stated:

We cannot in good conscience participate in such a sham. Therefore, on behalf of the members of Campaign for a Prosperous Georgia and the citizens of Georgia and South Carolina, we *refuse to contribute further* to this cruel hoax and will not participate in this dog and pony show you call the licensing hearings.

Tr. 240 (emphasis added). CPG now argues that it only refused to participate in the proceedings before the Licensing Board, and that it should have the right to appeal at least those issues decided by the Board prior to CPG’s walkout. But the other participants, including intervenor GANE and the Licensing Board, clearly understood — and the record shows — that CPG, in fact, withdrew completely and for good. Tr. 246-47; LBP-86-28, 24 NRC at 267. Indeed, CPG made no effort to preserve any right to appeal or to participate in any way in the future. In the circumstances, through its own words and inaction, CPG has forfeited its right to participate further in this proceeding. *See generally* *Midland*, 16 NRC at 905-08.

Applicants’ motion is *granted* and CPG’s appeal is *dismissed*.⁴
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

Mr. Edles did not participate in this Memorandum and Order.

³ Contrary to CPG’s suggestion, the issue here is not whether this is the proper time to appeal certain Licensing Board rulings. Nor is it whether one intervenor can pursue issues on appeal that were originally raised by another intervenor. Rather, the question is whether CPG still has any party status at all in this licensing hearing.

⁴ Accordingly, CPG’s brief on the merits (*supra* note 2) is *rejected*. We note in passing, however, that a large portion of CPG’s brief is virtually identical to GANE’s brief on the merits of its appeal.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:*

Thomas S. Moore, Chairman
Howard A. Wilber

In the Matter of

Docket No. 50-400-OL

CAROLINA POWER & LIGHT
COMPANY and
NORTH CAROLINA EASTERN
MUNICIPAL POWER AGENCY
(Shearon Harris Nuclear Power
Plant)

October 31, 1986

The Appeal Board affirms the Licensing Board's concluding decision in this operating license proceeding, LBP-86-11, 23 NRC 294 (1986), but withholds affirmance of the Licensing Board's operating license authorization pending consideration of the intervenors' appeal from the second partial initial decision, LBP-85-28, 22 NRC 232 (1985).

RULES OF PRACTICE: BRIEFS

A party's failure to brief an issue on appeal adequately "is tantamount to [its] abandonment." *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 413, *reconsideration denied*, ALAB-359, 4 NRC 619 (1976). *Accord Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-693, 16 NRC 952, 956-57 (1982).

*Dr. Reginald L. Gotchy resigned from the Appeal Panel October 1, 1986, and he is, therefore, no longer a member of the Board.

LICENSING BOARDS: RESPONSIBILITIES

It is the Licensing Board's proper role to weigh and consider all the record evidence.

RULES OF PRACTICE: EXPERT WITNESS

The possibility that inconsistent or even contrary inferences could be drawn from an expert witness' testimony if the views of the opposition's experts are accepted does not prevent a licensing board's findings from being supported by substantial evidence. *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear 1), ALAB-303, 2 NRC 858, 866 (1975).

RULES OF PRACTICE: APPELLATE REVIEW

An appeal board will overturn a licensing board's findings of fact only where it is "convinced that the record compels a different result." *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 357 (1975). See ALAB-843, 24 NRC 200, 209 n.38 (1986); ALAB-837, 23 NRC 525, 531 (1986).

QUALITY ASSURANCE/QUALITY CONTROL: REQUIREMENTS

The Commission's regulations require that an applicant's quality assurance program provide "adequate confidence" that those systems, structures and components having safety-related functions "will perform satisfactorily in service." 10 C.F.R. Part 50, Appendix B, Introduction. See *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 64 (1985).

REGULATORY GUIDES: APPLICATION

NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," (Rev. 1, November 1980) is not a Commission regulation that compels obedience. Rather, it serves as guidance, setting forth but one method for meeting the applicable regulatory requirements. ALAB-843, 24 NRC at 205 n.13; *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 710 (1985), *review denied*, CLI-86-5, 23 NRC 125 (1986). In other words, that document "is treated simply as evidence of legitimate means for complying with regulatory requirements." *Metropolitan Edison Co.*

(Three Mile Island Nuclear Station, Unit No. 1), ALAB-698, 16 NRC 1290, 1298-99 (1982), *aff'd in part on other grounds*, CLI-83-22, 18 NRC 299.

RULES OF PRACTICE: CONTENTIONS

It is well-settled that in a Commission operating license proceeding a party is bound by the literal terms of its own contention. *See* ALAB-843, 24 NRC at 208; *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-836, 23 NRC 479, 505 (1986).

LICENSING BOARDS: SCOPE OF REVIEW

Unless a licensing board raises an issue *sua sponte*, it is authorized to decide only those matters put in controversy by the parties. *See* 10 C.F.R. § 2.760a.

EMERGENCY PLANNING: FEMA FINDING (NEED FOR FINAL FINDINGS)

There is no regulatory requirement that the Federal Emergency Management Agency (FEMA) siren tests or findings be completed prior to a licensing board's authorization of an operating license.

EMERGENCY PLANNING: FEMA FINDING (NEED FOR FINAL FINDINGS)

It is well-settled that the issuance of FEMA's final findings on the adequacy of offsite emergency plans and preparedness is not a prerequisite to the authorization of a full-power operating license. Rather, preliminary FEMA reviews and interim findings presented by FEMA witnesses at licensing hearings are sufficient as long as such information permits the Licensing Board to conclude that offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. *Catawba*, ALAB-813, 22 NRC at 78.

RULES OF PRACTICE: BRIEFS

The Commission's rules clearly prohibit the practice of simply referring to one's proposed findings as support for an assertion of error on appeal. *See Public Service Co. of Oklahoma* (Black Fox Station, Units 1

and 2), ALAB-573, 10 NRC 775, 805 (1979), *vacated in part and remanded*, CLI-80-8, 11 NRC 433 (1980).

RULES OF PRACTICE: IMMEDIATE EFFECTIVENESS REVIEW

It is clear from the Commission's regulations that an operating license may be authorized before completion of the agency's internal appellate process. *See* 10 C.F.R. § 2.764(f).

APPEARANCES

John Runkle, Chapel Hill, North Carolina (with whom **Wells Eddleman** (*pro se*), Durham, North Carolina, was on the brief) for the intervenors Conservation Council of North Carolina and Wells Eddleman.

Thomas A. Baxter, Washington, D.C. (with whom **Delissa A. Ridgway**, Washington, D.C., and **Richard E. Jones** and **Dale E. Hollar**, Raleigh, North Carolina, were on the brief) for the applicants Carolina Power & Light Company and North Carolina Eastern Municipal Power Agency.

Charles A. Barth for the Nuclear Regulatory Commission staff.

DECISION

We have before us the joint appeal of the Conservation Council of North Carolina (CCNC) and Wells Eddleman from the Licensing Board's concluding decision in this operating license proceeding.¹ In that decision, the Board resolved the last two contested issues in the proceeding concerning drug use at the Shearon Harris construction site and the efficacy of the applicants' emergency notification procedures. Having decided these issues in favor of the applicants, the Licensing Board authorized the issuance of an operating license for the facility. For the reasons that follow, we affirm the Licensing Board's resolution of these two contested issues.

¹ *See* LBP-86-11, 23 NRC 294 (1986).

I.

The Licensing Board admitted for litigation CCNC's late-filed contention styled WB-3 (Drug Abuse During Construction). This contention alleged that "widespread" drug use at the Shearon Harris construction site has resulted in safety deficiencies at the plant.² After an evidentiary hearing, the Licensing Board concluded that "[d]rug use at the Shearon Harris construction site has not been 'widespread.'"³ In arriving at this determination, the Board considered a wide range of direct and indirect evidence on the extent of drug use at the applicants' construction site. This evidence included (1) the statistics on numbers of employees terminated for drug activity; (2) the results of an undercover police investigation of drug use at Shearon Harris; (3) the applicants' policies and programs to detect and prevent drug activity at the site; (4) direct observations of drug activity at the site; (5) the amount of drugs confiscated on site; and (6) the low rate of accidents at the site.⁴ After weighing this mass of evidence, the Board concluded that the extent of drug use at the Shearon Harris site has been, and remains, below five percent of the work force, and that this level of drug use could not be characterized as "widespread."⁵ The Board then found that "[t]here is no evidence that any specific deficient work has been done or that any specific safety concerns exist at the Harris Plant because of drug use."⁶ This conclusion was based on, *inter alia*, the lack of evidence in the record of any particular construction deficiencies and the largely uncontradicted affirmative evidence establishing the adequacy of the applicants' quality assurance program.⁷

Before us the intervenors seek to challenge both of these major Licensing Board conclusions and numerous subsidiary factual findings. As in their previous appeals from the Licensing Board's partial initial decisions, however, the intervenors' consolidated brief is grossly inadequate. The Board's findings on the drug abuse contention meticulously canvass

² The contention, as admitted, states:

Drug use at the Harris Plant is widespread (see the attached newspaper article for details and basis). Employees under the influence of drugs are less able to follow proper procedures and tech specs for the installation of electrical systems, pipefitting, and other safety-related work. Applicants' management has failed to control drug use during the construction and further, has failed to reinspect all safety-related work done by known drug abusers.

See *id.* at 301; Memorandum and Order (Ruling on Contentions Concerning Diesel Generators, Drug Use and Harassment at the Harris Site) (March 13, 1985) at 5-8.

³ LBP-86-11, 23 NRC at 299.

⁴ See *id.* at 343-47.

⁵ *Id.* at 346-48.

⁶ *Id.* at 299.

⁷ *Id.* at 348-64.

the record evidence and cover over 60 published pages in the Commission's reports.⁸ In contrast, the intervenors' substantive challenge to the Board's findings comprises three and one-half pages of their brief and consists of little more than broad allegations that the Board erred, without any explanation of how or why its findings are incorrect. Indeed, the intervenors even disdain citations to the evidentiary record to support their broadside attacks.⁹ As we have repeatedly pointed out to the intervenors in their earlier appeals,¹⁰ a party's failure to brief an issue on appeal adequately "is tantamount to [its] abandonment."¹¹ Nevertheless, even though we would be fully justified in treating the intervenors' appeal on this contention as abandoned, we have examined, as best we can, their bald assertions and find them to be without merit.

Initially, the intervenors complain about the Licensing Board's findings concerning the extent of drug use among workers at the Shearon Harris construction site. In this regard, they assert generally that the Licensing Board erred in according undue weight to some evidence, while "discount[ing]" other evidence.¹² These allegations of error are easily answered. It is the Licensing Board's proper role to weigh and consider all the record evidence. This is precisely what the Board did. It fully explained its findings, including why some testimony was not persuasive, and all of its findings are amply supported by the record. The intervenors apparently disagree with the Licensing Board over how much weight some evidence should have been given, but they have failed to present us with anything establishing that the Board's judgment was erroneous.¹³ Moreover, it must be remembered that findings of fact will be overturned only where "we are convinced that the record compels a different result."¹⁴ Such is clearly not the case here.

Additionally, the intervenors claim that "[a] review of the entire record will show overwhelmingly that drug abuse on site was widespread and is much higher than the 4.5% found by the Board."¹⁵ Once

⁸ See *id.* at 301-64.

⁹ See 10 C.F.R. § 2.762(d)(1).

¹⁰ See ALAB-843, 24 NRC 200, 204-05 (1986); ALAB-837, 23 NRC 525, 533-34, 542-43 n.57 (1986).

¹¹ *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 413, *reconsideration denied*, ALAB-359, 4 NRC 619 (1976). *Accord Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-693, 16 NRC 952, 956-57 (1982).

¹² Intervenors' Brief (June 9, 1986) at 3-6.

¹³ *Cf. Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear 1), ALAB-303, 2 NRC 858, 866 (1975) ("the possibility that inconsistent or even contrary inferences could be drawn if the views of the appellants' experts were accepted does not prevent the trial board's findings from being supported by substantial evidence").

¹⁴ *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 357 (1975). See ALAB-843, 24 NRC at 209 n.38; ALAB-837, 23 NRC at 531.

¹⁵ Intervenors' Brief at 5.

again, they fail to provide us with any citations to the record that would support this broad allegation and we find none. As noted earlier, the Board based its conclusion on a diverse array of evidence, direct and indirect.¹⁶ The most direct evidence before the Board was the statistics on numbers of employees terminated for drug activity. The Board found that between January 1 and October 15, 1985, 163 employees were terminated for drug-related reasons.¹⁷ This yielded an average of seventeen terminations each month. Using this figure, the Board assumed that approximately 205 employees were terminated in 1985. With a total site work force of 6,000, and taking into account expert testimony that not all drug users would be detected, the Board estimated that 4% to 4.5% of the workers in 1985 used drugs.¹⁸ It arrived at similar estimates for previous years.¹⁹ The intervenors have pointed to no reliable or persuasive evidence to undercut the Board's findings and we see no reason to question its figures.²⁰ The Board also concluded that drug-use levels probably have not risen above that 4% to 4.5% figure, finding that drug use peaked in 1984-85 and that "[t]he combination of an undercover [police] operation (later widely publicized), large numbers of drug-related terminations, [use of] drug [detecting] dogs, and a generally intensified antidrug program should have had a substantially chilling effect on drug use at the Harris site."²¹ We find this to be an eminently reasonable conclusion.

The Board also was fully justified in relying on indirect evidence to support its finding on the extent of drug use at the site. Included among this evidence was the applicants' drug program consisting of:

¹⁶ See *supra* p. 536.

¹⁷ See Tr. 8805-06; Applicants' Exh. 51, Chart II-3; Banks, *et al.*, Tr. fol. 10,077, at 4-5.

¹⁸ Tr. 8967.

¹⁹ See LBP-86-11, 23 NRC at 343-45.

²⁰ Indeed, it appears that the Board's conclusion is conservative because an employee may be terminated based on mere suspicion under the applicants' drug-control program. See *id.* at 343 n.24; Hindman, *et al.*, Tr. fol. 8893, at 11-12. Of the 218 terminations at Shearon Harris between 1979 and the time of the hearings, 77 were founded on "suspicion, based on less than search or testing," and 48 were founded on workers' refusals to submit to a urinalysis test or a search of their person, property, or vehicle. *Id.*; Applicants' Exh. 51, Chart II-3.

²¹ LBP-86-11, 23 NRC at 345.

(1) a clear policy on drug use which is communicated to all site employees; (2) supervisor drug awareness training and reliance on observations of supervisors to detect drug use; (3) security measures, including random and exiting searches, undercover investigations, searches of employees suspected of drug involvement, searches of employees' vehicles parked within the construction security fence, routine drug detection dog searches, and drug detection urinalysis tests for employees suspected of drug involvement; and (4) a Quality Check program whereby employees can make their concerns known, anonymously if desired.²²

The Licensing Board found this program to be "well-implemented and tough."²³ Similarly, the record evidence of the small amount of drugs confiscated over time at the site,²⁴ the low rate of accidents at the site,²⁵ and direct observations of site workers by applicants and NRC personnel²⁶ all reinforce the correctness of the Board's conclusion on illicit drug use, and we see no warrant for overturning these findings. In sum, our review of the record and the Board's decision reveals that the Licensing Board's findings and conclusions concerning this issue are thorough, balanced and convincing.

The intervenors next seem to assert that even if the Licensing Board's conclusion on the level of drug use among the Shearon Harris work force is accepted, this rate is still not "low enough" to ensure that drug use has not resulted in safety-threatening mistakes by site workers.²⁷ As the Licensing Board realized, "the 'widespread' allegation in the contention implies that such use has resulted in faulty work and safety concerns."²⁸ The Board concluded, however, that such was not the case.

As with the Board's finding that the level of drug use was, and remains, low, its conclusion that drug use did not cause safety concerns is amply supported by the record. First, CCNC did not allege any specific construction deficiencies as a result of worker drug use. In fact, as the Board pointed out, "the record is devoid of proof of any deficiency in construction caused by drug use."²⁹ Second, on the basis of expert testimony, the Board found that errors committed by workers as a result of drug impairment would not differ in any material way from employee errors resulting from other causes, such as fatigue, mental illness, or con-

²² *Id.* at 346. See Bensinger, *et al.*, Tr. fol. 8326; Hindman, *et al.*, Tr. fol. 8893, at 3-11; Mackonis and Mathias, Tr. fol. 8993; Tr. 8330-33, 8381-86, 8410-16; Applicants' Exhs. 30-40.

²³ LBP-86-11, 23 NRC at 346.

²⁴ See Hindman, *et al.*, Tr. fol. 8471, Attachment 5; Hindman, *et al.*, Tr. fol. 8893, at 12, 16; Mackonis and Mathias, Tr. fol. 8993, at 8-13; Tr. 8575, 8597-98, 8994-96, 9207-08.

²⁵ Hindman, *et al.*, Tr. fol. 8893, at 19-20.

²⁶ *Id.* at 16; Tr. 8755, 8759-61, 8762-65.

²⁷ Intervenors' Brief at 3.

²⁸ LBP-86-11, 23 NRC at 347.

²⁹ *Id.* at 348.

flicts with supervisors and coworkers.³⁰ Hence, it concluded "that routine supervisory practices and [quality assurance] measures will identify drug caused failures at about the same rate as other similar errors are identified."³¹ The intervenors have not challenged this conclusion. The Licensing Board then found that the applicants' quality assurance program is "adequate to cope with the errors likely to be caused by employees involved in drug activity."³² This finding, in turn, was based largely on the Board's analysis of one facet of the quality assurance program known as "attribute surveillance."³³

Under the attribute surveillance program, the applicants reinspect quality attributes of samplings of safety-related components, with the sample size based on a widely accepted sampling plan, Military Standard 105-D.³⁴ The record establishes, and the Board found, that at the time of the hearing, approximately 3,100 of the more than 4,200 components selected had been reinspected. Out of a total of 54,560 attributes examined, only 269 were found to be deficient. By comparing the number of defective attributes to the total number of attributes reinspected, the Board arrived at an overall inspector effectiveness rate of 99.5%. No deficiencies with safety significance were found.³⁵ Based on this evidence, the Board concluded that "[t]he applicants' attribute surveillance program is convincing evidence that the Shearon Harris overall quality assurance program is effective and has not been undermined by drug use."³⁶ As the Licensing Board noted, all safety-related craft work performed by employees implicated in drug activity was inspected at least once.³⁷ This circum-

³⁰ DuPont, Tr. fol. 9994, at 9-10, 12-14. Dr. DuPont is a clinical psychiatrist who was formerly Director of the National Institute of Drug Abuse and Chief White House Advisor on Drug Abuse. See *id.*, Attachment 1; Tr. 9986.

³¹ LBP-86-11, 23 NRC at 350.

³² *Id.* at 359.

³³ The Board noted that the applicants' quality assurance program had already been approved by the NRC staff. Moreover, the intervenors did not present any basis for questioning the efficacy of the program. Consequently, the Board saw no need to review the applicants' entire quality assurance program. *Id.* at 355, 358.

³⁴ *Id.* at 355. See Banks and Parsons, Tr. fol. 10,077, at 21-23. In some cases 100% of an inspector's work was reinspected. See Frederickson and Prevatte, Tr. fol. 10,166, at 5. The attribute surveillance program was instituted in June 1984, and the Licensing Board found that the reinspection included samples of all the safety-related work done at Shearon Harris from the early phases of construction with the exception of certain work that could not be reinspected, such as concrete placement. LBP-86-11, 23 NRC at 356; Tr. 10,094-96.

³⁵ Banks and Parsons, Tr. fol. 10,077, at 24, Attachments 3 and 4.

³⁶ LBP-86-11, 23 NRC at 357. The Board also relied on the NRC staff's assessment of the applicants' quality assurance performance. *Id.* at 358.

³⁷ See *id.* at 353-54; Banks, *et al.*, Tr. fol. 10,077, at 5-7, 14; Frederickson and Prevatte, Tr. fol. 10,166, at 5-8; Tr. 10,098-99.

stance, combined with the Board's finding that the applicants' quality assurance program was adequate to detect errors that may have been caused by employees involved in drug use, makes 100% reinspection of all construction unnecessary.³⁸

We recognize that even the best quality assurance program cannot assure that every possible construction deficiency, whether caused by worker drug use or otherwise, will be detected. As the Licensing Board indicated, the Commission's regulations do not require perfection.³⁹ Rather, the quality assurance program must provide "adequate confidence" that those systems, structures and components having safety-related functions "will perform satisfactorily in service."⁴⁰ Any level of drug use among workers building a nuclear power plant is, of course, cause for concern. In light of the apparent success of the applicants' drug and quality assurance programs, however, we fully concur with the Licensing Board's conclusion that drug use at the Shearon Harris construction site was not "widespread," and that it has not resulted in safety-related construction deficiencies. Accordingly, we affirm its findings and conclusions on contention WB-3.

II.

The Commission's regulations for coping with radiological emergencies require the establishment of an area approximately ten miles in radius around a nuclear plant, known as the plume exposure pathway emergency planning zone (EPZ),⁴¹ and the "means to provide early notification and clear instruction to the populace within the plume exposure pathway [EPZ]"⁴² The regulations also state that "[t]he 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."⁴³ In

³⁸ In addition, the applicants evaluated, and in some cases reinspected, the work of quality assurance personnel who themselves had been implicated in drug activity. According to the Board, these reinspections "establish an overall proficiency [rate] of 99.6%" for those inspectors, and hence "provides reasonable assurance that the original work of those inspectors was adequate." LBP-86-11, 23 NRC at 359-64; Banks, *et al.*, Tr. fol. 10,077, at 8-14.

³⁹ LBP-86-11, 23 NRC at 354.

⁴⁰ 10 C.F.R. Part 50, Appendix B, Introduction. See *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 64 (1985).

⁴¹ 10 C.F.R. § 50.47(b)(10), (c)(2).

⁴² *Id.* § 50.47(b)(5).

⁴³ *Id.* Part 50, Appendix E, § IV.D.3.

elaborating on these requirements, the Commission's basic guidance document on emergency planning states:

2. The minimum acceptable design objectives for coverage by the [notification] 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.⁴⁴

The Licensing Board admitted Eddleman contention 57-C-3, which alleged that the applicants' fixed siren system did not meet these requirements with regard to nighttime summer conditions. As framed by the Board, the basic issue raised by the contention was

whether the sirens can wake up virtually all the people sleeping in the EPZ between 1 a.m. and 6 a.m. particularly those with windows closed and air conditioners running. The Applicants should address whether the presently planned means of back-up mobile notification could and should be augmented to meet the "about" 15 minute standard in Appendix E, if necessary.⁴⁵

In resolving the contention, the Licensing Board interpreted the pertinent regulations as requiring reasonable assurance that more than 95% of the households within the inner five miles of the EPZ will be warned within the first fifteen minutes of the alert. As to the outer five miles, the Board found that the regulations permit greater flexibility regarding the percentage of persons alerted in the first quarter hour.⁴⁶ It found, however, that it need not specify a precise minimum criterion for this area because the evidentiary record established that the level of alerting in the outer five miles of the EPZ was sufficiently high to meet the regulatory standard.⁴⁷

At the hearing on contention 57-C-3, the applicants relied initially on an alerting system comprised of fixed sirens, informal notification, and

⁴⁴ NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," (Rev. 1, November 1980) at 3-3 [hereinafter, "NUREG-0654"].

⁴⁵ LBP-86-11, 23 NRC at 364.

⁴⁶ See generally *Final Rule on Emergency Planning*, CLI-80-40, 12 NRC 636, 638 (1980).

⁴⁷ LBP-86-11, 23 NRC at 372.

mobile alerting.⁴⁸ The Licensing Board found that the sirens can be expected to awaken approximately 84% of the households in the EPZ. With consideration of informal alerting, that figure increases to 91%. The Board concluded that this figure "clearly satisfies the 15-minute notification requirement" for the outer five miles of the EPZ.⁴⁹ With the addition of route alerting, which the Board found would cover 30% to 40% of the EPZ population in fifteen minutes and could be completed in approximately forty-five minutes, the Board concluded that close to 100% of the entire EPZ would be notified within forty-five minutes.⁵⁰

With respect to the inner five miles of the EPZ, however, the Board found that the combination of the sirens and informal alerting — which would notify 91% of the households — did not satisfy the regulations. In order to prevent any delay in obtaining an operating license, however, the applicants announced that they would supplement their notification system with a tone alert radio system.⁵¹ Under this program, radio re-

⁴⁸ See Applicants' Motion for Summary Disposition of Eddleman 57-C-3 (November 2, 1984) and attachments. Informal alerting refers to the phenomenon where people who have been alerted by the sirens contact and alert others. See LBP-86-11, 23 NRC at 388. Mobile alerting is additional public warning provided by police and fire vehicles driving predesignated routes throughout the EPZ. See *id.* at 389-90.

⁴⁹ LBP-86-11, 23 NRC at 396.

⁵⁰ *Id.* at 396-97.

⁵¹ See Tr. 10,269.

In seeking summary disposition on this contention, the applicants took the position that the sirens alone satisfied the regulatory criteria, and that route alerting and informal alerting should serve merely as backup. The applicants maintain that the appropriate standard for evaluating the notification system is that found in NUREG-0654 at 3-8 to 3-11; i.e., that for areas with 2,000 or fewer persons per square mile, such as the Shearon Harris EPZ, the sirens must provide sound level coverage of 60 decibels, or 10 decibels above ambient noise levels, based on summer daytime conditions, depending on whether a field survey to determine the area's average daytime ambient noise level has been conducted. See also FEMA-43, "Standard Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants" (September 1983), at E-7 to E-8. The Licensing Board rejected this view, finding it to be unsound as a matter of both law and fact. First, it ruled that the applicants could not rely on NUREG-0654 and FEMA-43 because they are merely guidance documents and cannot be given the binding effect the applicants advocate. Second, it found that the record showed a 60-decibel siren sound level initiated at about 2 a.m. on a summer night would arouse, at best, only 50% to 75% of the households in the EPZ. The Board held that such a result clearly would not satisfy the regulatory requirements. See LBP-86-11, 23 NRC at 367-69.

Subsequently, the Licensing Board, in letters dated November 19, 1985, and May 16, 1986, conveyed to the Commission its "generic concerns about nighttime alerting at reactors which rely entirely on sirens and . . . 'informal alerting'" Letter from Licensing Board to Commission (May 16, 1986) at 1. Because the Commission currently has under consideration the issue of the correct notification standard (see Letter from Chairman Zech to Licensing Board (August 7, 1986)), the NRC staff and the Federal Emergency Management Agency (FEMA) withdrew their joint appeal raising this question. See NRC Staff/FEMA Motion for Leave to Withdraw Notice of Appeal (May 21, 1986). Similarly, the applicants chose not to include this question in their brief. See Applicants' Brief (July 9, 1986) at 29-30. Rather, the applicants argue that the question of whether fixed sirens alone meet the regulations is now academic because the Licensing Board determined that the applicants' system (as supplemented with tone alert radios) satisfies the Board's interpretation of the regulations. Accordingly, they ask us not to reach the question. Because we agree that the applicants' notification system, with the addition of tone alert radios, fully complies with the Commission's regulations (see *infra* pp. 544-47), and because the Commission is addressing the notification issue generically, we see no need to decide whether a notification system consisting exclusively of fixed sirens is adequate.

ceivers are to be distributed to every household within a five-mile radius of the plant. The applicants have an arrangement with the National Weather Service (NWS), under which the NWS has agreed to broadcast a radio signal to the area around Shearon Harris in the event of a radiological emergency. This signal will, in turn, cause the receivers to sound an alarm tone.⁵² The Licensing Board found that "the independence and partial redundancy of the siren and radio systems demonstrate compliance with the requirement of 'essentially 100%' alerting in 15 minutes in the first 5 miles of the EPZ."⁵³

On appeal, the intervenors purport to challenge a number of the Licensing Board's findings. Once again their appellate brief is woefully inadequate. It generally consists of bare allegations that the Licensing Board's findings are wrong, and thus it fails to comply with the Commission's Rules of Practice. Our examination of the intervenors' naked charges, however, satisfies us that there is no merit to any of them.

First, the intervenors claim that the Licensing Board erroneously considered informal alerting and "backup" alerting in resolving contention 57-C-3. According to the intervenors, because informal alerting is not mentioned in NUREG-0654, Appendix 3, it "is clearly not within the scope of the alert-notification system required by NUREG-0654."⁵⁴ With regard to mobile route alerting, the intervenors' argument is somewhat more obtuse. They appear to argue that, because NUREG-0654, Appendix 3, § B.2(c) permits mobile alerting throughout the EPZ as part of "[s]pecial arrangements . . . to assure 100% coverage within 45 minutes," mobile route alerting cannot also be used to meet (1) the requirement of § B.2(a) (in the same part of that document) to provide an initial alert signal and instructional message within fifteen minutes throughout the entire EPZ and (2) the requirement of § B.2(b) to notify essentially 100% of the population within five miles of the plant site.

These charges are easily answered. We need only remind the intervenors that NUREG-0654 is not a Commission regulation that compels obedience, as the intervenors seemingly believe. Rather, it serves as guidance, setting forth but one method for meeting the applicable regulatory requirements — here, 10 C.F.R. § 50.47(b)(5) and Part 50, Appendix E, § IV.D.3.⁵⁵ In other words, that document "is treated simply as evidence

⁵² See LBP-86-11, 23 NRC at 391-96; Goodwin, *et al.*, Tr. fol. 10,723.

⁵³ LBP-86-11, 23 NRC at 395-96.

⁵⁴ Intervenors' Brief at 6-7.

⁵⁵ ALAB-843, 24 NRC at 205 n.13; *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 710 (1985), *review denied*, CLI-86-3, 23 NRC 125 (1986).

of legitimate means for complying with regulatory requirements.”⁵⁶ Thus, contrary to the intervenors’ claim, the mere fact that informal alerting is not specifically mentioned in Appendix 3 of NUREG-0654 does not disqualify it from being considered as a means for complying with the notification requirements contained in the Commission’s emergency planning regulations.⁵⁷ Similarly, there is nothing in that guidance document to preclude the applicants from relying upon mobile route alerting to accomplish more than one goal of their notification system, and such use does not, without a great deal more, disqualify that alerting method from consideration as a means of meeting the regulations.⁵⁸ Accordingly, the intervenors’ arguments that seek to elevate an agency guidance document to literally read commands of black letter law must fail.

Next, the intervenors assert that in resolving this emergency planning contention the Board erred in not considering “siren failure rates.”⁵⁹ But it is well-settled that in a Commission operating license proceeding a party is bound by the literal terms of its own contention⁶⁰ and, unless a licensing board raises an issue *sua sponte*, it is authorized to decide only those matters put in controversy by the parties.⁶¹ Here, the postulated failure of the sirens was not part of contention 57-C-3. Indeed, the intervenors admit as much in their brief.⁶² Accordingly, had the intervenors

⁵⁶ *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), ALAB-698, 16 NRC 1290, 1298-99 (1982), *aff’d in part on other grounds*, CLI-83-22, 18 NRC 299 (1983).

⁵⁷ The intervenors’ challenge to the use of informal alerting is based solely upon their erroneous perception and reading of NUREG-0654. We note, however, that even without informal alerting the record establishes that the applicants’ system complies with the Commission’s regulations. In these circumstances, we resolve only the narrow question presented by the intervenors.

The Licensing Board found that for the inner five miles of the EPZ sirens and tone alert radios would warn essentially 100% of the population within fifteen minutes. LBP-86-11, 23 NRC at 395-97. For the outer five miles, the Board found that sirens would notify about 84% of the population within fifteen minutes and that informal alerting would warn 7% more, so that the fifteen minute notification requirement of the regulations would be met. *Id.* at 396. The record also demonstrates that mobile route alerting in the outer five miles of the EPZ would alert between 30% and 40% of the population in fifteen minutes. See Tr. 9582, 9595. If the same methodology as used by the Licensing Board is employed, almost the same total of the population will be alerted by the combination of sirens and mobile route alerting as with sirens and informal alerting. Therefore, even though the applicants did not rely initially upon route alerting as a part of their primary notification system, the record nevertheless establishes the effectiveness of route alerting for notifying the population of the outer five miles of the EPZ.

⁵⁸ In other cases we have approved the use of mobile route alerting as a component of emergency notification systems. See *Catawba*, ALAB-813, 22 NRC at 78; *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-717, 17 NRC 346, 369 (1983).

⁵⁹ Intervenors’ Brief at 7.

⁶⁰ See ALAB-843, 24 NRC at 208; *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-836, 23 NRC 479, 505 (1986).

⁶¹ See 10 C.F.R. § 2.760a.

⁶² Intervenors’ Brief at 7.

sought to contest the likelihood of the applicants' sirens failing, they were obliged to proffer a contention to that effect in a timely manner with an adequate supporting basis. Having failed to do so, they cannot now complain that, in resolving this contention, the Licensing Board erred in not considering siren failure rates. In any event, the record establishes that many of the residences in the EPZ are within the acoustical coverage area of more than one siren and that all residences within five miles of the plant will be provided a tone alert radio.⁶³ Moreover, the mobile route alerting system blankets the entire EPZ.⁶⁴ Hence, even assuming that a number of fixed sirens fail in an emergency, the people residing in the coverage area of the failed sirens still would receive notification of the emergency.

The intervenors also argue that the Licensing Board should have postponed issuing its final decision resolving this contention until obtaining "official test results" which, according to the intervenors, "would soon be available."⁶⁵ Unfortunately, the intervenors do not further identify their reference to official tests and the record is silent on the scheduling of any tests. We presume, therefore, that the intervenors are referring to tests conducted by FEMA that become part of the final FEMA findings on sirens.⁶⁶ Yet there is no regulatory requirement that such FEMA tests or findings be completed prior to the Licensing Board's authorization of an operating license. As we determined in *Waterford*, "installation and testing of the siren system is precisely the type of matter for which the Commission believes predictive findings can suffice"⁶⁷ More recently, while responding to much the same argument concerning FEMA siren findings in *Catawba*, we held that

[i]t is now well-settled that the issuance of FEMA's final findings on the adequacy of offsite emergency plans and preparedness is not a prerequisite to the authorization of a full-power operating license. Rather, "preliminary FEMA reviews and interim findings presented by FEMA witnesses at licensing hearings are sufficient as long as such information permits the Licensing Board to conclude that offsite emergency preparedness provides 'reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.'"⁶⁸

⁶³ See Applicants' Exh. 46; Tr. 9369; Keast, *et al.*, Tr. fol. 9375, at 12-13, 21; Tr. 9618-19, 10,269. See generally Goodwin, *et al.*, Tr. fol. 10,723.

⁶⁴ See Keast, *et al.*, Tr. fol. 9375, at 26-27.

⁶⁵ Intervenors' Brief at 7-8.

⁶⁶ See Tr. 9641; 44 C.F.R. Part 350.

⁶⁷ *Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1105 (1983).

⁶⁸ *Catawba*, ALAB-813, 22 NRC at 78.

In this instance, the record overwhelmingly supports the Licensing Board's determination that there is reasonable assurance that the applicants' notification system meets this standard.⁶⁹

The intervenors argue further that "[t]he Board erred in neglecting the undetectability of failures in tone alert radios"⁷⁰ This is simply not so. The Board clearly set out the various existing safeguards for assuring that all receivers are in proper operating condition and, in effect, determined they are adequate.⁷¹

The intervenors also claim that the Licensing Board erred in not taking seriously the "many past failures" of tone alert radios in tests at another facility.⁷² But they introduced no evidence of such failures, and the data the intervenors cite for support relate to improper use of the tone alert radios, not mechanical failure.⁷³ In this regard, we note that the Licensing Board specifically adopted the same rate of improper use of tone alert radios found by a FEMA-sponsored survey of a Colorado reactor EPZ. The Board assumed that 13.6% of the households within the first five miles of the Shearon Harris EPZ would similarly misuse their radios and, hence, would not be alerted by the tone alert signal.⁷⁴

III.

Having reviewed the record and the intervenors' assertions of error, we conclude that there is nothing in the Licensing Board's decision re-

⁶⁹ LBP-86-11, 23 NRC at 408.

⁷⁰ Intervenors' Brief at 8.

⁷¹ LBP-86-11, 23 NRC at 394. The receiver features a red light that is activated when the radio is operating properly, awaiting the alert tone. The radio can also be tested by pressing the weather bar, which would allow the standard weather broadcast that is available 24 hours a day to be heard. There is also a test bar on the receiver. When this bar is pressed, it will enable the user to determine if the signal he should hear when the alert tone is broadcast is functioning. In addition, the NWS has approximately 20 to 25 emergencies per year during which it broadcasts an alert tone. These occasions would allow the users to determine that the radio is operating properly. Finally, the NWS sends out a weekly alert signal as a test of the radio. Tr. 10,876-77.

It should be noted that the installation of tone alert radios as a supplement to the siren system within the first five miles of the EPZ was first announced by the applicants on January 23, 1986, well after the siren hearing began and, obviously, well after the time for the submission of contentions. See Tr. 10,269. In the Licensing Board's view, the question of radio failures was an integral part of its consideration of the tone alert radios as a notification supplement.

⁷² Intervenors' Brief at 8.

⁷³ See Tr. 10,757, 10,762.

⁷⁴ LBP-86-11, 23 NRC at 395. In a similar vein, the intervenors contend that the Board erred "in accepting . . . as credible" one of the applicants' expert witnesses who testified concerning, *inter alia*, the rate of improper use of tone alert radios. Intervenors' Brief at 8. For support, however, they merely refer us to their proposed findings, a practice that is clearly prohibited. See *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775, 805 (1979), *vacated in part and remanded*, CLI-80-8, 11 NRC 433 (1980). Nevertheless, we have reviewed the intervenors' allegation and find it to be without merit.

garding CCNC contention WB-3 and Eddleman contention 57-C-3 that warrants reversal.⁷⁵ Further, we have conducted our customary *sua sponte* review of the balance of the decision and have found no errors requiring correction. For the foregoing reasons, the Licensing Board's findings and conclusions on contentions WB-3 and 57-C-3 are *affirmed*.⁷⁶ It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

⁷⁵ As their final attack, the intervenors assert that the Licensing Board should not have issued the initial decision until certain matters then pending before it were resolved. These matters concern (1) a question, over which the Board had retained jurisdiction, regarding possible harassment of two former employees of one of the applicants, and (2) a late contention filed less than a week before issuance of the initial decision. Shortly after the intervenors filed their brief in this appeal, the Licensing Board issued an unpublished ruling disposing of the possible harassment question, rejecting the late contention, and thereby rendering moot the intervenors' procedural objection. See Memorandum and Order (Rejecting Late Proposed Contention Concerning Alleged Falsification of Radiation Exposure Records) (June 13, 1986). There is similarly no merit to the intervenors' argument that issuance of the Board's decision should have awaited our disposition of all appeals from the earlier partial initial decisions. It is clear from the Commission's regulations that an operating license may be authorized before completion of the agency's internal appellate process. See 10 C.F.R. § 2.764(f).

⁷⁶ Although we affirm the Licensing Board's findings and conclusions on these two contentions, we do not affirm the Board's operating license authorization because we still have under consideration the intervenors' appeal from the Board's second partial initial decision, LBP-85-28, 22 NRC 232 (1985). Our resolution of that appeal is expected to be completed shortly.

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. 82-471-02-OL)
(Onsite Emergency Planning
and Safety Issues)

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

October 7, 1986

The Licensing Board grants Applicants' motion for authorization to issue a license to conduct fuel loading and precriticality testing and authorizes the Director of Nuclear Reactor Regulation to make appropriate findings on the matters specified in 10 C.F.R. § 50.57(a) and to issue the requested license.

RULES OF PRACTICE: STANDING

An intervenor's status as a party to the proceeding does not of itself make it a spokesman for others. *Puget Sound Power and Light Co.* (Skagit Nuclear Power Project, Units 1 and 2), ALAB-556, 10 NRC 30, 33 (1979).

REGULATIONS: INTERPRETATION (10 C.F.R. § 50.57(c))

Section 50.57(c) of 10 C.F.R. calls for a one-step procedure — i.e., the Board should consider the position of any party to the extent that his contentions are relevant to the activity to be authorized, and, prior to taking any action on a motion, should make findings upon certain matters set forth in 10 C.F.R. § 50.57(a) as to which there is such a relevant issue in controversy.

RULES OF PRACTICE: CONTENTIONS

A motion filed by an applicant pursuant to § 50.57(c) does not automatically present an opportunity to file new contentions (i.e., contentions not previously filed in response to the Commission's original notice of opportunity for hearing) specifically aimed at low-power testing. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-81-5, 13 NRC 361, 362 (1981); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-728, 17 NRC 777, 801 n.72 (1983). Any submission proposing late-filed contentions must address certain factors.

MEMORANDUM AND ORDER

(Granting Applicants' Motion for Authorization to Issue License to Conduct Fuel Load and Precriticality Testing)

Memorandum

On August 22, 1986, Applicants filed a motion for authorization to issue license to conduct fuel load and precriticality testing. On August 29, Seacoast Anti-Pollution League (SAPL) filed its response and objection,¹ and on September 3, the Commonwealth of Massachusetts (Mass.) filed its objection. On September 8, the Staff filed its response, which was supplemented by the filing of an affidavit on September 18, 1986.

¹ This response and objection was captioned as being that of SAPL and New England Coalition on Nuclear Pollution (NECNP), but only counsel for SAPL signed this submission. SAPL's counsel did not explain the basis for SAPL's standing to respond and object to the motion on NECNP's behalf. An intervenor's status as a party to the proceeding does not of itself make it a spokesman for others. *Puget Sound Power and Light Co.* (Skagit Nuclear Power Project, Units 1 and 2), ALAB-556, 10 NRC 30, 33 (1979). Accordingly, we treat the response and objection as having been filed only by SAPL upon its own behalf.

DISCUSSION

Applicants' motion is based upon 10 C.F.R. § 50.57(c), and relies upon attached affidavits.² Applicants urge that none of the parties' admitted contentions pending either before the Hoyt Board (re offsite emergency planning issues) or before this Board (re onsite emergency planning and safety issues) are relevant to the instant motion as required by § 50.57(c).³ Other than referring to arguments previously advanced by SAPL, NECNP, and by Mass. in opposing Applicants' motion of June 17, 1986, which had requested that the Board's partial initial decision should authorize operation of Seabrook Unit 1 up to and including 5% of rated power, neither SAPL nor Mass. argues that any offsite emergency planning issues are relevant to the instant motion. In its Memoranda and Orders of July 25, 1986 (LBP-86-24, 24 NRC 132), July 30, 1986 (LBP-86-25, 24 NRC 141), and September 15, 1986 (LBP-86-30, 24 NRC 437), the Board had rejected those arguments. In any event, as Applicants point out, the offsite contentions pending before the Hoyt Board are not relevant to the instant motion because 10 C.F.R. § 50.47(d) states that

no NRC or FEMA review, findings, or determinations concerning the state of *offsite* emergency preparedness or the adequacy of and capability to implement State and local *offsite* emergency plans are required prior to issuance of an operating license authorizing only fuel loading and/or low power operations (*up to 5% of the rated power*).

(Emphasis added.) The instant motion is for a low-power operating license of less than 5% of rated power — i.e., for 0%.

² The affiants are Vincent J. Esposito, Manager of the Core Engineering Section of the Nuclear Fuel Divisions Section of the Nuclear Fuel Divisions Business Unit of Westinghouse; George S. Thomas, Vice President of Nuclear Production at the Seabrook Station; Joseph M. Salvo, Senior Mechanical Engineer at Yankee Atomic Electric Company, assigned to the Seabrook project; James A. MacDonald, Radiological Assessment Manager at Seabrook Station.

Their professional qualifications satisfy us as to their expertise.

³ Section 50.57(c) provides:

An applicant may, in a case where a hearing is held in connection with a pending proceeding under this section make a motion in writing, pursuant to this paragraph (c), for an operating license authorizing low-power testing (operation at not more than 1 percent of full power for the purpose of testing the facility), and further operations short of full power operation. Action on such a motion by the presiding officer shall be taken with due regard to the rights of the parties to the proceedings, including the right of any party to be heard to the extent that his contentions are relevant to the activity to be authorized. Prior to taking any action on such a motion which any party opposes, the presiding officer shall make findings on the matters specified in paragraph (a) of this section as to which there is a controversy, in the form of an initial decision with respect to the contested activity sought to be authorized. The Director of Nuclear Reactor Regulation will make findings on all other matters specified in paragraph (a) of this section. If no party opposes the motion, the presiding officer will issue an order pursuant to § 2.730(e) of this chapter, authorizing the Director of Nuclear Reactor Regulation to make appropriate findings on the matters specified in paragraph (a) of this section and to issue a license for the requested operation.

With respect to the second part of the first argument, i.e., that none of the parties' admitted onsite emergency planning and safety issues pending before this Board are relevant pursuant to § 50.57(c), Applicants argue as follows:

As set forth in the *Affidavit of Vincent J. Esposito* (attached hereto as Exhibit A), the maintenance of a boron concentration of 2000 ppm or greater precludes criticality in the Seabrook Unit 1 core even if it is assumed that all control rods are withdrawn. *Exh. A* at §§ 4-5. As set forth in the *Affidavit of George S. Thomas* (attached hereto as Exhibit B), special procedures will be in place during the contemplated fuel loading and precriticality testing to assure that the boron concentration does not go below 2000 ppm. *Exh. B*, § 5. These procedures consist of periodic sampling of the water in the reactor and make-up supply; sampling of the contents of make-up water whenever water is added to verify the concentration; and locking (by chains and padlocks) all valves, the opening of which could permit the entry of nonborated water into the reactor coolant system. *Id.* This being the case no control room operation is needed to assure a boron concentration of greater than 2000 ppm and thus the preclusion of criticality. As a result the issues raised by SAPL Contention Supp. No. 6 (Detailed Control Room Design Review) (formerly N.H. No. 10) are irrelevant to the activities contemplated under the authorization sought.

Similarly, the issues raised by NECNP Contention I.B.2 (environmental qualification of electrical equipment) are also irrelevant to the contemplated activities. The presence of elevated boron concentrations renders unnecessary the use of any electrical control equipment or control circuitry important to safety to prevent criticality or provide safe shutdown. *Affidavit of Joseph M. Salvo* (attached hereto as Exhibit C) at § 4; see also *Exh. B* at § 4.

In addition, the Esposito Affidavit (Exhibit A) also demonstrates that in the highly unlikely event that a break should occur which resulted in an entire loss of the reactor coolant from the core, there still would be no need for reliance upon control room operations or electrical systems or circuitry to maintain subcriticality because the resulting loss of neutron generation capability of the fuel dominates the accompanying loss of neutron absorption capability of the borated coolant. *Exh. A* at § 6 *et seq.*

Finally, the Affidavit of James A. MacDonald (attached hereto as Exhibit D) demonstrates that there will be no need, during fuel load and precriticality testing, to implement the emergency classification system, which is the subject of Contentions NH-20 and NECNP III.I. This is so because the reactor will not go critical and thus there is no potential for release of radioactive material. Thus, the issues raised by these contentions are likewise irrelevant to the activities sought to be authorized.

Applicants' Motion at 5, 6.

Only SAPL urges that a specific onsite contention pending before this Board is relevant to the activity to be authorized. With respect to its Supplemental Contention 6, SAPL argues that "since it involves the control room and certain of the issues such as human engineering discrepancies" it ought to be resolved before any level of operation is authorized,

including subcritical operation." SAPL's Response at 5. However, the Memorandum and Order of September 15, 1986, LBP-86-30, *supra*, in partially granting Applicants' motion for summary disposition, dismissed that part of Supplemental Contention 6 which adverted to the control room and human/engineering discrepancies (HEDs). Thus, SAPL's argument lacks a basis and is rejected.⁴

Both SAPL and Mass. urge that the proposed draft low-power license dated August 20, 1986, in exempting Applicants "from the provisions of 10 C.F.R. § 70.24 insofar as this section applies to materials held under this license," raises a controversy which, pursuant to § 50.57(c), requires that this Board make findings on the matters specified in paragraph (a) in the form of an initial decision prior to authorizing the contested activity. They assert that this exemption allows the Applicants to avoid monitoring criticality of the core in the reactor. As a threshold matter, we find that SAPL and Mass. have misinterpreted § 50.57(c) in thinking that this section requires a two-step procedure — i.e., first, the Board should consider the position of any party and take action on a motion to the extent that his contentions are relevant to the action to be authorized; and, second, the Board should make findings upon certain matters set forth in § 50.57(a) as to which there is a controversy. We construe that section as calling for a one-step procedure — i.e., the Board should consider the position of any party to the extent that his contentions are relevant to the activity to be authorized, and, prior to taking any action on a motion, should make findings upon certain matters set forth in 10 C.F.R. § 50.57(a) as to which there is such a relevant issue in controversy.

Since the Part 70 exemption is not the subject of an existing contention of either SAPL or Mass., the exemption is not a relevant issue in controversy with respect to the activity to be authorized. Moreover, a motion filed by an applicant pursuant to § 50.57(c) does not automatically present an opportunity to file new contentions (i.e., contentions not previously filed in response to the Commission's original notice of opportunity for hearing) specifically aimed at low-power testing.⁵ Any submis-

⁴ SAPL does not specifically urge that the second matter of its concern as set forth in this contention is relevant to the activity to be authorized and thus also ought to be resolved before any level of operation is authorized, including subcritical operation. This second concern, which was not dismissed in the above-cited Memorandum and Order, related to the Safety Parameter Display System (SPDS). Even if SAPL's broad reference to "human engineering discrepancies" were taken to include any that might be present in the SPDS, SAPL has made no showing that any issues pertaining to the SPDS are relevant to fuel loading and precriticality testing, during which activities no self-sustaining nuclear chain reaction will take place. Absent nuclear criticality, there is no requirement for a system (the SPDS) whose function is to assess whether abnormal conditions warrant corrective action by operators to avoid a degraded core. NUREG-0737, Supp. 1, § 4.1.a. See also *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-83-27, 18 NRC 1146, 1149 (1983).

⁵ *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-81-5, 13 NRC 361, 362 (1981); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-728, 17 NRC 777, 801 n.72 (1983).

sion proposing late-filed contentions must address certain factors.⁶ No such submission is before us. In any event, while for unspecified reasons the Staff included the Part 70 exemption in the Part 50 draft operating license, Part 70 controls the possession, storage, and use of special nuclear materials, which encompasses reactor fuels, but only Part 50 controls the use of special nuclear materials in a utilization facility (i.e., as fuel in a nuclear reactor).⁷ Thus, even if, for the sake of argument, it is assumed that their interpretation of § 50.57(c) is well taken, SAPL's and Mass.'s reliance upon the exemption from Part 70 is misplaced and there is no real issue in controversy.

Only SAPL urges that, while the proposed draft low-power license of August 20, 1986, requires that Applicants submit the results of leakage rate measurements to demonstrate that their leakage reduction program has been implemented successfully prior to proceeding above 5% rated power, at the precriticality testing stage (at 0% power) any makeup water added to the reactor coolant system through some error might dilute the boron concentration below the standard of 2000 ppm. SAPL's attempt to place in controversy the leakage and dilution of borated water in the reactor coolant system falls short on two grounds. First, there simply is no admitted contention that questions any aspect of the Applicants' leakage reduction program; hence no relevant issue in controversy exists here. Second, SAPL's vague concerns about possible errors associated with addition of borated makeup water, and possible analytical errors in monitoring boron concentration, do not challenge any of the physical and administrative controls, or their implementation, devised by the Applicants to ensure maintenance of boron concentration in the reactor coolant system sufficient to prevent occurrence of criticality in the reactor fuel.⁸ Applicants' Motion at 5; Thomas Affidavit at 1-3 (*see supra* note 3).

⁶ On at least two occasions the Board has warned that late-filed contentions, as well as late-filed amendments, are admissible only if they meet all of the five factors in 10 C.F.R. § 2.714(a)(1), including the Appeal Board's three-part test for good cause. *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1045 (1983). Such a submission requesting leave to file contentions or amendments out-of-time must address these factors and affirmatively demonstrate that on balance the factors favor the granting of the request. *See Duke Power Co.* (Perkins Nuclear Station, Units 1, 2, and 3), ALAB-615, 12 NRC 350, 352 (1980).

⁷ For examples of the use of reactor fuels outside the reactor core that are regulated by Part 70, *see* 10 C.F.R. § 70.22(i). In addition, the Commission's Statements of Consideration, 39 Fed. Reg. 39,020 (1974), stated that the criteria for the alarm systems were being amended to provide greater conformity with American National Standard N16.1-1969, "Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors." On the other hand, 10 C.F.R. § 50.1 states that Part 50 provides for the licensing of production and utilization facilities and § 50.10(a) states, in pertinent part, that a license is required in order to use a production or utilization facility. Once licensed, the Seabrook reactor would be a utilization facility subject to Part 50.

⁸ *See Diablo Canyon, supra* note 4.

The Staff advises that it has reviewed Applicants' in-depth evaluations of every connection to the reactor coolant system and connected systems for potential sources of nonborated water. In contrast to SAPL's vague concerns, the Staff reported that Applicants had specifically evaluated potential sources of nonborated water and committed to their isolation from the reactor coolant system by mechanically locking closed the appropriate valves with chains and padlocks, and by, in addition, locking open the electrical breaker of the one motor-operated valve when it is necessary to lock this valve closed. Further, Applicants' procedures provide that any system so isolated from the reactor coolant system will be tested for boron concentration prior to its alignment with the reactor coolant system. The Applicants' evaluation of the procedures included valve leak rates, timing of boron concentration sampling, and administrative procedures. The Staff concluded that the Applicants' procedures in this regard will provide reasonable assurance that boron concentration in the reactor coolant system will be maintained at, or greater than, 2000 ppm throughout the fuel loading and precritical testing activities for which the Applicants have requested authorization. The Staff further concluded that public health and safety will not be threatened by the activities for which the Applicants seek authorization. Lyon Affidavit, ¶¶ 4-10.⁹

Finally, SAPL and Mass. argue that there is no compelling reason for Applicants to load fuel and begin precriticality testing at this time and thus there is no good cause why the hearing and a partial initial decision on the onsite emergency planning and safety issues should not be concluded prior to the Board's decision upon the instant motion. The short answer is that § 50.57(c) does not require an applicant, which requests an operating license authorizing low-power testing at not more than 1% of full power, to show a compelling reason or good cause in support of such a request.

Order

In light of the foregoing discussion, pursuant to §§ 2.730(e) and 50.57(c), the Board grants Applicants' motion for authorization to issue an operating license to conduct fuel load and precriticality testing, and authorizes the Director of Nuclear Reactor Regulation to make appropri-

⁹ As a supplement to its response of September 8, 1986, the Staff, on September 18, filed the affidavit of Warren C. Lyon in which the Staff's review of Applicants' proposed methods to maintain boron concentration at acceptable levels during fuel loading and precriticality testing was explicated. Mr. Lyon's professional qualifications were presented in ¶¶ 1-2 of his affidavit and we are satisfied as to his qualifications.

ate findings on the matters specified in § 50.57(a) and to issue the requested license.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Sheldon J. Wolfe, Chairman
ADMINISTRATIVE JUDGE**

**Jerry Harbour
ADMINISTRATIVE JUDGE**

**Emmeth A. Luebke
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 7th day of October 1986.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judge:

Charles Bechhoefer

In the Matter of

**Docket No. 30-12688-MLA
(ASLBP No. 87-542-01-MLA)**

**RADIOLOGY ULTRASOUND
NUCLEAR CONSULTANTS, P.A.
(Strontium-90 Applicator)**

October 23, 1986

In a materials license proceeding where the Commission authorized an informal hearing on the NRC Staff's denial of an application, the Presiding Officer requests (1) the NRC Staff to make available certain documents to the Applicant, and (2) the Applicant to provide a statement of the claims it seeks to adjudicate.

RULES OF PRACTICE: INFORMAL HEARINGS

Even though a particular informal hearing is not governed by the contention requirements set in 10 C.F.R. § 2.714(a), an applicant should be guided by those requirements in setting forth the claims it seeks to litigate.

**MEMORANDUM AND ORDER
(Requesting Specification of Claims)**

By its Order dated October 9, 1986, the Nuclear Regulatory Commission granted the request of Radiology Ultrasound Nuclear Consultants, P.A. ("RUNC" or "Applicant") for a hearing on the NRC Staff's July

25, 1986 denial of RUNC's application to amend its byproduct materials license (No. 29-06760-08) to authorize the use of strontium-90 plaque applicators for the treatment of malignant skin lesions. The Commission authorized an informal hearing, to be conducted by a single Presiding Officer, with the parties limited to RUNC and the NRC Staff. The undersigned was appointed Presiding Officer by appointment dated October 16, 1986 (51 Fed. Reg. 37,684, Oct. 23, 1986).

As authorized by the Commission Order, I hereby request that RUNC provide a statement indicating the aspect or aspects of the Staff's licensing denial which RUNC seeks to litigate. Although this informal proceeding is not governed by the contention requirements set forth in 10 C.F.R. § 2.714(a), RUNC in its statement should be guided by those requirements — i.e., RUNC should particularize the error(s) it believes the Staff to have made and should set forth with reasonable specificity a basis for each such claim. RUNC should organize its statement by claims (or issues to be litigated) and should forward with its statement any documents which it wishes to use in support of its claims.

Please be advised that I telephonically requested the NRC Staff to provide me with copies of relevant background documents, and it has provided the documents listed in the Attachment to this Memorandum and Order (not published). I understand that RUNC has not had access to certain of these documents — in particular, the Appraisals of Members of the NRC Advisory Committee on Medical Uses of Isotopes (Attachment, items 10 and 16). The Staff is requested to forward copies of these documents to RUNC.¹ To the extent that RUNC wishes to cite or rely on any of the listed documents in its statement, it may reference them and need not provide additional copies.

RUNC should file its statement, together with supporting documentation, by November 14, 1986, or within 10 days of service by the Staff of the foregoing documents (whichever is later).² The NRC Staff may respond to RUNC's statement, to be filed within 15 days of service of that statement.

As contemplated by the Commission's Order, this informal adjudication may be decided entirely on the basis of RUNC's statement and the Staff's response, together with relevant documents. The parties accordingly should use their best efforts to include in their filings all information they believe is relevant and material to their position. After receiving these filings, I will determine whether additional submissions and

¹ If the Staff has any objection to this request, it may seek a protective order.

² For good cause shown, extensions of time may be granted. Cf. 10 C.F.R. §§ 2.711 and 2.710. I should be advised of any requested extension of time, together with the position of the other party on such request, at least one day prior to the expiration date of the time sought to be extended.

documents may be desirable; I may pose questions to either or both of the parties.

In addition, the Commission has authorized the Presiding Officer, in his discretion, to entertain oral presentations from the parties. In their respective filings, RUNC and the Staff are invited to address whether such an oral presentation is necessary or desirable given the facts of this proceeding. Any oral presentation will be held in the vicinity of the Applicant's business location (i.e., Freehold, N.J.) or at such other location as may be agreed upon by the parties and approved by the Presiding Officer. If such an oral presentation is to be held, I will specify in a later Order the procedures applicable thereto, as well as the time and location of such presentation.

Although the parties to this proceeding are limited to RUNC and the NRC Staff, members of the public are invited to submit statements with regard to the application, comparable to limited appearance statements permitted under 10 C.F.R. § 2.715(a). If an oral presentation is held, I will afford members of the public the opportunity to make oral limited appearance statements. In any event, written statements may be submitted. Oral or written limited appearance statements do not become a part of the formal evidentiary record, but I have discretion to ask the parties to address on the record matters raised by such statements. Written limited appearance statements, or requests to make oral statements if an oral presentation is to be held, should be submitted to the Office of the Secretary, Docketing and Service Branch, U.S. Nuclear Regulatory Commission, 1717 H Street, NW, Washington, DC 20555. A copy of such a statement or request should also be served on the Presiding Officer.

At this time, I am also issuing a Notice of Hearing which is to be published in the *Federal Register*. The Notice summarizes the matters included in this Memorandum and Order of interest to members of the public.

IT IS SO ORDERED.

Charles Bechhoefer
ADMINISTRATIVE JUDGE
PRESIDING OFFICER

Dated at Bethesda, Maryland,
this 23rd day of October 1986.

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulles, Chairman
Dr. Jerry R. Kline
Mr. Frederick J. Shon

In the Matter of

Docket No. 50-322-OL-3
(ASLBP No. 86-533-01-OL)

LONG ISLAND LIGHTING
COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

October 29, 1986

In response to the remand of the Appeal Board, in ALAB-847, 24 NRC 412 (1986), the Licensing Board clarifies its decision on the monitoring of evacuees in LBP-85-31, 22 NRC 410 (1985), reaching the same decision, that the record is unclear as to how the reception center can accommodate the evacuees of the general population who will seek monitoring and processing and this constitutes a defect in the Applicant's emergency plan.

CLARIFYING DECISION ON REMAND
(Monitoring of Evacuees)

INTRODUCTION

This Board issued two decisions on LILCO's application for an operating license for the Shoreham Nuclear Power Station. The first covered

most of the contested issues.¹ In a second and concluding partial initial decision we dealt primarily with the adequacy of the Nassau County Veterans Memorial Coliseum (Coliseum) as a reception center for the monitoring, decontamination, and transferring to sheltering facilities of evacuees from the Shoreham EPZ in the event of an emergency.² LILCO raised on appeal three issues considered in the decisions. The subject of the remand discussed in this decision, the monitoring of evacuees, was first considered in the concluding partial initial decision. The other issues on appeal, conflict of interest and the lack of a state emergency plan, were decided in the first initial decision.

The Appeal Board on September 19, 1986, issued a decision disposing of the three issues.³ Two of the issues were remanded to us for further clarification and on the third we were reversed. Intervenor has sought Commission review of the Appeal Board's decision on the two issues other than the monitoring of the evacuees. We do not discuss those issues in this decision on remand. We clarify here our decision on the monitoring of evacuees and reach the same decision we did in the concluding partial initial decision, that the record is unclear as to how the Coliseum can accommodate the evacuees of the general population who will seek monitoring and processing and this constitutes a defect in the LILCO emergency plan.

LILCO's emergency response plan provides for the monitoring, decontamination, and sheltering of evacuees requiring such services. In reviewing the adequacy of the plan, we found as to LILCO's planning basis:

LILCO has used an estimate of 20% of the population of the EPZ as the maximum number of persons who would require shelter in the event of an emergency at Shoreham. . . . The maximum population of the EPZ is 160,000, thus LILCO's planning is based on a maximum of 32,000 seeking shelter. LILCO did not justify how this number could be related to the number of persons who might seek monitoring. The Board finds that the number of persons expected to seek shelter in the event of a disaster is not necessarily the same as the number of persons who might seek monitoring in the event of a radiological accident.

We accept LILCO's planning basis for the number of evacuees who might seek shelter, be processed through the relocation center and . . . must thus be monitored. . . . The record is unclear as to how the Coliseum could accommodate the evacuees of the general population who will seek monitoring and processing, aside from those seeking shelter. We therefore find that LILCO's failure to plan for those of the general population who seek only monitoring and processing constitutes a defect in the Plan.⁴

¹ LBP-85-12, 21 NRC 644 (1985).

² LBP-85-31, 22 NRC 410 (1985).

³ ALAB-847, 24 NRC 412 (1986).

⁴ LBP-85-31, 22 NRC at 417.

LILCO appeals from the Board's conclusion that the Applicant must estimate and plan for the number of evacuees who are likely to come to the Coliseum for radiological monitoring and decontamination apart from planning for the evacuees who seek shelter. LILCO asserts that the Board's decision must be reversed because it addresses matters outside the scope of the issues admitted for litigation and imposes an obligation not justified by any NRC planning requirement or guidance.

The Appeal Board returned the matter to us to consider in the first instance whether the issue was properly raised for litigation. The Appeal Board declined to rule at the time of its decision on LILCO's argument that the obligation imposed by the Board is contrary to applicable regulatory requirements. Another question the Board is to answer is whether we intended to revisit the issue of LILCO's plan for evacuees who did not seek sheltering, on reopening the record on the adequacy of the Coliseum, in June 1985. We are to determine whether, in view of the evolution of the LILCO Plan, the issue was reasonably embraced within the concerns presented for litigation.

The Appeal Board alerted us to matters we should take into account when revisiting our earlier conclusion. The text of the proffered contentions was offered as a starting point, to be followed by canvassing the direct testimony submitted in support of the contentions to help determine whether the matter was within the scope of the Intervenor's concerns. We were directed to consider whether LILCO's change in plans affected the Intervenor's ability to formulate the issues for litigation. We were asked to determine whether subsequent changes in the reception and congregate care centers raised new or unique concerns regarding the number of evacuees who would seek monitoring but not sheltering. The Appeal Board seeks an explanation of what it took to be an inconsistency in our exclusion from the reopened proceedings of testimony related to the number of general evacuees that can be expected to use the reception center and the Board's subsequent finding that LILCO had failed to demonstrate how many evacuees will seek monitoring and not sheltering. We are further asked to reexamine our conclusion in light of the Appeal Board's determination in ALAB-832 that the reopened proceeding should have been expanded to permit exploration of additional matters associated with the suitability of the Coliseum itself. The Appeal Board went on to state that "[p]resumably the Board will need to reexamine the adequacy of any new facility selected by LILCO. In this connection, the Board should consider whether the change in facility itself bears on the question of the need to plan for evacuees who seek monitoring but not sheltering."⁵

⁵ ALAB-847, 24 NRC at 424.

DECISION

The original LILCO plan designated five facilities located in Suffolk County to serve as relocation centers. The relocation centers had dual functions, to operate as reception centers for registering, monitoring, and decontaminating evacuees and as shelters for the temporary housing, feeding, and providing of sanitary facilities for processed evacuees. It was implicit that there would be individuals who would need monitoring and decontamination services, even if they did not need sheltering. However, in the succeeding months, LILCO's plan went through a tortuous evolution and succession of changes resulting from its inability to find suitable relocation centers in Suffolk County. Whenever LILCO identified facilities in the county to be used as relocation centers, the specified centers became unavailable. LILCO ultimately elected to enlist the assistance of the Nassau County Red Cross to find suitable facilities in Nassau County and it filed testimony on this revised plan which was finally heard in this proceeding on August 21, 1984. Cordaro, Rasbury, Robinson, and Weismantle (Cordaro, *et al.*), ff. Tr. 14,707.

The plan called for a split in the reception and sheltering functions which were to be performed at different facilities. The registering, monitoring, and decontamination of evacuees was to be performed at possibly two reception centers and the sheltering functions of providing temporary housing, feeding, and sanitary facilities for processed evacuees at 50 congregate care centers.

The prefiled testimony and subsequent cross-examination of LILCO's witnesses disclosed the major features of LILCO's new plan in considerable detail. However, the testimony did not identify the reception centers for which the Nassau County Red Cross Executive Director was then negotiating. There followed a controversy among the parties concerning disclosure of the new reception centers. (At that time there was a possibility that two centers would be designated although ultimately only one was identified.) The Board did not compel disclosure of the facilities because negotiations for their use were not complete; however, the Board found the lack of an identified reception center constituted a void in the record. Tr. 14,806-07 (Laurenson).

The litigation of relocation center contentions including 24.O and 75 continued uninterrupted after the Board found that there was a void in the record. Subsequently, the record was closed on August 29, 1984.

The Board initially admitted Intervenors' Relocation Contentions 24.O, 24.P, 74, 75, and 77 to this proceeding which bear on the monitoring and decontamination of evacuees in the event of a radiological emergency. Others were denied. In the subsequent evolution of LILCO's

plans for relocation centers and the functions to be performed in connection with them, Contentions 24.O and 75 continued to remain relevant to the changed circumstances, and Contention 24.O became the focus of controversy resulting in this remand.

Contention 24.O was admitted to this proceeding without comment or interpretation by the Board as follows:

The Plan designates Suffolk County Community College as the relocation center to be used by evacuees from eight of the 19 zones in the EPZ (zones A-E, H-J) and for the children in the Shoreham-Wading River School District. LILCO estimates the population of these to be 18,599 (26,574 in the summer). (See Plan, Appendix A, at IV-87 to 178). Suffolk County Community College is an entity of the Suffolk County government. LILCO has no agreement with Suffolk County to use Suffolk County Community College as a relocation center. Furthermore, pursuant to Suffolk County Resolution No. 456-1982 and Resolution No. 222-1983, the Suffolk County Community College will not be available for use in implementing the LILCO Plan. Therefore, there is no relocation center designated for a significant portion of the anticipated evacuees. Thus, the proposed evacuation of Zones A-E, H-J, and the Shoreham-Wading River School District, cannot and will not be implemented.

Contention 75 stated the following concerns:

Contention 75. The LILCO Plan provides no estimates of the number of evacuees who may require shelter in a relocation center, and the plan fails to demonstrate that each such facility has adequate space, toilet and shower facilities, food and food preparation areas, drinking water, sleep accommodations and other necessary facilities. Accordingly, there is no assurance that the relocation centers designated by LILCO will be sufficient in capacity to provide necessary services for the number of evacuees that will require them. Thus, LILCO fails to comply with NUREG-0654, Sections II.J.10.g and J.12.

Up to the point of closing the record, there was no significant dispute among the parties as to the appropriate scope of the relocation center contentions. Contention 24.O as originally admitted asserted that the facility named as a relocation center was no longer available and that consequently there was no relocation center designated for a significant portion of the anticipated evacuees. The contention specifically stated the total population of the zones to be served by the relocation center and, at the outset, the Board presumed from the wording of the contention that some subset of that population would be identified in testimony as the number that would require service in the event of an emergency. This expectation was later borne out when LILCO stated its planning basis for population in prefiled testimony.

However, at the time of litigation the literal wording of Contentions 24.O and 75 had been overtaken by events, and the contentions were no

longer fully applicable to the situation at hand. Aside from changed facilities, this is because LILCO presented a new plan for relocation centers wherein the required services for evacuees would be performed at separate locations. Registration, radiological monitoring, and decontamination for all arriving evacuees were to be performed at a facility termed a reception center while sleeping accommodations, food, and sanitary services were to be supplied at some fifty other locations in Nassau County that were termed congregate care centers. Cordaro, *et al.*, ff. Tr. 14,707, at 15-17; Tr. 14,801, Rasbury. No party moved to amend the relocation center contentions to fit the new situation. The Board assumed that the essential concerns expressed by Contentions 24.O and 75 were still clear and applicable to the new situation and it permitted litigation to continue uninterrupted. At the conclusion of litigation in August 1984, there existed in the Board's view only a single narrow, albeit important, void in an otherwise valid and complete record. This was the identity of the reception centers where monitoring, decontamination, registration, and assignment of evacuees to congregate care centers would be performed and the functional adequacy of the unnamed center for these tasks. LILCO was on adequate notice as early as August 21, 1984, that given the void in the record it might not prevail on Contention 24.O although the Board expressed no opinion as to what LILCO should do about it.

In transferring the essential concerns of the original relocation center contentions to the new factual situation, it was apparent to the Board that Contention 75 adequately expressed the essential county concerns surrounding the newly disclosed congregate care centers, although it was established in direct testimony that no radiological monitoring or decontamination would be performed at these centers. Thus, litigation of Contention 75 produced a full and complete record in spite of LILCO's revised plans, and no subsequent need to reopen on these issues existed. Litigation of Contention 75 established to the Board's satisfaction that LILCO's planning basis for the number of persons seeking public shelter at congregate care centers was adequate. Cordaro, *et al.*, ff. Tr. 14,707, at 18. This left Contention 24.O to encompass the county concerns surrounding the unnamed reception centers including the questions of monitoring and decontamination, since testimony established that these functions would be performed at the new reception centers.⁶

⁶ The Appeal Board remarked in ALAB-832 that in its view Contentions 24.O and 75 showed that "intervenor's essential concern was whether those facilities were adequate to fulfill their purpose if actually called upon to do so." 23 NRC 135, 162 n.104 (1986). Needless to say, this was the Licensing Board's view throughout the litigation on these issues. No party offered a seriously differing view.

The evolution of LILCO's plans for reception centers had no fundamental bearing on planning for the total number of evacuees who might arrive at such centers. To be sure, had there been five centers as originally planned, the total number of evacuees seeking service would have been parcelled out among them. As the plan actually evolved, however, a single reception center was finally designated, and the test of adequacy naturally evolved to a determination of whether that center might accommodate by itself the same total number of arriving evacuees. There was no barrier to determining what the total number should be in the planning basis because the essence of LILCO's bifurcated plan for accommodating evacuees had been disclosed in the August 1984 hearing even though the identity of the reception center had not. No reason was ever proposed on the record for believing that the total number of evacuees in need of either monitoring or shelter was somehow dependent on the means for providing these functions. Indeed, it is the thrust of the regulation that the need for services will arise in an accident and that it is the task for planners to estimate and accommodate that need whatever its magnitude. The need for monitoring arises from reasons that are independent of those creating a need for shelter even though both functions are encompassed in a single plan and there is overlap between the groups. Planning, however, must anticipate the total need, not just a part of it.

The question of whether the Coliseum (the only location at which monitoring and processing was to occur) could accommodate the evacuees of the general population who would seek monitoring and processing was properly raised for litigation must be answered in the affirmative. Also, it was an issue directly addressed by Applicant and Intervenor during the hearing on August 21, 1984. Applicant submitted written testimony on Contention 24.O, whose purpose, in part, was to describe the planning basis for reception centers to be used in the LILCO plan. Cordaro, *et al.*, ff. Tr. 14,707, at 5. At that time it was contemplated to have possibly more than one reception center. Applicant was fully cognizant of Intervenor's allegation that the reception centers that were to provide radiological monitoring and decontamination for evacuees had to have sufficient personnel and equipment to monitor evacuees within a 12-hour period, as required by NUREG-0654 § II.J.12. Cordaro, *et al.*, ff. Tr. 14,707, at 7. It was not disputed that the reception centers had to have the capability of performing monitoring of the evacuees arriving at the reception centers in about a 12-hour period. Tr. 14,714-15 (Weismantle).

The evacuees that Applicant expected to arrive at the reception center for monitoring were those who sought sheltering; their number was

placed at about 32,000. This was based on a study that showed that the number of persons who evacuated from disasters and used relocation centers, amounted to 10-20% of the population. The disasters on which the study was based were natural disasters. Additionally, Suffolk County planners, in a draft radiological plan, estimated that 20% of the seasonal population would require such shelter. The 32,000 figure is 20% of the 160,000 plume EPZ seasonal resident population. Cordaro, *et al.*, ff. Tr. 14,707, at 18-20.

It was Applicant's belief that the foregoing would cover the usual emergency situation. In what it thought was an unlikely event, that of particulate release and contamination, persons in those limited areas who could have been contaminated would be directed, through the EBS system, to go to the reception centers for monitoring and decontamination. Tr. 14,826-28 (Weismantle). Applicant considered as bordering on the impossible the need to direct the entire 160,000 population to the centers for monitoring and decontamination. In response to cross-examination, Applicant's witnesses could not envision such an accident occurring to require evacuating the population of the entire EPZ. Tr. 14,828-30 (Weismantle, Cordaro). Applicant offered no estimate beyond 32,000, to cover those evacuees who might be subjected to particulate contamination or any other evacuees in addition to those who would only seek shelter. The study Applicant principally relied upon for its estimate was not related to a radiological emergency, and Applicant's estimate does not account for the evacuees in a radiological emergency that might need monitoring.

Intervenors chose not to present a direct case on Contention 24.O but to make their case only on the basis of cross-examination. Tr. 14,910-14 (McMurray).

The Board was satisfied after the August 1984 litigation that the planning basis for populations that might arrive at reception centers and congregate care centers had been litigated and that LILCO had had a fair opportunity to make its position clear. In particular, the Board was convinced that LILCO was familiar with the planning requirement of NUREG-0654 § J.12 that it must be "capable of monitoring within about a 12-hour period *all* residents and transients in the plume exposure EPZ arriving at relocation centers." (Emphasis added.) It was also clear from the subsequent cross-examination that LILCO intended to stand on its analysis showing that 32,000 persons was the appropriate number to use for planning both sheltering and monitoring requirements in spite of positing by Intervenors' counsel that the number of persons needing monitoring might be as large as 160,000. LILCO's testimony acknowledged, however, that the number needing monitoring might be larger than

32,000 in certain low-probability situations, although it rejected the possibility that the number could ever be as large as 160,000.

The evidentiary record in the proceeding was closed on August 29, 1984. At a Conference of Counsel on January 4, 1985, the Board again ruled that LILCO's failure to identify a reception center constituted a void in the record, and further that identifying the Coliseum as a reception center was not merely a confirmatory item. Pursuant to a January 11, 1985 motion by LILCO, the Board on January 15, 1985, reopened the record for the limited purpose of determining whether the Coliseum was adequate to serve as a reception center.

At the time of reopening the record, the Board had reached no conclusion as to whether LILCO was correct in its prior analyses of the planning basis for monitoring. Neither had it concluded that Intervenor's were correct in counsel's assertion that the planning basis should be as large as 160,000 persons.⁷ We had simply concluded that the matter had been litigated, and that the parties' positions were clear on the record. Intervenor's proceeding by cross-examination was a perfectly acceptable way for it to make its case.

At no time prior to the reopened hearing did we indicate that the evidence had been reviewed by the Board and that it was sufficient to sustain Applicant's position. We had not reviewed the record on an interim basis in order to critique a party as to whether it has sustained its burden.

The Applicant opposed revisiting the issue of monitoring in the reopened hearing as evidenced by its failure to raise the matter as part of its requested January 11, 1985 motion for reopening. Further evidence is contained in a filing with the Board titled "LILCO's Opposition to Intervenor's Motion for Reconsideration of Board's February 5 Order Denying Discovery" (February 12, 1985), dealing with the denial of discovery in the reopened proceeding. Applicant stated that the seven documents submitted with its motion for reopening of January 11, 1985, filled the void in the record; that the planning basis surrounding the use of the Coliseum previously "has been thoroughly litigated"; and that issues "fully litigated" included "monitoring and decontamination." *Id.* at 3.

This was consistent with the Board's conclusion, and the Board ordered "[t]he number of general evacuees that can be expected to use a relocation center had already been litigated and that subject will not be reheard." Memorandum and Order (Reopening the Record) (May 6, 1985), at 4.

⁷ We note that LILCO included a scenario in its emergency planning exercise of February 13, 1986, in which it assumed that 100,000 persons would be monitored. Post-Exercise Assessments, April 17, 1986, Federal Emergency Management Agency, at 80.

As matters stood at the time of the reopened hearing, the issue of the population planning basis was therefore not properly before us for that hearing which had a very narrow scope. The Board had no doubt at that time, however, that the planning basis included the issue of monitoring, that it was properly before us in the overall relocation center litigation, and that it was a matter that could properly be decided based on the August 1984 record.

The Board withheld a decision on relocation center issues in its partial initial decision because the reopened hearing had not yet been held and the record was at least in some respects incomplete. In its concluding partial initial decision, the Board ruled adversely to LILCO on the issue of population planning basis. The ruling found that the lack of planning for the number of persons in need of monitoring was a defect in need of correction. There was no lack of fairness in this ruling because LILCO had already had the opportunity in the August hearing simply to supply a number with an underlying rationale for the number of persons who might arrive at a reception center in need of radiological monitoring but not of sheltering. This was a contingency it had acknowledged could happen.

Instead, LILCO's posture in filings before us was as a party confident that it had carried its burden of proof and who saw no need to alter its position that 32,000 persons was the correct planning basis.⁸ It was not until the Board canvassed the record with the focus needed for decision that it concluded that LILCO's confidence was misplaced. This was because LILCO's planning basis for the number of persons needing shelter was traceable to experience and literature describing nonradiological disasters. Tr. 14,821 (Weismantle). This left the question of radiological monitoring of the evacuees arriving at the reception center open and unanswered. The need for monitoring and the need for shelter arise from different reasons for evacuees, and independent analysis is needed to formulate a planning basis for the total number needing service.

The Appeal Board's determination in ALAB-832 that the reopened proceeding on the Coliseum should have been expanded to permit exploration of additional matters associated with the suitability of the Coliseum itself does not warrant at this juncture a different conclusion from that previously arrived at by the Board. The Appeal Board in ALAB-832 directed us to hear other issues raised by Intervenors as appropriate to the reopened proceeding. The issues to be litigated did not include

⁸ See "LILCO's Reply Finding on Reopened Contention 24.O (Nassau Coliseum)" (July 26, 1985), at 8, where Applicant took the position that the number of evacuees expected to come to the Coliseum in the event of a Shoreham emergency was irrelevant to the reopened issue because the potential number of evacuees had already been litigated. See also Tr. 15,969-76 (Robinson).

establishing the number of evacuees that are to be monitored and processed in the event of a radiological emergency. We continue to view the matter of the number of evacuees to be monitored and processed in the event of a radiological emergency as having been litigated on August 21, 1984, a position subscribed to by Applicant, the appellant.

LILCO, on September 30, 1986, filed a motion to reopen the evidentiary record on Contention 24.O for the purpose of replacing the Coliseum as a reception center with three LILCO facilities — the Hicksville, Bellmore, and Roslyn Operations Centers. Applicant mentions this remand in its motion but does not suggest that the matter that is the subject of its appeal be litigated.⁹ Intervenors filed an answer vigorously opposing the motion to reopen. In it, Intervenors set forth the areas that should be litigated in the event the motion to reopen is granted. They do not mention as one of the matters for relitigation the number of evacuees that would seek monitoring and processing.¹⁰ No party has come forward and requested that this area be litigated.¹¹

Considering the foregoing, along with the fact that the issues on appeal as regards the monitoring of evacuees remain unresolved, it would be premature for us at this time to consider whether the changes in the facility itself bear on the question of the need to plan for evacuees who seek monitoring but not sheltering. Should the Appeal Board rule that the matter was not properly raised for litigation or that the Board imposed an obligation not justified by any NRC planning requirement or guidance, the entire matter would be rendered moot. Otherwise, the Board would want to obtain the position of the parties for relitigating the issue of establishing the number of evacuees to be monitored, considering their past and current positions relating to the matter.

After analysis of the issue on remand, the Board adheres to its findings as stated in its concluding partial initial decision. We conclude that Contentions 24.O and 75 taken together properly raised the issue of population planning basis for evacuees arriving at a reception center, that LILCO had a fair opportunity to litigate the matter, and that when the smoke had cleared it had simply failed to carry its burden of proof on that point. In reaching this conclusion, the Board never found it possible to adopt any parties' views as to what the correct number should be in the planning basis for radiological monitoring. This remains true to this day; there is simply no basis to decide it in the record.

⁹ "LILCO's Motion to Reopen Record" (September 30, 1986), at 3.

¹⁰ "Suffolk County, State of New York, and Town of Southampton Opposition to LILCO's Motion to Reopen Record" (October 14, 1986).

¹¹ See also "NRC Staff's Response in LILCO's Motion to Reopen Record" (October 10, 1986).

CONCLUSION

The Appeal Board has directed that we should "reconsider [our] decision regarding the monitoring of evacuees . . . in accordance with this opinion." ALAB-847, 24 NRC at 433. We have done so, paying especially close attention to the questions set forth by the Appeal Board regarding the number of evacuees to be monitored. We treat them *seriatim* below.

First, the Appeal Board would have us consider whether the issue of the number of evacuees needing monitoring was properly before us at all. *Id.* at 420. We believe that it was. As we reasoned above, we agree with the Appeal Board's earlier analysis, viz., that

[a]lthough the relocation center contentions were cast in terms of the lack of agreement evidencing permission for use of designated facilities as relocation centers, the intervenors' essential concern was whether those facilities were adequate to fulfill their purpose This intent is manifest, for example, in Contention 24.O. . . . The same thought is inherent in Contention 75, which asserts that "there is no assurance that the relocation centers designated by LILCO will be sufficient in capacity to provide necessary services for the number of evacuees that will require them.

ALAB-832, 23 NRC at 162 n.104.

Second, the Appeal Board notes that "the Licensing Board is best situated to decide one question hotly contested on appeal — i.e., whether the Board intended as part of its reopening to revisit the issue of LILCO's plan for evacuees who did not seek sheltering." ALAB-847, 24 NRC at 421. As we clearly set forth above, we did not so intend. We agreed with Applicant and we regarded the issue as having already been litigated.

Third, the Appeal Board says "[t]he Board should determine whether [the] . . . revisions in the number, locale and function of the individual reception center and the congregate care centers raised new or unique concerns regarding the number of evacuees who would seek monitoring but not sheltering." *Id.* at 423. We conclude that the prior changes did not raise new or original concerns on that issue. Under all circumstances, it is incumbent on Applicant to establish a planning basis for all evacuees to be monitored. The facilities have again changed, however, and it would be premature for us to consider whether that change may bear upon the question of the number of evacuees seeking monitoring.

Fourth, the Appeal Board notes that "[i]t is possible, of course, that the Board declined to relitigate LILCO's planning basis because it had already adopted the intervenors' assertion that any monitoring and decontamination facility must have the capability of processing all 160,000

people living in the EPZ." *Id.* at 423-24. As we state clearly above, we have not accepted the figure of 160,000 suggested by Intervenor's counsel. We find no support for that figure in the record; indeed, we find no adequate support for any specific total figure whether it be 160,000 people, 32,000 people, or anything between or beyond those figures.

Based on our analysis on remand, the Board continues to believe that it was correct in its ruling that LILCO's plan should contain a planning basis for the number of evacuees arriving at a reception center to be monitored. This ruling was applicable of course to litigation surrounding the Coliseum which we are aware is no longer available to LILCO.

Because of that development, the Appeal Board notes that "[p]resumably the Board will need to reexamine the adequacy of any new facility selected by LILCO" and "whether the change in facility itself bears on the question of the need to plan for evacuees who seek monitoring but not sheltering." *Id.* at 424. We have presently before us LILCO's Motion to Reopen Record for the purpose of replacing the Coliseum with three other facilities. It is premature to make the reexamination at this time because the Appeal Board has not ruled as to whether the issue was properly raised for litigation or whether it is a regulatory requirement. A negative answer to either issue would render this matter moot. Further, Applicant's motion to reopen the record for substituting three other facilities for the Coliseum is vigorously opposed by the Intervenor. Neither side takes a position that the number of evacuees to be monitored is part of the motion for reopening. Before stating any conclusion we would want to give the parties the opportunity to make known their positions as to whether the number of evacuees to be

monitored should be considered for inclusion as part of any reopened record on the substitution of facilities.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Morton B. Margulies, Chairman
ADMINISTRATIVE LAW
JUDGE**

**Jerry R. Kline
ADMINISTRATIVE JUDGE**

**Frederick J. Shon
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland,
this 29th day of October 1986.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

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

In the Matter of

**Docket No. 50-445-CPA
(ASLBP No. 86-528-02-CPA)**

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

October 30, 1986

The Licensing Board admits a contention filed in response to a Commission decision explaining a new principle governing construction permit extension cases.

**RULES OF PRACTICE: ADMISSIBILITY OF CONTENTION
(CONSTRUCTION PERMIT EXTENSION PROCEEDING)**

In a construction permit extension proceeding, a contention that alleges both that Applicants willfully failed to complete their plant on time without a valid purpose and that they have not discarded and repudiated their policy, is substantively admissible.

**RULES OF PRACTICE: TIMELINESS OF CONTENTION
(CONSTRUCTION PERMIT EXTENSION PROCEEDING)**

When intervenors had made timely allegations and had then filed a new version of those allegations in response to a Commission decision

that explained a new legal principle, this new version is timely and admissible.

RULES OF PRACTICE: CONTENTION SHOULD NOT CONTAIN PROCEDURAL ARGUMENTS

The Board refused to admit a contention differing from an admitted contention only in that it stated the party's position about some procedural rulings.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS (CONSTRUCTION PERMIT EXTENSION)

The Board interprets Commission precedent concerning the admissibility of contentions in construction permit extension proceedings.

**DELAY WITHOUT A VALID BUSINESS PURPOSE:
ADMISSIBILITY OF CONTENTION CONCERNING FAILURE TO
RENOUNCE PRIOR POLICY**

It is proper to litigate an allegation that Applicants have failed to repudiate an alleged prior policy to delay construction without a valid business purpose.

**ADMISSIBILITY OF CONTENTION (CONSTRUCTION PERMIT
EXTENSION CASE): SIMILAR ISSUE IN OPERATING
LICENSE CASE**

Since the remedy available in a construction permit case is different from that in an operating license case and since the procedural posture of the two cases also is different, a contention may be admitted in a construction permit extension case even if a similar contention is litigable in the related operating license case.

MEMORANDUM AND ORDER

(Motion to Admit New Contentions or for Reconsideration)

Memorandum

This decision addresses Consolidated Intervenors' (Citizens Association for Sound Energy (CASE) and Meddie Gregory) "Motion to Admit

Amended Contentions or, in the Alternative, for Reconsideration of Certain Previously Denied Contentions," September 30, 1986 (Motion).¹

I. PROCEDURAL HISTORY

On May 2, 1986, we issued a Special Prehearing Conference Memorandum and Order (Prehearing Order) (unpublished) admitting CASE and Meddie Gregory as Consolidated Intervenor and admitting a single contention derived from CASE Contention 6 and Gregory Contention 1. Both Texas Utilities Electric Company, *et al.* (Applicants) and the Staff of the Nuclear Regulatory Commission (Staff) appealed. Thereafter, the Appeal Board certified the following question to the Commission:

Is the admitted CASE/Meddie Gregory contention . . . foreclosed as a matter of law by *Washington Public Power Supply System* (WPPSS Nuclear Power Project Nos. 1 & 2), CLI-82-29, 16 NRC 1221, 1230-31 (1982).

Memorandum and Opinion (July 2, 1986).

In response, the Commission issued CLI-86-15, 24 NRC 397 (1986), in which it provided a compound answer to the Appeal Board's question. First, the Commission states that the usual rule is that Applicants for a construction permit extension either must show (1) good cause for the past delay in completion of the plant, or (2) good cause for the NRC to allow more time for plant completion. The Commission then advises that

If a permittee is seeking a CP extension solely because more time is needed to correct deficiencies, a contention worded like this one and directed only at past conduct would not be sufficient, even if true, to defeat the extension.²

On the other hand, the Commission also advises us that:

Yet to grant a CP extension request in the face of a finding that the past delays were caused by a past and still ongoing policy of deliberate violations would be to reward such wrongdoing. Surely the drafters of the Atomic Energy Act cannot have had this in mind when they allowed CP extensions for good cause.³

Faced with this realization, the Commission appears to have struck a new balance. It stated the rule that:

¹ The Atomic Safety and Licensing Appeal Board has held the pending appeal in abeyance pending our determination of this Motion. Unpublished Order, October 9, 1986.

² CLI-86-15, 24 NRC at 402.

³ *Id.*

[I]f there was a corporate policy to speed construction by violating NRC requirements,[⁴] and that policy was discarded and repudiated by the permittee, any delays arising from the need to take corrective action would be delays for good cause.⁵

Subsequent to this Commission action, the Appeal Board provided parties with an opportunity to comment.⁶ Then, Consolidated Intervenor filed the pending motion.

II. THE NEW CONTENTIONS

On September 30, 1986, eleven days after the Commission issued CLI-86-15, Consolidated Intervenor filed a Motion to Admit Amended Contentions or, in the Alternative, for Reconsideration of Certain Previously Denied Contentions. The motion responded in a prompt fashion to the Commission's decision.

The two contentions submitted by Consolidated Intervenor are:

Amended Contention 1. Since Applicants do not allege that they have a good cause for the delay, they can only prevail if they allege and prove good cause for the extension by demonstrating that they have identified the cause for the delay and have discarded and repudiated the policies that led to and/or caused the delay. Applicants have not alleged or established that they have discarded and repudiated the policies that caused the delay in completion of construction of Unit 1.

Amended Contention 2. The delay of construction of Unit 1 was caused by Applicants' intentional conduct, which had no valid purpose and was the result of corporate policies which have not been discarded or repudiated by Applicants.

The effect of Amended Contention 2 is to restate previous contentions in a manner that responds clearly to the requirements of CLI-86-15. Amended Contention 1 also makes a statement about Intervenor's viewpoint about the procedural status of the case.

Previously, Consolidated Intervenor had alleged that Applicants' Comanche Peak Response Team (CPRT) program, which is responsible for reviewing past construction and determining what changes must be made, was inadequate.⁷ In the amended contentions, Consolidated Inter-

⁴ The Board interprets this as the Commission's interpretation of Consolidated Intervenor's original contention, which the Commission assumed to be factually true for purposes of this motion even though no proof had yet been offered.

⁵ CLI-86-15, 24 NRC at 403.

⁶ Unpublished Order of September 22, 1986.

⁷ CASE Contention No. 3 had alleged that "further delay will be caused by Applicants' refusal and failure to follow NRC regulations. . . ." CASE Contention No. 4 had alleged that "[t]here is . . . no basis for concluding that . . . there is adequate and/or appropriate control over CPSES Unit 1 to ensure that NRC requirements are being and will be met." In CASE No. 7 and Gregory No. 2, Consolidated

Continued

venors have restated their prior contentions and alleged that the Applicants have not "discarded and repudiated" past conduct.

Consolidated Intervenor has always been clearly dissatisfied with the integrity of the CPRT program. Applicants are relying on the CPRT program to examine and correct their plant and they may never examine whether their past conduct needs to be repudiated. Applicants believe that their conduct of the CPRT program amounts to whatever "discarding and repudiating" may be necessary.

III. TIMELINESS

Because Consolidated Intervenor filed timely contentions alleging dissatisfaction with the CPRT program, we find that they have always believed that Applicants did not properly discard and repudiate their past conduct. Hence, we find that these new contentions are not late because they are merely a more clearly worded version of portions of prior allegations that were timely.

We also have reviewed the new contentions on the basis of their being late filed and we find that, based on a balancing of the factors stated in 10 C.F.R. § 2.714(a), these contentions are admissible.⁸

First, we consider that the issuance of CLI-86-15 provided good cause for late filing. We have already discussed that issue fully. We note that this factor is the most important, particularly in this case where similar allegations were made in timely filed contentions.

The second and fourth factors, availability of other means to protect petitioners' interest and the extent to which other parties will represent petitioners' interest, weigh on the side of admitting this contention. These factors almost always weigh in favor of the moving party.

The third factor, ability to contribute to development of a sound record, is also met. In the related operating license proceeding, one of the Consolidated Intervenor has demonstrated the ability to contribute both to technical and nontechnical portions of the proceeding. Given that the issues are primarily of a nontechnical nature, involving the interpretation of management conduct concerning willful violations of reg-

Intervenor alleged that the CPRT process did not itself comply with NRC regulations and that Applicants' history of noncompliance with regulations required license conditions concerning completion of construction.

⁸ Applicants point out that the time to seek reconsideration of our former order has passed and that Consolidated Intervenor should not be permitted to seek reconsideration. However, we find that the issuance of CLI-86-15 provided new insight into applicable law and restarted the clock for motions for reconsideration, thereby making Consolidated Intervenor's motion timely. We have proceeded with the case during the pendency of the appeal by direction of the Appeal Board by Order of October 9, 1986 (unpublished).

ulations or repudiation of past conduct, intervenors' lawyers' extensive experience in NRC proceedings is highly relevant. This factor weighs heavily in favor of admitting the contentions.

The fifth factor, broadening of the proceeding, weighs against admission of this contention, as it almost always does. However, we consider that the other factors have greater overall weight.

IV. SPECIFICITY AND BASIS

A. Contention 1

Contention 1 states:

Amended Contention 1. Since Applicants do not allege that they have a good cause for the delay, they can only prevail if they allege and prove good cause for the extension by demonstrating that they have identified the cause for the delay and have discarded and repudiated the policies that led to and/or caused the delay. Applicants have not alleged or established that they have discarded and repudiated the policies that caused the delay in completion of construction of Unit 1.

We agree with Applicants that Amended Contention 1 is not admissible. It differs from Contention 2 largely because it contains procedural assumptions that are more properly the subject of motions than of contentions.

Amended Contention 1 correctly states that Applicants did not allege good cause for past delay. However, this contention contains the phrase "can only prevail," used to suggest that Applicants' failure to allege good cause for past delay should be a barrier to their later deciding to show good cause for past delay.

We are also not prepared to accept the assumption in Contention 1 that it is necessary to identify the cause for past delay in order to repudiate the causes of that delay. It would appear to be easier to renounce a cause of delay that has been carefully isolated; however, we consider it to be proper for Applicants to attempt to persuade us that their current course of conduct is so correct that it constitutes discarding and repudiating whatever the cause for past delay might have been.

B. Contention 2

Contention 2 states:

Amended Contention 2. The delay of construction of Unit 1 was caused by Applicants' intentional conduct, which had no valid purpose and was the result of corporate policies which have not been discarded or repudiated by Applicants.

This contention relates to prior allegations that we already admitted as a contention. We interpret this contention in light of the prior contention and the specific bases provided by Intervenor.⁹ Thus, there is sufficient specificity for this contention to be litigable.

The provided bases are more than adequate. They refer to documents that are related to Intervenor's contention, and we are not authorized to analyze those documents in depth at this stage of the proceeding.

We also note that the operating license case has an extensive history with which this Board is familiar. Hence, we are able to interpret the bases in light of that record and to determine that there is adequate basis.

At this point, we know that there were enough problems with the design documents at Comanche Peak that Applicants have stated that they are reviewing essentially 100% of the design. Important problems were found in the pipe support and cable tray hanger design areas.

Applicants also have corroborated Staff findings concerning problems in the quality control audit program. The Staff found many problems relating to the quality of construction. Applicants have not yet finished assessing the seriousness either of the design or construction problems.

Given the stated bases, which alone are sufficient, plus our knowledge of additional information that has been made available to us, we do not yet know the seriousness of this pattern of deficiencies or the extent to which it represents intentional conduct of Applicants. However, there is an adequate basis for further inquiry, which can occur during the discovery process. At this stage of the proceeding, we do not finally determine facts. Our sole job is to pass on whether contentions have provided an adequate basis for inquiring further.

V. MEANING OF "DISCARDED AND REPUDIATED"

The Commission has informed us in CLI-86-15 that an extension of a construction permit will not be denied even if intentional delay is demonstrated, *providing* that the Applicants demonstrate that they have discarded and repudiated their intentional misconduct.

In this case, Applicants have not admitted the intentional misconduct that Intervenor alleges. However, they also have stated that their actions demonstrate that they have "discarded and repudiated" whatever management errors may have existed in the past.¹⁰ Consequently, there is a

⁹ Consolidated Intervenor's bases are set forth in Appendix A.

¹⁰ See "Permittees' Response to Consolidated Intervenor's Motion to Admit Amended Contentions or, in the Alternative, for Reconsideration of Certain Previously Denied Contentions," October 10, 1986 (Response), at 19.

factual dispute between Intervenor and Applicants about the extent to which present conduct does constitute repudiation and about the extent to which management changes have ameliorated prior management problems. The Board finds, under the circumstances, that it will be necessary to litigate these adverse positions in order to resolve this dispute. It is not proper to resolve this knotty problem at this stage of the proceeding.

VI. ISSUES IN THE OPERATING LICENSE CASE

Although the Board believes that issues similar to those raised in this case are also pending in the operating license case, the issues do not appear to be identical. In particular, litigation within the operating license case would not result in terminating the construction license and therefore would not be a substitute for Intervenor's right to intervene to contest the extension of that license.

Furthermore, the Board's view about the issues properly in the operating license case is not shared by Applicants. It is Applicants' view in the operating license case that it is not proper, under the admitted contention, to consider the extent to which management practices have resulted in quality assurance/quality control breakdowns. The basis for Applicants' argument is their belief that they can correct all plant deficiencies without assessing management blame and that correction of the physical problems is all they need do to counter the allegations of Contention 5.

Because that is Applicants' view, which could be sustained on appeal, the procedural context for raising these management issues is substantially different in the two cases.

VII. JURISDICTION

Applicants state that we lack jurisdiction to reconsider our denial of the previously denied contentions or to admit amended contentions. With that we respectfully disagree.

We have before us a motion filed in direct response to a Commission order. The Appeal Board has deferred action awaiting our action. We are the best-equipped forum to consider the relationship of this filing to prior filings, to the law, and to the context of this case. There is every reason for us to fulfill our judicial responsibility by addressing these issues rather than ducking them.

Order

For all the foregoing reasons and based on consideration of the entire record in this matter, it is, this 30th day of October 1986,

ORDERED:

That Consolidated Intervenor's Amended Contention No. 2 shall be admitted. In all other respects, Consolidated Intervenor's Motion is denied.

THE ATOMIC SAFETY AND LICENSING BOARD

**Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE**

**Walter H. Jordan
ADMINISTRATIVE JUDGE**

**Kenneth A. McCollom
ADMINISTRATIVE JUDGE**

Bethesda, Maryland

APPENDIX A

BASES FOR AMENDED CONTENTION 2

- A. The corporate policy that caused the delay was:¹
1. Applicants deliberately refused to take positive action to reform their QA/QC program in the face of consistent criticism, and
 2. Applicants have failed to properly design their plant, specifically:
 - a. Applicants failed to correctly apply fundamental engineering principles,

¹ Although it is not a lawful requirement that an intervening party must disclose as a condition for admission of a contention any evidence that supports its bases, Consolidated Intervenor's do direct the attention of the Board and the parties to, and incorporate by reference, Appendix B of CASE's Motion for an Evidentiary Standard (February 4, 1985) which contains references to documents supporting Consolidated Intervenor's bases.

- b. Applicants failed to properly identify unique designs in their PSAR,
 - c. Applicants constructed much of their plant prior to its design having been completed,
 - d. Applicants have failed to comply with 10 C.F.R. Part 50, Appendices A and B, including their failure to promptly identify and correct design deficiencies, and deliberately refused to take positive action to correct such deficiencies.
3. Applicants ignored consistent criticism of their QA/QC program over a period of at least ten years and of their design over a period of at least four years, in the face of warnings by independent auditors, the NRC, and even the Atomic Safety and Licensing Board. As a result of these deliberate actions, Applicants built an unlicensable plant which must now be reinspected, redesigned, and reconstructed in the hope that it can be made licensable. There is no valid purpose given by Applicants for why, in the face of these criticisms, they refused to change their QA/QC implementation or address and correct design deficiencies.
- B. Applicants have never acknowledged that this or any other corporate policy was the cause of the delay or that anything in the control of corporate management caused the delay, and thus Applicants have never discarded or repudiated the policies that caused the delay. This basis is supported by the absence of any statements of repudiation and of any stated intent to discard any corporate policy.
- C. Applicants have actually continued in place the corporate policies and personnel primarily responsible for the original delay.
- 1. The people running the plant now are most of the same persons who made the original decision to ignore the legal requirements for building the plant in order to build it faster. Applicants' September 16, 1986, Supplementation to Answers to CASE's Interrogatories to Applicants (August 27, 1986).
 - 2. Applicants' redesign, reinspection, and reconstruction program is in fact a continuation of the previous corporate policies which caused the delay. In particular:
 - a. The CPRT is not sufficiently independent from TUEC since all judgments on the safety significance of deficiencies and disposition of NCRs, design changes, and reconstruction are made by TUEC personnel, many of whom, like Messrs. Tolson, Brandt, Purdy, and Finneran (all now employed at CPSES), made the original judgments that allowed the deficient conditions to exist.

- b. CPRT reinspections are being conducted without complying with Appendix B, thus making trending, documentation, and any verification of the work performed impossible.
- c. The CPRT program has not been fully approved by the Staff but has been modified at least three times, apparently without going back to redo work conducted under the rejected plans.
- d. The CPRT implementation has violated CPRT standards for reinspections, including the use of production quotas for inspectors and harassment and intimidation of inspectors.
- e. The work that Applicants propose to conduct under the extended construction permit represents major changes in the original proposed construction and design and cannot be lawfully undertaken unless the construction permit is amended. No such amendment has been sought or received. This policy of ignoring the procedural requirements of the NRC regulations has caused many problems, including a construction work halt to await staff approval of the proposed extension of the construction permit, which Applicants had allowed to expire without seeking a renewal.

D. In order to establish that they have discarded and repudiated the corporate policies that led to the delay, Applicants must adopt and implement a redesign, reinspection, and reconstruction program that contains at least the following elements, which are now missing from the CPRT program:

- 1. full independence from all current and former CPSES employees,
- 2. stop work on construction and on reinspection of construction until reanalyses and redesigns have been completed and the designs have been approved as acceptable by the hearing board,
- 3. existence and implementation of a QA/QC program for reinspection, redesign, and reconstruction that complies with 10 C.F.R. Part 50, Appendix B,
- 4. full documentation that fundamental engineering principles have been correctly applied in the reinspection, redesign, and reconstruction process,
- 5. full documentation that all previously identified design issues (including, but not limited to, the Walsh/Doyle allegations and concerns raised by Cygna or during the Cygna hearings) have been correctly identified and properly addressed,

6. hold points in the reinspection, redesign, and reconstruction process to enable staff, public, and Board review of the previously completed tasks, and
7. full public access to all documents generated by the process, transcription of all meetings, and public attendance at those meetings.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

James M. Taylor, Director

In the Matter of

Docket No. 40-8027

SEQUOYAH FUELS
CORPORATION
(Gore, Oklahoma Facility)

October 15, 1986

The Director of the Office of Inspection and Enforcement denies petitions filed by the Government Accountability Project on behalf of Native Americans for a Clean Environment Client Council and others, Arkansas Peace Center, the National Water Center, and Citizens' Action for a Safe Environment, requesting enforcement action by the NRC against Sequoyah Fuels Corporation. The Petitioners based their requests for relief upon issues arising from an accident that occurred at the Sequoyah Fuels facility in Gore, Oklahoma, on January 4, 1986, and upon issues associated with the history of the facility and the Licensee's disposition of its waste products. In denying the requested relief, the Director determined that the actions necessary to protect the public health and safety already have been taken and that the Licensee's disposition of its wastes and its general history do not reflect an inability to comply with regulatory requirements or provide a basis for granting the specific requested relief.

RULES OF PRACTICE: SECTION 2.206 PETITIONS

A request for a review of NRC regulations to determine the sufficiency and adequacy of regulatory controls at a licensed facility falls outside of the scope of matters usually considered under 10 C.F.R. § 2.206.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Matters that are the subject of administrative proceedings are not appropriate for consideration in a § 2.206 proceeding. Moreover, the § 2.206 procedure is not available to seek relief in a matter where another forum is available even if the petitioners are not parties in the proceeding in the other forum.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Where no specific factual basis is provided by petitioners to support a claim, further inquiry need not be made.

OPERATING LICENSES: EXPIRATION

Sections 2.109 and 40.43(b) of 10 C.F.R. provide that in any case in which a Licensee has filed an application for renewal of its license at least 30 days prior to the expiration of the license, such license shall not expire until application for renewal has finally been determined by the Commission. This is in accordance with the protections afforded by § 9(b) of the Administrative Procedure Act, 5 U.S.C. § 558(c).

RULES OF PRACTICE: STAFF AUTHORITY

It is within the Staff's enforcement discretion to determine that further effort to pursue the issue of a material false statement is not warranted where the statement was made 16 years earlier and there was a lack of reliance upon the statement by the NRC.

AEA: RIGHT TO HEARING

Absent a request for a hearing on a matter other than a facility construction permit application, there is no requirement that one be held.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Not every violation of the Commission's regulations or licenses compels suspension or revocation of a license.

AEA: RIGHT TO HEARING

A hearing is not required as a matter of right where a licensee agrees to suspend licensed operations. Nor is there a right to a hearing on lifting a suspension.

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

INTRODUCTION

Four petitions have been filed pursuant to the provisions of 10 C.F.R. § 2.206 by various organizations requesting enforcement action by the NRC against Sequoyah Fuels Corporation (SFC), which is authorized to possess and use source material at its facility in Gore, Oklahoma.

On March 21, 1986, Thomas Carpenter of the Government Accountability Project (GAP), on behalf of Native Americans for a Clean Environment Client Council and others, filed a petition (hereinafter GAP Petition) with the Commission requesting that the Commission immediately impose an indefinite suspension of SFC's license pending the completion of certain actions.¹ Specifically, the GAP Petition requested that the suspension continue until (1) the Licensee is in compliance with "all licensing requirements and conditions"; (2) completion of an Interagency Task Force review of an accident that occurred at the facility on January 4, 1986, to assess the public health impacts of the accident; (3) an independent inspection and review of the causes of the January 4th accident is conducted by a third party;² (4) a management study is undertaken to determine the cause of what the Petitioners allege is the inability of the Licensee to comply with regulatory requirements; and (5) completion of all ongoing Staff inspections and investigations.

The Petitioners in the GAP Petition assert that immediate agency action is necessary in light of environmental contamination and questions about workers' health which may have resulted from the January 4th accident and a "subsequent accident" at the facility, and what they claim is the inability of NRC's Region IV office to take appropriate regulatory action. As specific grounds for their request that the Commission impose the suspension of Sequoyah Fuels' operating license, Petitioners assert

¹ Other named petitioners in the GAP Petition are Carlisle Citizens Association, National Water Center, Arkansas Peace Center, and Fayetteville Peace and Justice Center.

² Petitioners do not define what they mean by a "third party."

that the history of violations at the plant evidences the inability of the facility's operators to comply with regulatory requirements.³

By letter dated May 13, 1986, I acknowledged receipt of the GAP Petition. In my acknowledgment letter I informed the Petitioners that Sequoyah Fuels Corporation had agreed to suspend its operations as a result of the January 4th accident. This suspension was to continue until both NRC and the Licensee had reviewed the accident and the Licensee's operations to determine appropriate corrective actions for problems that contributed to or resulted from the accident. I also noted, however, that following an extensive review by the Staff, which is documented in two Safety Evaluation Reports dated April 23, 1986, NRC had allowed Sequoyah Fuels to receive yellowcake at the facility and resume the scheduled shipment of cylinders containing uranium hexafluoride (UF₆) that were already in inventory at the time of the accident and to return the empty uranium slurry trailers and drums to uranium producers for reuse. My May 13, 1986, letter also indicated that the Staff had already completed a number of inspections and investigations concerning the cause and impact of the January 4 accident and that an Interagency Task Force had completed its review of the accident. I stated that the Staff would, however, continue its review of the GAP Petition and that, as provided by § 2.206 of the Commission's regulations, appropriate action would be taken on the Petition within a reasonable time. A notice that

³ The Petitioners also requested that the NRC Office of Inspector and Auditor (OIA) review and audit NRC regulations to determine the sufficiency of regulatory controls at the Sequoyah Fuels facility and adequacy of NRC requirements to prevent occurrences such as the January 4th accident. Because this request falls outside of the scope of matters usually considered under § 2.206, a copy of the Petition was referred to OIA for whatever action it deemed appropriate. See *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), DD-84-16, 20 NRC 161, 164 n.3 (1984). However, two generic studies have already been undertaken by the NRC as a result of the accident. The first study was a "lessons learned" study headed by the Deputy Regional Administrator of NRC Region I to consider experience gained from the accident, which was completed in May 1986. The final report, NUREG-1198, "Release of UF₆ from a Ruptured Model 48Y Cylinder at the Sequoyah Fuels Corporation Facility: Lessons-Learned Report" was published in June 1986. The second study, which is a special study by individuals with varied regulatory experience under contract to the NRC to analyze NRC materials licensing and inspection programs, is expected to be completed in mid-October 1986. By letter dated June 6, 1986, OIA informed the Commission that, in view of these studies and the changes expected to result from them, as well as the lack of specific references in the GAP Petition to regulatory problems, OIA had determined not to undertake the requested audit.

In addition, the Petitioners express their objection to Kerr-McGee's request to amend its materials license to include a uranium tetrafluoride (UF₄) facility and "low level waste dump." As these matters are presently the subject of administrative proceedings before a presiding officer of the Atomic Safety and Licensing Board panel (i.e., solid waste disposal proceeding and proceeding to authorize operation of the Sequoyah facility to convert depleted uranium hexafluoride (UF₆) to depleted UF₄), they are not appropriate for consideration in this § 2.206 decision. See *General Public Utilities Nuclear Corp.* (Three Mile Island Nuclear Station, Units 1 and 2; Oyster Creek Nuclear Generating Station), CLI-85-4, 21 NRC 561, 563-64 (1985); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-81-6, 13 NRC 443, 444 (1981). This is the case notwithstanding that Fayetteville Peace and Justice Center is not an intervenor in those proceedings, since the § 2.206 procedure is not available to seek relief in a matter where another forum is available even if the petitioners are not parties in the proceeding in the other forum. *Three Mile Island*, CLI-85-4, *supra*, 21 NRC at 564.

the GAP Petition was under consideration was published in the *Federal Register*. 51 Fed. Reg. 18,709 (May 21, 1986).

On June 1, 1986, the Arkansas Peace Center (APC), one of the named Petitioners, filed a motion in the Sequoyah Fuels solid waste disposal proceeding to disqualify Judge Frye, the presiding officer. In its motion, APC sought, in addition to its disqualification request, the revocation of SFC's license. In this connection, APC further requested that the Commission take charge of all radioactive materials at the facility and safeguard them to minimize future hazard, order the decommissioning and dismantling of the facility and isolation of all hazardous radioactive materials from the biosphere, and begin action by issuing orders or initiating proceedings that may be required to address the "emergency" alleged to exist at the facility. On July 9, 1986, Judge Frye referred APC's motion, with the exception of the issue of disqualification, to the Staff for consideration under § 2.206 (hereinafter APC Petition).

On June 13, 1986, the National Water Center (NWC), also a named petitioner in the GAP Petition, filed with the Commission a document entitled "Motions to Reconsider" in the Sequoyah UF₆ to UF₄ and solid waste disposal proceedings. In its motion, NWC requested, among other things, that the Commission study and institute full formal hearings regarding the disposition of SFC byproducts, based on its concern regarding airborne and waterborne effluents that have emanated from the Sequoyah Fuels facility. In a Memorandum and Order dated June 27, 1986 (unpublished), Judge Frye referred this portion of NWC's motion to the Staff for consideration under § 2.206 (hereinafter NWC Petition).

On July 3, 1986, Kathy Carter-White, on behalf of Citizens' Action for a Safe Environment (CASE), filed a petition (hereinafter CASE Petition) requesting that I issue a temporary order staying the restart of operations of the Sequoyah Fuels facility, serve SFC with an Order to Show Cause why its license to operate the facility should not be suspended or revoked, and ultimately revoke SFC's license. As specific grounds for this request, the CASE Petition alleged that the licensee had shown itself to be unfit to operate a facility, as evidenced by its gross negligence in its operation of the Sequoyah Fuels facility, willful violations of the requirements of its license, and the making of a material false statement. By letter dated July 31, 1986, I acknowledged receipt of the CASE Petition. A notice that the CASE Petition was under consideration was published in the *Federal Register*. 51 Fed. Reg. 28,463 (Aug. 7, 1986).

I have now completed my evaluation of the GAP Petition, the subsequent APC and NWC Petitions, and the CASE Petition. I have determined, for the reasons set forth below, that the actions necessary to pro-

tect the public health and safety already have been taken and that the additional actions requested by the Petitions are not warranted.

DISCUSSION

Many issues have been raised in the four Petitions. To facilitate consideration of these issues, they are grouped as follows into those issues associated with the January 4, 1986 accident, and those issues associated with the history of the facility prior to the accident.

The January 4, 1986 Accident

I. On January 4, 1986, a 14-ton capacity cylinder containing in excess of 30,000 pounds of UF_6 ruptured while being heated in a steam chest at the Sequoyah Fuels facility.⁴ The cylinder had been overfilled to the point that its contents exceeded the cylinder's maximum allowable shipping weight of 27,560 pounds. Plant employees had been in the process of heating the cylinder to facilitate removal of excess UF_6 when the cylinder wall ruptured due to the expansion of UF_6 as it changed from the solid to the liquid phase. Both such overfilling and heating of the overfilled cylinder were contrary to the Licensee's operating procedures. The high pressure in the cylinder and large size of the rupture resulted in the rapid release of much of the UF_6 into the atmosphere. One individual employed by the Licensee died because of exposure to hydrogen fluoride (a hydrolysis product of UF_6). Other employees received exposures to uranium and hydrogen fluoride.

The NRC was notified of the accident soon after its occurrence. The NRC immediately formed and dispatched a team of inspectors to the facility to conduct an investigation into the facts surrounding the incident and to identify any generic or site-specific safety concerns related to the incident. The first team members arrived on site the evening of January 4, the day of the incident. Subsequently, the inspectors were divided into an Augmented Investigation Team (AIT) and an emergency response team. The AIT consisted of personnel from NRC's Region IV office and NRC's Office of Nuclear Material Safety and Safeguards, and was supplemented by other technical experts from NRC, the Oak Ridge Gaseous Diffusion Plant, Lawrence Livermore National Laboratory, and the National Bureau of Standards.

⁴ The Sequoyah Fuels facility converts uranium oxide concentrates (yellowcake) from milling and mining operations to UF_6 . The UF_6 is subsequently shipped to enrichment facilities.

By letter dated January 9, 1986, Sequoyah Fuels Corporation agreed to suspend its operations and not to restart the facility without the concurrence of the NRC. In addition, SFC committed not to disturb or move process equipment related to the January 4th incident without the approval of the NRC. A number of additional commitments were also made in meetings with Region IV staff. These commitments were confirmed in a Confirmation of Action letter from Robert D. Martin, Regional Administrator, Region IV, to R.P. Luke, Executive Vice President, SFC, dated January 17, 1986.

An Interagency Public Health Assessment Task Force was also formed in January 1986 to assess the public health impact associated with the accidental release of UF_6 that occurred. The Task Force was composed of representatives from the NRC, the Environmental Protection Agency (EPA), the Department of Health and Human Services, the Department of Agriculture, the Lawrence Livermore National Laboratory, the Oak Ridge National Laboratory, and the University of Rochester. The goals of the Task Force were to identify the potential public health impact resulting from the accident based on data available, to identify and recommend action or precautions necessary to mitigate any adverse impact on the general public, and to provide a data base for use of governmental agencies and others for followup studies. The scope of the Task Force assessment consisted of (1) the nonradiological effects of uranium (i.e., chemical toxicity) on SFC workers and offsite individuals, (2) the radiological effects to onsite individuals and to the population in the affected area, and (3) the effects of fluorides (UO_2F_2 and HF) on onsite and offsite individuals, vegetation, and animals.

Additionally, during the week of February 10 through 14, 1986, a comprehensive inspection was performed by six senior NRC inspectors. This inspection consisted of an in-depth review of SFC compliance with NRC regulations and license requirements. The Office of Investigations (OI) also began an investigation, which at this date is still ongoing.

II. The AIT completed its investigation and documented its findings and conclusions in reports issued in February and June 1986. See NUREG-1179, "Rupture of Model 48Y UF_6 Cylinder and Release of Uranium Hexafluoride," Vols. 1 and 2. As a result of its investigation, the AIT identified the following factors as the primary contributors to the accident:

1. The cylinder was overfilled because it was not placed fully on the scales. The fill bay and associated equipment were not designed to prevent improper positioning of cylinders in the bay so that the cylinder would be properly located on the scales. The fill bay was not designed to accommodate 14-ton cylinders.

2. The time required for filling the cylinder was long enough to allow partial solidification of the UF_6 which inhibited product removal from the cylinder.
3. The precise weight of the cylinder was not readily determinable after it was overfilled.
4. There was no secondary or alternate way to measure the quantity of material in a cylinder being filled.
5. Employees violated company procedures when they heated an overfilled cylinder. Workers, including line management personnel, had not been trained in regard to company procedures. Procedural controls such as checklists or approval points were not an integral part of plant operations.
6. Equipment for monitoring or automatically venting cylinders that were being heated was not provided for by the plant design.

In response to these findings, SFC has committed to make improvements in its operations. The changes in the facility included numerous modifications and improvements to plant process equipment such as the cylinder filling area and the steam chests. These physical improvements form the technical bases for commitments made by the Licensee, and also form a basis for certain new NRC requirements such as the conditions under which UF_6 cylinders may be heated.

The Interagency Task Force completed its investigation and documented its findings and conclusions in a report issued in March 1986. See NUREG-1189, "Assessment of the Public Health Impact from the Accidental Release of UF_6 at the Sequoyah Fuels Corporation Facility at Gore, Oklahoma," Vols. 1 and 2. As a result of its investigation, the Task Force recommended that workers exposed to the accident should be monitored carefully for at least 1 or 2 years for evidence of pulmonary or renal injury that might have resulted from the exposure to uranium and hydrogen fluoride, but that further evaluation of offsite individuals should be conducted only if monitoring of exposed workers indicated the development of chronic effects due to acute hydrogen fluoride exposure. With regard to the direct impact of the offsite releases, the initial evidence indicated that no lasting ecological harm was done. However, the Task Force recommended that followup testing and environmental sampling be conducted to confirm this. While the Task Force found that the preliminary assessment indicated measurable and highly variable uranium and fluoride contamination in soil and vegetation located off site in the path of the plume, using the highest levels reported, assessments indicated that known drinking water sources, consumption of vegetation planted after the accident, and the consumption of local fish

and game may not present a health hazard. Conversely, vegetation that existed at a growth stage at the time of the accident and was exposed to the plume may contain unsafe levels of uranium or fluorides and should be tested.

In response to these findings, SFC is implementing a 2-year health study program to follow employees exposed to uranium and fluorides. SFC also expanded its program for sampling water, soil, and vegetation in the environment to include additional sampling in the affected area during the current growing season.⁵

The results of the special NRC inspection conducted February 10 through 14 were documented in an inspection report issued May 9, 1986. See Inspection Report 40-08027/86-02. The inspection report identified violations of NRC requirements and license commitments. SFC responded to this inspection report by letter dated May 28, 1986, and outlined corrective actions taken in response to these concerns.

On February 20, 1986, SFC proposed to the NRC a three-phased program for resumption of activities and operations at the Sequoyah facility. The first of these phases was the resumption of the receipt, sampling, and storage of uranium ore concentrates (yellowcake). The second phase was the shipment of uranium hexafluoride that was in inventory at the time of the January 4th accident and the return to customers of empty uranium ore concentrate drums and slurry trailers. Phase three is the restart of normal UF₆ production.⁶

⁵ With regard to the health study program, on October 2, 1986, the Director, Office of Inspection and Enforcement, issued an Order Modifying License that will ensure among other things that this is carried out, and that the results will be submitted on or before July 1, 1988. With regard to the sampling of water, soil, and vegetation, such sampling was completed in May 1986. The report of the results and analysis is expected to be completed by October 15, 1986. If necessary, additional sampling will be required.

⁶ By letter dated July 18, 1986, the Licensee requested authorization of another phase, limited system operation for cleanup purposes, and requested NRC approval to perform certain tasks to accomplish this. By letter dated August 22, 1986, the NRC authorized a portion of this request, and by letter dated September 20, 1986, authorized the remaining tasks. The letters of August 22 and September 20 did not authorize uranium conversion or production of additional UF₆ and the Licensee was not permitted to introduce any new uranium to the process system.

By letter postmarked September 26, 1986, CASE requested that I verify whether uranium conversion had been authorized on September 20, 1986. CASE asserted that this would constitute the potential for immediate irreparable harm due to the questionable status of SFC's authority to operate the facility in the absence of proper permission from state and federal authorities asserting examples of such lack of authority.

NRC's letters of August 22 and September 20, 1986, only authorized the operation of equipment necessary to process material left in the circuit after the UF₆ release and from uranium-bearing cleanup solutions generated during recovery from the accident. This authorization did not permit SFC to perform conversion to UF₆ and did not involve any new or modified equipment. This processing would be required whether or not the facility is permitted to resume conversion operations. These activities do not constitute any immediate irreparable harm as charged nor do they impact on other issues raised in the September 26 CASE request.

By letters dated February 24 and 26, 1986, SFC requested that the NRC concur on starting phase one and phase two activities. This request was accompanied by documentation of the procedures to be used and other commitments. Following an extensive review by the Staff, NRC concurred to these activities on April 23, 1986. The Staff documented its review and conclusions in two Safety Evaluation Reports. See Safety Evaluation Report for the proposed Phase I activities at the Sequoyah Facility (April 23, 1986); Safety Evaluation Report for the proposed Phase II activities at the Sequoyah Facility (April 23, 1986). On the basis of this review, the Staff concluded that these activities could be conducted in a manner that adequately protects the health and safety of the public, SFC employees, and the environment.

On May 7, 1986, the Licensee submitted a letter stating that it expected to have completed its commitments and corrective actions by May 22, 1986, and requested that the Commission concur in phase three, the resumption of normal UF_6 production. By letter dated May 23, 1986, SFC was informed that its letter of May 7, 1986, did not provide an adequate basis for the NRC to conclude that future UF_6 production would be conducted in a manner that would properly protect health and safety since it lacked sufficient detail for the Staff to assess the adequacy of plant/equipment modifications, the revised training program, and the procedure upgrade program, and significant details on management of quality assurance programs and management oversight. SFC was asked to provide an analysis describing the relevant internal investigation reports, inspection reports, consultant reports, commitments to the Commission and to Congress, and proposed improvements and commitments for correction of each deficiency. SFC provided this analysis to the Commission on June 25, 1986. On August 20, 1986, SFC submitted modifications to its June 25 document consisting of proposed changes to the SFC license. These modifications were submitted as a result of comments and questions raised by the NRC concerning the June 25 document. Two pages dated September 3, 1986, provided corrections to the August 20, 1986 submittal. On September 10, 1986, SFC was asked for additional information including the results of its own investigation regarding instances of heating overfilled cylinders. By letter dated September 24, 1986, the Licensee responded indicating that frequent heating of overfilled cylinders had occurred prior to the accident in violation of the Sequoyah Fuels Corporation plant operating procedures and regulatory requirements. Furthermore, SFC indicated that given the number of cylinders that were apparently heated with more than the maximum net weight, it must be concluded that some supervisory personnel either acquiesced in or condoned this practice. As described in § III below, on

October 2, 1986, the Staff issued an Order Modifying License which addressed many of the Staff's concerns arising from these submittals.

Prior to granting SFC's request to authorize the resumption of normal UF₆ production, the Commission will carefully review the Licensee's analysis and other submittals and will evaluate all actions taken by the Licensee. The Commission's evaluation will include a thorough review of the status and acceptability of all of the Licensee's corrective actions that have been determined essential for restart of UF₆ production and to provide reasonable assurance that the Licensee has met all applicable requirements. In this connection, a multi-agency inspection was conducted of the facility on June 9-12, 1986, to ensure that all regulatory requirements are being met. This team inspection was conducted by representatives from the NRC, OSHA, and the EPA. Results of this inspection are documented in Inspection Report 40-08027/86-07 dated July 25, 1986. In addition, during the week of July 28, 1986, the NRC conducted an inspection to ensure that all outstanding commitments had been addressed prior to authorizing the restart of UF₆ production. Results of this inspection are documented in Inspection Report 40-08027/86-08 dated September 4, 1986.⁷ Since the July inspection, additional inspections have occurred and significant deficiencies have not been found. An inspection in September 1986 identified a defect in the Licensee's procedures. See Inspection Report 40-08027/86-11. However, the defect was promptly corrected by the Licensee. A followup inspection that was conducted did not identify any additional significant inadequacies with the Licensee's procedures or with the attitude of the Licensee's employees toward identifying and correcting procedural inadequacies.

Thus, the Staff's actions have essentially satisfied the requests in the GAP Petition that a review of the accident by the Interagency Task Force formed to assess the public health impacts of the accident be completed, and, with the exception of the investigation being conducted by OI, that all ongoing Staff inspections and investigations be completed prior to resumption of licensed activities.⁸ With regard to the request

⁷ As a result of the two inspections, 29 "open items" from previous inspections were "closed out" in that the NRC inspectors determined that SFC had corrected the previously identified violations and had met other commitments made to the NRC of specific actions to improve the safety of plant operations. The only "open item" remaining involved on-the-job training for operators in process operations, and this item could not have been completed because the plant was shut down.

⁸ Although the OI investigation has not to date been completed, for the reasons discussed in § III of this Decision, *infra*, I have determined that there is reasonable assurance that SFC will conduct its operations in a manner that will not present an undue risk to the public health and safety after the plant is restarted, and that this investigation need not be completed prior to authorization of the resumption of UF₆ production.

that an independent inspection and review of the causes of the accident be conducted by a third party, I have determined that such relief is not warranted. The NRC Staff and Interagency Task Force have conducted extensive inspections and investigations concerning the cause and impact of the accident. From these findings, I am satisfied that the causes of the accident and the Licensee's corrective actions are understood such that NRC is able to make a determination as to whether the Licensee has taken adequate corrective action and is able to operate the plant in a manner that will provide reasonable assurance that it will comply with all requirements.⁹

III. The CASE Petition sets forth twenty-one allegations in support of its request for relief. Most of these allegations relate directly or indirectly to the January 4 accident.¹⁰

As discussed above, the NRC extensively investigated the circumstances and causes of the accident, including most of the issues raised in these allegations.¹¹ The inspections and investigations determined that a

⁹ The Petitioners also express concern over a "second accident" which they allege took place in which another UF₆ cylinder was overfilled while the facility was under a suspension of activities. This event occurred on March 13, 1986, when a 10-ton UF₆ cylinder was overfilled during a special one-time draining procedure permitted pursuant to permission granted to the Licensee by Region IV. See Memorandum from R.D. Martin to S.D. Emerson (March 10, 1986). The AIT determined that the overfilling was caused by a dislodged beam linking the cylinder weighing scale with its readout dial. This defect resulted in an erroneously low indication of weight and the cylinder was overfilled by about 5000 pounds. All but about 175 pounds of excess material was properly evacuated from the cylinder within about 24 hours after the overfill. However, the cylinder was not heated, so this situation did not present the same hazard as that of January 4. Details of this event are documented in NUREG-1179, Vol. 2.

¹⁰ Specifically, the CASE allegations that relate to the accident are: I. SFC willfully failed to adhere to its training program; II. SFC with the awareness of management routinely violated its procedures and NRC directives in heating overfilled vessels of uranium hexafluoride; III. SFC failed to maintain its emergency warning systems; IV. The executive vice president willfully selected a facility manager who did not possess a requisite degree; V. Shift supervisors failed to instruct operating personnel in relevant procedures; VI. The manager for production failed to maintain updated detailed operating procedures for reference by operating personnel; VII. The manager for health physics and industrial safety failed to provide new employees with requisite training; VIII. The manager of conversion engineering failed to adequately review equipment design regarding the capacity of the loading scales; IX. The facility manager and president failed to adequately review changes to process operations; X. The manager of health physics and industrial safety failed to perform monthly inspections of essential radiation safety equipment; XI. The manager of maintenance and construction failed to inspect for cartwheel damage or replace damaged carts; XII. The director of regulatory compliance failed to conduct comprehensive quarterly audits; XIII. SFC willfully violated 10 C.F.R. § 20.203(e)(2) in failing to post warning signs; XIV. SFC willfully violated its radiological contingency plan; XV. SFC violated additional radiation protection requirements; XVI. SFC continued its lax attitude in decontamination after the accident; XVII. SFC made a material false statement in its probabilistic risk assessment of the potential of a rupture or valve failure of a hot UF₆ product cylinder.

It should be noted that of these allegations, allegations I through XVI are essentially restatements of the findings of the NRC and AIT documented in NRC Inspection Report 40-08027/86-02 and NUREG-1179, Vol. 1. CASE has, however, recharacterized these findings in certain instances and provided no factual basis for the recharacterizations. Absent such specific factual basis, further inquiry need not be made. See, e.g., *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), DD-85-11, 22 NRC 149 (1985).

¹¹ Specifically, the issues raised in CASE allegations I and II have been investigated by the Augmented Inspection Team (see NUREG-1179) and allegations III through XVI have been investigated during NRC inspections following the accident (see Inspection Reports 40-08027/86-02, 86-07, and 86-08). CASE's allegation XVII, that SFC made a material false statement, is discussed *infra*.

contributing factor to the accident was a major breakdown in management control and oversight of licensed activities, which was illustrated in part by the failure of management to ensure that significant operating procedures were followed by Licensee personnel and the failure to adequately train Licensee personnel.

SFC has committed to extensive corrective actions specifically geared to address this problem. These corrective actions are documented in the Safety Evaluation Report by the Division of Fuel Cycle Material Safety Related to the Authorization to Resume Operations for the Sequoyah Fuels Corporation UF₆ Conversion Facility, October 14, 1986 (hereinafter SER Related to the Authorization to Resume Operations). Examples of improvements that have been proposed and approved by the NRC include the following: construction of an enclosed room for filling UF₆ cylinders to prevent the spread of contamination in the event of a UF₆ release; modifications of the weight-measuring equipment to prevent erroneous readings; installation of an interlock to automatically terminate heating if the pressure inside a UF₆ cylinder reaches a preset level; creation of new management positions and appointment of new people to these positions to provide for better management oversight of operations (e.g., managers of quality assurance, health physics and industrial hygiene, administration and services, and procedures and training); review and revision of plant operating procedures; establishment of a new offsite training center; and training and retraining of all employees in plant operations, safety-related procedures, use of respiratory protection, and emergency procedures. In addition, SFC has instituted a new Facility Quality Assurance Program and established the position of Manager, Quality Assurance, to help ensure that SFC employees will comply with NRC and SFC safety and operating requirements. Regarding a possible plant emergency, SFC has installed a public emergency warning system and has acquired an agreement with a local radio station to provide announcements of monthly tests of the siren warning system and to provide information to the public in the event of a real emergency. These and other corrective actions will provide reasonable assurance that management will control operations so that the resumption of licensed activities will not present an undue risk to public health and safety.

In addition, the NRC has taken enforcement action as a result of the findings of NRC inspections and investigations. On October 14, 1986, a Notice of Violation and Proposed Imposition of Civil Penalties was issued to the Licensee proposing civil penalties of \$310,000 for violations

identified during the inspections.¹² On October 2, 1986, an Order Modifying License was issued to SFC. The Order imposed as conditions of any continued operations at the Sequoyah Fuels facility commitments made by SFC to the Commission, as well as additional conditions that the Commission determined are required to protect the public health, safety, and interest. These conditions included a requirement that the Licensee obtain the services of an independent oversight organization which shall, among its many responsibilities, maintain a 24-hour daily surveillance (during operations) of plant processing operations to ensure compliance with procedural and regulatory requirements and shall bring to the immediate attention of the NRC and SFC any conditions it believes to be unsafe or not in conformance with NRC requirements. This independent organization shall be in place until the NRC can verify that the Licensee's organizational authority and responsibilities are in compliance with this Order.

With regard to the Licensee's performance, an additional point needs to be addressed. CASE alleges that SFC willfully violated NRC requirements, the conditions of its license, and its own procedures. Specifically, CASE alleges that SFC willfully violated its license by failing to adhere to the training program for operating personnel upon which the Licensee's operation was conditioned, that it routinely violated its procedures by heating overfilled vessels of uranium hexafluoride with the full awareness of management, that the executive vice-president willfully selected a facility manager who did not possess the requisite degree set forth as a condition of its license, that SFC willfully violated 10 C.F.R. § 20.203(e)(2) by failing to post warning signs around radioactive areas, and that SFC willfully violated its radiological contingency plan.

CASE has provided no factual basis for the assertion that these violations were willful. *See* note 10, *supra*. The Commission has an ongoing investigation into whether wrongdoing associated with the events leading to or following the accident occurred. Until this investigation is completed, the Staff is not in a position to address the issues of willfulness. However, the October 2, 1986 Order Modifying License, discussed above, required SFC to make changes to its procedures and training program and to obtain the services of an independent oversight organization

¹² The Notice of Violation cited the Licensee for those violations identified during inspections for which there was sufficient factual basis to support a finding that a violation had occurred. These violations included failure to train operating personnel, violation of procedures in overheating overfilled cylinders containing uranium hexafluoride, and failure to maintain operating procedures for several radiation safety-related activities. Many of these violations were also raised by CASE in its allegations. However, with regard to other allegations, insufficient factual basis existed to support a finding that a violation had occurred. Consequently, no enforcement action was taken with regard to these allegations (e.g., that equipment design regarding the capacity of loading scales was not adequately reviewed; that there was a failure to inspect for cartwheel damage or replace damaged carts).

which shall maintain a 24-hour daily surveillance (during operations) of plant processing operations and shall bring to the immediate attention of the NRC and SFC any conditions it believes to be unsafe or not in conformance with NRC requirements. This continuous independent audit will ensure that resumption of normal operations at the facility will not present an undue risk to the public health and safety after the plant is restarted and while the investigations are under way. Following completion of OI's investigation, the Commission may take such additional action as it determines is appropriate.

In sum, the NRC considers the accident and its consequences to be a very serious matter. The NRC has conducted extensive and intensive investigations and inspections of the accident, its causes, and the SFC administration of its licensed program. Specific violations have been found and have been or are being dealt with under NRC's enforcement authority in separate proceedings. For its part, SFC has made necessary improvements in the plant safety program including facility modifications, the hiring of additional staff, improved operating procedures, better training of employees, and other improvements as detailed in the SER referenced above. Based on these efforts to upgrade the facility and its safety program and the 24-hour oversight, the NRC has determined that there is reasonable assurance that the facility will be operated in a safe manner and in compliance with NRC requirements.

History of the Operation of SFC Prior to January 4th Accident

The GAP Petition requested that the Commission suspend the license for the Sequoyah Fuels facility pending compliance of the facility with "all licensing requirements and conditions" and pending the conduct of a management study to determine the root cause of what Petitioners allege is the inability of Kerr-McGee to comply with regulatory requirements. The GAP Petition suggests that the January 4th accident is but the latest accident at a plant that has experienced a long history of violations. APC in its Petition reiterates this concern and, in addition, asserts that the NRC has shown "favoritism" to SFC in allowing it to continue to operate despite its poor record.¹³ CASE also points to SFC's history as a

¹³ A considerable part of the APC Petition is a verbatim copy of portions of a petition filed with the Commission by Jeannine Honicker in 1978 which requested revocation of all licenses for activities conducted in the nuclear fuel cycle. That petition was denied by the Commission, 46 Fed. Reg. 39,573 (Aug. 4, 1981). Mrs. Honicker's petition for review of that denial was dismissed by the U.S. Court of Appeals without opinion. 679 F.2d 261 (D.C. Cir. 1982). Her petition to the Supreme Court for a writ of *certiorari* also was denied. 459 U.S. 945 (1982). Revisiting those issues is not warranted.

basis for its request for relief and alleges that the Safety Evaluation Report supporting renewal of the Sequoyah Fuels facility license dated September 20, 1985, states that fifteen violations had been identified since the previous license renewal. CASE further asserts that although SFC historically has promised to improve its program, it has consistently lapsed into noncompliance again, and for this reason, the NRC should not accept further promises of compliance, but the Sequoyah Fuels facility should remain closed.¹⁴ CASE also alleges that SFC made a material false statement in 1974 in response to an EPA request for information which became the basis for all accident scenario probabilities on the question of the accident potential involving the rupture or valve failure of a hot UF₆ product cylinder and which was incorporated in the original Final Environmental Impact Statement and all subsequent assessments.

The NRC has examined in detail SFC's history of compliance. The Petitioners provide numerous examples of events that have occurred at the facility which they allege were violations of NRC requirements.¹⁵ However, many of the cited examples, while they were occupational mishaps or undesirable practices, did not constitute violations of NRC requirements.¹⁶ Furthermore, many of the cited events took place over 15 years ago, and, as such, are not pertinent to the question of whether current SFC management, which has undergone changes and made extensive improvements to its program, can operate the plant safely. With regard to the events that occurred prior to the accident which did constitute viola-

¹⁴ Basically, CASE's claims that relate to these assertions are set forth in its allegations XVII (that SFC made a material false statement in its probabilistic risk assessment of the potential of a rupture or valve failure of a hot UF₆ product cylinder), XVIII (that SFC historically has promised to do better but repeatedly lapses into noncompliance), XIX (that SFC exercises "ultra vires de facto operation" absent regulatory authority), XX (that SFC has misrepresented the status of its contract for the appropriation of water from Lake Tenkiller), and XXI (that SFC exhibits a long history of noncompliance). It should be noted, however, that several of CASE's claims in this regard lack the specificity required by § 2.206, while others involve violations of EPA regulations and consequently are outside of the scope of this decision. EPA required SFC to take action to correct these deficiencies as described in an August 15, 1986 compliance report.

¹⁵ The GAP Petition includes as an attachment a report entitled "Kerr-McGee Sequoyah Uranium Hexafluoride Production Plant," by Charles Barnes, and highlights excerpts from this report in order to reiterate alleged violations. The APC Petition also includes a portion of this report in order to set out alleged violations.

¹⁶ For example, the GAP Petition alleges that, according to NRC inspection reports, there were 67 occasions in 1980 when the average daily concentration of airborne uranium exceeded allowable limits, and 27 such occasions in 1981, and 80 in 1982. GAP has used figures cited in Inspection Reports 40-08027/82-01 and 83-01. However, those occasions when the concentration of airborne uranium exceeded the values in 10 C.F.R. Part 20, Appendix B, Table 1, col. 1, did not constitute violations of NRC limits. As stated in 10 C.F.R. § 20.103, the NRC limit is based on the quantity of uranium inhaled by an individual, not on the concentration in the air. By limiting the time a worker is exposed to the concentration of uranium or by the use of a respirator, the quantity of uranium inhaled can be kept within the limit specified in § 20.103 although the concentration exceeds the value in Appendix B. In both of the referenced inspection reports, the inspector concluded that SFC had not violated the exposure limit for individual workers.

tions of NRC requirements, none of those violations were determined to be of great significance and none resulted in escalated enforcement action against the Licensee. In all cases in which the NRC cited SFC for identified violations, SFC corrected the violations and the NRC verified by inspection that the corrective actions had been taken and were effective.¹⁷

CASE alleges that SFC made a material false statement in September 1974, in response to an EPA request for information that became the basis for all accident scenario probabilities on the question of the accident potential involving the rupture or valve failure of a hot UF₆ product cylinder. CASE asserts that SFC stated that the probability of a rupture or valve failure of a hot UF₆ product cylinder was less than 1 in 100 million and that this constituted a material false statement and that there is no current basis for this assessment, implying that there never was.

EPA had conveyed comments to the NRC on the draft Environmental Impact Statement which indicated that the probability of a rupture or valve failure of a hot UF₆ product cylinder should be included in the final statement. The NRC requested the Licensee to address this issue. The EPA comment and the Licensee's response were included in the Appendix to the final Environmental Impact Statement issued in February 1975 (NUREG-75/007).

This statement was not relied upon by the NRC in drafting its final Environmental Impact Statement. Rather, the NRC considered that such an accident was credible, and analyzed its potential consequences in the final Environmental Impact Statement. Given the age of the statement and the lack of reliance on it, it is within the Staff's enforcement discretion to determine that further effort to pursue the issue of a material false statement is not warranted.

¹⁷ In connection with its claim that the NRC has shown "favoritism" to SFC, APC asserts in its motion that SFC was allowed to operate with an expired license. CASE also raises this issue in its Petition in support of an allegation that SFC has notoriously operated absent regulatory authority. There is no merit to this assertion. Sections 2.109 and 40.43(b) of 10 C.F.R. provide that in any case in which a licensee has filed an application for renewal of its license at least 30 days prior to the expiration of the license, such license shall not expire until application for renewal has finally been determined by the Commission. This is in accordance with the protections afforded by § 9(b) of the Administrative Procedure Act, 5 U.S.C. § 558(c). On September 24, 1982, SFC filed its application for renewal of its license which was to expire on October 31, 1982. By letter dated November 8, 1982, the Licensee was notified that its existing license would remain in effect until the Commission acted on its application, pursuant to 10 C.F.R. § 40.43.

APC also asserts that in renewing the SFC license in September 1985, the NRC granted further delays of 6 months in requiring SFC to stipulate procedures for handling hexafluoride cylinders and other safety concerns, and the January 4th accident occurred during this delay. There was no delay granted when the license was renewed. A condition of the renewed license required the Licensee to prepare and submit a detailed analysis of each step in the handling of hot UF₆ cylinders, identifying scenarios that could result in cylinder rupture, and measures and actions to mitigate the effects of a UF₆ release. The condition allowed the Licensee 6 months to prepare this information. It is common practice for the Staff to allow a licensee necessary time to meet a requirement such as this.

In connection with their assertion that the Sequoyah facility has had a long history of violations, the Petitioners raise numerous issues with regard to SFC's disposition of its waste products. For example, the GAP Petition alleges that over 5 million gallons of radioactive and toxic pollutants may have seeped from the plant's liquid waste storage ponds into the ground. In addition, the GAP Petition alleges that the NRC has allowed SFC to discharge 11,000 pounds of uranium in liquid per year into a ditch (which APC claims in its Petition is discharged into the Illinois River). NWC further asserts in its Petition that the composition and volume of wastewater discharged into the Illinois River is unknown because of SFC's practice of diluting its waste stream before analyzing it for radioactive and chemical components.

The Petitioners provide no basis for these claims. SFC has in place a program for detecting radioactive and toxic pollutants in groundwater through sampling local surface waters and water from strategically placed wells. This program was reviewed and approved and is inspected by the NRC. The results of this program have not to date indicated significant concentrations or movement of radioactive material in groundwater as a result of seepage from the plant's liquid waste storage ponds. With regard to the NWC assertion that the total volume and composition of SFC's liquid waste discharges are not known, the total liquid discharge from the SFC facility is released to a natural water course south of the facility and flows to the Illinois River near its entry into the Arkansas River. This discharge is called the combination stream and is composed of the cooling tower and fluoride treatment effluent streams, the sanitary wastewater stream, and excess plant intake water from the Lake Tenkiller supply. The volume of the stream and the chemical and radiological parameters are determined on a routine basis by SFC and the State of Oklahoma. The liquid release is permitted by the EPA under National Pollutant Discharge Elimination System (NPDES) Permit No. OK0000191.¹⁸ In an August 15, 1986 compliance report, EPA reported that, with the exception of some recent minor pH excursions due to algae blooms, SFC has been substantially in compliance since March 1985. Radiological releases have remained well below limits established by the NRC. During the years 1980-1985, SFC has discharged an average of about 9600 pounds per year of uranium to the combination stream

¹⁸ CASE asserts in one of its allegations that SFC has no current Oklahoma State pollution discharge elimination system permit. This assertion is erroneous. From 1982 until the present time the Licensee was allowed to operate under its previous permit pursuant to provisions of the Oklahoma State health department similar to those of §§ 2.109 and 40.43(b). CASE also implies in one of its allegations that SFC may have no contract with the Army Corps of Engineers for appropriation of water from Lake Tenkiller. This assertion is also erroneous, as the Licensee has a contract for water from Lake Tenkiller. The specific amount is negotiated periodically.

or about 1 to 2% of the permissible limit. In 1984, the volume of liquid discharged was reduced by about half. This resulted in about 5000 pounds of uranium discharged. In 1985, about 4000 pounds of uranium was discharged in liquid effluents.

The GAP Petition also asserts that SFC pumped 5 million gallons of treated waste into an aquifer. With regard to this concern, SFC originally had planned to dispose of its waste by pumping it into an underground aquifer. In October 1982, SFC was permitted, pursuant to a license granted by the State of Oklahoma, to test an injection well by pumping 5 million gallons of waste into an aquifer. This test was carefully observed and monitored by both the NRC and the State of Oklahoma. No adverse effects were determined to have resulted from this test; however, the Licensee has since determined not to continue disposing of its wastes in this manner and plugged the injection well. See "An Assessment of the Sequoyah Fuels Facility, Gore, Oklahoma," Oklahoma State Department of Health (November 1985).

The GAP Petition also alleges that contaminated equipment and over one hundred and ten 55-gallon drums of waste have been buried at the site. Such material was buried on site from 1970 through 1981. This burial was accomplished in compliance with the requirements of 10 C.F.R. Part 20 which were then in effect and which allowed this method of disposal. Although NRC regulations have since been changed and the Licensee has discontinued such burial of waste and equipment, no adverse effects are expected from burial in accordance with the limits previously contained in Part 20, and the Licensee's environmental program has detected no such adverse effects.

GAP and NWC express concerns that SFC has been using radioactive and toxic waste as liquid fertilizer on land used by grazing cattle that were subsequently consumed by humans. With regard to this concern, the NRC thoroughly reviewed SFC's proposed use of treated liquid waste as fertilizer and allowed SFC to do this, and to graze cattle and sell hay grown on treated areas, pursuant to a license amendment issued on June 30, 1982.¹⁹ This program, which is detailed in SFC's 1982

¹⁹ NWC asserts that there were several amendments and no "public review." In response to this assertion, it should be noted that the NRC conducted an environmental assessment related to the use of raffinate as a fertilizer and issued a Negative Declaration which was published in the *Federal Register*. 47 Fed. Reg. 26,261 (June 17, 1982). The Environmental Impact Appraisal that supported the Negative Declaration was reviewed and accepted by the Food and Drug Administration, the Department of Agriculture, the Environmental Protection Agency, and the State of Oklahoma. There was no request for a hearing on this matter, and absent a request for such a hearing, there is no requirement that one be held. See, e.g., *Florida Power and Light Co.* (Turkey Point Nuclear Generating Station, Units 3 and 4), LBP-79-21, 10 NRC 183, 191-92 (1979).

Sequoyah Facility Environmental Report, is closely controlled and SFC submits to the NRC, as is required, the results of control testing on a routine basis. The NRC has determined that these activities present no undue risk to public health and safety and the environment.²⁰

Finally, APC asserts in its Petition that the NRC deemed it unnecessary to install additional air-sampling stations despite a demonstrated need for improvement in the monitoring of airborne radioactivity near the SFC facility, and consequently a plume of airborne contamination has been released to the north, northwest, southwest, or southeast without detection. In this connection, NWC asserts in its Petition that the inadequacies of the existing air-monitoring system have caused an underestimation of the rate of emissions by SFC and their impact upon public health and welfare and that, in light of these inadequacies, SFC's vegetation monitoring program for the assessment of potential radiological doses by ingestion of vegetation is unsuitable.

There is no merit to APC's and NWC's claims regarding the release of undetected airborne contamination. Airborne releases of radioactive material from the facility are measured (on a real-time basis) on site prior to their release to the unrestricted area. The offsite environmental monitoring systems referred to in the Petitioners' assertions are not meant to instantaneously detect or measure routine releases, but rather to provide data averaged over time to assess the environmental impact of airborne effluents from plant operation. SFC records indicate that effluent and environmental monitoring equipment have been operational except for short periods of time due to minor equipment failures, and the Staff concludes that no undetected releases as described by the Petitioners have occurred at the SFC facility.

In sum, the NRC has monitored and reviewed SFC's disposal of its wastes and there is no necessity for the Commission to examine further SFC's disposition of these materials as requested by NWC.²¹ Furthermore, contrary to the Petitioners' assertions, the Licensee's disposition of its wastes and its general history do not reflect an "inability" to comply with regulatory requirements, or provide a basis for granting the specific

²⁰ CASE also sought a long-term study of the surface application of barium-treated solvent extraction uranium raffinate fertilizer. However, CASE provided no factual basis as to why such a study would be appropriate. In the Staff's view, based on the above-referenced material, such a study is not warranted and, without additional factual basis, will not be considered.

²¹ NWC in its Petition requests that an "independent" study of SFC and its environment be conducted similar to those recommended by the U.S. General Accounting Office at the Feed Materials Production Center at Fernald, Ohio; Portsmouth Uranium Enrichment Complex at Piketon, Ohio; and Mound at Miamisburg, Ohio. It should be noted that these are not independent studies, but studies by contractors of the Department of Energy (DOE) of DOE facilities. By contrast, the activities conducted at the SFC facility have been subjected to the overview of the NRC, EPA, and the State of Oklahoma in their respective areas of jurisdiction.

relief requested by the petitions. While it is true that over the past 15 years, violations have occurred, these violations do not reflect an incapability or unwillingness on the part of the Licensee to abide by NRC requirements or provide a sufficient basis for revocation or indefinite suspension of the license. Furthermore, in all cases the NRC has investigated these instances, taken appropriate enforcement action, and ensured that the Licensee has taken suitable corrective action. NRC has not shown "favoritism" to this Licensee.²² With regard to the January 4th accident, as described above, the NRC has thoroughly investigated the causes and impact of this occurrence and has taken or is taking appropriate enforcement action.²³ While this incident was indeed serious, and violations of NRC requirements have occurred, these violations do not in and of themselves warrant suspension or revocation of SFC's license. Not every violation of the Commission's regulations or licenses compels suspension or revocation of a license. See *Petition for Emergency and Remedial Action*, CLI-78-6, 7 NRC 400, 405-06 (1978). In this instance, SFC agreed to suspend operations until the NRC could ascertain that there is reasonable assurance that operations would be conducted safely. As indicated above, the Licensee has undertaken extensive corrective action and made improvements to its program to ensure that licensed activities will be carefully controlled.²⁴ The NRC will not authorize resumption of production of uranium hexafluoride unless it determines that there is reasonable assurance that SFC can operate the plant in a manner consistent with the terms of its license and in a manner that protects public health and safety.²⁵

²² The GAP Petition also asserts that there has been an inability of the NRC regional office to take appropriate regulatory action, but the Petition does not provide any explanation as to the basis for this assertion. In any event, as indicated in note 3, *supra*, the GAP Petition was provided to OIA for its review and appropriate action and OIA declined to undertake the audit requested by GAP.

²³ CASE also questions the adequacy of emergency planning and requests a revised emergency plan. By letter dated August 14, 1986, FEMA indicated its approval of SFC's offsite emergency plan. Moreover, the enforcement action referenced above addresses aspects of emergency planning. In addition, the Commission is working on a rulemaking addressing emergency planning for facilities such as Sequoyah Fuels. Pending completion of the rulemaking, orders will be issued as necessary to ensure adequate emergency planning. For example, orders are being developed to address notification issues raised by the January 4th incident.

²⁴ As revocation of SFC's license is not mandated, the additional relief requested by APC is not required. Furthermore, because the Licensee's improvements address the causes of the accident and provide appropriate correction, and because the violations do not demonstrate an inability on the part of the Licensee to comply with regulatory requirements, no further management study, as requested in the GAP Petition, appears to be necessary.

²⁵ CASE also took issue with the fact that the informal nature of the consent order whereby SFC agreed to suspend its operations has resulted in the exclusion of input by the public in the decision process. As discussed *supra*, SFC's suspension of its operations was a voluntary action entered into by the Licensee so that the NRC and Licensee could review the accident and Licensee's operations to determine appropriate corrective actions for problems that contributed to or resulted from the accident. A hearing is not required as a matter of right where a licensee agrees to suspend licensed operations. See

Continued

CONCLUSION

For the reasons stated above, the GAP, APC, NWC, and CASE Petitions are denied. As provided in 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary for the Commission's review.

James M. Taylor, Director
Office of Inspection and
Enforcement

Dated at Bethesda, Maryland,
this 15th day of October 1986.

Public Service Co. of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438 (1980). Nor is there a right to a hearing on lifting a suspension. *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287, 1314 (D.C. Cir. 1984), *vacated in part on other grounds and reh'g granted*, 760 F.2d 1320 (1985), *aff'd on reh'g*, 789 F.2d 26 (1986). See also *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Unit 1), CLI-85-10, 21 NRC 1569, 1575 n.7 (1985). However, a public meeting was held on July 8th and 9th, 1986, in Gore, Oklahoma, to solicit information from members of the public about issues that they desired the NRC to consider during its review of SFC's proposals to restart operations. The meeting was attended by members of the NRC Staff as well as the Licensee. The issues and questions raised during the meeting that were relevant to restart were addressed as part of the Staff's review and analysis, and have been included as an appendix to the SER Related to the Authorization to Resume Operations. In light of the information the NRC has available, given the inspections and investigations that have been conducted, and in view of the public meeting, I see no purpose to a hearing as a matter of discretion.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-352

PHILADELPHIA ELECTRIC
COMPANY

(Limerick Generating Station,
Unit 1)

October 16, 1986

The Director of the Office of Nuclear Reactor Regulation declines to take action based upon the alleged failure by Philadelphia Electric Company (Licensee) to comply with certain environmental license conditions imposed on the Licensee's Limerick Generating Station, Unit 1. On March 5, 1986, Robert L. Anthony (Petitioner) requested that the NRC suspend the operating license for the Limerick facility, alleging that the facility utilized cooling water from the Schuylkill River in violation of the facility's Environmental Protection Plan (EPP). Finding that the Petitioner did not provide facts or specific information that showed that the Licensee failed to undertake its obligations in this regard, the Director denied relief.

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

INTRODUCTION

On March 5, 1986, Robert L. Anthony (Petitioner) filed a petition with the Nuclear Regulatory Commission (NRC) asking the NRC to take certain actions with respect to continued operation by the Philadelphia Electric Company (Licensee) of its Limerick Generating Station, Unit 1 (the facility). The Commission has referred this matter to the

Office of Nuclear Reactor Regulation for its consideration pursuant to 10 C.F.R. § 2.206. Principally, the Petitioner requested that the NRC immediately suspend the operating license on the basis that the Licensee had not complied with certain environmental license conditions imposed by the NRC. Specifically, it was alleged that the facility utilized cooling water in violation of its Environmental Protection Plan (EPP). On May 27, 1986, the NRC acknowledged receipt of the petition and informed the Petitioner that it saw no need to take the immediate actions requested by the Petitioner. Mr. Anthony submitted additional letters to the NRC on this subject dated June 19, and July 7, 1986. The Staff has considered these three submittals (the Petition) by Mr. Anthony jointly. For the reasons stated in this Decision, the Petitioner's request is denied. My Decision in this matter follows.

DISCUSSION

The site of the Limerick facility is on the east bank of the Schuylkill River in Limerick Township, Montgomery County, Pennsylvania. The Limerick facility expects, on a year-round basis, to withdraw the majority portion of the water necessary to cool the plant from the Schuylkill River. The flows of the Schuylkill vary widely during the course of the year and, consequently, there are extensive periods during which the Schuylkill River alone could not supply all of the consumptive cooling water needs for the Limerick facility and still supply all of the downstream requirements. Consequently, the Licensee has proposed the supplementary cooling water system (SCWS), as described in the license application submitted to the NRC for operation of the facility, to draw water from the Delaware River some 30 linear miles from the plant site and thereby augment the water drawn from the Schuylkill River. Completion of the SCWS has been delayed due to opposition to the project by members of the Buck's County Commission and the Neshaminy Water Resources Authority. In an attempt to alleviate the shortage of Schuylkill River water supplies on an interim basis while matters regarding completion of the SCWS proceed, the Licensee has made applications to the Delaware River Basin Commission (DRBC) in each of the years 1985 and 1986 for several modifications of water withdrawal limitations imposed by the DRBC.

The Petition is concerned with the subject of two applications, dated December 16, 1985, and March 4, 1986, filed by the Licensee with the DRBC for operations during the year 1986. The December 16, 1985 application requested modification of the restraint that prohibits Schuylkill

River (river) water withdrawal when river water temperature is above 59°F by the substitution of limits on dissolved oxygen concentration. This application also requested that certain assignments of river water to other power plants on the Schuylkill River, the Titus and Cromby Stations, be reassigned to the Limerick Station. The March 4, 1986 application was a joint application by the Licensee, the Reading Anthracite Company, the Tamaqua Borough Authority, and the Borough of Tamaqua for approval to discharge water from Tamaqua's Still and Owl Creek reservoirs and from the Beechwood Pool of the Reading Anthracite Company into the Schuylkill River for withdrawal at Limerick.

DRBC Evaluation

The DRBC evaluated these applications, held public hearings, considered comments from the public and other governmental agencies, and issued its findings in two decisions, both dated April 29, 1986. These decisions, identified as Docket No. D-69-210-CP (FINAL) (Revision No. 5) and Docket No. D-69-210-CP (FINAL) (Revision No. 6) were provided to the NRC by Mr. Troy B. Conner's letter to the NRC dated May 13, 1986.

The Revision No. 5 decision addressed the substitution of dissolved oxygen limitations for the 59°F river water temperature limitation and the reassignment of water allocations from the Cromby and Titus Stations to the Limerick Station. The DRBC decision reflects a careful consideration of the relationship of the temperature limitation to the dissolved oxygen (D.O.) limitation, noting that "one of the purposes of the original 59°F temperature limitation was to prohibit any further degradation of D.O. during low D.O. conditions" The decision discusses the specific limit values of D.O., including the period from March 1 to June 15 when more conservative limits were chosen upon the advice of the Pennsylvania Fish Commission. The decision discusses the required locations of the D.O. monitors and other details regarding the collection and reporting of data.

The decision also discusses the effects of withdrawing water at Limerick instead of at the Cromby Station, which is 9 miles downstream of Limerick and at Limerick instead of at the Titus Station which is 23 miles upstream of Limerick. The decision discusses the resulting differential flow rates for the affected portions of the river and the effect on total dissolved solids (TDS) in Schuylkill River waters.

Revision No. 5 to the DRBC Docket Decision approved the Licensee's application with some modifications as noted in the decision.

The Revision No. 6 decision addressed the application for releases from the Still and Owl Creek reservoirs and the Beechwood Pool. The proposed releases from Still Creek and Owl Creek reservoirs would be expected to make available about 1 billion gallons of water for use at Limerick, and the Beechwood Pool releases would add another 300 million gallons.

The DRBC considered the number of days of water availability that would be added by use of Beechwood Pool waters (the number of days covered would increase from 102 to 121) and balanced this against the problems perceived with the Beechwood Pool releases. Chief among those problems discussed by the DRBC were the increase in total dissolved solids (TDS) in the streams receiving the releases, the higher TDS concentration in water available to all downstream Schuylkill River water users, and the practical aspects of implementing the Beechwood Pool release program. Accordingly, the DRBC did not approve releases from the Beechwood Pool.

The DRBC evaluation of the Still Creek and Owl Creek reservoirs includes a careful consideration of the very good to excellent water quality in these reservoirs, the need to ensure provision of an adequate water supply for Tamaqua, the potential for erosion, and the effect on users downstream from the Limerick facility. As stated in the DRBC decision:

Releases from Tamaqua reservoirs only will actually reduce the TDS levels that would otherwise occur upstream of Limerick and will not cause any degradation of TDS downstream of Limerick from that which would have existed without Limerick Unit 1 and without the proposed releases. Use of water from Tamaqua reservoir would have nearly the same impacts downstream of Limerick as using the approved diversion from the Delaware River.

The DRBC docket decision reflects the involvement of the Pennsylvania Department of Environmental Resources' Bureau of Water Resources Management. The Licensee's application package of March 4, 1986, to the DRBC reflects the involvement of the Pennsylvania Fish Commission, the Philadelphia Suburban Water Co. and the U.S. Environmental Protection Agency. On the basis of the record as discussed in DRBC's Docket Decision Revision No. 6, the DRBC approved releases from the Still Creek and Owl Creek reservoirs.

Licensee's Evaluation

Appendix B to the Limerick Unit 1 facility operating license, the Environmental Protection Plan (EPP), requires the Licensee to evaluate ac-

tivities affecting the environment prior to their implementation.¹ In this regard the Licensee has performed evaluations of the activities approved for implementation by the DRBC. Provided the issues do not involve an unreviewed environmental issue and thus require prior NRC review and approval, the Licensee is not required by the EPP to submit these evaluations to the Staff. The Licensee has, in this instance, submitted evaluations by letters dated June 2 and June 24, 1986, in response to the Staff's specific request related to the Petition. The Licensee's evaluations are consistent with the DRBC findings and approvals discussed above and in addition include a discussion of impingement and entrainment effects on Schuylkill River fishes. The Licensee has evaluated entrainment of fish larvae seasonally in relation to river flow and water withdrawal by the Limerick plant, as currently proposed. Consideration was given to water withdrawals during the spawning season of June and July when all of the water needs during 1986 would be supplied via the Schuylkill River. The review of the intake-related impingement impacts is also summarized. Based on these evaluations the Licensee does not anticipate that the impingement and entrainment impacts expected to result from the interim mode of operation for 1986 would be significantly different from those expected to result from the long-term mode of operation as evaluated in the Final Environmental Statement. The Staff has identified no basis to disagree with the findings by the Licensee that no significant changes in impingement or entrainment impacts are anticipated. The Licensee also submitted comments by letter dated June 13, 1986, regarding the Petition concluding that it was in compliance with the provisions of the EPP.

Response to Petition

Petitioner's submittal² of March 5, 1986, expressed concerns regarding the timing of actions taken by PECO, the modification of the water tem-

¹ Pursuant to the EPP, when the Licensee's evaluation indicates that an activity involves an unreviewed environmental question, the Licensee shall provide a written evaluation of such activity and obtain prior NRC approval. As stated in the EPP,

[a] proposed change, test or experiment shall be deemed to involve an unreviewed environmental question if it concerns: (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the FES-OL, environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing Board; or (2) a significant change in effluents or power level; or (3) a matter, not previously reviewed and evaluated in the documents specified in (1) of this Subsection, which may have a significant environmental impact.

² Petitioner's submittal also petitions the Commission to suspend the operating license under the provisions of 10 C.F.R. § 50.100 of the Commission's regulations. This matter has been addressed in separate correspondence from the Staff to the Petitioner, dated August 13, 1986.

perature withdrawal criterion to one based on dissolved oxygen concentration, the reassignment of Titus and Cromby Station consumptive cooling water allocations to the Limerick Station, and alleged changes in the Environmental Protection Plan.

The Petitioner's comment on the timing of the Licensee's actions asserts that statements made in the Staff's letter of February 26, 1986, to the Petitioner are incorrect. The Staff's letter of February 26, 1986, was in response to the Petitioner's letter of January 17, 1986, which concerned the DRBC hearings then scheduled for January 22, 1986. Clearly, these DRBC activities were related to actions the Licensee proposed to undertake in 1986. Accordingly, they had not been acted on by the DRBC and had not been implemented by the Licensee at the time of the Staff's February 26, 1986 response.

With respect to the issue of modification of the 59°F water temperature withdrawal criterion to one based on dissolved oxygen concentration, the Staff notes that the DRBC, in its decision of May 29, 1985, on the Licensee's request for relief for the year 1985, stated as follows:

The objective of the 59°F temperature limitation contained in the original docket decision was to prevent the Limerick project from aggravating dissolved oxygen conditions in the Schuylkill River during critical periods.

The temporary substitution of direct dissolved oxygen monitoring at each critical downstream location is consistent with that objective. In addition, the dissolved oxygen monitors will provide data, not otherwise available to the water resource agencies, for better management of the Schuylkill River.

The 59°F temperature limitation was first included in the DRBC's docket decision, D-69-210-CP, in March 1973 and was continued in the DRBC decision, D-69-210-CP (FINAL), of November 5, 1975. The text of the DRBC limitation was included in § 2.4 of the Limerick Environmental Report for the operating license application and was discussed in § 4.3 of the Final Environmental Statement on the operating license application (NUREG-0974, 1984).

Thus, the record shows that the 59°F temperature limitation and the dissolved oxygen concentration limits that it sought to protect have long been included in the issues, given careful and extensive review by the appropriate agency — DRBC, in this instance. Thus, the Staff finds that the Petition does not show that the use of D.O. in place of the 59°F temperature limitation is an unreviewed environmental issue.

The Staff also notes that the DRBC docket decisions for 1986, D-69-210-CP (FINAL) (Revisions No. 5 and 6), reflect the involvement of the Pennsylvania Fish Commission in the determinations of the appropriate

dissolved oxygen limitations as well as the monitoring instrumentation. The Petition makes no technical presentation with respect to these issues other than to simply assert that the change to a direct measurement of dissolved oxygen concentration involves an unreviewed environmental question, requires a change in the EPP, and is in violation of the requirements of the license. Thus the Petition fails to provide information that shows that the Licensee has not adhered to the requirements of the facility operating license.

The Petition also alleges that the reassignment of water previously allocated to the Titus and Cromby Stations to the Limerick Station is in violation of the EPP. The Petition does not describe the harm to the environment that is perceived to result from this reallocation but merely states that the impact of the reallocation is an unreviewed environmental question. The Staff notes that the flow rates involved are but small fractions of the river flow, that the reallocation basically involves taking the same quantity of water out of the Schuylkill River at Limerick instead of at the Titus and Cromby Stations, and that the issue has received careful attention from the DRBC and other involved agencies as documented in the DRBC decisions for 1986. The Licensee has also evaluated these issues as set forth in its evaluations pursuant to the EPP and in its applications to the DRBC. The allegation in the Petition that water reallocation constituted an unreviewed environmental condition was not substantiated.

The Petition also alleges that there have been changes in the Environmental Protection Plan (EPP) as set forth in Appendix B to the Limerick Generating Station Unit 1 operating license. The purpose of the EPP is to set forth a plan that the Licensee shall comply with to provide for protection of nonradiological environmental values during operation of the Limerick Generating Station. The Licensee has made no requests for modification of the EPP nor does the Staff anticipate any need for changes to the EPP in this regard. The Petition provides nothing more than the bare allegation in this regard. For these reasons, the Staff does not find that this allegation was substantiated.

On June 19, 1986, Mr. Robert Anthony supplemented his earlier petition of March 5, 1986, with respect to alleged violations of the EPP. This document raises the same arguments regarding the dissolved oxygen withdrawal criteria issue as presented in the March 5, 1986 Petition. The Petitioner indicates that he has presented his arguments regarding dissolved oxygen and temperature limitations to the DRBC in its public hearing and references certain exhibits presented in that DRBC hearing. The Petition does nothing more than refer to exhibits used by the Licensee during the DRBC hearing in conjunction with bare allegations

that further assessments must be done. The Staff finds nothing here that would call into question the carefully considered assessments of the DRBC, which included two public hearings and comments by interested parties including the Pennsylvania Fish Commission, the Pennsylvania Department of Environmental Resources, and the U.S. Environmental Protection Agency.

The Staff further notes that the June 19, 1986 document is substantially in error with respect to its interpretation of DRBC Docket Decision Revision No. 6. In this decision the DRBC declined to approve releases from the Beechwood Pool, in contrast to the claims of the Petition.

The Petitioner's further submittal dated July 7, 1986, purports to be a response to the information provided by the Licensee in its letter of June 24, 1986, to the NRC Staff. The NRC Staff had requested the Licensee, in a letter dated June 17, 1986, to respond to the points raised in the Petition. The Licensee's letter of June 24, 1986, responded to that request by providing a copy of the Licensee's environmental evaluation of the Titus/Cromby reallocations and the Still Creek and Owl Creek reservoir releases and referencing a letter dated June 13, 1986, from the Licensee's counsel.

The July 7, 1986 submittal by the Petitioner generally repeats requests made earlier for review of various aspects of the applications made by the Licensee to the DRBC for the year 1986. The Petition refers to documents previously prepared by the NRC Staff, the Licensee, and the DRBC followed by unsupported assertions that further evaluations are required. No new information is provided in this submittal with respect to whether the activities approved by the DRBC related to the Limerick Generating Station Unit 1 for 1986 involve any significant adverse impact upon the Schuylkill River. This is the criterion contained within the EPP for identifying issues for NRC review prior to their implementation.

In sum, the information in the Petition is not new and has been developed as a consequence of activities undertaken by the Licensee and reviewed in detail by the DRBC. In this context, the NRC Staff finds that the Petition fails to show that the attention given these issues by the Licensee is inconsistent with the objectives of the EPP for protection of nonradiological environmental values during the operation of Limerick Unit 1.

CONCLUSION

The Licensee has made an application for and has received approval from the Delaware River Basin Commission for interim sources of cooling water from the Schuylkill River for the year 1986, pending the completion of the Point Pleasant Diversion System from the Delaware River. The DRBC review of these applications has included public hearings and reflects the involvement of other agencies including the Pennsylvania Fish Commission, the Pennsylvania Department of Environmental Resources, and the U.S. Environmental Protection Agency. The Licensee has conducted a review of issues as they were approved by the DRBC for implementation in response to the requirements of the Environmental Protection Plan as set forth in Appendix B to facility operating license NPF-39. The Petition provides no facts or specific information that show that the Licensee is failing to undertake its obligations in this regard. As such, the Petition is without adequate basis. Consequently, the relief sought by the Petition is inappropriate. Accordingly, the Petitioner's request for action pursuant to § 2.206 is denied. As provided by § 2.206(c), a copy of this Decision will be filed with the Secretary for the Commission's review.

**For the Nuclear Regulatory
Commission**

**Harold R. Denton, Director
Office of Nuclear Reactor
Regulation**

**Dated at Bethesda, Maryland,
this 16th day of October 1986.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-400

**CAROLINA POWER & LIGHT
COMPANY and
NORTH CAROLINA EASTERN
MUNICIPAL POWER AGENCY
(Shearon Harris Nuclear Power
Plant)**

October 15, 1986

The Director of Nuclear Reactor Regulation denies a request by the Coalition for Alternatives to Shearon Harris (CASH) that he initiate a show-cause proceeding pursuant to 10 C.F.R. § 2.202 to require Carolina Power & Light Company to address a number of issues before issuance of the operating license for the Shearon Harris facility.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Parties to an operating license proceeding may not use 10 C.F.R. § 2.206 petitions to reconsider issues previously decided or to avoid an existing forum where they are more logically presented. *General Public Utilities Nuclear Corp.* (Three Mile Island Nuclear Station, Units 1 and 2; Oyster Creek Nuclear Generating Station), CLI-85-4, 21 NRC 561 (1985).

RULES OF PRACTICE: SECTION 2.206 PETITIONS

The Petitioners' assertions about the suitability of the 10-mile EPZ, without any reference to specific facts or circumstances unique to the Shearon Harris facility, are essentially a challenge to the Commission's emergency planning regulations, and a petition under 10 C.F.R. § 2.206

for enforcement action cannot be used as a substitute for a petition for rulemaking. *General Electric Co. (Vallecitos Nuclear Center)*, DD-79-9, 9 NRC 744, 753 (1979); *Commonwealth Edison Co. (LaSalle County Station, Units 1 and 2)*, DD-84-6, 19 NRC 891, 897 (1984). The appropriate vehicle to seek a change to the Commission's requirements is a petition for rulemaking filed in accordance with 10 C.F.R. § 2.802.

TECHNICAL ISSUE DISCUSSED

Inservice inspection of reactor coolant piping welds.

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

INTRODUCTION

By petition dated July 2, 1986, Messrs. Joseph Hughes and Steven Katz, on behalf of the Coalition for Alternatives to Shearon Harris (CASH), and Mr. Wells Eddleman, requested pursuant to 10 C.F.R. § 2.206 that the Director of the Office of Nuclear Reactor Regulation institute a show-cause proceeding pursuant to 10 C.F.R. § 2.202 to address certain issues raised by the petition and to withhold issuance of the operating license for the Shearon Harris facility until these issues are addressed in a hearing. Specifically, CASH requested that (1) the Applicants be required to redemonstrate the adequacy of their emergency planning capabilities in light of the decision by Chatham County to withdraw from participation in the emergency plan and alleged deficiencies in the Applicants' emergency plan demonstrated by an emergency siren actuation incident on June 28, 1986; (2) the Applicants be required to comply with 10 C.F.R. § 50.47(a)(2) concerning conducting a full-scale exercise within 1 year before full-power operation; (3) the Commission investigate allegations by Ms. Patty Miriello concerning falsification of records of employee radiation exposures, deficiencies in the radiation protection program, and improper inservice inspections of large reactor coolant line welds; and (4) the Commission prepare a supplemental Environmental Impact Statement and consider psychological distress to residents of the surrounding area in light of three new significant circumstances — (a) the Chernobyl accident, (b) the false siren incident, and (c) the Chatham County pullout.

Notice of receipt of the petition was published in the *Federal Register* on July 17, 1986 (51 Fed. Reg. 25,964). The Applicants filed a response to CASH's petition on August 15, 1986.

As explained in the discussion that follows, I have determined that the petition should be denied. On the basis of its review, the Staff does not believe an adequate basis exists to deny the operating license or initiate a proceeding as requested by Petitioners.¹

DISCUSSION

Chatham County Withdrawal from Shearon Harris Emergency Plan

On May 27, 1986, the Commissioners of Chatham County, North Carolina, where a portion of the Shearon Harris facility is located, passed a resolution rescinding their approval of the Shearon Harris Emergency Response Plan (ERP). Petitioners asserted that this resolution moots the finding by the Federal Emergency Management Agency (FEMA) that the ERP is adequate and prevents the NRC from making the finding required by 10 C.F.R. § 50.47(a)(1) of reasonable assurance that adequate protective measures can be and will be taken in the event of a radiological emergency.

By letter dated July 7, 1986, however, the Chatham County Board of Commissioners informed the NRC that it had as of that date unanimously adopted a resolution endorsing the Shearon Harris Emergency Plan and affirming the County's commitment to carry out its operational roles as outlined in the plan during future exercises and in the event of an emergency at the facility. In view of this action, Chatham County participation in the ERP no longer has the potential to adversely affect the Commission findings under § 50.47(a)(1) and provides no basis for initiation of a § 2.202 proceeding or other action as requested by Petitioners.

Full-Scale Emergency Exercise

The Petitioners also raise concerns about the fact that more than a year has passed since the Applicants' successful completion of a full-scale exercise of its emergency plan as required by 10 C.F.R. Part 50, Appendix E, § IV.F.1. The Applicants currently have pending before the Commission a request for an exemption from this requirement.

¹ Apart from the merits of the issues, the Petition may be independently denied on procedural grounds. CASH's Petition requests that the Director should withhold granting of any operating license until the matters it raises are resolved, relief that concerns initial licensing of the facility and not enforcement action such as is usually contemplated under § 2.206. See *Cleveland Electric Illuminating Co. (Perry Nuclear Power Plant, Units 1 and 2)*, DD-85-14, 22 NRC 635, 642 n.4 (1985); *Detroit Edison Co. (Enrico Fermi Atomic Power Plant, Unit 2)*, DD-84-11, 19 NRC 1108, 1110 n.2 (1984).

Wells Eddleman filed a request for a hearing on this exemption request on April 3, 1986, and, together with CASH, again on August 5, 1986. The Staff has the exemption request under consideration and the requests for hearing are currently before the Commission. *See* Order of the Commission, dated September 12, 1986 (unpublished). Because this issue of the need for a full-scale exercise of the emergency plan within 1 year before issuance of the full-power operating license is being considered fully in these other contexts and the resolution of this matter will be in accordance with Commission's requirements, we are not considering it further here as the basis for a show-cause order.

Inadequate Implementation of the Emergency Plan

The Petitioners described an incident that occurred in late June which they believe indicates a lack of preparedness on the part of the Applicants with respect to activation of the notification system both on site and with affected communities. An alarm siren was inadvertently activated about 2:00 a.m. on June 28, 1986. Several persons awakened by the siren called various state and local authorities and the Shearon Harris plant site. These officials did not know about the siren and gave what CASH believes were confusing and uninformed responses to the calls. CASH contends that this incident indicates that there is no apparent method to secure information upon activation of a siren, implying that this indicates a likelihood that adequate information would be unavailable in an actual emergency. CASH also asserts that if vandals activated the siren, then inadequate security is provided at siren locations.

In their submittal, the Applicants indicate that on June 28, 1986, one siren was activated for one 3-minute cycle by a vandal who climbed the pole on which the siren was located and cut the padlock on the control cabinet. CASH asserts that the difficulties individuals near the siren had in finding officials who could explain the event demonstrate deficiencies in notifying state and local officials of an emergency. While the sounding of the alarm may have been unsettling to those who heard it, the fact that company and state and local officials were unaware of and could not explain this isolated, vandalized, nonscheduled alarm does not call into question the ability of the Applicants' emergency notification and alarm system to function in the event of an actual emergency. Because the alarm on June 28 did not involve an actual emergency, there was no reason why the various officials that CASH identifies in its petition should have known of the single siren's sounding for a 3-minute period. The Applicants' emergency preparedness plan, including their ability to notify offsite authorities, has been reviewed by NRC and FEMA. The

plan was tested during a full-participation exercise in May 1985 and found to be adequate. In a Memorandum dated August 27, 1985, FEMA found that the state and local emergency plans are adequate and capable of being implemented, and that the exercise demonstrated that offsite preparedness is adequate to provide reasonable assurance that appropriate measures can be taken to protect the health and safety of the public living in the vicinity of the Shearon Harris Nuclear Power Plant in the event of a radiological emergency. Followup review of the plan and the limited-participation exercise to be performed in October 1986 will continue to verify program adequacy. Based on our and FEMA's review, we believe the Applicants' emergency plan would function satisfactorily to notify state and local officials in the event of a real emergency.

In addition, during an actual emergency, members of the public will receive instructions via the TV or radio Emergency Broadcast System, not via telephone calls with local officials. A brochure that provides information related to an emergency at the Harris facility, including instructions for obtaining information when the sirens sound, has been provided to all persons within the Emergency Planning Zone (EPZ).

We note from the Applicants' submittal in response to the CASH petition that it has committed to review and modify procedures to ensure that when the company learns of a siren sounding inappropriately in the future, it will promptly notify local officials and the news media so that any public concern can be dispelled quickly.

The Petitioners also question whether the sirens are adequately protected from vandals since frequent improper activation of the sirens might cause individuals to ignore or delay response to an actual alert. Only two instances of single sirens improperly activating have occurred during the year and a half the sirens have been in place. The methods used by CP&L to prevent improper activation are similar to those that have been satisfactorily used by licensees for a number of years.

In summary, we do not believe the siren activation incident provides a basis for a show-cause order or other regulatory action.

Allegations Concerning Adequacy of Radiation Protection Program

In its petition, CASH alleges certain facts that it believes raise serious questions about the effectiveness of the Applicants' proposed radiation protection program for their employees. CASH's allegations are based upon the affidavit of a former employee of the Applicants, Ms. Patty

Miriello.² Ms. Miriello alleges that while employed at CP&L's Brunswick facility, inaccurate records of her radiation exposure were kept and that contrary to the requirements of 10 C.F.R. § 20.408, she has been unable to obtain an accurate record of her exposure from the Applicants since terminating her employment. CASH apparently contends that these alleged problems at Brunswick, if true, raise questions about how the Applicants' program at Shearon Harris will perform.

These allegations are identical to ones submitted to the Atomic Safety and Licensing Board that considered CP&L's application for an operating license and which were the subject of a late-filed contention considered by that Board. In assessing whether the issues presented raised a significant safety concern, the Board considered Ms. Miriello's affidavit and that of Mr. Stephen Browne, a CP&L employee responsible for technical direction of the personnel dosimetry program at all CP&L plants. Mr. Browne's affidavit was also submitted to the Staff by the Applicants in response to this CASH petition. Ms. Miriello's complaint concerned a discrepancy between the reading on her self-reading pocket dosimeter (SRPD) and that of her thermoluminescent dosimeter (TLD). Mr. Browne's affidavit described CP&L's investigation and resolution of this discrepancy, why TLD readings are considered more accurate and why, absent evidence to the contrary, they are used as the official dose even if an SRPD reading is higher. The Applicants also provided a copy of the final termination report of exposure which was provided to Ms. Miriello on September 10, 1985.

In its review of this issue, the Board concluded that Mr. Browne's explanation of the points in question was more plausible than Ms. Miriello's. They also indicated that from hearing both individuals testify in hearings before them, they found Mr. Browne to be credible, while they were skeptical of Ms. Miriello's testimony and did not rely on it. The Board concluded there was no persuasive evidence of falsification of records and no significant safety concerns and rejected the effort to

² In its petition, CASH makes the statement that "[a]lthough the NRC Office of Investigations (OI) has had documented evidence of Ms. Miriello's contentions since September 1985, the OI has yet to do a personal interview with the allegor."

Investigators from the NRC Office of Investigation had conducted a personal interview with Ms. Miriello on September 11, 1985. Approximately 90% of the time of the interview was spent on her concerns regarding alleged falsification of preservice piping nondestructive examination (NDE) inspection records by Nuclear Energy Services (NES), a Carolina Power & Light Company contractor at the Shearon Harris site. The remainder of this interview touched on numerous allegations by Ms. Miriello including health physics concerns and alleged falsification of radiation exposure records. Thus the assertion that a personal interview has not been conducted with Ms. Miriello by the Office of Investigation is incorrect.

reopen the record on this issue. Memorandum and Order of June 13, 1986 (unpublished).³

The Staff has conducted inspections of the radiation protection programs of CP&L at both the Brunswick and the Shearon Harris facilities including specific examination of the technical areas where Ms. Miriello alleged problems were occurring. The results of these inspections are described in Inspection Reports No. 50-325/86-06, 50-324/86-07, dated March 21, 1986, and 50-325/86-18 and 50-324/86-19, dated July 25, 1986. Only one minor violation was discovered at the Brunswick facility. In all other areas reviewed, the Applicants' program was in compliance with requirements. Ms. Miriello's allegations of inaccurate documentation of her exposure were specifically reviewed and the results of that review are documented in Inspection Reports No. 50-325/86-18 and 50-324/86-19, dated July 25, 1986. The inspector concluded that her exposure had been accurately determined and factually documented. In fact, the inspector found no evidence in general of inaccurate exposure records at either facility. In addition, the Licensing Board in the operating license proceeding has ruled favorably on the general adequacy of the Applicants' equipment, processes, and procedures for radiation protection. LBP-85-28, 22 NRC 232 (1985).

On the basis of all of the above, we conclude that further regulatory action is not warranted in regard to the Applicants' radiation protection program at Shearon Harris or Brunswick.

Allegations of Improper Ultrasonic Inspection of Welds

Ms. Miriello and CASH also raise concerns about the adequacy of inservice ultrasonic inspections conducted at Shearon Harris of large reactor coolant line welds, assertedly conducted as part of the Applicants' quality assurance program. Ms. Miriello indicates that she observed two NDE examiners disagreeing about indications in ultrasonic test results which did not appear to have been resolved, that design flaws in these welds violated ASME Code § XI, and that she had seen unauthorized revisions made to weld inspection data sheets. Ms. Miriello and CASH conclude that approximately 10% of the welds in the inservice inspection

³ Intervenor, including one of the Petitioners here, Wells Eddleman, did not appeal the Board's order. Time for any appeal has passed. The Commission has stated that parties to proceedings may not use § 2.206 petitions to reconsider issues previously decided or to avoid an existing forum where they are more logically presented. *General Public Utilities Nuclear Corp. (Three Mile Island Nuclear Station, Units 1 and 2; Oyster Creek Nuclear Generating Station)*, CLI-85-4, 21 NRC 561 (1985). Thus, the fact, that this issue was considered in the OL proceeding would be another basis to reject Petitioners' request for a show-cause proceeding on this issue.

program at the Shearon Harris plant are defective and improperly documented.

First of all, it should be noted that Ms. Miriello's and CASH's assertions about the impacts of the alleged discrepancies on the quality of the welds are based on a misunderstanding of the process by which welds are determined to be acceptable at the Harris facility. During the construction of the Harris facility, each weld on safety-related piping was inspected by radiography and/or surface examination of the welds and the results were reviewed for quality and documentation by quality assurance personnel. That process has been completed at the Harris facility and the piping welds judged acceptable. The preservice inspections with which Ms. Miriello was associated are the first step of the inservice inspection process conducted throughout the life of the plant to help identify conditions that could affect the performance of plant systems and components. NDE testing (ultrasonic examination) is done of each weld before plant operation begins to get an accurate "fingerprint" of each weld to use as a baseline for comparison purposes throughout the life of the plant. This is, then, the second time these welds have been inspected and these examinations are for a different purpose than initially assuring the quality of the welds.

Ms. Miriello's allegations concerning NDE testing were originally submitted to NRC in the fall of 1985. NRC Region II inspectors conducted an inspection of preservice inspection of safety-related piping welds at Shearon Harris in December 1985, reviewing procedures, observing actual work, reviewing data reports, and conducting independent ultrasonic verification examination of welds. These inspections are documented in Inspection Report No. 50-400/85-48, dated July 15, 1986. The inspectors concluded that while some changes to the weld data sheets had not been made in accordance with the required procedure, which was apparently what Ms. Miriello observed, the final information being reported on the data sheets was accurate. The inspectors' own verification examinations indicated that the procedures being used to conduct the preservice examinations were adequate and that the information reported by the examiners compared favorably to the results of their own examinations. In general, the inspection confirmed that the procedures for ultrasonic testing being used by the Applicants were adequate, and that results reported by NDE personnel were adequate and in accordance with ASME Code § XI requirements.

On the basis of the above, I conclude that the Staff is satisfied with the acceptability of the welds on safety-related piping in the Shearon Harris plant. In addition, the Applicants' inservice inspection program of safety-related piping welds is adequate and accurately documenting the welds

in the plant. No basis exists for issuance of a show-cause order with respect to safety-related piping welds.

Supplemental Environmental Impact Statement

CASH also argues that the NRC should prepare a supplemental environmental impact statement (EIS) because of new information that it has submitted. This new information consists of the Chernobyl accident, the false siren incident, and the Chatham County withdrawal from the emergency plan. CASH also suggests that the nature of this information could create psychological distress in people near the facility, and the supplemental EIS should also consider such an impact.

As discussed above, Chatham County has now agreed to participate fully in the emergency plan. The siren incident did not demonstrate any inadequacies in the Applicants' ability to notify state and local officials in the event of an actual emergency. Thus, neither of these occurrences constitutes significant new information.

CASH also refers to the Chernobyl accident as significant new information and asserts that it raises compelling questions on the dispersal of radiation. They contend that recent information on accident consequence estimates as discussed in NUREG/CR-2239, "Technical Guidance for Siting Criteria" (December 1982), and NUREG-0956, "Reassessment of the Technical Bases for Estimating Source Terms" (draft report issued July 1985 and Final Report issued July 1986), coupled with the Chernobyl accident, raise questions about the adequacy of the 10-mile emergency planning zone for the Shearon Harris plant.

The NRC Staff is continuing to evaluate information concerning the Chernobyl accident. Nothing that the Staff has learned so far provides a basis for the Staff to take regulatory action with respect to any of the reactor facilities that the NRC regulates. CASH has not provided any information that would suggest the Harris facility is uniquely affected by what is known to date about the Chernobyl accident nor are we aware of any such information.

Nor do CASH's assertions about the suitability of the 10-mile EPZ in light of Chernobyl and recent studies on accident risk assessments appear to be directed at any unique aspect of emergency planning at the Harris facility. Rather their concern is more general, i.e., "in light of TMI and Chernobyl (with respect to the dispersal of radiation), notions concerning the adequacy of a ten mile emergency planning zone may be inadequate to protect the health and safety of those living around the Shearon Harris Nuclear Power Plant." Petition at 12. This is essentially a challenge to the Commission's regulations and a petition under § 2.206 for

enforcement action cannot be used as a substitute for a petition for rule-making. *General Electric Co.* (Vallecitos Nuclear Center), DD-79-9, 9 NRC 744, 753 (1979); *Commonwealth Edison Co.* (LaSalle County Station, Units 1 and 2), DD-84-6, 19 NRC 891, 897 (1984). The appropriate vehicle to seek a change to the Commission's requirements is to file a petition for rulemaking in accordance with 10 C.F.R. § 2.802. Moreover, emergency planning issues were litigated in the operating license proceeding and one of the Petitioners here was a party to that proceeding. The issue of the adequacy of the configuration of the EPZ was specifically raised in the form of contentions that were rejected by the Licensing Board. LBP-85-49, 22 NRC 899 (1985) (Tr. 982, 984-85), *aff'd*, ALAB-843, 24 NRC 200 (1986). In general, parties may not use § 2.206 procedures as a vehicle to reconsider issues previously decided or for avoiding an existing forum in which they more logically should be presented. *Three Mile Island, supra*, CLI-85-4.

Finally, CASH appears to assert that the NRC should prepare a supplemental EIS to consider psychological stress on residents surrounding the Shearon Harris facility in light of this new information, i.e., Chernobyl, the Chatham County pullout, and the siren incident. The Supreme Court in *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 103 S. Ct. 1556 (1983), held that the National Environmental Policy Act does not require the NRC to consider whether risk of accident might cause psychological distress on the health and community well-being of residents of the surrounding area. In any event, the new information that CASH asserts would create this psychological distress either no longer exists or does not raise any significant issues concerning the Harris facility. In summary, nothing that CASH has asserted in its petition or of which the Staff is otherwise aware constitutes significant new information that would require preparation of a supplemental EIS in accordance with 10 C.F.R. § 51.92.

CONCLUSION

We have reviewed the information submitted by CASH in its petition. For the reasons discussed above, I have concluded that no basis exists for initiation of a show-cause proceeding pursuant to § 2.202 or for withholding of the operating license. Consequently, CASH's request is

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

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland,
this 15th day of October 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF THE EXECUTIVE DIRECTOR FOR OPERATIONS

Victor Stello, Jr., Executive Director for Operations

In the Matter of

Docket No. PRM 50-40

JOHN F. DOHERTY

June 20, 1986

The Nuclear Regulatory Commission (NRC) denies a petition for rule-making filed by John F. Doherty. The Petitioner requested that the Commission amend its regulations to require that, following a power reactor trip, a licensee, if unable to determine the cause of the reactor trip in 8 hours, be required to place the reactor in cold shutdown pending further study of the event. The petition is denied because issues raised by the Petitioner are being resolved as a result of actions already taken by the NRC.

DENIAL OF PETITION FOR RULEMAKING

THE PETITION

By letter dated November 26, 1985, Mr. John F. Doherty (hereinafter Petitioner) filed with the Nuclear Regulatory Commission (NRC) a petition for rulemaking to amend NRC regulations. Notice of receipt of the petition and a request for comments were published in the *Federal Register* on February 11, 1986 (51 Fed. Reg. 5086).

The Petitioner requested that the NRC adopt regulations that would require a licensee operating a power reactor to place the reactor in cold shutdown, if following a reactor trip, the licensee is unable to determine the cause of the reactor trip within an 8-hour period following the trip.

BASIS FOR REQUEST

The Petitioner contends that the 1983 Salem Anticipated Transient Without Scram (ATWS) event is a prototype of the kind of accident his proposal is designed to prevent. On the day preceding this event at Salem, the Petitioner states that there was a partial failure to "SCRAM" that the utility thought had been caused by an operator manually tripping the reactor. The Petitioner cites NUREG-1000, Vol. 1, as indicating that a study of process recorders at Salem would have shown that a "SCRAM" failure had occurred and that restart would probably lead to a more serious "SCRAM" failure, which is what occurred at Salem. The Petitioner contends that the Office of Nuclear Reactor Regulation cites favorably a utility's policy that is similar to the action called for in his petition.

PUBLIC COMMENTS ON THE PETITION

A notice of filing of petition for rulemaking was published in the *Federal Register* on February 11, 1986 (51 Fed. Reg. 5086). Interested persons were invited to submit written comments or suggestions concerning the petition by April 14, 1986. The NRC received twenty-nine comments in response to the notice: twenty-six from public utilities, utility representative organizations, nuclear power plant vendors, and industry representative organizations; and three from individuals.

A majority of the commenters (twenty-eight) opposed the petition. The main reasons cited by these commenters were:

1. Generic Letter 83-28, item 1.1, Post-Trip Review Program Description and Procedure, requires utilities to ensure that the causes of unscheduled reactor shutdowns are fully understood prior to plant restart and that the proper function of all required safeguards equipment be verified. This program has already addressed the Petitioner's concerns.
2. The Petitioner's requirement to take the plant to cold shutdown is unjustified and unnecessary since (a) the condition of hot standby places the plant in a condition of safety essentially equal to cold shutdown; (b) the action causes unnecessary thermal cycling, potential increases in radioactive waste production, and the potential for increased occupational exposures; (c) the investigation of the cause of the unscheduled shutdown could be obscured; and (d) the cost to the ratepayer is not counterbalanced by a safety benefit.

3. The Petitioner quotes the NRC document, NUREG-1000, Vol. 1, out of context. The intent of the paragraph cited by the Petitioner is the approval of a utility's attention to detail in its post-trip review procedures rather than the unnamed utility's policy of bringing the unit to cold shutdown when the cause of trip cannot be ascertained.

The only commenter supporting the Petitioner's recommendation considered the proposal a worthwhile "ounce of prevention."

REASONS FOR DENIAL

The NRC shares the Petitioner's concern with the Salem ATWS events. The generic implications of the ATWS events at the Salem Nuclear Power Plant were evaluated and documented in the NUREG-1000, Vol. 1, report which the Petitioner cites to support the substance of his petition. The volume 1 report was issued in April 1983. As a result of the information contained in NUREG-1000, Vol. 1, the NRC determined that a series of actions was required as a result of the generic implications of the Salem ATWS events. These actions addressed issues related to reactor trip system reliability and general management capability. The required actions were sent to all licensees of operating reactors, applicants for an operating license, and holders of construction permits by Generic Letter 83-28, dated July 8, 1983. The generic letter appears as Appendix A to NUREG-1000, Vol. 2, "Generic Implications of ATWS Events at the Salem Nuclear Power Plant — Licensee and Staff Actions," dated August 1983. The actions covered by the letter fell into four areas. The first area, post-trip review, is directly pertinent to this petition for rulemaking.

Within this post-trip review area, actions were specified that addressed the licensee's program, procedures, and data collection capability to ensure that the causes for unscheduled reactor shutdowns, as well as the response of safety-related equipment, are fully understood prior to reactor restart. Licensees and applicants were required to describe their program for ensuring that unscheduled reactor shutdowns are analyzed and that a determination is made that the plant (reactor) can be restarted safely. Reports from the licensees or applicants were to describe the program for review and analysis and were to include, as a minimum:

1. The criteria for determining the acceptability of restart.
2. The responsibilities and authorities of personnel who will perform the review and analysis of these events.

3. The necessary qualifications and training for the responsible personnel.
4. The sources of plant information necessary to conduct the review and analysis. The sources of information should include the measures and equipment that provide the necessary detail and type of information to reconstruct the event accurately and in sufficient detail for proper understanding.
5. The methods and criteria for comparing the event information with known or expected plant behavior (e.g., that safety-related equipment operates as required by the technical specifications or other performance specifications related to the safety function).
6. The criteria for determining the need for independent assessment of an event (e.g., if the cause of the event cannot be positively identified, a competent group such as the Plant Operations Review Committee, will be consulted prior to authorizing restart) and guidelines on the preservation of physical evidence (both hardware and software) to support independent analysis of the event.
7. The systematic safety assessment procedures compiled from the above items, which are to be used in conducting the evaluation.

Reports describing the post-trip review programs of all power reactor licensees were received and reviewed by NRC's Office of Nuclear Reactor Regulation (NRR). Safety Evaluation Reports (SERs) documenting the NRC review of the individual licensee reports have been completed for all operating reactors. The licensee's submittal and the NRC's SERs are available from the NRC's Public Document Room, 1717 H Street, NW, Washington, DC 20555. For operating license applicants, the NRC review has been or will be performed consistent with the licensing schedule. SERs, when completed, will also be available in NRC's Public Document Room.

In general, the systematic safety assessment procedures established by the licensees in the submitted post-trip review programs ensure the following restart criteria are met before restart is authorized:

1. A post-trip review team has determined the root cause and sequence of events resulting in the plant trip.
2. Near-term corrective actions have been taken to remedy the cause of the trip.
3. A post-trip review team has performed an analysis and determined that the major safety systems responded to the event within specified limits of the primary system parameters.

4. The post-trip review has not resulted in the discovery of a potential safety concern (e.g., the root cause of the event occurs with a frequency significantly larger than expected).
5. If any of the above restart criteria are not met, then an independent assessment of the event is performed by the Plant Operations Review Committee (PORC), or another designated group with similar authority and experience.

The post-trip review programs also delineate the qualifications, responsibilities, and authorities of the licensee personnel who will perform the post-trip review and analysis.

Typically, the post-trip review team leader is a member of plant management at the shift supervisor level or above and holds or, prior to assuming a current position, held a senior reactor operator's license at the plant. The team leader is charged with overall responsibility for directing the post-trip review, including data gathering and data assessment, and has the necessary authority to obtain all personnel and data needed for the post-trip review.

A second person on the review team is a shift technical advisor (STA) or a person who possesses a relevant engineering degree with special transient analysis training.

The team leader and the STA (engineer) are responsible for concurring on a decision/recommendation to restart the plant. A nonconcurrence from either of these persons is sufficient to prevent restart until the trip has been reviewed by the PORC or equivalent organization.

As a part of the post-trip review program, the licensee or applicant has indicated that a verification will be made of the proper operation of plant systems and equipment. This verification will be accomplished by comparing post-trip review data to data provided in the final safety analysis report and/or the plant technical specifications. This activity includes an analysis of the sequence of events to verify the proper functioning of safety-related and other important equipment.

The licensee or applicant also must have procedures to ensure that all physical evidence necessary for an independent assessment is preserved.

The Commission believes that the post-trip review programs submitted under these guidelines ensure licensee actions that address the Petitioner's concerns.

Accordingly, the Commission denies the petition.

For the Nuclear Regulatory
Commission

Victor Stello, Jr.
Executive Director for
Operations

Dated at Bethesda, Maryland,
this 20th day of June 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. PRM 50-36

**NUCLEAR UTILITY BACKFITTING
AND REFORM GROUP**

October 3, 1986

The Nuclear Regulatory Commission is denying in part the petition for rulemaking filed by the Nuclear Utility Backfitting and Reform Group that petitions the NRC to modify reporting requirements imposed on its licensees and applicants for nuclear power plant construction permits. The petition discusses eight issues of concern that would require amendments to 10 C.F.R. Parts 50 and 73. Two of the Petitioner's concerns have been granted and two others are being denied. The remaining four are being considered and will be addressed in pending proposed rulemakings.

NRC: SECURITY PLANS

Changes to security or safeguards effectiveness plans can have a significant impact on the public health and safety. The submittals of these changes to the Commission will remain pursuant to 10 C.F.R. § 50.46(p), within 2 months of the change being made.

NRC: EMERGENCY PLANS

Pursuant to 10 C.F.R. § 50.54(q), licensees may not implement proposed changes that decrease the effectiveness of approved emergency

plans without the Commission's approval. Changes that do not decrease the effectiveness of these plans may be made without approval, provided that the NRC is informed of the change within 30 days after it is made.

NRC: REPORTING REQUIREMENTS

Pursuant to 10 C.F.R. § 50.55(e), holders of construction permits must notify the NRC within 24 hours of each deficiency in design and construction which, if it were not corrected, would adversely affect the safety of operations anytime throughout the expected lifetime of the plant. Followup of this initial notification in writing is required within 30 days.

NRC: REPORTING REQUIREMENTS

The reporting requirements imposed by 10 C.F.R. § 50.59(b) enable the Commission to perform reviews of the changes to a facility and to determine if these changes adversely impact the public health and safety. Reliance on submittals under 10 C.F.R. § 50.71 which requires a licensee periodically to update the Final Safety Analysis Report, would not allow a continual review of the safety ramifications caused by these changes and hence could adversely affect the public health and safety.

NRC: REPORTING REQUIREMENTS

Pursuant to 10 C.F.R. § 73.71, licensees must file a written report of unaccounted-for shipments, suspected thefts, unlawful diversion, radiological sabotage, or events that significantly threaten or lessen the effectiveness of safeguards, within 15 days after the initial verbal report.

DENIAL IN PART OF PETITION FOR RULEMAKING

I. BACKGROUND

On June 21, 1983, the Commission published in the *Federal Register* (48 Fed. Reg. 28,282) a notice announcing the receipt of a petition for rulemaking filed by the Nuclear Utility Backfitting and Reform Group. The Commission indicated that the Petitioner requested that it amend its regulations in 10 C.F.R. Parts 50 and 73 to modify existing reporting requirements so as to reduce the regulatory burden on affected nuclear power plant licensees and applicants for construction permits. The Peti-

tioner also requested that the Commission revise certain guidance documents to provide additional relief from regulatory requirements.

The Petitioner contended that the above regulations and guidance documents place excessive regulatory burdens on licensees and/or are unnecessarily duplicative. The Petitioner further states that the preparation and filing of these reports requires a significant time and effort on the part of licensees' employees and that this time could be better spent on matters directly related to public health and safety. Finally, the Petitioner states that if the Commission were to modify the subject reporting requirements in the manner requested, licensees' employees would be able to prepare and submit to the Commission on a more reasonable schedule the required technical analyses with less interference in their daily duties.

II. PUBLIC COMMENTS

A. Description of Comments Received on Petition

Eighteen comments were received on the petition: two were from a single commenter, eleven were from electric utilities, three from engineering firms, two from private citizens, and one from an industrial association. Seven commenters generally endorsed the petition, some of them offering specific comments on certain issues. Nine commenters agreed with the petition, in part, and one disagreed with all of the Petitioner's proposals.

In view of the number of varied issues addressed by the Petitioner and the number of comments, mostly pro, for each issue, the analysis below is organized by issue. The issue will be stated, the current requirement given, comments discussed, and the Commission position provided.

B. Response to Public Comments

Issue 1

The Petitioner proposes to amend 10 C.F.R. § 50.54(p) so that a change to a security or safeguards effectiveness plan that does not decrease its effectiveness be submitted to the NRC annually.

Currently, the reports required by § 50.54(p) must be submitted to the NRC within 2 months after a change has been made.

Comments

Of the eight commenters who specifically addressed this issue, one disagreed with the Petitioner and stated that § 50.54(p) should not be changed because the judgment as to whether safeguards effectiveness has been reduced should be made by the NRC within the 60 days now allowed in order to see if the changes did or did not decrease the safeguards effectiveness of the plan. The other seven commenters agreed, at least in part, with the Petitioner stating, in part, that annual changes to emergency and safeguards plans and procedures are sufficient because the majority of changes are not significant and are not important from a standpoint of public health and safety. These commenters think that implementation of this change would reduce a large administrative burden now imposed on licensees.

Action

The NRC is denying this issue. The Petitioner considers the changes to the plan unimportant from the standpoint of public health and safety. However, NRC disagrees that such changes are unimportant because in the event that the licensee misjudges the significance of the change, the NRC would be unaware of such misjudgment for up to a year and would be unable to take timely corrective actions. The NRC does not consider it to be in the best interest of the public health and safety to delay judging the effect of each change any longer than 2 months after a change has been implemented.

Issue II

The Petitioner proposes to amend 10 C.F.R. § 50.54(q) so that a change to an emergency plan that does not decrease its effectiveness is submitted to the NRC annually or, as an alternative, reported within 2 months of a change.

Currently, the reports required by § 50.54(q) must be submitted to the NRC within 30 days of implementation.

Comments

Of the eight commenters who specifically addressed this issue, one disagreed with the Petitioner and stated that the NRC should judge whether or not a change is "substantial" and should judge the impact of cumulative changes to a single procedure. Another disagreed with the Petitioner's proposal because, if implemented, the NRC copy of each

emergency plan could be from 2 to 12 months out of date from the plan in effect. This commenter thinks that changes should be submitted "within 2 months" after they are made. Six commenters supported the Petitioner's proposal and stated, in part, that the changes could be codified without adversely impacting the quality of the emergency plans or adversely affecting public health and safety and would eliminate much unnecessary paperwork.

Action

Research to reevaluate source terms is scheduled to be completed in September 1986. Revision of the emergency planning regulations, which would address the Petitioner's concern about the frequency of submittals of change to an emergency plan will be reevaluated along with the new source-term reevaluation.

Issue III

The Petitioner proposes to amend 10 C.F.R. § 50.55(e) to eliminate the 24-hour notification by holders of construction permits of each deficiency found in design and construction, which if it were to remain uncorrected, could have adversely affected safety or, as an alternative, proposes that a reportable deficiency in design or construction under a construction permit be submitted up to 5 days following discovery.

Currently, holders of construction permits must notify the NRC within 24 hours of each deficiency in design and construction which, if it were not corrected, would adversely affect the safety of operations anytime throughout the expected lifetime of the plant, and follow up this initial notification with a written report within 30 days.

Comments

Of the ten commenters who specifically addressed this issue, two commenters disagreed with the Petitioner and eight generally agreed. One commenter who disagreed was concerned with who determines whether the deficiency is reportable, the NRC or the utility. The other commenter who disagreed thought that the current practice is contrary to the regulatory requirement. The commenter contends that the current regulation does not require notification until 24 hours after a deficiency has been found significant, but that often industry reports a deficiency within 24 hours of discovery. Therefore, the commenter thinks the rule change is unnecessary. Some of those supporting the petition believe that

the deficiency is reportable upon discovery; others do not. Those who understand that the licensee reporting the deficiency determines whether it is reportable stated, in part, that the 24-hour notification does not allow sufficient time to collect and analyze data to determine whether a problem is a reportable deficiency. Further, determining whether a problem is reportable is said to require multidiscipline and multiorganization review. This proposal would, according to some commenters, minimize the reporting of nonproblems without adversely impacting the public health and safety. Several commenters said that these deficiencies, reported while a plant is being constructed, pose no immediate danger to public health and safety.

Action

The Petitioner's concerns are being considered and will be addressed in a rulemaking currently being developed in amendments to 10 C.F.R. Parts 21 and 50, "Revisions to the Criteria and Procedures for the Reporting of Defects," scheduled to be published as a proposed rule in September 1986. The contact person for this rulemaking is Robinda Singh, telephone number (301) 492-4149.

Issue IV

The Petitioner proposes (1) that, for a licensee of an operating production or utilization facility, 10 C.F.R. § 50.59(b) requirements to submit reports of a change to a facility or a procedure described in a Final Safety Analysis Report (FSAR) be satisfied by compliance with 10 C.F.R. § 50.71 requirements; and (2) that reports of conduct of tests and experiments not described in the FSAR be submitted annually, except for changes to a facility or procedure or the conduct of tests or experiments that involve a change in a facility's technical specifications or an unreviewed safety question.

Currently, the reports required by § 50.59(b) must be submitted annually or at shorter intervals specified in a license. These changes are also reported annually as updates to the facility's FSAR under § 50.71.

Comments

Of the eight commenters who specifically addressed this issue, one commenter who disagrees with the Petitioner's proposal believes that a § 50.59(b) brief report is easier for the Commission to review in order to regulate changes to a licensee's plant than an annual amendment to an

FSAR. He contends that understanding reports of a change submitted under § 50.71 requirements would require searching out and studying several FSAR sections.

Another commenter agrees that the reports could be combined if § 50.59(b) were rewritten to reflect accurately, what he thinks is, its intent. That is, the commenter thinks the requirement is intended to provide the NRC an opportunity for a reflective review of each change made by a licensee to see whether or not it compromises safety and, ultimately, constitutes an unreviewed safety question. The commenter thinks that the words "change in the facility (procedure) as described in the Safety Analysis Report (SAR)" actually lead to a prescriptive or cursory review to determine whether or not a figure or text in the FSAR must be altered as a result of the change. The commenter is concerned that such a prescriptive approach often causes one to lose sight of the basic purpose of § 50.59(b).

The commenter adds that these words are interpreted inconsistently within the nuclear industry. The commenter thinks that some licensees apply this terminology if any portion of the facility or procedure being changed is described in any manner in the FSAR and others, perhaps most, apply this requirement only if the portion of the facility or procedure being changed is specifically described in the FSAR. The commenter believes this latter application can lead to a prejudgment on erroneous grounds as to whether a change can compromise safety. He suggests rewriting § 50.59(b) to remove troublesome and unnecessary terminology from the regulations and focus the attention in § 50.59(b) on the performance of safety evaluations in support of conclusions as to whether or not proposed changes involve an unreviewed safety question.

Of the seven who specifically supported this issue, one commenter suggested that FSAR updates be submitted within 2 years of completion of the FSAR for new licensees and annually thereafter. Other commenters stated that the current § 50.59(b) reporting requirement, in effect, duplicates other reports and that by eliminating such duplication, available resources could be directed toward matters of genuine safety significance.

Action

The NRC is denying the portion of the petition affecting § 50.59(b). The intent of the requirement in § 50.71 for updating FSARs is to keep the description of the plant up to date. FSARs provide cumulative records of all changes. But, the report required by § 50.59(b) is applicable to specific changes made throughout the year and is available at the

plant site for ready review by the NRC's resident inspectors. It is important to recognize that efforts performed in support of § 50.59(b) reviews are substantially different from the final product the Commission would expect to be documented in FSAR updates. Specifically, complicated projects having no unreviewed safety questions and no changes to Technical Specifications will be documented by a utility-sponsored safety analysis to include the three-factor test contained in 10 C.F.R. § 50.92. The synthesis of a large volume of work will usually be condensed in the FSAR update, and technical evaluations will be referenced. The Commission's regulations address the submittal of all § 50.59(b) actions on an annual basis or at such shorter intervals as may be specified in the license. Periodically, at the request of the resident inspector, the Regional Office will review an individual § 50.59(b) action in support of the resident inspector. Typically these reviews evolve following review of the three-factor test. The reporting under § 50.59(b) enables the Staff to perform rather immediate and efficient reviews of the changes made by the licensee and to determine whether or not those changes impact the public health and safety, often before receipt of the annual updates to the FSAR. Therefore, reliance on § 50.71 annual FSAR submittals would not allow this continual determination of a change's impact on safety, and this delayed review could adversely impact safety.

Issue V

The Petitioner proposes to amend Appendix E, § V, to 10 C.F.R. Part 50 to specify a "threshold of significance" for reporting changes to emergency plans which must be satisfied before a report is required. The Petitioner proposes that the "threshold" be similar to the one specified in § 50.54(p), and that changes be reported annually.

Currently, changes to emergency plans or procedures must be reported to the NRC within 30 days of making the changes.

Comments

Two of the six commenters who specifically addressed this issue disagreed with this proposal. One proposed that a change be submitted "within 2 months" of the change to prevent, as in the case of § 50.54(q), the emergency plan the NRC retains from being as much as 1 year out of date. The other felt that the NRC should determine the threshold of significance as is now done by review of each change within 30 days.

The other commenters who agreed with the Petitioner specifically on this issue stated that the reports currently generated are of questionable

value when compared to the effort expended. One commenter cited the utility's approximate 3000-page submittal of changes as "a wasteful use of paper and resources." One commenter, further, stated that hundreds of procedures are changed without written notification under § 50.59, and also that § V of Appendix E to 10 C.F.R. Part 50 is an example of a requirement imposed that was an overreaction to the accident at Three Mile Island and that its requirements should be relaxed.

Action

Research to reevaluate source terms is scheduled to be completed in September 1986. Revision of the emergency planning regulations, which would address the Petitioner's concern about establishing a "threshold of significance" for a change to an emergency plan to determine whether the change must be reported, will be reevaluated along with the new source-term reevaluation.

Issue VI

The Petitioner proposes to amend 10 C.F.R. § 73.71 so that a followup written report involving loss, theft, or sabotage of strategic special nuclear material or lessened effectiveness of physical security systems be required 30 days after an initial verbal report.

Currently, the written followup report required by § 73.71 must be submitted within 15 days.

Comments

One of the six commenters who specifically addressed this issue disagreed with this proposal and thinks that a timely written report provides the NRC better factual information than a verbal report by telephone, which may create confusion.

The other five commenters specifically agreed with the Petitioner on this issue. They stated, in part, that the modified reporting criteria would improve the usefulness of these reports by allowing licensees to fully resolve the problem before submitting a written report. An increased reporting interval would allow licensees to resolve problems quicker and more comprehensively instead of expending resources to generate reports of marginal value.

Action

The Commission agrees that it is desirable to extend this reporting period from 15 to 30 days and published a proposed rule on August 27, 1985 (50 Fed. Reg. 34,708) that would grant this portion of the petition. The final rule is scheduled to be published July 1986.

Issue VII

The Petitioner proposes that when reporting requirements in license technical specifications duplicate the reporting requirements of 10 C.F.R. § 50.72(a), the plant technical specifications should be amended to eliminate duplicate requirements.

Comments

Of four commenters who specifically addressed this issue, three commenters addressed Issue VII and agreed with the Petitioner. A commenter stated, in part, that technical specifications should contain only those requirements that directly impact public health and safety. Reports that are mere duplicates of regulations are unnecessary and should be eliminated.

One commenter suggests that "significant events" (§ 50.72(a)) and "reportable occurrences" (technical specifications) be consolidated in either the regulations or the technical specifications. Further, he thinks that the reporting requirements for these two types of events are currently inconsistent, and suggests that written reports for "significant events" should be required as they are for events requiring "prompt notification with written followup." One commenter disagreed with the Petitioner stating that the current requirements force individuals to look at the entire problem.

Action

The petition for this issue was addressed and granted in a final rule published July 27, 1983 (48 Fed. Reg. 33,850), that became effective January 1, 1984. The amendment to 10 C.F.R. § 50.73 in this rule superseded the old requirements in § 50.72(a) (2) and (5), which eliminated the 24-hour report, confirming telegram, and the 14-day report. In addition, Generic Letter 83-43 (December 19, 1983) provided guidance for complying with this regulation.

Issue VIII

The Petitioner proposes to lengthen the period between an initial telephone report and the due date for a written followup report of reportable occurrences from 14 to 30 days in response to NUREG-0123 and to any similar provisions in NUREGs-0103, -0212, and -0452.

Comments

Five of the six commenters who specifically addressed this issue expressed agreement with this proposal. One commenter stated, in part, that the reporting modification would improve effectiveness without adversely affecting NRC's ability to ensure that corrective and preventive actions are accomplished. Another commenter noted that the Licensee Event Report (LER) has replaced the 14-day reporting interval with a 30-day reporting requirement. One commenter disagreed with the Petitioner.

Action

The petition for this issue was also addressed and granted in a final rule published July 27, 1983 (48 Fed. Reg. 33,850), that became effective January 1, 1984. The amendment to 10 C.F.R. § 50.73 in this rule changed the reporting period from 14 days to 30 days and superseded any perception that different reporting periods are required by NUREGs-0123, -0103, -0212, and -0452.

III. FINDINGS

The Nuclear Regulatory Commission has acted upon the Petitioner's concerns as follows: two are being denied, four are being addressed in current rulemakings, and two have been granted. Issues I and II (§ 50.54(p) and § 50.59(b)) are denied for the reasons previously stated. Issues II, III, V, and VI (§ 50.54(q), § 50.55(e), Part 50, Appendix E, and § 73.71) are being addressed in current rulemakings. Issues VII and VIII (§ 50.72(a), NUREGs-0123, etc.) have been resolved and the Petitioner's concerns met by the amendment to 10 C.F.R. § 50.73.

For the Nuclear Regulatory
Commission

Victor Stello, Jr.
Executive Director for
Operations

Dated at Bethesda, Maryland,
this 3rd day of October 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. PRM 71-10

THE STATE OF WISCONSIN

October 10, 1986

The Nuclear Regulatory Commission (NRC) denies a petition for rule-making filed by the State of Wisconsin. The Petitioner requested that the NRC expand the scope of its regulations pertaining to spent nuclear fuel transport "to ensure that both the need for and the safety and environmental consequences of proposed shipments have been considered in a public forum prior to approval of the shipment and route." The NRC concludes that the new procedure requested in the petition is not justified by the arguments presented in the petition when considered together with the views and arguments of other persons who commented on the petition and in light of experience, testing, analysis, and other information. The Commission concludes that its existing regulation of the transportation of spent nuclear fuel, when viewed in the context of the combined programs of the NRC, the Departments of Transportation (DOT) and Energy (DOE), the Federal Emergency Management Agency (FEMA), and the States, is sufficient to provide adequate assurance against unreasonable risk to the health and safety of the public. The Commission also concludes that the procedures suggested in the petition would not significantly serve to improve the protection of the public against unreasonable risk from the transportation of radioactive materials.

DENIAL OF PETITION FOR RULEMAKING

I. BACKGROUND

By letter dated December 13, 1984, Mr. Carl A. Sinderbrand, on behalf of the State of Wisconsin, filed with the NRC a petition for rule-making which requested that the NRC amend its regulations to initiate a new procedure to specifically approve individual spent nuclear fuel shipments and to afford a mechanism for public input for each approval decision. The NRC published a notice of receipt of the petition on February 4, 1985 (50 Fed. Reg. 4866), including the full text of the Petitioner's proposed amendment, and invited public comments.

NRC has never had a procedure for approving individual shipments of spent nuclear fuel. Under its regulatory program, the Atomic Energy Commission (AEC) issued specific licenses authorizing types of shipments, including a specified shipping cask, until 1973. Repetitive specific licenses were issued when more than one licensee used the same shipping cask.

In 1973 the AEC agreed to take the lead in reviewing and approving packages for all commercial radioactive material shipments except those limited to designated small quantities, while DOT exercised its authority in other areas. At that time, the procedure of issuing repetitive specific licenses was dropped and was replaced by the current system of approving designs of and quality assurance programs for packages which any licensee may use by registering as a user. This system was combined with a general license authorizing any Commission licensee to make shipments in an NRC-approved package provided the person is registered to use the package, has an NRC-approved quality assurance program, and has certain specified documentation. The use of general license eliminated a large paperwork burden on AEC and licensees alike, and has been proved by experience over the years to provide adequate control.

II. ISSUES RAISED

The Petitioner proposes a rule that would (1) prohibit unapproved spent nuclear fuel shipments; (2) require an application for approval that demonstrates (i) that the applicant will satisfy safety, safeguards, and routing requirements, (ii) that the shipment is necessary, (iii) that there are no unique risks along the proposed route, (iv) that alternatives to the shipment and route have been evaluated, and (v) that the proposed shipping cask will withstand all reasonably foreseeable incidents along the

proposed route; (3) provide an opportunity for public participation in the approval decision; and (4) provide for adequate protection of the public health and safety.

The Petitioner cites the existence of the following five conditions in support of its claim that NRC needs to establish a regulatory process for the evaluation and approval of individual shipments of spent nuclear fuel proposed by licensees:

1. No Federal agency considers the safety or environmental risks associated with selected routes;
2. No Federal agency requires adequate safeguards to protect the public in the event of an accident or other emergency;
3. The NRC does not regulate the carrier of spent nuclear fuel or consider its safety record;
4. No Federal agency considers the need for or propriety of individual shipments of spent nuclear fuel; and
5. The public has no opportunity for meaningful participation with respect to the decision to transport spent nuclear fuel.

III. PUBLIC COMMENTS

In response to the invitation for public comments on the petition for rulemaking, forty-four comment letters were submitted to the NRC by State and local governments, individuals, public interest groups, and power and other industrial companies. Of the twenty-one comment letters from State and local governments, eighteen supported the need for the new regulatory process or some variation of it. Those who expressed reservations cited undue hardship associated with the proposal, security problems, and undue delays associated with the proposed hearings. One Indian tribe noted the lack of any specific provision for involvement by tribal governments. Six of the seven individual commenters supported the rule for the reasons stated in the petition. The one who expressed reservations cited the lack of justification for the proposal. All six public interest groups supported the proposal for the reasons outlined in the petition. The ten power companies and other industrial organizations that commented opposed the petition citing lack of justification, duplication, undue burden, and lack of legal foundation. In summation, thirty commenters supported the petition primarily for the reasons given in the petition, and fourteen commenters opposed the petition for lack of justification, duplication, security problems, undue burdens and delays, and lack of a legal foundation for the Petitioner's proposal.

IV. CONSIDERATION OF PETITION ISSUES

The Petitioner cites a number of contentions in support of its request that the NRC adopt the proposals in the petition.

1. Failure to Consider Safety or Environmental Risks of Specific Routes

In its first contention, the Petitioner, in speaking of spent nuclear fuel shipments over the last 18 months, states that "no federal agency has considered . . . the safety or environmental risks associated with the selected routes" Petition at 4. Later, the Petitioner argues that "the NRC does not independently consider the safety of the particular route, does not evaluate the potential safety and environmental risks of the shipment" *Id.* at 6. Finally, in describing what it considers to be "a significant gap in the regulatory program," the Petitioner states that "no agency considers risks associated with specific routes." *Id.*

The petition would require that an applicant for spent nuclear fuel shipment approval evaluate alternatives to the proposed route and demonstrate that the proposed shipment, including its route, is the alternative that provides the least risk of radiological exposure to the public.

The DOT has specific regulations for the routing of spent nuclear fuel by road which require, with certain exceptions, that the carrier operate over preferred routes which include interstate highways and State-designated alternate routes. The routes are selected after consideration is given to minimization of radiological risk. The routing rule was upheld by the Second Circuit Court of Appeals in *City of New York v. Department of Transportation*, 715 F.2d 732 (2nd Cir. 1983), *cert. denied*, 104 S. Ct. 1403 (1984). In upholding the DOT regulation, the Court stated that the Hazardous Materials Transportation Act (HMTA) does not require that the safest means be used in transporting spent fuel or any other hazardous material, but only requires the DOT to promulgate rules that provide for adequate safety. 715 F.2d at 740. Thus, no Federal agency, under the HMTA, could require a licensee to show that the proposed shipment is the alternative that provides the least risk as long as the shipment provides for adequate safety as prescribed under the DOT routing rules.

The routing rule is based on the DOT's finding that the interstate highway system generally minimizes the risk of transporting spent nuclear fuel, and that State agencies can designate alternate routes in accordance with DOT guidelines for minimizing risk. The DOT has made a generic evaluation of highway routes and concludes that the interstate highway system should serve as the basic Federal framework for provid-

ing safe and efficient routes for transporting spent nuclear fuel by road. In addition to this generic evaluation by DOT of interstate and alternate routes available for spent nuclear fuel transportation, the NRC specifically evaluates and approves routes selected by licensees for safeguards purposes. These route approvals are not limited to individual shipments of spent nuclear fuel, but may be used for repetitive shipments.

For rail transportation, the DOT physically inspects rail track for safety when a rail route is used for transportation of spent nuclear fuel. The inspections are made before the start of a series of shipments over the same route and at 6-month intervals during those shipments. Although there is no formal routing rule for rail shipments of spent nuclear fuel, the Federal Railroad Administration (FRA) works informally with the utility and carrier to investigate alternative routes by rail. Many of the principles of the highway routing rule are incorporated into the process for rail route selection.

In addition to the informal application of routing standards for spent nuclear fuel shipments by rail, the FRA has regulations in 49 C.F.R. Part 174 that impose rail safety requirements. These rules require a separation of spent nuclear fuel by at least one car from the engine, from an occupied caboose, and from another placarded car in the train. The rules impose a 48-hour limit on forwarding a spent nuclear fuel shipment after acceptance at an originating point or receipt at any yard or transfer station (weekends and holidays excluded). The FRA rules require documentation aboard the train and reports of any accidents and incidents enroute. The FRA rules also set standards for wheels and brakes, hours of service, track standards related to train speeds, employee training, and qualifications of train crews.

The FRA's 325 inspectors are responsible for complete inspection of all rolling stock, including locomotives; for monitoring carriers' operating rules and training procedures; for monitoring the nation's rail tracks; for monitoring the railroad signal systems; and for inspecting hazardous cargoes. For the initial move of all the spent nuclear fuel shipments from Nebraska and Minnesota to Morris, Illinois, since August 1984, FRA has inspected the entire track from origin to destination, and completely inspected the signal systems, the carriers' operating rules, the equipment to be used, the documentation, and the cargo. In addition to the FRA's complete inspection for the initial move, it is FRA policy to conduct a full equipment inspection and documentation check on each spent nuclear fuel shipment. After the initial track and signal inspection, further inspections are conducted on a periodic basis.

In addition to the DOT controls exercised over spent nuclear fuel shipments, NRC conducts a safeguards evaluation of rail routes in much the same way as it does for highway routes.

In addition to the determinations of routing adequacy made by the DOT, the NRC concluded, after issuing its Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes (NUREG-0170) in December 1977, that its regulations were adequate to protect the public against unreasonable risk from the transportation of spent nuclear fuel. For 1985, the report projected that there would be 1530 spent nuclear fuel shipments by truck and 652 by rail (NUREG-0170, Table 1.1). These shipments were evaluated as presenting an accident risk of only 0.0004 latent cancer fatalities per year (*id.*, Table 5.9). Based on this evaluation, the risk associated with any individual shipment of spent nuclear fuel transported in accordance with NRC and DOT regulations is small.

In support of the petition's contention that shipping controls may not be adequate for some routes, a commenting State agency conducted a review of the technical literature on cask design, development, and performance and concluded that the safety of existing casks is sufficiently uncertain as to warrant more extensive testing which would address potentially hazardous conditions for each proposed route. An individual commenter noted that casks now in use have not been tested for strength when heated to the temperature at which they travel and then submerged into the cold waters of the Mississippi River.

The Commission notes the long-standing disagreement between it and some persons who question the adequacy of the NRC package standards for transportation of radioactive material and who doubt whether the packages can be adequately evaluated by engineering analysis rather than being physically tested under all conditions to ensure their accident resistance. The NRC employs the package standards of the International Atomic Energy Agency, which have been in use throughout most of the world for almost 20 years. Although spent nuclear fuel casks have not been subjected to all possible combinations of accident conditions during that time, there has been enough accident and testing experience to confirm the high strength of casks in use today. The difference between the normal operating temperature of a spent nuclear fuel cask and the temperature of a large river such as the Mississippi is not large enough to cause a structural or containment problem. Furthermore, the large mass of the cask would slow its cooling, thereby reducing any potential for damage.

2. Protection of the Public in Emergencies

The Petitioner's second assertion is that no Federal agency requires "adequate safeguards to protect against emergencies," and that "NRC . . . only gives cursory attention to emergency planning." Petition at 5 and 6.

The Federal plan for providing adequate safeguards to protect against radiological emergencies is described in a *Federal Register* notice issued by FEMA on September 12, 1984 (49 Fed. Reg. 35,896). The plan describes how twelve Federal agencies that have resources and capabilities to respond to a radiological emergency will work together and will work with State governments and private organizations during an emergency response.

The plan, known as the Federal Radiological Emergency Response Plan (FRERP), describes how the Federal Government will respond to State requests for assistance during a major radiological emergency, how the Department of Energy (DOE) will maintain radiological monitoring and assessment support to the State and local governments, and how the other Federal agencies are prepared to augment the DOE support, if necessary. The FRERP has been tested by the Federal agencies and proven viable. NRC has issued a general Statement of Policy on NRC Response to Accidents Occurring During the Transportation of Radioactive Material (49 Fed. Reg. 12,335, Mar. 29, 1984).

The scope of the FRERP specifically includes Federal response to transportation accidents involving radioactive materials. One of the FRERP planning assumptions is that State or local governments have primary responsibility for determining and implementing any measures to protect life, property, and the environment in any areas not within the boundaries of a fixed nuclear facility. In a transportation accident, the State or local government has the responsibility for taking emergency action, while appropriate Federal resources may be used to support State and local government response measures, if requested. Federal agency response plans recognize the primacy of the response roles of State and local governments, operators of the transporting vehicle, and owners of the spent fuel.

A utility commented that when an accident occurs the response to it is, of necessity, a local responsibility. After reviewing the responsibility of the DOT to reduce the probability of transportation emergencies and the responsibility of the DOE to maintain response teams to assist local authorities in the event of a nuclear emergency, the utility referred to a DOT conclusion that "spent nuclear fuel poses a much lower risk of transportation accident than do any number of common chemicals, the

containment of which could also be expected to exceed the capacity of local groups to respond (49 Fed. Reg. 46,664)."

In commenting on the petition, a second utility agreed that it would appear appropriate for a State, in conjunction with its emergency response capabilities, to examine possible transport routes within its borders and recommend to NRC that these preselected routes be used. The Commission notes that this process is already in use for safeguards purposes and that a number of States have recommended routes within their boundaries. These State recommendations are considered by NRC in its route approval process for spent nuclear fuel shipments.

An individual from the State of Wisconsin, after reviewing the regulatory system now in place, the small risk of radiation injuries from a spent nuclear fuel incident, and the numerous competent groups available to respond to a transportation accident involving radioactive material in Wisconsin, concluded that the Wisconsin proposal would result in adverse consumer economics without significantly improving public safety.

An item sometimes referred to as necessary for an effective emergency response is prenotification to State and local authorities that a spent fuel shipment is being made. In response to a congressional requirement, NRC regulations in 10 C.F.R. § 71.97 now require prior notification of licensee shipments of spent nuclear fuel to the Governor of each State through or into which the shipment will pass. In commenting on the Wisconsin petition, a State agency noted that, particularly in the area of advance notification of shipment of spent nuclear fuel, the NRC's regulations must be strengthened. A second State expressed its concern with the lack of enforcement and inspection procedures needed to ensure that proper prenotification is made by the shipper and that information submitted is accurate. In addition, a city urged the NRC to increase the length of the notice period for spent nuclear fuel advance notifications. The Commission considers its advance notification rule to be reasonable in terms of the length of notification period and considers its inspection and enforcement of this rule to be sufficient to ensure its effectiveness. However, this must be considered a separate issue not covered within the Wisconsin petition, because no proposal to amend the advance notification provisions is included in the petition. Changes to those requirements may be proposed under the "petition for rulemaking" provisions of 10 C.F.R. § 2.802 of the NRC regulations.

Another essential ingredient for adequate emergency response capability is trained response personnel at both the State and local levels. FEMA, in its March 11, 1982 revision of 44 C.F.R. Part 351, "Radiological Emergency Planning and Preparedness," sets out Federal agency roles and assigns tasks regarding Federal assistance to State and local

governments in their radiological emergency planning and preparedness activities. FEMA places upon itself the responsibility to develop and manage a radiological emergency response training program to meet State and local needs, using technical expertise and resources of other involved agencies. The NRC, the Environmental Protection Agency, and the Departments of Health and Human Services, Energy, Transportation, Agriculture, and Commerce all have responsibilities to assist FEMA, in their particular fields of expertise, in the development, implementation, and presentation of training programs for Federal, State, and local radiological emergency preparedness personnel. The DOT has the particular responsibility in the area of transportation emergencies to provide guidance and materials for use in training emergency services and other response personnel for transportation accidents involving radioactive materials.

Emergency response training programs that have resulted from these Federal responsibilities are as follows:¹

a. DOE, through Oak Ridge Associated Universities (ORAU), offers

- "Medical Planning and Care in Radiation Accidents," a 1-week course for physicians, training about forty-eight participants per year.
- "Health Physics in Radiation Accidents," a 1-week course for health physicists, training about thirty-six participants per year.
- "Handling of Radiation Accidents by Emergency Personnel," a 2½-day course for emergency room surgeons and nurses, training about fifty-four participants per year.

b. DOT offers —

- *Radioactive Materials Transportation Information and Incident Guidance*, a self-training manual.
- *Emergency Response to Hazardous Materials in Transportation (Self Study Guide)*, U.S. Department of Transportation, 1982. This is a DOT-offered self-study course on full-spectrum transportation regulations.
- "Handling Radioactive Materials Transportation Emergencies," a training package for first-on-the-scene responders. This is a 6- to 8-hour tape and slide presentation.

¹ FEMA-REP-5, "Guidance for Developing State and Local Radiological Emergency Response Plans and Preparedness for Transportation Accidents," Federal Emergency Management Agency, March 1983.

- *Hazardous Materials: 1980 Emergency Response Guidebook*, U.S. Department of Transportation, 1980. This document has relevance to full-spectrum hazardous material response. The DOT has distributed this document with the intent of providing a copy for operators of every emergency vehicle in the United States.
- c. FEMA Radiological Emergency Preparedness (REP) program offers —
- “Radiological Emergency Planning Seminar,” a 1-week seminar focusing on nuclear power plant offsite planning requirements.
 - “Radiological Accident Assessment Course,” a 1-week course to train radiological health personnel in offsite dose assessment and projection techniques.
 - “Radiological Emergency Response Course,” a 10-day course to train State and Federal radiological emergency response team personnel in techniques of responding to a wide range of radiological accidents. Approximately 400 persons are trained each year.
- d. NRC, through ORAU, offers —
- A 10-week program for State health physicists, training about twenty participants per year.
- e. Colorado Training Institute offers —
- A 3-day seminar and a 2-week course on all phases of hazardous materials transportation incident response, including radioactive materials. Originally funded by a grant from DOT, but now an independent State-run program.

On a training-related issue, the DOT highway routing regulation requires that drivers of vehicles carrying spent nuclear fuel receive emergency action training within the 2 years preceding that transportation. The training must include the properties and hazards of the spent nuclear fuel and the procedures to be followed in the event of an accident or other emergency. The DOT regulation also requires the driver to have a copy of the mandatory route plan including telephone numbers that will access emergency assistance in each State to be entered. 49 C.F.R. § 177.825(c)-(d). The required training for escorts, applicable to all modes of transport, includes the following five subjects: (1) security en route, (2) communications, (3) radiological considerations, (4) response to contingencies, and (5) response to threats.

3. NRC Regulation of the Carrier

The Petitioner's third contention that "the NRC does not regulate the carrier or consider its safety record" fails to recognize that the DOT performs this function. Petition at 6. DOT imposes regulations that relate to both the hazardous nature of the cargo and the safety aspects of the transporting vehicle. DOT also inspects and enforces against its carrier rules.

Although NRC considers that it has the authority under the Atomic Energy Act to regulate carriers insofar as they transport material regulated by the NRC, it has agreed under a Memorandum of Understanding with DOT dated June 8, 1979 (44 Fed. Reg. 38,690) that it will leave the development of carrier safety standards to DOT because of DOT's greater experience and expertise in that role.

On the issue of incomplete regulatory control, one State referred to a report issued in 1984 by the National Research Council entitled "Social and Economic Aspects of Radioactive Waste Disposal — Considerations for Institutional Management." On the issue of transportation of spent nuclear fuel, the panel of experts "found that an underdeveloped regulatory framework currently exists for the transportation of spent fuel and high-level waste. The Federal governmental agencies involved defer to each other, with primary responsibility essentially delegated to NRC's reactor licensees." The panel recommends

a careful evaluation of existing federal regulation of highway transport to assure that (a) a sufficiently broad and uniform regulatory regime exists for the safe transport of radioactive wastes, (b) any redundancies and incompleteness in the existing NRC-DOT regulations have been eliminated, and (c) the needs of States to control safety on their highways are met.

The State submits that the conclusions and recommendation of the report are warranted, and that adoption of the Wisconsin petition would help the problem. The Commission strongly disagrees that its regulatory framework is underdeveloped. The existing rules were developed over substantial periods of time with full opportunity for public comment. The regulations have met the test of time, producing an excellent safety record over many years. In the absence of any demonstration that the regulations are inadequate — and the National Research Council report has not been specific in that regard — the Commission is not inclined to act on the recommendations of the report.

A nuclear equipment manufacturer commented that the Wisconsin petition is apparently based on the premise that the transport of spent nuclear fuel is not adequately regulated even though it is one of the most

heavily regulated transportation activities. The commenter argues that the basic regulatory system for transport of spent nuclear fuel has been demonstrated by experience nationally and internationally to be sufficiently encompassing to ensure protection of public health and safety. The proposed procedures for approval of spent nuclear fuel shipments would cause an enormous use of NRC and utility resources for little, if any, public gain. The Commission agrees that the same package and transportation standards are applied internationally and have proved to be adequate. However, the systems (i.e., agencies or combination of agencies) that apply those uniform standards differ from country to country. The NRC is continually monitoring the relationship between its regulations and those of the other agencies with which it shares jurisdiction in the United States.

4. Need for and Propriety of Individual Shipments

In referring to spent nuclear fuel shipments over the last 18 months, the Petitioner comments that "no Federal agency has considered the need for the shipments . . . or the propriety of exposing the public to these risks." Petition at 4. In enlarging on this same concept, the Petitioner argues that

the utilities' ratepayers may be exposed to substantial costs, the public in the vicinity of the route may be exposed to substantial safety hazards, and States and municipalities along the route may be exposed to substantial liability and costs for emergency response without any opportunity to question the propriety of the shipment.

Petition at 7. The Petitioner requests that an applicant for approval of an individual spent nuclear fuel shipment be required to demonstrate that "the proposed shipment is necessary to meet the requirements of the licensee's operating license or required minimum fuel storage capacity." Petition at 2.

A State agreed with Wisconsin's assertion that there are significant gaps in the regulatory program regarding shipment of spent nuclear fuel. Specifically,

- There should be a Federal policy designed to minimize spent nuclear fuel shipments prior to the operation of a commercial nuclear waste repository; and
- There should be a Federal regulatory system for evaluating the *need* for spent nuclear fuel shipments prior to the operation of a repository.

A State senator supported that view by noting that spent nuclear fuel shipments that have been and are being made to the Morris Storage Fa-

cility will have to be removed from Morris and transported again when the U.S. Government develops an interim storage facility or a disposal facility. He believes this raises the serious question of the necessity of shipments to Morris. An individual agreed by noting that shipments of spent nuclear fuel from Monticello, Minnesota, to Morris, Illinois, are being made only for economic gain since the storage pool at Monticello has about 4 more years of space left in it at current use rates.

A public interest group asserted that there should be consideration given to the need for the shipments and the safety and environmental risks associated with various routes, and related that consideration to its belief that the training of firefighters, law departments, and hospitals is inadequate at this time.

A State summarized its view that it is irrefutable that spent nuclear fuel shipments pose some risk and that the necessary and uncoordinated random shipment of those materials must be avoided. The State concluded that even after a comprehensive and reasonably predictable strategy for spent nuclear fuel management has been developed and the impacts of shipments can be analyzed, a review of the need for such shipments must be conducted and used as the basis for granting or denying authorization for the shipments.

On the other hand, a utility noted that local governments have imposed regulations in the past requiring the transporter to demonstrate a need for each shipment. The utility further noted that all such regulations have been struck down as being in violation of the Commerce Clause of the U.S. Constitution. As support for this proposition, the utility cited *Kassel v. Consolidated Freightways Corp. of Delaware*, 450 U.S. 662 (1981).

A law firm representing multiple utilities commented that the Wisconsin petition proceeds from the two false assumptions that (1) spent nuclear fuel shipments are so dangerous or environmentally harmful that they should only be permitted in the event of dire need, and (2) NRC possesses the legal authority to determine the "need" for proposed shipments. The commenter cited the Nuclear Waste Policy Act of 1982 and its requirement that the Department of Energy provide interim storage capacity (prior to the establishment of a permanent high-level waste repository) for civilian nuclear power reactors that cannot reasonably provide adequate storage on site. This capacity is to be made available only to a person who is "diligently pursuing licensed alternatives to the use of Federal storage capacity" including transshipment to another civilian nuclear power reactor owned by such person. The commenter believes that Congress thus expressly acknowledged the possible need for electric utilities to transship spent nuclear fuel. The commenter also cited Pub. L.

96-295, which requires that NRC provide for prenotification to State Governors of spent nuclear fuel shipments, as evidence that Congress specifically contemplated shipments of spent nuclear fuel prior to the operation of a repository. The commenter then pointed to the NRC and DOT regulations under which spent nuclear fuel shipments are authorized, regulations the adequacy of which has been reaffirmed on a number of occasions, and concluded that "any additional specific determinations by NRC as to the 'need' to transport would needlessly and unlawfully circumscribe the managerial discretion of the operators of licensed nuclear power plants."

Finally, a State agency noted that the issue of whether spent nuclear fuel should be transported is not an appropriate subject for resolution through the rulemaking process, but should be resolved only by Federal legislative action.

The NRC has analyzed the risks associated with the transportation of spent nuclear fuel, and found them to be small. The Commission acknowledges enactment of several laws (e.g., the Atomic Energy Act of 1954, as amended, the Nuclear Waste Policy Act of 1982, and the Hazardous Materials Transportation Act) which make it abundantly clear that some spent nuclear fuel shipments are expected and accepted in the public interest, but this cannot be taken as a statement of national policy that all shipments of spent nuclear fuel have been authorized by Congress.

The NRC's recent rulemaking to establish 10 C.F.R. Part 53, "Criteria and Procedures for Determining the Adequacy of Available Spent Nuclear Fuel Storage Capacity," published in the *Federal Register* on February 11, 1985 (50 Fed. Reg. 5548), raised the issue whether the Commission should give preference to onsite storage alternatives in determining the need for Federal interim storage for a licensee. Consideration was given to indications in the legislative history of the Nuclear Waste Policy Act of 1982 (NWPA) to the effect that onsite storage of spent nuclear fuel should be encouraged and that transportation of spent nuclear fuel should be minimized. The Commission took the position in that rulemaking action, and affirms it here, that it has no authority under Subtitle B of the NWPA to establish priorities for the pursuit of spent nuclear fuel storage alternatives. If the Commission finds, pursuant to Part 53, that one or more alternatives to Federal interim storage is feasible, the utility is not eligible to participate in the Federal interim storage program. The choice of which alternative to pursue will be decided elsewhere.

As to the Petitioner's concern over substantial costs to the utilities' ratepayers from unnecessary shipments of spent nuclear fuel, the economic decisions made by utilities in transporting spent nuclear fuel are

beyond the purview of the NRC's regulatory authority as long as the utility meets NRC regulatory requirements with respect to health, safety, common defense, and security. See *Pacific Gas & Electric Co. v. State Energy Resources Conservation and Development Comm'n*, 461 U.S. 190, 221-22 (1983).

In addition to the Commission having found that the risks of spent nuclear fuel transportation are low, it also explored the consequences of serious incidents that might cause the spent nuclear fuel casks to fail. One recent series of tests included the destructive testing of spent nuclear fuel in simulated fuel casks occurring from presumed acts of sabotage. The preponderance of available evidence, including the recent testing to analyze the effect of explosives, showed that accidental releases from spent nuclear fuel casks would be neither severe nor far-reaching.² Based on this preponderance of evidence, the Commission finds no basis for further restrictions on the shipment of spent nuclear fuel or for an examination of the need for individual shipments.

The Commission does have a study under way on this subject, however, to assess the accident resistance of spent nuclear fuel shipping casks when subjected to the stresses associated with historically based real-world accidents. The study will evaluate the ability of spent fuel transportation containers designed to meet the performance criteria in current NRC regulation (10 C.F.R. Part 71) to safely retain its radioactive contents, maintain its shielding, and prevent nuclear criticality when subjected to stresses associated with severe road or rail accidents. It will also assess the probability and potential consequence of any accidents in which stresses exceed values associated with current regulations. The study is nearly complete and results are expected to be published in late 1986 following an independent peer review. This study, as well as other initiatives, is part of the continuing Commission process to assess and maintain its transportation regulations adequately in light of changing transportation patterns and technologies.

With risks low and potential consequences even from an improbable, severe, less-than-catastrophic accident, additional controls are only justified if the cost of those controls does not exceed their benefits. In the case of the additional controls sought by the Petitioner, the technical benefits would be measured in terms of the value of normal and accidental exposures avoided. Although the costs of the new approval procedure proposed in the petition have not been quantified, it is the Commission's judgment that, because of the small technical benefits available under any

² NUREG-0170, "Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes," December 1977. NUREG/CR-2472, "Final Report on Shipping Cask Sabotage Source Term Investigation," October 1982.

foreseeable circumstances, a favorable cost/benefit balance could not be obtained.

5. Opportunity for Meaningful Public Participation

The Petitioner's final contention in support of the proposal is that "the public has no opportunity for meaningful input into the decision to transport waste, as this decision is wholly within the discretion of the licensee." Petition at 7. The Petitioner requests that the "NRC exercise its regulatory authority to ensure that both the need for and the safety and environmental consequences of proposed shipments have been considered in a public forum. . . ." *Id.* at 1.

A State commenter reported that two public discussions held in advance of spent nuclear fuel shipments from the State had some constructive results. The utility involved was able to demonstrate that it had reviewed alternate means of addressing its storage problems, and State agencies, the utility, and the carrier were spurred by public concern to take safety precautions beyond the minimum required by Federal regulations. Based on this experience, the State suggested three reasons for a positive response to the Wisconsin petition:

- Open discussion of the issues may result in a greater range of choices, both formal and informal;
- Fears that public participation would somehow get out of hand and undermine rational, technically sound decisionmaking are probably not realistic. Reasonable resolution leaves everyone better off; and
- If the NRC itself provides a public forum, resort to State and local government as a source of information and discussion is less likely. Legally futile attempts to ban spent nuclear fuel transportation by local ordinance can only generate local resentment and undermine Federal authority.

The Commission, together with DOT, has also attempted to establish a dialogue with affected persons on the issue of spent nuclear fuel transportation. At a DOT/NRC-hosted seminar in Chicago on July 31-August 2, 1985, those agencies met with representatives of forty-nine States, local governments, and Indian tribes to discuss the problems and potential solutions associated with spent nuclear fuel transportation. A total of 275 people participated.

In addition, an NRC contractual study has included numerous interviews with government officials and members of the public regarding their concerns over shipments of spent nuclear fuel from the West Valley, New York, former reprocessing plant now being decommis-

sioned. The focus of the study has been to obtain information documenting the concerns and actions of affected institutions in previous spent fuel shipment campaigns. The contractual study is not yet complete.

Most of the public commenters who supported the Wisconsin petition also supported the formal hearing process that was part of the petition and on which the approval of the spent nuclear fuel shipment in question would in part be based. For example, a State observed that members of the affected public have not been given an opportunity through the route approval process to express their concerns about their own personal safety and the protection of the environment in which they live. The Wisconsin petition gives the public an appropriate opportunity to provide input into the decisionmaking process. A public interest group complained that "it has been impossible to provide input into the decision-making process for nuclear waste shipments," and believes that "if there is no public input the health and safety of the public will not be insured."

Some persons supporting and some persons opposing the petition registered comments against the formal hearings proposed. A utility commented that the rule as proposed is silent on whether the requirements would be repeatedly imposed for a specific shipping route even though approval was granted for a prior shipment, and could be construed so as to benefit individuals interested in making frivolous repeated requests for hearings for already established shipping routes. A State commented that the basic reason for the rulemaking petition is to allow more public input to the decisions regarding transportation of spent nuclear fuel. While the State encouraged public participation in all aspects of interstate transportation, it believed the Wisconsin proposal would result in undue hardship on the shipper and carrier. The State believed that NRC and DOT provisions for public input have been adequate for route selection, and in fact the State had designated certain routes as preferred routes for spent nuclear fuel shipments. The State's recent accident experience has been good.

There was some division of sentiment among State and local officials on the times when public hearings would be most useful. Although it was not clear from the petition whether a series of shipments could be approved as a result of a single hearing or whether an individual shipment would be subject to the entire approval process by itself, some commenters clearly preferred approval of a series of shipments. For example, a commenting State favored a generic, rather than specific, examination of spent fuel shipments to establish generic criteria for designating routes and alternate routes, for establishing the need to ship, and for calculating risks, but favored avoiding the possibility of a hearing each time spent nuclear fuel is shipped. A city endorsed Wisconsin's request for in-

dividual approval of spent nuclear fuel shipments, for public comments on each request, and for environmental impact statements if required under Federal law, rules, and requirements, but would give the NRC discretion on whether to conduct a hearing when requested by a commenting person.

Another State supported the Wisconsin contention that the current NRC transportation rules be thoroughly reviewed by the Commission, including ample opportunity for State and public comment. Procedurally, however, the State supported a thorough public review only prior to any major campaign to ship radioactive wastes between two points, including an opportunity for affected States to participate in routing decisions. It suggested that an understanding should also be reached with all affected States on the role of all parties in inspection of shipments, emergency response, prior notification, and liability.

A State supporting the Wisconsin petition suggested the following revisions to the Wisconsin proposal:

- (1) Allow for an application and approval/denial for a series of shipments from one point of origin to one destination; and
- (2) Clarify whether an Environmental Impact Statement or an Environmental Analysis will be required.

Finally, some commenters seemed to express more of a need for an exchange of information than for a formal hearing where a shipment approval decision is involved. A public interest group complained that the public does not have information as to the safety of the casks being used, the necessity of the shipments, the proper routes to take, or other life protection issues. The commenter did not believe that shipping spent nuclear fuel from one temporary location to another is a responsible policy, and urged that shipments be stopped until a more responsible policy can be put into effect. One individual supported the petition for its provisions allowing public input, believing that any economic activity affecting the economic and physical health of the public should be subject to effective public input.

The Commission believes it has been very open to public participation in the processes that established the present rules for transporting spent nuclear fuel. This includes public rulemaking proceedings for establishment of packaging standards in 10 C.F.R. Part 71 begun on December 21, 1965 (30 Fed. Reg. 15,748); for the general-license, package approval system in Part 71 begun on November 20, 1971 (36 Fed. Reg. 22,134); for the establishment of standardized impacts associated with the transportation of radioactive material, including spent nuclear fuel, to and from nuclear power plants begun on November 1, 1973 (38 Fed. Reg. 30,203); and the reevaluation of NRC transportation regulations begun

on June 2, 1975 (40 Fed. Reg. 23,768). In each of these cases, announcements were issued and public comments were solicited.

As with the radioactive material transportation regulations promulgated by NRC, those adopted by DOT were also considered through public rulemaking proceedings. The DOT routing rule is an example where there were multiple opportunities for public participation. An Advance Notice of Proposed Rulemaking was issued on August 17, 1978 (43 Fed. Reg. 36,492) soliciting public comments. A Notice of Proposed Rulemaking followed on January 31, 1980 (45 Fed. Reg. 7140) that was followed by seven public hearings held in Philadelphia, Atlanta, Chicago, Denver, Seattle, Boston, and New York, plus three additional public meetings in Akron, Ohio; Eugene, Oregon; and Union City, California. DOT received and reviewed over 1000 public comments and reviewed over 1600 pages of transcripts from the public meetings. This represents an extraordinary level of public participation.

V. CONSIDERATION OF COMMENT ISSUES

The public comments raised a number of issues not included in the Wisconsin petition, but which are related to the petition in various ways.

1. Disclosure of Safeguards Information

A utility suggested that the requirement for an applicant to demonstrate that he or she has fulfilled the 10 C.F.R. § 73.37 requirements for physical protection of spent nuclear fuel in transport is redundant since the regulation already imposes an obligation to comply with its provisions. The utility further suggested that if a licensee were required to make available for public inspection detailed information relating to security of the shipments, the purposes of § 73.37 would be defeated. A State agency thought that adoption of the Wisconsin petition would compromise the security of spent nuclear fuel shipments by making known during the public hearing process the actual shipment dates and times. An individual commented that announcement of proposed shipments in the *Federal Register* would breach some needed security and thereby increase the risk of sabotage or theft of the shipment.

The Commission does not agree with the utility's comment that there is no difference between having a requirement for a physical protection program in § 73.37 and having the NRC Staff review that program to ensure that it satisfies those same requirements. As with individuals working in any specialty, the NRC Staff develops expertise from review-

ing and discussing a large number of physical protection programs which the Staff can then apply to its review of other programs. In the Commission's judgment, this process results in greater assurance that the physical protection requirements of § 73.37 are being adequately applied. In fact, for some time an NRC Staff review of a licensee's physical protection program for transportation of spent nuclear fuel has been done when the licensee applies for its route approval under 10 C.F.R. § 73.37(b)(7).

The Commission, however, does agree with the commenters that public hearings in which details of a particular shipment and the security arrangements regarding the shipment are discussed might result in increasing the risk of its sabotage or theft.

2. Extending Scope of Wisconsin Petition

A State recommended that the concept proposed in the Wisconsin petition be extended to "other highly radioactive material that the Commission . . . determines by rule requires permanent isolation" under the provisions of the Nuclear Waste Policy Act (NWPA). The same commenter urged that the same rules also apply to spent nuclear fuel and high-level waste transportation activities undertaken by DOE. A second State also endorsed the amendments to Part 71 proposed by PRM 71-10, and was particularly concerned that the amendments apply to DOE shipments of spent nuclear fuel pursuant to the NWPA. The State interpreted Part 71 requirements as applying to the DOE shipments.

A public interest group supported the Wisconsin petition but asked that protection of the environment be added to the proposed consideration of minimizing radiological exposures. The group also requested that the Commission, on receipt of a request for hearing while considering an individual licensing case, be required to hold a hearing within 60 days in the State from which the request was received.

In general, DOE activities — including spent nuclear fuel shipments — are exempt from NRC regulation as a matter of law. (For the principal exception, see § 202 of the Energy Reorganization Act of 1974, as amended, 42 U.S.C. § 5842.) It should be noted, however, that DOE is required by § 137 of NWPA, 42 U.S.C. § 10,157, to utilize, by contract, private industry to the fullest extent possible in each aspect of transportation of spent nuclear fuel under that Act. As a result, the rules pertaining to licensed shipments may apply.

It is the Commission's view that no additional regulatory review of spent nuclear fuel shipments is necessary or desirable. The same view would apply to other types of radioactive material with comparable hazards.

3. Miscellaneous Support for and Opposition to the Petition

Many of the commenters were forceful in their support for or opposition to the petition without providing much new information that would assist the Commission in deciding the issue. A sampling of those comments follows:

a. Support for the petition

- A public interest group supported the Wisconsin petition by asking for a public rulemaking proceeding to examine the issues raised by Wisconsin, and for a hearing to be held in Wisconsin. The reasons for concern are the following:
 1. The lack of consideration of the need for spent nuclear fuel shipments;
 2. The lack of examination of alternatives to the shipment;
 3. The lack of physical testing of casks;
 4. The lack of demonstrated emergency response capability in case of a radiation accident; and
 5. The lack of a clear evaluation of alternative routes.
- Another public interest group supported the Wisconsin petition because of its concern that there is no Federal agency considering the safety of the public or environmental risks involved in radioactive waste shipments.
- A State Representative believed that "despite the extreme hazard of these radioactive materials the safety of these shipments has not been adequately assured." He cited the failure to determine the need for the shipments, safety and environmental risks associated with specific routes, and lack of adequate emergency response capability as the reasons for inadequate safety. He concluded by stating that all citizens subject to the hazards of these highly radioactive shipments have the right to be assured that all possible steps are being taken to ensure their safety.
- One individual supported the Wisconsin petition based on his belief that no adverse or ill effects would be realized by power companies or shippers of spent nuclear fuel.

b. Opposition to the petition

- An industry commenter made the point that the Petitioner has not identified a need for adoption of the proposed rule, and the petition contains no new data or information that would point out inadequacies in the current regulatory basis. The commenter stated his belief that the current transport regulations of the Commission and the corresponding regulations of the DOT provide significantly more than adequate assurances of the public health and safety.
- A utility, in addition to finding the Wisconsin proposal inappropriate and unnecessary, found the language of the proposal so vague in places that one could not demonstrate compliance. The utility also believed that spent nuclear fuel transportation has relatively benign credible accident consequences compared to many chemical shipments which are not subject to such scrutiny.
- A utility referred to a report by Drs. Courtney and Lambremont of Louisiana State University on a review of 190 scientific and technical papers examining radioactive material transportation over an 18-year period. The reviewers concluded that "the risk to the general public from the transportation of radioactive materials is extremely low. The extensive amount of work which supports this conclusion reflects a remarkable international consensus."
- A utility believed the Wisconsin proposal unnecessary given (1) the emphasis on cask design safety; (2) the security provisions of Part 73; (3) the spent nuclear fuel considerations in reactor licensing hearings; and (4) the regulations of DOT. The utility argued that there has been no showing that an additional evaluation would provide any increased public health and safety protection.
- A representative of an Indian tribe noted that the Wisconsin proposal omits any reference to a tribal government's interest in applications for approval of spent nuclear fuel shipments and is thus inconsistent with policies under the NWPA that generally encourage tribal consent and consultation in the decisionmaking process.
- A utility, after considering the NRC regulatory framework, safeguards/safety studies, and the safeguards/safety record, recommended that current requirements be reduced.

VI. NRC CONCLUSION

The petition was examined in the context of the Memorandum of Understanding (MOU) between NRC and DOT, dated June 8, 1979 (published July 2, 1979; 44 Fed. Reg. 38,690), by which transportation regulatory functions are divided between the two agencies in the interest of completeness and avoidance of duplication of effort. Where the MOU calls for DOT to lead in some particular area, such as in the regulation of carriers of radioactive material and the routes over which they travel, NRC does not consider its regulations or its regulatory programs to be deficient because they do not duplicate that control. The Commission concludes that its existing regulation of the transportation of spent nuclear fuel, when viewed in the context of the combined programs of NRC, DOT, DOE, FEMA, and the States, is sufficient to provide adequate assurance against unreasonable risk to the health and safety of the public. The contentions cited in the petition are, therefore, not accepted by the Commission as adequate justification for the changes requested in the petition. The Commission also concludes that the procedures suggested in the petition would not significantly serve to improve the protection of the public against unreasonable risk from the transportation of radioactive materials.

For the above reasons, the NRC has denied this petition.

While denying the State of Wisconsin's petition for rulemaking, the Commission certainly recognizes the concern on the part of Wisconsin and other States about the transportation of spent nuclear fuel and high-level radioactive waste. The transportation of spent nuclear fuel is an issue that affects many States. A safe and reliable spent nuclear fuel transportation system will be an important element for a successful nuclear waste disposal program.

While believing that the existing Federal system provides adequate protection of the public health and safety, the Commission realizes the desire of States for greater participation in the transportation regulation process. If States desire an additional degree of confidence that spent nuclear fuel is being transported safely within their borders, the Commission suggests that States examine the inspection and escort program of the State of Illinois. Each spent nuclear fuel shipment traveling in Illinois is inspected by the State's Department of Nuclear Safety to assure that all applicable Federal and State radiation protection requirements are met. The Illinois State Police inspect and escort trucks carrying these shipments. The Illinois Commerce Commission inspects rail shipments. This inspection and escort program provides Illinois with an added measure of assurance that spent nuclear fuel is being transported safely with-

out, it appears, imposing burdensome procedures on licensees and carriers.

For the Nuclear Regulatory
Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 10th day of October 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Victor Stello, Jr., Executive Director for Operations

In the Matter of

Docket No. PRM 50-37

LILLIAN McNALLY

October 20, 1986

The Executive Director for Operations (EDO), acting under the authority of § 1.40(o) of the Commission's regulations, denies the petition submitted by Ms. Lillian McNally which requested (1) removal of deuterium (hydrogen isotope of mass 2) and tritium (radioactive hydrogen isotope of mass 3) from reactor systems and (2) termination of the recombination of hydrogen and oxygen in reactor systems.

The petition is denied because (1) deuterium present in the reactor coolant is not the major source of tritium in light-water-cooled nuclear reactors, (2) tritium releases to the environment from nuclear power plants are already as low as is reasonably achievable as defined by Appendix I to 10 C.F.R. Part 50, and (3) recombination of hydrogen and oxygen is necessary to reduce waste gas volumes and reduce the potential for hydrogen-oxygen explosive reactions.

**ATOMIC ENERGY ACT: RELATION TO FEDERAL WATER
POLLUTION CONTROL ACT**

The National Pollutant Discharge Elimination System, created by the Federal Water Pollution Control Act Amendments of 1972, does not deal with tritium because that substance is regulated under the Atomic Energy Act of 1954, as amended.

NATIONAL ENVIRONMENTAL POLICY ACT

The phrase "(3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequence . . ." (§ 101(b)(3), 42 U.S.C. § 4331(b)(3)) represents a national goal, not a statutory requirement.

NRC: AUTHORITY OF EXECUTIVE DIRECTOR FOR OPERATIONS TO DENY PETITIONS

Under § 1.40(o) of 10 C.F.R. Part 1, "Statement of Organization and General Information," the Executive Director for Operations has authority to deny any petition for rulemaking of a minor or nonpolicy nature where the grounds for denial do not substantially modify an existing precedent.

NRC: AS LOW AS IS REASONABLY ACHIEVABLE (ALARA) LEVELS

Discharges of tritium from operating nuclear power reactors are "as low as is reasonably achievable" as evidenced by (1) the low individual doses from tritium, (2) the low collective (population) doses associated with the tritium releases, and (3) the inability to justify use of additional control technology to reduce tritium effluents. Consequently, the Petitioner's request for further reductions is not considered to be "reasonably achievable."

NRC: APPENDIX I TO 10 C.F.R. PART 50

Section II.D of Appendix I requires additional effluent control technology to be added if the added cost of control divided by the magnitude of the anticipated reduction in collective (population) dose does not exceed \$1000 per person-rem reduced. The most cost-effective technique for tritium control has a cost of \$5300 per person-rem reduced and, although not required under Appendix I, is presently used in certain pressurized water reactors.

NRC: RECOMBINATION OF HYDROGEN AND OXYGEN

The Petitioner's request to terminate the practice of recombining hydrogen and oxygen was denied because (1) the uncombined hydrogen and oxygen are potentially explosive and (2) the increased gas volumes that would result if these gases were not recombined could adversely affect the holdup and decay of other radioactive gases and increase the release of these gases to the environment.

NRC REGULATIONS: TRITIATED WATER

Tritiated water is controlled by existing NRC regulations because it can be a health concern in sufficient quantities.

NRC REGULATIONS: AUTHORITY TO REGULATE DEUTERIUM

Deuterium is neither source, special nuclear, nor byproduct material regulated by the NRC under the Atomic Energy Act. The NRC could, however, regulate this substance under its general authority to regulate production and utilization facilities.

DENIAL OF PETITION FOR RULEMAKING

I. BACKGROUND

On July 6, 1983, a petition for rulemaking was filed with the NRC by Lillian McNally. The NRC Staff corresponded with the Petitioner on August 25, 1983, indicating (1) the level of deuterium in reactor systems that the Petitioner requested was below natural deuterium levels; (2) the tritium levels in liquid effluents permitted by Appendix B of 10 C.F.R. Part 20 or by the Interim Primary Maximum Contaminant Levels for radionuclides in drinking water issued by the Environmental Protection Agency (40 C.F.R. Part 141) were respectively about 1000 times and about 3000 times lower than the levels sought by the Petitioner; and (3) based upon these analyses, the Staff was likely to recommend that the Commission deny the petition.

On September 23, 1983, an amended petition was received and docketed by the NRC as PRM 50-37. Receipt of this petition was noticed in the *Federal Register* on October 31, 1983 (45 Fed. Reg. 50,083).

The amended petition requested the Commission to set standards for tritium and deuterium such that:

Water circulated in and around Nuclear Power Plants is not to exceed the natural environment concentration of deuterium and tritium for one year; that in one year the concentration shall be limited to less than one part by weight in 10,000 parts, and that the amount by which the contaminants [exceed this limit] shall be reviewed annually thereafter to determine the attainable purity of circulating water.

The Petitioner also requested that:

In no case should the reintroduction of contaminated water produced by the recombination of molecular hydrogen and oxygen in the plant be permitted.

II. PUBLIC COMMENTS

A. Summary of Comments Received on Petition

Four public comments were received by the NRC in response to the notice of receipt for this petition. Three respondents recommended denial of the petition. One respondent favored granting the petition. The respondent favoring granting of the petition cited the absence of regulations controlling tritium discharges issued by EPA under the National Pollution Discharge Elimination System (NPDES). The respondents who favored denial of the petition cited technical inconsistencies similar to those noted in the NRC Staff's August 25th letter to the Petitioner, and one respondent questioned the NRC's authority to control deuterium.

B. Response to Public Comments

Issue 1

NRC and its licensees are mandated by NEPA to avoid "degradation, risk to health and safety or other undesirable and unintended consequences."

NRC Response

The NRC does not agree with the commenter's interpretation of NEPA. The section of the National Environmental Policy Act (Pub. L. 91-190) referred to by this commenter (§ 101(b)(3), 42 U.S.C. § 4331(b)(3)) states:

(3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences

However, the preface that precedes this paragraph (§ 101(b), 42 U.S.C. § 4331) states in part:

(b) In order to carry out the policy set forth in this Act, it is the continuing responsibility of the Federal government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs and resources to the end that the Nation may

This preface clearly indicates that the paragraphs that follow it, including ¶ (3), represent a series of national goals. The NRC believes that its existing regulations regarding radiation protection meet these goals.

Issue 2

Water is ubiquitous so that tritiated water is a concern regarding potential health effects.

NRC Response

Tritiated water can be of public health significance, and for that reason, its release to the environment is controlled by the NRC under its regulations in 10 C.F.R. Part 20.

Issue 3

NPDES (the EPA National Pollutant Discharge Elimination System) fails to deal with tritium.

NRC Response

Materials regulated under the authorities of the Atomic Energy Act are not subject to the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500, 86 Stat. 816, 33 U.S.C. § 1151), § 402 of which created the National Pollutant Discharge Elimination System (NPDES). This explains why NPDES does not deal with tritium. Tritium releases to the environment, either to the atmosphere or in liquid effluents, are regulated under the Atomic Energy Act of 1954, as amended.

Issue 4

The Petitioner fails to demonstrate that releases of radioactive water to the atmosphere are at levels that have produced any public health concerns. Such releases have been within NRC limits and the NRC limits in 10 C.F.R. Part 20 and Part 20, Appendix B, are adequate to protect public health.

NRC Response

The Petitioner's proposed level of tritium is orders of magnitude greater than presently allowed under 10 C.F.R. Part 20 (1 million microcuries per milliliter ($\mu\text{Ci/ml}$) versus the limit in Appendix B Table II of 10 C.F.R. Part 20 of $0.003 \mu\text{Ci/ml}$ in liquid effluents).

Issue 5

It would be impossible to control the tritium and deuterium in reactor waters to levels not exceeding naturally occurring levels as tritium and deuterium are both produced during reactor operation.

NRC Response

In light-water reactors (LWRs), deuterium in cooling water is a minor source of tritium production in the coolant; leakage of fission-product tritium produced in the fuel and by neutron reactions with boron and lithium are the principal sources of tritium. In pressurized water reactors, tritium is formed directly in the coolant by interactions with boron and lithium in addition to deuterium. Because of the presence of these other sources of tritium in an LWR, removal or reduction of the deuterium concentration in the coolant as proposed by the Petitioner would not result in any major reduction in the overall tritium production nor would it result in significantly decreased tritium releases to the environment.

Petitioner's suggested limit for deuterium of 1 part by weight in 10,000 is 3 to 4 times lower than the natural concentration of deuterium in water. Furthermore, additional tritium and deuterium will be produced by neutron capture by hydrogen during operation of the reactor. This condition would require reducing the deuterium and tritium concentrations at the plant water intakes to less than ambient levels in order to attempt to offset the levels produced from reactor operation.

The Petitioner intends that a deuterium/tritium removal process be employed to remove the deuterium prior to irradiation and tritium and deuterium as they are formed. The existence of a pending patent by Ms. McNally on a deuterium-tritium removal process is not a relevant factor in the Commission's decision on her petition.

Issue 6

Petitioner's desired limit for a concentration of 1 in 10,000 "doesn't make sense" for tritium as it corresponds to about 1000 Ci/liter which is many orders of magnitude above normal tritium levels during operation.

NRC Response

The application of the 1 part in 10,000 by weight (1:10,000) ratio to tritium would result in reactor coolant tritium concentrations that greatly exceed those that could be tolerated without excessive dose to plant workers. A tritium-to-hydrogen ratio of 1:10,000 by weight corresponds

to a tritium activity concentration of approximately 1 Ci/g (or per milliliter) which is equivalent to 1000 Ci/liter of water. Although it would be almost impossible to reach such concentrations in a light-water reactor, such a limit could not be tolerated for tritium because of worker protection considerations. Therefore, the portion of the petition requesting the NRC to adopt this limit for tritium is unacceptable.

Issue 7

The Petitioner does not present any data on the process to remove tritium. There is no proof of cost efficiency and therefore this process cannot be used to establish standards.

NRC Response

The NRC does not require specific details of the Petitioner's proposed tritium separation process. It is sufficient to note that there are existing methods for the separation of tritium and hydrogen isotopes which could be applied.

The Commission has criteria determining the practicability of additional reductions in radioactive effluents from nuclear power reactors. These criteria define "as low as is reasonably achievable" or "ALARA" levels of radioactive materials in light-water-cooled nuclear power reactor effluents and are in Appendix I to 10 C.F.R. Part 50. One of the criteria for ALARA is that additional equipment for effluent reduction and control must be added if the reduction in the collective (population) dose (person-rem) afforded by the control equipment multiplied by the worth of exposure reduction (\$1000 per person-rem reduced) would exceed the cost of adding this technology.

The estimated population doses associated with tritium releases from light-water reactor (LWR) effluents in 1981 ranged between 1.1×10^{-6} person-rem to 3.4 person-rem at individual LWR sites. The total for all reactor sites was 8.3 person-rem. This means that, using the Appendix I criterion of \$1000 per person-rem reduced, expenditures for tritium control up to \$3400 per year maximum per reactor might be justified. The maximum total cost for all plants that could be justified would be \$8300 (8.3 person-rem \times \$1000 per person-rem). The average justifiable cost per plant would be around \$100.

The processing of in-plant liquid and effluent streams containing tritium may entail handling tens of thousands of gallons of liquids. There is no demonstrated separation technology that could concentrate and separate tritium and deuterium from this volume of liquid for a hundred dol-

lars or less. Therefore, the NRC concludes that the Petitioner's request to require a reduction in tritium levels in waters circulating in and around reactor plants is not "reasonably achievable" under the Commission's established criteria in Appendix I to 10 C.F.R. Part 50.

Issue 8

Deuterium is outside of NRC's jurisdiction to regulate.

NRC Response

Deuterium (hydrogen-2) is neither a source, byproduct, nor a special nuclear material regulated by the NRC under the Atomic Energy Act of 1954, as amended. However, to the extent that deuterium could affect public health and safety (such as through tritium production), it could be regulated by the NRC under its authority to regulate production and utilization facilities, including nuclear power reactors.

Issue 9

The Petitioner also requested that:

In no case should the reintroduction of contaminated water produced by the recombination of molecular hydrogen and oxygen in the plant be permitted.

NRC Response

Hydrogen and oxygen gases are produced in normal reactor operation by the radiolytic (radiation-induced) decomposition of water. The purpose of the Petitioner's request would be to keep tritium-contaminated hydrogen gas from mixing with the large volume of water within the plant. These gases are potentially explosive and can represent a significant portion of the total quantity of radioactive waste gases produced. Controlled recombination of these gases back into water reduces not only the potential explosive hazard, but also the volume of the gaseous wastes that have to be stored and treated. The volume reduction resulting from recombination of hydrogen and oxygen permits longer in-plant holdup of radioactive waste gases, longer periods of radioactive decay, and consequently results in lower radiation doses from gaseous effluents. Because the elimination of recombiners could have an adverse impact on the potential safety of reactor systems, would have adverse impacts on waste gas holdup times and would increase offsite radiation doses, and

cannot be justified solely on the potential reduction of the already-low doses from tritium, the NRC also denies this aspect of the petition.

III. FINDINGS

The NRC finds that (1) the requested reductions in the deuterium levels would not necessarily produce corresponding reductions in tritium production, (2) tritium in the coolant of operating light-water reactors already is at or beneath the numerical limits requested by the Petitioner, and (3) the associated tritium releases from nuclear power plants are already "as low as is reasonably achievable."

The request not to permit hydrogen and oxygen recombination is also denied because this recombination is desirable both for safety reasons and for reducing the levels of gaseous radioactive releases. Therefore, PRM 50-37 is denied.

For the Nuclear Regulatory
Commission

Victor Stello, Jr.
Executive Director for
Operations

Dated at Bethesda, Maryland,
this 20th day of October 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

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

COMMONWEALTH EDISON
COMPANY

(Braidwood Nuclear Power Station,
Units 1 and 2)

November 6, 1986

The Commission points out that summary denial of Applicant's "motion for reformation" of a Commission decision denying review of an appeal board order would be justifiable, since in reality the motion is one for reconsideration, and as such expressly barred under Commission rules. However, the Commission addresses the merits of the petition to ensure that an injustice did not result from its order denying review and because Applicant appears to have learned nothing from earlier Commission admonitions in the proceeding. The Commission finds that Applicant's "motion for reformation" is deficient both on the law and on the facts, and denies it.

NRC: REVIEW OF APPEAL BOARD DECISIONS

A "motion for reformation" of a Commission order which requests deletion of 40% of the order, including the Commission's rationale for its denial of review of an appeal board decision, is in reality a motion for reconsideration and thus barred under Commission rules.

NRC: ADJUDICATORY RESPONSIBILITIES

If the Commission has committed a serious injustice in an adjudicatory order, it should be willing to consider rectifying that injustice, even if an occasional exemption from its rules is required.

NRC: ADJUDICATORY RESPONSIBILITIES

Speculation that a Commission order may harm a party in future proceedings before a state regulatory body is not a basis for seeking Commission revision of that order.

ORDER

On March 20, 1986, the Commission issued an order (unpublished) in which it denied the Applicant's petition for review of an Appeal Board decision (ALAB-817, 22 NRC 470 (1985)) dismissing a motion for directed certification filed by the Applicant. The Applicant's petition had asked the Commission to dismiss the Intervenor's late-filed quality assurance contention and bar its resubmission. At the same time, however, the Commission stated that it was taking review *sua sponte* of the question of the correctness of the Licensing Board's application of the five-factor test which the Commission's regulations prescribe for late-filed contentions. 10 C.F.R. § 2.714.

Applicant's brief, filed April 3, 1986, contained no suggestion that the Commission had committed any errors in the March 20 order. On April 24, 1986, the Commission issued an order in which it found that the Licensing Board had incorrectly applied the five-factor test, and it dismissed the Intervenor's quality assurance contention. CLI-86-8, 23 NRC 241. We also ruled that the contention, if resubmitted, would again have to be dismissed. At that time, we thought that we had finally put these issues to rest.

On May 5, 1986, however, we received from the Applicant what it termed a "motion for reformation" of the March 20 order, accompanied by a photocopy of that order with some 40% of the text marked out and a variety of handwritten insertions. Whereas the March 20 order had directed criticisms at the Licensing Board, Intervenor, Applicant, and, to a lesser extent, the NRC Staff, the Commission was now asked to delete just those portions of the order in which the Applicant was criticized. The Applicant explained that those criticisms might tend to harm it in future proceedings before the Illinois Commerce Commission in which the prudence of the Applicant's actions would be at issue.

In reality if not in name, the Applicant's "motion for reformation" is a motion for reconsideration. As the Intervenor's well-reasoned comments point out, it

asks not for mere word changes, but for the elimination of an essential element of the March 20 order: the Commission's rationale for denying the Applicant's petition for review of ALAB-817. Such motions for reconsideration are expressly barred by the Commission's regulations. 10 C.F.R. § 2.786(b)(7).

Our analysis could end there, with the legal judgment that the Applicant's petition contravenes the Commission's rules. We go on to address the merits, however, for two reasons. First, if the Commission has committed a serious injustice in an adjudicatory order, it should be willing to consider rectifying that injustice, even if an occasional exemption from its rules is required. Second, it appears to us that the Applicant has learned nothing from our previous observations and admonitions in this proceeding. Accordingly, we will retread this ground once more — we trust, for the last time.

The March 20 order leveled two principal criticisms against the Applicant: first, its failure to raise with the Appeal Board the issue of the Licensing Board's misapplication of the five-factor test; and second, its failure to alert the Appeal Board to the possibility that litigation of quality assurance might delay completion of the plant. With regard to the first, Applicant has never satisfactorily explained why, in addition to its other claims of error on the part of the Licensing Board, it did not also mention the misapplication of the five-factor test. With regard to the second, it appears to us that the Applicant was either surprisingly reticent in failing to mention the possibility of delay to the Appeal Board, or surprisingly tardy in arriving at the realization that such delay was a possibility. We must remind the Applicant that it was the Applicant's own decision to inform the Appeal Board explicitly that it was not seeking review of the Licensing Board's application of the five-factor test, and to argue to the Appeal Board that interlocutory review of Licensing Board decisions was appropriate even "in circumstances which demonstrated not the potential of irreparable harm to the movant or pervasive effect on the proceeding, but the need to provide guidance to licensing boards on the discharge of their duties." Motion for Directed Certification at 7.

We thus see no reason to withdraw the rationale of the March 20 order, or to adopt the marked-up revision of the order provided to us by the Applicant.¹

One final note is appropriate regarding Applicant's claim that Commission relief is necessary to prevent adverse action by the Illinois Commerce Commission in prudency hearings. The Commission is not a party to those proceedings. The Commission's job as a regulator is to "call them as we see them." The Com-

¹With respect to one minor factual error in the March 20 order, Applicant is correct: the affidavit attached to Applicant's September 23, 1985 filing with the Commission did include an estimate of the delay in plant construction likely to result from litigation of quality assurance issues. This statement was, however, in no way critical to the result reached.

mission has no intention of trimming its views of the law or the facts to help or hinder one party or another in proceedings before state regulatory bodies. The suggestion that we should or would do so betrays a deep and troubling misconception by the Applicant of the role of this Commission.

It is, of course, the Applicant's decision whether to expend its resources on filings such as the one before us; as we have said, it is not our role to adjudicate the prudence of such expenditures. But we wish to make crystal clear that the Commission intends to devote no more of its own resources to this issue, and that, accordingly, no further filings on this matter will be entertained.

Commissioners Asselstine and Carr did not participate in this decision.

The "Motion for Reformation" is DENIED. It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 6th day of November 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket Nos. 50-440-OL
50-441-OL

CLEVELAND ELECTRIC ILLUMINATING
COMPANY, *et al.*
(Perry Nuclear Power Plant,
Units 1 and 2)

November 6, 1986

The Commission authorizes the issuance of a full-power license for the Perry Unit 1 nuclear facility, based on (1) the results of the formal adjudicatory proceeding which resolved contested matters relating to license issuance; and (2) the conclusion that various uncontested issues considered outside of the formal proceeding have been resolved in favor of the plant's operation.

NRC: IMMEDIATE EFFECTIVENESS REVIEW

At the conclusion of an operating license proceeding, board decisions in favor of a plant's operation become effective without the Commission conducting an "immediate effectiveness" review under 10 C.F.R. § 2.764 and without the Commission issuing any orders regarding those decisions.

OPERATING LICENSE: RESPONSIBILITY OF NRC STAFF

As a matter of policy the NRC Staff does not issue full-power licenses without Commission approval on uncontested as well as contested issues. *See* 46 Fed. Reg. 47,906 (Sept. 30, 1981).

OPERATING LICENSE: EMERGENCY PREPAREDNESS

In order for an operating license to issue, the Commission's regulations require that there be "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." 10 C.F.R. § 50.47(a).

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

The Commission's standards for reopening a closed proceeding set a high, although not insuperable, barrier to reopening. This policy is fully consistent with the approach taken by the Supreme Court and the Courts of Appeals that favors finality in administrative proceedings. *See, e.g., Bowman Transportation, Inc. v. Arkansas-Best Freight Systems, Inc.*, 419 U.S. 281, 296 (1974); *Interstate Commerce Commission v. Jersey City*, 322 U.S. 503, 514-15 (1944); *Oystershell Alliance v. NRC*, 800 F.2d 1201 (D.C. Cir. 1986).

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

The Commission's policy on reopening closed records recognizes that once the administrative record has closed, NRC resources should not be diverted from conducting relevant safety studies into preparation for reopened hearings unless there has been a strong showing that reopening is justified.

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

In accord with its policy on reopening, the Commission has on several occasions stepped into adjudicatory proceedings before its subordinate boards to correct, *sua sponte*, procedural errors involving the submission of new contentions. *See, e.g., Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), unpublished order of March 20, 1986, and CLI-86-8, 23 NRC 241 (1986); *United States Energy Research and Development Administration* (Clinch River Breeder Reactor Plant), CLI-76-13, 4 NRC 67 (1976).

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

When the Appeal Board finds itself unable to grant a motion to reopen on the basis of the pleadings, it should deny the motion rather than order an exploratory hearing that would further expend the resources of the NRC Staff on hearings rather than on technical safety study and reviews.

EMERGENCY PLANNING: FEMA VIEWS (NEED FOR LICENSING DECISION)

Commission regulations provide that the NRC will base its findings on offsite preparedness on a review of FEMA's finding[s] and determinations. 10 C.F.R. § 50.47(a)(2).

OPERATING LICENSE: EMERGENCY PREPAREDNESS

At issue in a licensing decision is not whether continued improvements in an emergency plan are a useful goal, but whether there is reasonable assurance that adequate protective steps can and will be taken in the event of a radiological emergency. *See* 10 C.F.R. § 50.47(a).

OPERATING LICENSE: EMERGENCY PREPAREDNESS

Where there is reasonable assurance that adequate protective measures can be taken in the event of a radiological emergency, it is neither necessary nor appropriate to postpone the issuance of an operating license on the basis of preliminary state concerns that are being considered outside of a concluded formal adjudicatory proceeding. Without a detailed technical and factual basis, the concerns cannot be satisfactorily evaluated; thus, the Commission is unwilling to delay license issuance.

OPERATING LICENSE: CRITERIA (SEISMIC DESIGN)

The Commission finds it necessary and appropriate to continue to rely on the "tectonic province" approach with regard to a plant's seismic design, where an earthquake has occurred in the vicinity of a plant that is located in a region of the country with no identified "capable faults" on which earthquake predictions can be based and where it is unlikely that the fault that caused the earthquake can be identified.

TECHNICAL ISSUES DISCUSSED

Safe Shutdown Earthquake
Seismic Design Criteria
Response Spectrum
High-Frequency Accelerations.

MEMORANDUM AND ORDER

The Commission in today's decision authorizes the NRC Staff to issue a full-power license for the Perry Unit 1 nuclear facility ("Perry-1").¹ This decision is based on the results of the formal adjudicatory proceeding regarding whether the Perry nuclear facility should receive an operating license, and on a review of uncontested matters.²

The formal adjudicatory proceeding regarding whether the Perry nuclear facility should receive an operating license has now been concluded. Accordingly, the Board decisions in favor of operation become effective without the Commission's conducting an "immediate effectiveness" review under 10 C.F.R. § 2.764, and the Commission need not issue any order regarding those decisions. However, as a matter of Commission policy the NRC Staff does not issue full-power licenses without Commission approval on uncontested as well as contested issues. *See* 46 Fed. Reg. 47,906 (Sept. 30, 1981). This Memorandum explains the Commission's decision to allow the licensing of Perry to proceed. As explained below, the two most significant areas of concern raised outside of the adjudication concern seismic and emergency planning issues. Since concerns about those areas were also raised within the adjudication, this Memorandum addresses the specific issues raised in these areas both within and outside of the formal adjudication.

I. THE ADJUDICATORY PROCEEDING

The adjudicatory proceeding concerning whether the Perry nuclear facility should receive an operating license commenced in 1981. Ohio Citizens for Re-

¹The NRC ordinarily does not consider issuance of a license until a plant is ready to operate. Perry Unit 2 is not ready to operate. Therefore today's decision, insofar as it addresses actual license issuance, is limited to Perry-1.

²The Court of Appeals for the Sixth Circuit on September 4, 1986, stayed the Commission from taking "any possible vote" on operation of Perry-1. The Court on October 14, 1986, lifted that stay. *Ohio Citizens for Responsible Energy, Inc. v. NRC*, No. 86-3355.

sponsible Energy, the Sunflower Alliance, *et al.*, and a third intervenor (who later withdrew) participated in the adjudication, which covered a broad range of issues, including quality assurance, diesel generator reliability, hydrogen control, and emergency planning. The Licensing Board resolved the quality assurance contention in favor of applicants Cleveland Electric Illuminating Co., *et al.* ("CEI" or "Applicants") in a partial initial decision issued in 1983. The Board found that "[t]he uncontradicted evidence is that applicant's quality assurance program has provided adequate overview and control . . . and . . . has prevented, and will continue to prevent, unsafe conditions at the plant." LBP-83-77, 18 NRC 1365, 1396 (1983). That decision was upheld by the Appeal Board. ALAB-802, 21 NRC 490 (1985).

The Licensing Board's second partial initial decision resolved the other issues in Applicants' favor. The Board found that Applicants had met their burden of proof on each issue, subject to seven conditions, and that "there is reasonable assurance that the Perry Nuclear Power Plant . . . can be operated without endangering the health and safety of the public." LBP-85-35, 22 NRC 514, 588 (1985). That decision was also upheld by the Appeal Board. ALAB-841, 24 NRC 64 (1986), *reconsideration denied*, ALAB-844, 24 NRC 216 (1986). The time for Commission review of that decision expired on September 29, 1986.

The Commission's decision not to review the Appeal Board's decision represents a judgment that that decision was legally and factually sound. It means that the Appeal Board's findings constitute final agency action on the issues addressed in the adjudication. In addition, concerns were raised about certain issues that were not part of the adjudication: seismic issues related to the January 1986 Ohio earthquake and emergency planning matters raised by Governor Celeste of Ohio. To put those issues in their proper context, we shall first discuss the handling of seismic and adjudicatory issues in the adjudication.

A. Emergency Planning Issues in the Adjudicatory Proceeding

In order for an operating license to issue, the Commission's regulations require that there be "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." 10 C.F.R. § 50.47(a). Several contentions regarding the adequacy of the Perry emergency plan were litigated before the Licensing Board and resolved favorably to the Applicants, subject to certain precertification conditions. *See* LBP-85-35, *supra*, 22 NRC at 518-29. The Licensing Board found, among other things, that state and local organizations had reviewed evacuation time estimates and that the interests of state and local governments had been given proper consideration. The Board found that adequate medical resources were available to cope with a radiological emergency and that arrangements for care of contaminated individuals met NRC requirements. The Board also concluded that planning deficiencies previously

identified in an interim report by the Federal Emergency Management Agency ("FEMA") had been remedied or were in the process of being corrected, and that FEMA in a November 1984 full-participation exercise had found no deficiencies affecting public health and safety. In summation, the Board held that the Applicants had met their burden of proof on the emergency planning allegations, and dismissed the contentions that the plans were inadequate. *Id.* at 529. The Appeal Board in upholding this decision pointed out that the intervenor advancing the emergency planning contentions had made no attempt to show error in the Licensing Board's conclusions. ALAB-841, 24 NRC 64 (1986), *reconsideration denied*, ALAB-844, 24 NRC 216 (1986).

B. Seismic Issues in the Adjudicatory Proceeding

In the operating license proceeding, the record of which closed in 1985, seismic issues were not raised and therefore were not addressed by the Atomic Safety and Licensing Board. On January 31, 1986, however, an earthquake of magnitude 5.0 occurred approximately 10 miles south of the Perry plant. Three days later, intervenor Ohio Citizens for Responsible Energy ("OCRE") filed a motion with the Appeal Board, which at that time had jurisdiction over the proceeding, asking that the record be reopened to consider its claim that the plant's design was inadequate. In support, OCRE attached a newspaper article indicating that the earthquake had caused vibratory ground motion at the facility of 0.19 to 0.25g, in contrast to the 0.15g nominal peak acceleration for the design spectrum of the Safe Shutdown Earthquake ("SSE") for Perry. Applicants and the NRC Staff opposed reopening with voluminous technical filings that were never disputed by OCRE.

The history of OCRE's motion to reopen has been recounted elsewhere. *See* CLI-86-7, 23 NRC 233 (1986). In brief, the Appeal Board, finding itself unable to determine whether the motion should be granted, scheduled an exploratory hearing to aid its determination. The Commission reversed the Appeal Board and denied the motion to reopen. The Commission held that, as a procedural matter, if the Appeal Board could not grant the motion on the basis of the pleadings, it had to deny the motion. The Commission also noted the lack of safety significance of the earthquake insofar as it affected or had the potential to affect the Perry plant. Indeed, this point was conceded by OCRE in its reply papers. *See id.* at 235.

Simply by noting that an earthquake has occurred which exceeded certain high-frequency ground motions of the Perry SSE design spectrum does not make a *per se* showing of safety significance sufficient to warrant reopening the record. Given the sound policy reasons for avoiding reopening in the absence

of a strong threshold showing,³ there is a need for some proof that the high-frequency exceedances were of a range and magnitude important for safety at Perry, or that they held significant safety implications regarding seismicity in the vicinity of the plant. But the movant offered little beyond speculation on either of these necessary propositions; most importantly it offered no expert testimony that would have supported its position on such critical technical questions. On the other hand, the NRC Staff and the Applicants provided detailed technical material to support their position that these technical questions did not raise significant safety concerns and that reopening was not justified. Under these circumstances, there was no need or occasion for further inquiry into the merits of the reopening motion. Consistent with the Commission's *Waterford* doctrine, *Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), CLI-86-1, 23 NRC 1 (1986), we held that OCRE's motion to reopen should have been denied. CLI-86-7, *supra*, 23 NRC at 235.

That the Commission denied the motion to reopen did not mean that the seismic concerns would not receive further study. It meant only that the Commission's standards for reopening had not been met, and that the issue would be considered outside of the formal adjudication as an uncontested issue. As explained below, the further studies that have been conducted confirm the Commission's judgment that the earthquake issue did not warrant a reopening of the adjudicatory record.

II. UNCONTESTED ISSUES

As a matter separate from the formal adjudication, the Commission held a public meeting on September 5, 1986, at which it heard from the Applicants, the State of Ohio, OCRE, FEMA, and the NRC Staff. Two issues raised at

³The Commission recognizes that its standards for reopening and the way that they are to be applied set a high, although not insuperable, barrier to reopening a closed proceeding. This policy is fully consistent with the approach taken by the United States Supreme Court and the Courts of Appeals that favors finality in administrative proceedings. See, e.g., *Bowman Transportation, Inc. v. Arkansas-Best Freight Systems, Inc.*, 419 U.S. 281, 296 (1974); *Interstate Commerce Commission v. Jersey City*, 322 U.S. 503, 514-15 (1944); *Oystershell Alliance v. NRC*, 800 F.2d 1201 (D.C. Cir. 1986). The policy recognizes that once the administrative record has closed, NRC resources should not be diverted from conducting relevant safety studies into preparation for reopened hearings unless there has been a strong showing that reopening is justified. In accordance with this policy, the Commission has on several occasions stepped into adjudicatory proceedings before its subordinate boards to correct, *sua sponte*, procedural errors involving the admission of new contentions. See, e.g., *Commonwealth Edison Co.* (Braidwood Nuclear Power Station, Units 1 and 2), unpublished order of March 20, 1986, and CLI-86-8, 23 NRC 241 (1986); *United States Energy Research and Development Administration* (Clinch River Breeder Reactor Plant), CLI-76-13, 4 NRC 67 (1976). Thus, in recognition of this policy, when the Appeal Board found itself unable to grant the motion on the basis of the pleadings, it should have denied the motion rather than order an exploratory hearing that would further expend the resources of the NRC Staff on hearings rather than on technical safety study and reviews.

that meeting warrant discussion: (1) Governor Celeste's concerns regarding emergency planning; and (2) OCRE's seismic concerns resulting from the January 31, 1986 earthquake near Perry. We will address each in turn.

A. Emergency Planning Issues Outside the Adjudication

1. Background

On August 15, 1986, long after the adjudicatory record had closed, Governor Celeste advised the Commission that he had "withdraw[n] [his] support for evacuation plans" for Perry. Governor Celeste stated that he had formed a team to review the evacuation plans in light of the accident at Chernobyl and the earthquake near Perry. He requested that "the NRC . . . withhold the license for full power operation . . . until [the] review is satisfactorily completed." Governor Celeste had previously indicated his support of the plans in an "Implementing Directive" issued on March 24, 1986.

Representatives for the Governor's Office addressed the Commission at the September 5 meeting. They requested that the Commission not issue a full-power license until the Emergency Evacuation Review Team (EERT), formed by the Governor, had time to meet with public officials, CEI, concerned citizens, and experts to discuss all the implications that have been raised regarding the evacuation plan. They felt it would be prudent to reexamine the emergency plan to determine what, if any, improvements should be made to it. To support this request, they cited concerns about the accident at Chernobyl and about details of plan implementation, such as an asserted lack of training and proper equipment and a lack of communication regarding implementation of the plan, which had been raised before the EERT at a public meeting on September 4, 1986.

While the Governor's representatives stated that the State and the Governor would carry out their full responsibility under the state constitution to protect public health and safety, they felt, because of their concerns about the plan, that this responsibility might include taking steps inconsistent with the existing plan. They stated that they would implement those elements of the plan that they felt would best protect Ohio citizens.

A representative from FEMA also spoke at the September 5 Commission meeting. He responded to the comments of the Governor's representatives as follows. With regard to the comment that to protect public health and safety the State might take acts inconsistent with the existing plan, he stated that emergency planning contemplates that protective actions will be adjusted in an actual emergency to meet the particular situation. With regard to the individual concerns raised by the Governor's representatives, he stated that those types of concerns are not unusual and are often due to a turnover in personnel and the need to continue updating and maintaining training capabilities. The FEMA

representative stated that FEMA had reviewed the Perry plans and two exercises that had been held at the Perry site. He advised the Commission that FEMA had no grounds to change its finding that there was reasonable assurance that adequate protective measures can and will be taken at the Perry site in the event of a radiological emergency.

On October 29, 1986, the State of Ohio submitted numerous preliminary findings by the EERT.⁴ These preliminary findings included concerns about nuclear accident scenarios, the geographical scope of emergency planning, notification of governmental authorities and the public, capability of area hospitals, and evacuations during adverse weather conditions. The State requested that the Commission postpone a decision on full-power operation until it has had an opportunity to review Ohio's evaluation of the plan, and make necessary changes in the plan.

2. Analysis

The status of emergency preparedness at Perry has been adjudicated and found adequate. The issue relevant to licensing of Perry now is whether the Governor's concerns, raised outside of the formal adjudication, need further resolution before Perry is licensed for full-power operation.

The Commission's regulations provide that the NRC will base its findings on offsite preparedness on a review of FEMA's finding and determinations. 10 C.F.R. § 50.47(a)(2). FEMA has found reasonable assurance that adequate protective actions can be taken at Perry in the event of a radiological emergency. To date FEMA has not advised the Commission of any change in its conclusions.⁵

The Commission appreciates the Governor's desire to improve the status of emergency preparedness. In this regard, we welcome the Governor's ideas and cooperation with the Staff and the utility toward this goal. Indeed, like the State of Ohio, the NRC is itself continuing to study the implications of the Chernobyl accident on emergency planning, as well as other matters, and is always eager to improve existing emergency planning. However, the issue relevant to licensing of Perry is not whether continued improvements are a useful goal, but whether

⁴These preliminary findings were contained in a "Second Supplemental Memorandum in Support of Its Motion to Intervene, and a Request That the Commission Postpone Action on Full Power Operation." The Commission on October 30, 1986, denied the State's Motion to Intervene in the formal adjudicatory proceeding. However, the Commission has considered the State's arguments as part of its review of uncontested issues. See CLI-86-20, 24 NRC 518 (1986).

⁵While FEMA is satisfied that emergency preparedness is adequate, it has noted that the exercise conducted in May 1986 did not qualify as a "full participation" exercise under NRC regulations. Therefore CEI did not comply with the NRC requirement for a full-participation exercise within 1 year before full-power license issuance and prior to operation above 5% power. 10 C.F.R. Part 50, Appendix E, §IV.F.1. The NRC granted CEI an exemption from that requirement on November 6, 1986.

there is reasonable assurance that adequate protective steps can and will be taken in the event of a radiological emergency. *See* 10 C.F.R. § 50.47(a).

On October 28, 1986, the Commission Staff and a representative from the Federal Emergency Management Agency met with the EERT and in a day-long meeting, discussed many of the concerns now raised by the State, and provided the EERT with certain of their preliminary views on these issues. The Staff also offered to meet with the EERT as soon as its findings and conclusions were formulated, in order to expedite the process. The Commission has encouraged this effort by its Staff and urges that the Staff, to the fullest extent possible, continue to provide the EERT with all necessary assistance to support the timely and successful completion of its report. However, with regard to the State's request — grounded upon the EERT's concerns — that the Commission withhold issuance of the Perry full-power license, as noted above, the Commission has been advised by the Federal Emergency Management Agency that based on its review of the Perry offsite emergency plans and the results of two exercises of those plans, it has reasonable assurance that in the event of a radiological emergency at Perry, the plans are adequate and capable of being implemented. In considering a requested exemption from the 1-year exercise requirement of § IV.F.1, Appendix E, of the Commission's regulations, the NRC was again advised by FEMA in a memorandum from Richard W. Krimm to Edward L. Jordan, dated November 4, 1986, that the "[g]ranting [of] such a request would not alter FEMA's finding that there is reasonable assurance that adequate protective measures can be taken in the event of a radiological emergency at the Perry Nuclear Power Plant." The question thus arises whether, at this late stage of the licensing review, the matters raised by the State significantly undercut these FEMA findings. The concerns expressed by the State come to us as summary statements of legal counsel for the State which reflect only preliminary findings from the State's ongoing EERT review. Before these concerns can be satisfactorily evaluated there needs to be some detailed technical and factual support for them, especially since some of them seem counter to previous detailed FEMA findings and findings in the formal adjudicatory proceeding. Without a detailed technical and factual basis, we are unwilling to delay license issuance. Accordingly, the Commission does not believe that it is either necessary or appropriate to postpone the issuance of the Perry license pending the completion of the EERT report. In addition, since the Perry facility will not be prepared to go above 5% of rated power until late November, and the plant will not likely achieve appreciable power levels for yet another 30 days, the Staff should have an opportunity to consider the EERT findings prior to the facility achieving full power; we are advised that the EERT's report is now scheduled to be issued sometime in middle or late December. The NRC Staff will review the report, and a copy of the report will

also be promptly transmitted to FEMA for consideration in conjunction with its ongoing 44 C.F.R. Part 350 review of the Ohio emergency plans.

B. Seismic Issues Outside the Adjudicatory Proceeding

1. Regulatory Background

The Commission's regulations provide reasonable assurance that nuclear power plants are built to withstand the effects of earthquakes. Each plant is designed to have the capacity to shut down safely following the Safe Shutdown Earthquake (SSE), which is based upon an evaluation of the regional and local geology and seismology and specific characteristics of local subsurface material. There are several approaches under the Commission's regulations for determining the SSE. The approach to be followed depends on whether the nuclear site is in an area where the seismological features likely to cause earthquakes can be specifically located and identified.

For plants located in areas where earthquakes can generally be associated with specific geological structures, typically in the western United States, the plants are designed to withstand the maximum vibratory ground motion at the site from an earthquake whose source is an identified fault or geological structure. Under this process, when a fault that has been active in the past is located and identified, it is labelled a "capable fault," and evaluation of the earthquake potential is based on the fault's actual characteristics.⁶

In the eastern United States, however, the specific geological cause of earthquakes frequently cannot be determined because surface geology bears little relationship to the cause of earthquakes and there is a lack of consensus as to the mechanism that causes earthquakes in the eastern United States. In order to make quantitative judgments about seismic design in these areas, the concept of "tectonic province" was developed.⁷ Under this approach, the SSE is determined by assuming that the largest historical earthquake that occurred anywhere in the tectonic province could occur in the vicinity of the plant site. This consideration of the largest historical earthquake over a relatively large area having common

⁶ Specifically, a capable fault is defined as a fault which has exhibited one or more of the following characteristics:

(1) Movement at or near the ground surface at least once within the past 35,000 years or movement of a recurring nature within the past 500,000 years.

(2) Macro-seismicity instrumentally determined with records of sufficient precision to demonstrate a direct relationship with the fault.

(3) A structural relationship to a capable fault according to characteristics (1) or (2) of this paragraph such that movement on one could be reasonably expected to be accompanied by movement on the other.

10 C.F.R. Part 100, Appendix A, § III(g).

⁷ A "tectonic province" is defined as "a region of the North American continent characterized by a relative consistency of the geologic structural features contained therein." 10 C.F.R. Part 100, Appendix A, § III(h).

geological characteristics is intended to take account of geological structures as yet undetected which might cause earthquakes in the vicinity of a nuclear power plant.

The Perry plant was designed under the "tectonic province" approach. Perry falls within the central stable region tectonic province, which extends from the Appalachians to the Rocky Mountains. Since there were no "capable faults" near Perry, the plant was designed to withstand the vibratory ground motions from the largest historical earthquake from unidentified faults in this relevant tectonic province, i.e., the central stable region. That earthquake was the 1937 Anna, Ohio earthquake of maximum Modified Mercalli intensity VII-VIII and estimated magnitude 5.0-5.3. During the operating license review, the Staff found the proposed SSE acceptable when compared to a set of recordings from earthquakes with magnitudes of 5.3 ± 0.5 .

2. OCRE's September 5 Seismic Concerns

At the September 5, 1986 Commission meeting, OCRE criticized NRC regulations as allegedly containing a "Catch-22" — no further research need be conducted unless there is a capable fault, but the capable fault will not be found without the research. OCRE maintained that the January 31, 1986 earthquake must have been caused by a fault, and clearly a fault that has caused an earthquake is a "capable fault" that can cause more earthquakes. OCRE argued that a small eastern fault can cause substantial earthquakes, and that the inferred fault rupture aligns with the Akron magnetic boundary. Therefore, OCRE argued, further study should be undertaken to determine what size earthquake to expect from this as yet undiscovered fault.⁸

The NRC Staff in response to OCRE's comments explained that the earthquakes in the eastern United States generally are caused by faults, but the fault motion occurs at such depths that the geological features cannot be identified. Since the specific faults cannot be actually located, there are no identifiable "capable faults" as defined by the Commission's regulations, even though there are unidentified faults that may be capable of causing earthquakes. Staff also explained that the magnitude 5.3 earthquake design for Perry is the largest historical earthquake in the central stable region tectonic province, which extends from the Appalachians to the Rocky Mountains. Staff explained that consideration of the largest earthquake, not associated with geologic structures, has ensured

⁸ OCRE also argued that there are faults intersecting the intake and discharge tunnels under Lake Erie, and that they should be inspected for evidence of movement or damage from the earthquake. The Commission accepts the Staff's explanation that the tunnel faults are not properly oriented so as to cause earthquakes in the present stress regime. The 1986 earthquake substantiated this assumption.

consideration of what may be extended structures close to plant sites. Staff also stated that the existence of the Akron magnetic boundary does not necessarily imply the existence of a fault.

Applicants stated that the results of its surface and subsurface geological field studies, gravity, aeromagnetic investigations, and historical seismic studies show none of the characteristics that would be attributed to a capable fault, as defined in 10 C.F.R. Part 100, Appendix A. Applicants stated that this conclusion is shared by the NRC and the USGS. Finally, Applicants maintained that the January earthquake was consistent with the geological, geophysical, and seismological characteristics of the tectonic province on which the Perry design is based, and that the original selection of the Perry SSE, based on a tectonic province approach, still remains valid.

3. Analysis

As part of the pleadings filed in opposition to the motion to reopen, the NRC Staff provided a supplemental safety evaluation report discussing the Staff's findings up to that time regarding the January 31, 1986 earthquake. NUREG-0887, Supp. No. 9 (March 1986) ("SSER-9"). With regard to the high-frequency exceedances, the report noted the "vast amount of literature which documents the low-damage potential of earthquakes of short duration and high frequencies." *Id.* at 3-3. Further studies (after the Commission denied the motion to reopen) have been conducted. Those studies support the initial conclusion reached by the Staff in opposing the motion to reopen, i.e., the earthquake did not have safety significance for Perry. *See, e.g.*, NUREG-0887, Supp. No. 10 (September 1986), where the NRC Staff concluded that the seismic design for Perry remained acceptable and unaffected by the January earthquake.⁹

OCRE's primary argument seems to be that with enough research the fault that caused the earthquake can be identified. Then the Commission's regulations dealing with "capable faults" would be applicable, and predictions could be based on the actual characteristics of that fault.

Based upon experiences in the eastern United States, it is unlikely that the fault that caused the January 31 earthquake can be identified, in spite of the significant efforts that were made by the utility. The Commission agrees with OCRE that a fault caused the earthquake, just as faults cause the other earth-

⁹ The Commission at the September 5 meeting also heard from Dr. W. Reed Johnson, a technical expert who was on the Appeal Board panel that had originally considered OCRE's motion to reopen. Dr. Johnson stated that he was now convinced that the safety-related equipment at Perry would function even in the event of an earthquake significantly larger than the Ohio 1986 earthquake, but having the same unusual frequency characteristics that earthquake displayed.

quakes in the eastern United States. But predictions cannot be based on the characteristics of those faults, simply because the faults cannot be identified and their characteristics defined. Accordingly, it remains necessary and appropriate to rely on the tectonic province approach for determining seismicity at the Perry site. No significant reason has been given to show that the Commission should depart from its regulatory scheme, either as a general matter or in this specific case. The Commission continues to believe that the tectonic province approach is both reasonable and conservative.

Another question arises in this case from the fact that the SSE design spectrum for ground motion for the Perry plant was exceeded for a very narrow range of high frequencies during the January 31 earthquake. The Perry plant, like many other nuclear power plants, uses the design spectrum described in NRC Regulatory Guide 1.60. *See* SSER-9 at 2-2. Consistent with § VI(a) of 10 C.F.R. Part 100, Appendix A, the Regulatory Guide 1.60 response spectra are smoothed design spectra that were developed based on the mean plus one standard deviation, i.e., the 84th percentile,¹⁰ of acceleration time history information from a large number of earthquake events of different magnitudes. *See, e.g., Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-83-57, 18 NRC 445, 510 (1983). This acceleration time history information is generally from large, relatively distant western earthquakes. The Regulatory Guide 1.60 spectral shape is widely used for sites throughout the United States. *See id.* at 507.

Data recorded near several recent eastern earthquakes, including the 1986 Ohio earthquake, have suggested a larger proportion of high-frequency energy levels than reflected in the shape characteristic of Regulatory Guide 1.60.¹¹ As noted above, at Perry some of the earthquake motions recorded from the January 1986 earthquake exceeded the Regulatory Guide 1.60-based Perry design spectrum for a very narrow range at the high-frequency end of the spectrum (above about 15 Hz). Nonetheless, at the intermediate and low frequencies the Perry design spectrum is very conservative with respect to the 1986 recorded earthquake motions.

It has been general Staff practice, in a number of cases over many years, that the "high-frequency peak accelerations have not been used and should not be used in scaling and applying the Reg. Guide 1.60 design spectra because they are usually of short duration and little energy and are not representative of spectral response at lower, more significant frequencies." SSER-9 at 2-3. In this case,

¹⁰ Intuitively, it would not be unreasonable to expect exceedances of a Regulatory Guide 1.60-based design response spectrum since the spectrum is derived from the 84th percentile of the data, that is, some 16% of the data would be expected to lie above the smoothed spectrum.

¹¹ The Staff is considering the generic implications raised by the high-frequency ground motion at these recent earthquakes.

the NRC Staff has verified that the design-basis SSE, without modification of the spectrum, in fact results in a design with ample seismic resistance capacity over the entire frequency range of interest, even at the 20-Hz frequency.

Moreover, for Perry, as in other cases in which site-specific data exceeded the design-basis spectrum at high frequencies, the NRC Staff and its consultants carefully reviewed the records of the January 1986 earthquake to ensure that the Perry seismic design, based on the Regulatory Guide 1.60 spectrum, could accommodate the 1986 earthquake with adequate seismic margin, even though the design spectrum was exceeded at about 20 Hz. *See* SSER-9 § 3. The Staff concluded that the 1986 Ohio earthquake represents a negligible effect on the future safe operation of the Perry plant. *See* SSER-9 at 3-4. The Staff also conducted several walkdown inspections and concluded that the earthquake did not have any significance from an engineering point of view on the equipment in the Perry plant. *See* SSER-9 at 3-11. Further, the Staff review of the Applicants' evaluations concluded that "the Ohio earthquake of 1986 is judged to have had an insignificant effect on the Perry plant structures," SSER-10 at 3-4, and that "the Perry plant's seismic design has adequate safety margins to accommodate the recorded 1986 Ohio earthquake even though the design SSE response spectra were exceeded at around 20 Hz." SSER-10 at 3-8. The Staff also concluded that "if a similar earthquake of somewhat higher amplitude and longer duration should occur near the Perry site, the current equipment seismic qualification program would be adequate to ensure the equipment would not be damaged." *Id.*

The Commission is satisfied that the Perry plant seismic design has adequate safety margins to accommodate the recorded Ohio earthquake of 1986 even though the design response spectra were exceeded at around 20 Hz. Accordingly, the Commission concludes that there will be no undue risk to public health and safety from seismic events, taking into consideration both the application of the tectonic province approach and the application of the design spectrum at the Perry plant.

III. CONCLUSION

The adjudicatory proceeding to determine whether Perry-1 should be licensed to operate has been concluded in favor of full-power operation. The Commission has reviewed various issues outside of that adjudication and concluded that they too have been resolved in favor of operation. The Commission therefore authorizes the NRC Staff to issue a full-power license for Perry-1.

Commissioner Asselstine disapproves of this order. His separate views are attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 7th day of November 1986.

SEPARATE VIEWS OF COMMISSIONER ASSELSTINE

I cannot agree with the Commission's order for several reasons. First, the Commission majority reaffirms a decision it made in this proceeding earlier this year. I did not support the Commission's decision then, and I cannot support it now. "Dissenting Views of Commissioner Asselstine," CLI-86-7, 23 NRC 233, 237 (1986). Second, I believe that the Commission should have provided the State of Ohio a continuing opportunity to informally advise the Commission on emergency planning issues, and the Commission should give more than cursory consideration to the State's concerns on those issues.

1986 Ohio Earthquake

The Commission's order reaffirms its decision in CLI-86-7. In that order, the Commission interjected itself into the Appeal Board's consideration of the Intervenor's motion to reopen the Perry proceeding. The Commission should not have intervened to vacate summarily the order in which the Appeal Board set up a mini-hearing to gather additional information on what effect the 1986 Ohio earthquake had on the safety of the Perry plant. Further, the Commission should not have summarily denied the Intervenor's motion to reopen the Perry licensing proceeding. The Commission clearly should not have taken such significant and final action without first hearing from the parties on the issues presented by the motion.

The Intervenor raised what appeared on its face to be a significant issue — the fact that, in at least one respect, the 1986 Ohio earthquake exceeded the

Safe Shutdown Earthquake (SSE) for the Perry plant.¹ The Appeal Board was concerned enough about this issue to decide, even after receiving filings from the NRC Staff and the Applicants, that it should conduct a mini-hearing to gather additional information to help determine whether the Ohio earthquake presented a safety-significant issue for Perry.

The Commission concluded, however, that the Board should not be permitted to obtain additional information. Instead, the Commission decided that the Board should be limited to whatever information had been provided by the parties in the first round of pleadings. According to the Commission, if the Board could not make a determination that there was a safety-significant issue based on the initial pleadings, then the Intervenor obviously had not met its burden on the motion to reopen, and the Board should have dismissed the motion. The Commission then decided to dismiss the motion to reopen. Unfortunately, the conclusion that the Commission drew from the Board's actions is not as obvious as the Commission would have us believe. One could also assume that if the Board was concerned enough that it felt it needed additional information, then the Intervenor had raised an issue that was significant, and the Board should simply have granted the motion to reopen and decided the issue in the adjudicatory proceeding rather than by setting up a mini-hearing.

In any event, the Commission should not have intervened in this proceeding uninvited and without hearing from any party to the *Perry* proceeding. The Commission argues that its action was within its supervisory authority over the Boards.² While the Commission does have general supervisory authority over the boards, intervention in board proceedings and summary action by the Commission should be taken sparingly and only in the clearest of cases. The Commission could not justifiably conclude, either as a procedural matter or as a technical matter, that the Board's action in this case was so clearly in error that the Commission's summary action was necessary.

The Commission had tacitly approved the "mini-hearing" approach used by the Appeal Board by failing to comment or object when the Appeal Board in *Diablo Canyon* used a similar approach to decide whether a safety-significant

¹ Once again the Commission seems to attach some importance to the fact that OCRE conceded "that the high frequency exceedances of the SSE design acceleration recorded in the January 31, 1986 earthquake do not have engineering significance" and that the earthquake caused little or no damage to the plant. See p. 690 of Commission Order. This is largely irrelevant. The Intervenor had not abandoned its claim that the earthquake raised questions about the adequacy of the seismic design basis for the plant and of compliance with NRC regulations. These are the very subjects on which the Appeal Board wished to obtain additional information from the Applicants and Staff.

² It is interesting that the Commission chose to cite its *Braidwood* decision as an illustration of the exercise of its supervisory authority. (See p. 691 of Commission order.) That case, when considered together with this case, provides an excellent illustration of when the Commission chooses to exercise its authority, e.g., when it sees an opportunity to dismiss a contention from a licensing proceeding. It also illustrates the fact that the Commission is willing to apply its procedural rules strictly only to public intervenors and not to applicants or licensees.

issue was presented by a motion to reopen in that case. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-756, 18 NRC 1340 (1983). The *Waterford* case, upon which the Commission relies heavily, deals with dismissal of a motion to reopen based solely upon the fact that an OI investigation remained outstanding. It is not intuitively obvious that *Waterford* would require dismissal of a motion to reopen that raises a specific, significant safety issue and that is not based merely on the fact of the existence of an outstanding investigation. The procedural issues are, then, not as simple as the Commission's order would suggest. The technical issues raised by OCRE's motion to reopen were also fairly complex. The words of the Appeal Board best illustrate this:

Even with regard to so seemingly simple an issue as safety significance, it is difficult to make an informed judgment on the basis of preliminary written materials where, as here, the combined and complicated fields of geology, seismology, and engineering mechanics come into play.

Appeal Board Order dated March 20, 1986, at 6.

In fact, the Commission's order today contains several pages of discussion of the technical issues in an eleventh-hour attempt to justify the Commission's dismissal of the motion on technical grounds.³ In these circumstances, the Commission's summary action was not justified. Without a clearly incorrect Board decision, the Commission was not justified in intervening at all, much less in taking such final action without seeking comments from the parties.

The Commission has, in the *Waterford* and *Perry* decisions, established stringent pleading requirements which, when combined with the Commission's standards for reopening and the Commission's rules on when the Boards can raise issues *sua sponte*, make it nearly impossible for an intervenor or a Board to raise a new issue. Thus, in the future, whether a Board will be able to consider an issue in some detail will depend upon how adept a particular intervenor is at making an open-and-shut case in its initial pleading. This elevates form over substance, and makes public participation in our proceedings needlessly difficult.

Emergency Planning

The State of Ohio has raised a number of issues relating to emergency planning for the Perry plant and has asked the Commission to postpone action on a

³The Commission's attempt to bolster its decision in CLI-86-7 by citing analysis of the earthquake which has been completed since the Commission's decision cannot justify the dismissal of the motion to reopen last April. Rather, the issue is, given the information available at that time, was the Commission's action reasonable? Clearly, when one considers the concern of the Appeal Board on the earthquake issue and the complexity of both the technical and procedural issues involved, it was not.

license for Perry until the State's review of those issues is complete. The Commission's review of Ohio's concerns has been cursory at best. The Commission heard from the Governor's representatives early in September, and the Staff has met with the State. However, the Commission has refused to meet with the State again or to provide other than a terse explanation for its conclusion that Ohio's concerns do not provide a basis for holding up issuance of the Perry license.

The Commission should provide Ohio with a continuing opportunity to advise the Commission on emergency planning issues. The Commission should, at a minimum, meet once again with the Governor's representatives to discuss the State's concerns before authorizing issuance of a license. And, the Commission should consider the State's concerns in some detail before deciding whether Ohio's issues are significant enough to justify delaying issuance of a license for the plant. The Commission's order states merely that Ohio's concerns are not detailed enough, as presented in the State's recent filing, to warrant holding up license issuance. Ohio seems to be giving the issues thoughtful consideration, and the State deserves more than this back-of-the-hand treatment.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. 40-4492
(50 Fed. Reg. 46,370)

AMERICAN NUCLEAR CORPORATION
et al.

(Revision of Orders to Modify
Source Materials Licenses)

November 17, 1986

The Commission terminates a hearing concerning the imposition of ground water detection license conditions on the licenses of eleven mill owners. The Commission determines that the licensees, who together challenged the license conditions, sought to litigate generic matters already resolved in rulemaking and thus are barred from "collaterally attacking" those rules in an adjudication. The Commission therefore makes the license conditions effective.

MATERIALS LICENSE UNDER PART 70: AMENDMENT
(OPPORTUNITY FOR HEARING)

Where an identical license condition is imposed individually on all of a group of licensees, the condition is subject to individual challenge by each licensee. For this reason, each separate order modifying a mill licensee's source material license includes the opportunity to request a hearing. *See* 10 C.F.R. § 2.204.

RULES OF PRACTICE: COLLATERAL ATTACK

In the Commission's view the heading or title of a regulation is not important; what is important is what issues did the prior regulation address and resolve. By raising only those generic issues that the Commission has considered and decided in rulemaking, a licensee has presented no case other than one barred by the collateral attack rule.

NRC: CHOICE OF RULEMAKING OR ADJUDICATION

The Commission may regulate by rulemaking or adjudication. *Pacific Gas and Electric Co. v. Federal Power Commission*, 506 F.2d 33 (D.C. Cir. 1974).

RULES OF PRACTICE: COLLATERAL ATTACK

The Commission adheres to the fundamental principle of administrative law that its rules are not subject to collateral attack in adjudicatory proceedings.

DECISION

We decide today that the briefs submitted by the mill licensees failed meaningfully to address, let alone persuade us that we erred in, our tentative view that the only issues that they sought to litigate were matters already decided by Commission rulemaking and thus prohibited in an adjudicatory proceeding.

NATURE OF THE PROCEEDING

This decision culminates a proceeding begun by orders¹ applying a new license condition to the source materials licenses of eleven uranium mill owners ("millers") which are Commission licensees.² Each license condition required the licensee to implement a ground water monitoring program to ensure com-

¹ Orders were issued on July 19, 1985, by the Director of the Nuclear Regulatory Commission's Uranium Recovery Field Office, and were revised by order of November 7, 1985, with respect to the effective date. A hearing was requested on both sets of orders.

² The licensees are Atlas Minerals, Docket No. 40-3453, Source Material License No. SUA-917; Bear Creek Uranium Co., Docket No. 40-8452, Source Material License No. SUA-1310; Exxon Minerals Co., Docket No. 40-8102, Source Material License No. SUA-1139; Pathfinder Mines Corp., Docket No. 40-2259, Source Material License No. SUA-672; Pathfinder Mines Corp., Shirley Basin Mine, Docket No. 40-6622, Source Material License No. SUA-442; Plateau Resources Ltd., Docket No. 40-8698, Source Material License No. SUA-1371; Rio Algom Mining Corp., Docket No. 40-8084, Source Material License No. SUA-1119; UMETCO Minerals Corp., Gas Hills Mill, Docket No. 40-0299, Source Material License No. SUA-648; UMETCO Minerals Corp., White Mesa Mill, Docket No. 40-8681, Source Material License No. SUA-1358; Western Nuclear Inc., Docket No. 40-1162, (Continued)

pliance with 40 C.F.R. § 192.34(a)(2), a regulation promulgated by the Environmental Protection Agency (EPA) pursuant to EPA's authority under § 275 of the Atomic Energy Act. 48 Fed. Reg. 45,946 (1983). By rulemaking the Commission formally adopted the position that it was statutorily authorized to and would implement the EPA's regulation by imposing ground water detection license conditions case-by-case at least until the Commission could implement the EPA regulation by its own rulemaking with respect to ground water detection. *See* 50 Fed. Reg. 41,852, 41,853 (1985) (discussing authority pursuant to § 84 of the Atomic Energy Act).

Although each miller was separately offered a hearing on the ground water requirements imposed on its license, the millers chose to act in concert and together requested a hearing solely on three legal issues which we here set forth as we recited them in our Order of April 18, 1986 (unpublished) granting this hearing:

(1) The standards published by EPA are not "generally applicable standards" within the meaning of Section 275 of the AEA because they impose onsite and design, engineering, and management requirements that exceed EPA's jurisdiction and so NRC has no obligation to implement and enforce them.

(2) Under § 84a(1) of the AEA [Atomic Energy Act], NRC must make an independent technical evaluation of potential risks to public health and the environment and must assess the economic costs of the requirements imposed by the Orders; and

(3) NRC must adopt EPA's ground water standards through notice and comment rulemaking before enforcing such standards and until such rulemaking is completed, NRC cannot rely on Sections 81 and 161(b and c) of the AEA because NRC has not developed a record to support the standards it would adopt.

In the April 18 Order, we noted as well that the millers along with Environmental Defense Fund (EDF), which is the sole intervenor in this proceeding, were in agreement that only these three legal issues are presented by issuance of the orders and that such issues can be resolved through summary procedures.

THE COLLATERAL ATTACK ISSUE

On its own initiative, the Commission in its April 18, 1986 Order offered its tentative view that the issues raised by the millers had been resolved by the Commission in its rulemaking conforming NRC requirements to some of the standards promulgated by EPA. The final NRC rule ("conformed mill tailing reg-

Source Material License No. SUA-56; and American Nuclear Corp., Gas Hills Project, Docket No. 40-4492, Source Material License No. SUA-667.

ulations") on point was published in the *Federal Register* (50 Fed. Reg. 41,852) on October 16, 1985, a date subsequent to the millers' initial request for a hearing. In that rulemaking the same questions were raised as were presented by the millers in their hearing request. The Commission there decided those issues and incorporated its decisions in Criterion 5 of Appendix A to Part 40 of the Commission's rules. It also explicated its decisions on those issues in the preamble that was published in the *Federal Register* along with the rule. See 50 Fed. Reg. 41,852 at 42,853-55.³ In these circumstances the Commission framed a threshold issue, requiring the millers to demonstrate why consideration of the three issues presented in the hearing requests would not involve a collateral attack on the Commission's mill tailing regulations. This was necessary because, as the Commission explained, the Commission adheres to the fundamental principle of administrative law that its rules are not subject to collateral attack in adjudicatory proceedings.

The Commission was forceful and direct with respect to its view of the burden the collateral attack issue placed on the millers:

We believe that this means they must show that, contrary to our tentative view expressed above, the issues they now raise were not in fact resolved by the rulemaking.

Commission's Order of April 18, at 5.

BRIEFS OF THE PARTIES ON THE COLLATERAL ATTACK ISSUE

In response to the Commission's directive, the millers devoted one paragraph of their 15-page brief. The brevity of the response permits us to quote it here in its entirety:

In its April 18, 1986 Order, the Commission asked whether the mill licensees were mounting a collateral attack on the Commission's conformance regulations in this adjudicatory proceeding. There appears to be some confusion here. The conformance regulations referred to in the Commission's April 18 Order do not include the detection monitoring requirements challenged in this proceeding. The Commission deferred consideration of most ground water issues, including the question whether to issue generic requirements for detection monitoring. To solicit comments on ground water issues, the Commission published an Advanced Notice of Proposed Rulemaking. 49 Fed. Reg. 46425 (November 26, 1984). Similarly, the

³Moreover, as the Commission also emphasized in its April 1986 Order, on September 3, 1985, a U.S. Court of Appeals put to rest the issue whether the standards published by EPA are "generally applicable standards" within the meaning of §275 of the Atomic Energy Act" and held that they are. *American Mining Congress v. Thomas*, 772 F.2d 640 (10th Cir. 1985), cert. denied, 54 U.S.L.W. 3790 (June 2, 1986). In that case and its companion case decided the same day, *American Mining Congress v. Thomas*, 772 F.2d 617, cert. denied, 54 U.S.L.W. 3790 (June 2, 1986), the Court explicitly rejected all industry petitioners' challenges to EPA's ground water regulations. Notably, petitioners in those cases included some, while not all, of the parties to this action.

EPA active site standards do not specify detection monitoring requirements. EPA acknowledges that this is a compliance activity within NRC's jurisdiction 48 Fed. Reg. 45942 (October 7, 1983). As the mill licensees are not challenging any Commission regulations in this case, the Commission's rule against collateral attack of its regulations in adjudicatory proceedings does not apply.

Miller's Main Brief at 4-5.

In the NRC Staff's view, in which we now concur, the millers' entire brief was inappropriate in that it did not clearly address the legal issues and instead challenged the manner in which the Staff conducted its licensing activities and argued other facts.⁴ Intervenor EDF, on the other hand, discussed at length its support of the Commission's tentative view and explained the manner in which the millers were making an impermissible collateral attack on the Commission's rules. EDF Brief at 6-11. To this well-developed argument the millers chose merely to say in their reply brief that:

The mill licensees established that the Commission's rule against collateral attack does not apply because neither EPA's active site standards nor NRC's conforming regulations contain the specific detection monitoring requirements at issue here. [citing Millers' Main Brief at 4-5].

COMMISSION DECISION

Because the millers' brief did not meaningfully challenge the view that the Commission had already considered and decided the three issues that they had raised in their requests for a hearing, and because we substantially concur in EDF's analysis, we adhere to the tentative view expressed in our April 18, 1986 Order.

As the millers recognize, the Commission may regulate by rulemaking or adjudication. *Pacific Gas and Electric Co. v. Federal Power Commission*, 506 F.2d 33 (D.C. Cir. 1974). Typically, the regulatory requirements for any licensee are imposed both by regulation and by specific license condition. The regulation is of general application and is arrived at by the prescribed rulemaking process (see generally 5 U.S.C. § 553). It is subject to judicial review (5 U.S.C. § 702), and may not be collaterally attacked in individual proceedings. *Pacific Gas and Electric Co.*, 506 F.2d at 38; see also 10 C.F.R. § 2.758.⁵ A license

⁴ The millers in their reply brief maintain that they do not desire an evidentiary hearing and protest in essence that they have but argued undisputed material facts. However, their brief is replete with unsupported testimony. For egregious examples, see Brief at 12-14 and Reply Brief at 4 n.3.

⁵ Intervenor Environmental Defense Fund notes that there is some uncertainty with respect to the breadth of the Commission's bar against collateral attack on its regulations in NRC proceedings. EDF correctly urges that reasons of policy support broad application, and the millers do not challenge application of the bar in this informal proceeding, arguing rather that in the absence of a specific ground water rule they cannot be found to be attacking a Commission regulation. Accordingly, we need not resolve the issue here.

condition governs the activity of the specific licensee. It is imposed by order and, as here, is subject to adjudicatory challenge and judicial review, 42 U.S.C. § 2239. While a license condition is specific to the licensee, it is by no means unusual that identical provisions will appear in licenses of different licensees carrying on similar, if not identical, activities. However, even where the identical condition is imposed individually on all of a group of licensees, it is subject to individual challenge by each. For this reason, each separate order modifying a mill licensee's source material included the opportunity to request a hearing. *See* 10 C.F.R. § 2.204.

Thus, in an individual evidentiary hearing or one consolidated for some purposes, each licensee was able to make its individual case, if indeed it had one, why the specific ground water detection program prescribed by the Staff would not serve the purposes for which it had been intended or why some other provisions would equally well provide the level of detection needed to serve the same standards. In such a setting, millers could have forced Staff to the proof of the specific propriety of its licensing actions.⁶ And barring health and safety requirements for immediate effectiveness, only after being tested in adjudication would the licensing order have been enforceable on the licensee. To the extent that any issue was decided in a previous hearing that decision would become binding precedent. In that fashion, the Commission may regulate by order as well as by regulation.

Here, the millers chose not to seek such a hearing but chose rather to challenge the substance of the Commission's rulemaking decision⁷ that it must enforce the EPA regulation and would do so by order at least until it developed a rule. By doing so they attacked the Commission's regulations and ran afoul of the bar against such an attack. The millers appear to concede that the general legal issues that they seek to raise were indeed addressed and decided in Commission rulemaking, but argue that in this proceeding the only regulation shielded by the bar on collateral attack would be one that would have established the very ground water detection requirements being applied by the instant orders. We disagree. In our view, the heading or title of the regulation is not important; what is important

⁶ The millers misapprehend the discussion of the Court in the section of *Pacific Gas & Electric Co.* that they cite. Here indeed the agency was "prepared to support its action" and meet "its responsibility to present evidence and reasoning" (506 F.2d at 38) insofar as each miller had sought to be heard in a hearing on issues challenging the suitability of the license conditions imposed to the specific licensed activity. It was not prepared, nor need it have been, to rehash the questions of its statutory authority to apply EPA's standards and like issues decided in its rulemaking. As *itb Pacific Gas* explains, where the Commission has followed requisite procedures to adopt Commission policy of general application, as it has done in this matter, it need not retry the same issues in an adjudicatory setting.

⁷ The same rulemaking decision is under challenge in the Court of Appeals by at least a significant number of the same parties who had participated in the rulemaking and made the same arguments that they made in this proceeding. *Quivira Mining Co. v. NRC*, No. 85-2853 (10th Cir. filed Dec. 13, 1985). Moreover, their attachment for our convenience of their arguments on jurisdiction from their rulemaking comments only serves to confirm that they seek now merely to replot the same ground.

is what issues did the prior regulation address and resolve. The absence of specific ground water regulations does not offer the miller the opportunity to relitigate here those generic decisions that the Commission has made in a legal rulemaking. By raising here only those generic issues that the Commission has considered and decided in rulemaking, the millers have presented no case other than one barred by the collateral attack rule.

THE REMAINING ISSUES

While we could decide this matter solely on the basis that it brings a collateral attack on the Commission's rules, we note briefly that nothing the millers have argued with respect to the three other issues causes us to alter our views which were carefully considered in the rulemaking.⁸

CONCLUSION

In light of the foregoing, this hearing is terminated. The proposed license conditions are effective as of the date of this Order.

It is so ORDERED.

For the Commission⁹

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 17th day of November 1986.

⁸ EDF raises as a fifth issue whether given that the millers requested that their appeal proceed by summary disposition, they can now raise license-specific factual issues concerning NRC Staff's exercise of its discretion. EDF's Brief at 4. We think that our decision on this issue is apparent, that they may not. As we noted *supra*, their use of unsupported testimony in legal argument is egregious.

⁹ Commissioner Asseltine was not present when this item was affirmed. If he had been present, he would have approved it.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Gary J. Edles
Howard A. Wilber

In the Matter of

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

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

November 20, 1986

The Appeal Board denies the Massachusetts Attorney General's appeal from a Licensing Board order, LBP-86-34, 24 NRC 549 (1986), authorizing the issuance of an operating license allowing fuel loading and precriticality testing at the Seabrook facility.

OPERATING LICENSE: LOW-POWER LICENSE
(PREREQUISITE FINDINGS)

The submission of state and local radiological emergency response plans is not a precondition to grant of a license authorizing only fuel loading and precriticality testing. *See* 10 C.F.R. 50.47(d).

OPERATING LICENSE: LOW-POWER LICENSE (PREREQUISITE FINDINGS)

Section 50.57(c) acknowledges that different considerations may be relevant to an authorization for low-power as opposed to full-power operation.

REGULATIONS: INTERPRETATION (10 C.F.R. 50.47(d))

Section 50.47(d), which deals with emergency plans, expressly confines any examination of emergency preparedness in connection with a low-power license to an assessment of the applicant's onsite emergency plans.

OPERATING LICENSE: APPLICATION FOR LICENSE

An operating license application is a "living, breathing" document, subject to change at least until full-power operation is authorized. *See* 10 C.F.R. 50.30 and 50.57.

REGULATIONS: INTERPRETATION (10 C.F.R. 50.57(c))

The purpose of 10 C.F.R. 50.57(c) is to accord an applicant an opportunity to obtain a license authorizing low-power operation so it can test the facility even if issues unrelated to low-power operations have not yet been resolved.

REGULATIONS: INTERPRETATION (10 C.F.R. 50.47(d))

Section 50.47(d) gives unqualified authorization to issue a low-power license in the absence of Nuclear Regulatory Commission or Federal Emergency Management Agency approval of an offsite emergency plan as long as other prerequisites, including an adequate state of onsite emergency preparedness are met. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-83-17, 17 NRC 1032, 1034 (1983).

REGULATIONS: INTERPRETATION

Not every health and safety regulation, regardless of its purpose or terms, must be deemed fully applicable to fuel loading and to every phase of low-power operation. Each regulation must be examined to determine its application and effect for fuel loading and for each phase of low-power operation. Simple logic and common sense indicate that some regulations should, by their own terms, have no application to fuel loading or some phases of low-power operation. *Long*

Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), CLI-84-21, 20 NRC 1437, 1440 (1984).

APPEARANCES

Carol S. Sneider, Boston, Massachusetts, for Francis X. Bellotti, Attorney General of the Commonwealth of Massachusetts.

Robert A. Backus, Manchester, New Hampshire, for the Seacoast Anti-Pollution League.

Thomas G. Dignan, Jr., Boston, Massachusetts (with whom R.K. Gad, III, and Kathryn A. Selleck, Boston, Massachusetts, were on the brief), for the applicants, Public Service Company of New Hampshire, *et al.*

Robert G. Perlis for the Nuclear Regulatory Commission staff.

DECISION

Before us is the appeal of the Attorney General of the Commonwealth of Massachusetts from the Licensing Board's October 7, 1986 memorandum and order in this operating license proceeding involving the Seabrook nuclear power facility.¹ That order authorized the issuance of an operating license allowing fuel loading and precriticality testing at Seabrook. The Attorney General's appeal raises a single question: whether 10 C.F.R. 50.33(g) requires that utility applicants file a radiological emergency response plan for the entire plume exposure pathway emergency planning zone (EPZ) for the facility before any license may be issued. In this instance, it is conceded that the applicants have not submitted such a plan for the portion of the EPZ that lies within the Commonwealth of Massachusetts.

Intervenor Seacoast Anti-Pollution League (SAPL) joins in the Attorney General's appeal.² In addition to endorsing his single appellate claim, SAPL advances additional discrete arguments of its own. The applicants and the NRC

¹ See LBP-86-34, 24 NRC 549.

² We were not informed of SAPL's intentions until October 24. This was several days after our summary denial of the Attorney General's application for a stay of the effectiveness of the Licensing Board's October 7 order. To avoid delay in the disposition of the Attorney General's appeal, SAPL agreed to tender its brief by no later than October 30, and we permitted SAPL to participate in the October 31 oral argument to address the issue raised by the Attorney General. We also granted the applicants, the NRC staff and the Attorney General leave to file post-argument supplemental memoranda addressing the separate SAPL assertions. See Appeal Board Order of (Continued)

staff maintain that the challenged license was properly authorized and, thus, the October 7 Licensing Board order should be affirmed.

The Attorney General's claim requires us to examine the interplay among three provisions of the Commission's regulations. The first is 10 C.F.R. 50.57, which governs the issuance of operating licenses and was invoked by the applicants in their motion for a fuel loading and precriticality testing license. The second is 10 C.F.R. 50.33, which governs the contents of license applications and, as above noted, is invoked by the Attorney General on his appeal. The third is 10 C.F.R. 50.47, which deals with emergency plans and is relied upon by the applicants and the staff in resisting the appeal.

The prerequisites for the issuance of operating licenses are set out in 10 C.F.R. 50.57(a). As pertinent here, a license may be issued upon findings that "[c]onstruction of the facility has been substantially completed, in conformity with the construction permit and the application as amended," that "[t]he facility will operate in conformity with the application as amended," and that "[t]here is reasonable assurance . . . that the activities authorized by the operating license can be conducted without endangering the health and safety of the public. . . ."

10 C.F.R. 50.57(c) authorizes an applicant for an operating license to

make a motion . . . 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.

In ruling on such a motion, a licensing board is directed to give

due regard to the rights of the parties to the proceedings, including the right of any party to be heard to the extent that his contentions are relevant to the activity to be authorized. Prior to taking any action on such a motion which any party opposes, the presiding officer shall make findings on the matters specified in paragraph (a) of this section as to which there is a controversy, in the form of an initial decision with respect to the contested activity sought to be authorized.³

The Attorney General does not contend that, in this instance, the Licensing Board failed to make any findings that might have been required by section 50.57(a). Nor does he maintain either that the failure to submit emergency response plans prior to issuance of the license raises health or safety questions or that fuel loading or precriticality testing cannot be conducted in conformity with the application as submitted. Rather, as noted earlier, his sole assertion is that no type of license can be authorized here because the applicants failed

October 27, 1986 (unpublished); App. Tr. 75. The applicants and the staff filed memoranda on November 14 (the Attorney General filed no further papers). We will rule on SAPL's claims in a subsequent decision.

³10 C.F.R. 50.57(c).

to comply with the separate requirements of 10 C.F.R. 50.33(g) governing the contents of applications. That section provides, in pertinent part:

If the application is for an operating license for a nuclear power reactor, the applicant shall submit radiological emergency response plans of State and local governmental entities in the United States that are wholly or partially within the plume exposure pathway Emergency Planning Zone (EPZ)

In the Attorney General's view, the application filing requirements of this section are a mandatory element of the application process for any operating license, including one limited to fuel loading and precriticality testing. As such, they are additional preconditions to issuance of the requested license. SAPL agrees.

The applicants and the NRC staff argue, to the contrary, that the submission of such plans is not a precondition to grant of a license authorizing only fuel loading and precriticality testing. Among other things, they point to 10 C.F.R. 50.47(d), which provides that:

no NRC or FEMA review, findings, or determinations concerning the state of offsite emergency preparedness or the adequacy of and capability to implement State and local offsite emergency plans are required prior to issuance of an operating license authorizing only fuel loading and/or low power operations (up to 5% of the rated power). Insofar as emergency planning and preparedness requirements are concerned, a license authorizing fuel loading and/or low power operation may be issued after a finding is made by the NRC that the state of onsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. The NRC will base this finding on its assessment of the applicant's emergency plans against the pertinent standards in paragraph (b) of this section and Appendix E of this part.

We agree with the applicants and the staff. To be sure, the requirement for the filing of state and local emergency plans contained in section 50.33(g) does not distinguish between full-power licenses and licenses for operations at less than full power. But section 50.57(c) acknowledges that different considerations may be relevant to an authorization for low-power as opposed to one for full-power operation. And section 50.47(d), which deals with emergency plans, expressly confines any examination of emergency preparedness in connection with a low-power license to an assessment of the applicant's onsite emergency plans. The Attorney General argues that we must accord literal and independent effect to section 50.33(g) so that the failure to file state or local emergency plans would stand in the way of low-power operation. In our view, section 50.33(g), whether read in isolation or construed consistently with the provisions of section 50.57(c) and 50.47(d), does not support the interpretation urged by the Attorney General.

To begin with, nothing in section 50.33 establishes a timetable for submission of the component parts of an operating license application.⁴ As the applicants correctly pointed out at oral argument, an operating license application is a "living, breathing" document,⁵ subject to change at least until full-power operation is authorized. Thus, contrary to the Attorney General's argument, section 50.33(g) cannot be taken to require that all emergency planning components of an application be submitted before any operating license may be issued.

Further, no discernible public interest objective would be served by requiring the submission of state or local emergency plans as a condition of fuel loading or precriticality testing. On brief, neither the Attorney General nor SAPL points to any such objective. Indeed, at oral argument, both of them conceded that the applicants could easily remedy the perceived defect in the application simply by filing their own version of an offsite emergency plan for that portion of Massachusetts that falls within the EPZ.⁶ SAPL did assert that "the existence of a plan does provide some additional margin of safety even though it may not have been reviewed."⁷ But, given that the Commission's regulations do not require either the NRC staff or FEMA even to look at the plans when they are submitted, we cannot accept the view that a legitimate purpose behind enforcement of the section 50.33(g) requirement *at this stage* is to enhance safety.⁸ In sum, we reject the argument that the terms of section 50.33(g) require the submission of state or local emergency plans as a condition of fuel loading or precriticality testing.

Equally important, the Attorney General's construction of section 50.33(g) cannot be squared with the objectives of sections 50.57 or 50.47(d). Portions of an application (notably offsite emergency plans) are frequently tendered well after the adjudicatory proceeding on that application has begun. NRC operating license proceedings, after all, are lengthy and involve the disposition of numerous and complex safety and environmental questions. Such questions are frequently taken up at different times as particular issues become amenable

⁴ Other provisions of the regulations, notably 10 C.F.R. 50.30 and 50.57, provide that an application is subject to amendment.

⁵ App. Tr. 36, 38.

⁶ App. Tr. 16-17, 26-27.

⁷ App. Tr. 28.

⁸ The staff argued that the purpose behind section 50.33(g) can be gleaned from its administrative history. See NRC Staff Brief in Opposition to the Appeal of the Attorney General of Massachusetts from the Licensing Board's Order of October 7, 1986 (October 24, 1986) at 5-6; App. Tr. 58-59. That provision was added to the Commission's regulations as part of the package of changes adopted in the wake of the accident at Three Mile Island. In the staff's view, it was intended only to make clear that the filing of state and local emergency plans would be the applicant's responsibility and that such plans would henceforth be subject to FEMA and NRC review. The staff's analysis finds some support in the administrative history of the regulations. See, e.g., 45 Fed. Reg. 55,402, 55,403 (1980) (NRC adopts "major changes" from past practice, i.e., requirement that an applicant submit both its own emergency plan and state and local government emergency plans; NRC will review FEMA's findings as to whether state and local plans are adequate).

to litigation.⁹ The purpose of section 50.57(c) is to accord an applicant an opportunity to obtain a license authorizing low-power operation so it can test the facility even if issues unrelated to low-power operations have not yet been resolved. A reading of section 50.33(g) that would require the submission of state and local emergency plans before a low-power license can be issued would be inconsistent with that purpose.¹⁰

Further, as even the Attorney General acknowledges, section 50.47(d) specifically states that no review or approval "concerning the state of offsite emergency preparedness or the adequacy of and capability to implement State and local offsite emergency plans" is necessary before an applicant may be authorized to operate at power levels of five percent or less.¹¹ As the Commission explained when proposing to add section 50.47(d) to its regulations:

When the [emergency planning] regulation was originally drafted and finally promulgated, the question of emergency planning and preparedness licensing requirements for an operating license authorizing only fuel loading and low power operation . . . was not fully evaluated. It is apparent to the Commission that the emergency preparedness requirements for a low power license need not be as extensive as those requirements for a full power operating license. On the basis of the experience gained in emergency preparedness reviews over the last year, the Commission now concludes that evaluations of the adequacy of offsite emergency preparedness and the capability of offsite response mechanisms, as measured by the full requirements of 10 CFR 50.47(a) and (b) and Part 50, Appendix E, are not necessary prior to issuing a low power license.¹²

Although we appreciate that a distinction can be drawn between requiring FEMA or NRC approval of offsite emergency plans and simply requiring their submission, we do not believe that this is what the Commission intended. In our judgment, the Commission did not contemplate that offsite emergency planning matters — including the filing of state or local emergency plans — would stand in the way of low-power operation.¹³

⁹ See *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1044 (1983) (applicant's emergency plan may be unavailable at the beginning of a proceeding due to the hearing schedule).

¹⁰ See generally *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-83-17, 17 NRC 1032 (1983) (low-power license may be issued despite any uncertainties about offsite emergency planning). In the *Limerick* case, by way of example, a low-power license was issued on October 26, 1984 (see 49 Fed. Reg. 44,171 (1984)), although an emergency plan covering a portion of the EPZ, i.e., the State Correctional Institution at Graterford, Pennsylvania, was not filed until December 13, 1984. See *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-806, 21 NRC 1183, 1186-87 (1985).

¹¹ See generally *Shoreham*, 17 NRC at 1034 ("Section 50.47(d) gives unqualified authorization to issue a low-power license in the absence of NRC or FEMA approval of an offsite emergency plan as long as other prerequisites, including an adequate state of onsite emergency preparedness, are met").

¹² 46 Fed. Reg. 61,132 (1981). See also *id.* at 61,133 n.1 ("The NRC will review only those elements under each of the planning criteria that are essential for determining the licensee's (not State and local agencies') preparedness").

¹³ The Attorney General points to certain Commission pronouncements in its 1980 emergency planning proposal to support his claim that the Commission intended that state or local plans be submitted before issuance of any operating license, even one for low power. See Attorney General Francis X. Bellotti's Application for a Stay and Brief in Support of Appeal of Licensing Board Order Authorizing Issuance of Operating License to Conduct

(Continued)

In the *Shoreham* proceeding, the Commission observed that not every health and safety regulation

regardless of its purpose or terms, must be deemed fully applicable to fuel loading and to every phase of low-power operation . . . Each regulation must be examined to determine its application and effect for fuel loading and for each phase of low-power operation. Simple logic and common sense indicate that some regulations should, by their own terms, have no application to fuel loading or some phases of low-power operation.¹⁴

In our view, the same rationale must apply to any construction we place on Commission regulations. Because the Commission has expressly decided, both in its regulations and relevant opinions, that a low-power license may be issued without regard to the state of offsite emergency preparedness, we reject the notion that the requirement governing the filing of state emergency response plans contained in 10 C.F.R. 50.33(g) should be deemed to be a condition for issuance of a license for fuel loading or precriticality testing.

For the foregoing reasons, the appeal of the Attorney General of Massachusetts is *denied*. The affirmance or reversal of the Licensing Board's October 7, 1986 order must, however, await the disposition of the other issues raised by the Seacoast Anti-Pollution League. *See supra* note 2.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

Fuel Load and Precriticality Testing (October 16, 1986) at 4-5. The Attorney General reads the Commission's statements too broadly. Although the Commission spoke generally of a requirement for consideration of state or local plans as a condition for issuance of an operating license without distinguishing between low-power and full-power licenses, both the context of the 1980 statements and the changes brought about by the 1982 amendments make clear that it intended to confine the regulations applicable to state or local plans to full-power operations.

¹⁴ *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-84-21, 20 NRC 1437, 1440 (1984).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ivan W. Smith, Chairman
Gustave A. Linenberger, Jr.
Dr. Oscar H. Paris

In the Matter of

Docket Nos. 50-546-OL
50-547-OL
(ASLBP No. 83-487-02-OL)

PUBLIC SERVICE COMPANY
OF INDIANA, INC., and
WABASH VALLEY POWER
ASSOCIATION, INC.

(Marble Hill Nuclear Generating
Station, Units 1 and 2)

November 3, 1986

LICENSING BOARD: JURISDICTION UNDER 10 C.F.R. § 2.107(a)

Where an Atomic Safety and Licensing Board has been designated to rule on petitions for leave to intervene in a hearing on an application for a facility operating license, to issue any notice of hearing on the application, and to preside over any such hearing; and where petitions to intervene have been filed but have not been granted by the Licensing Board pending a decision on the existence of admissible contentions; and where a notice of hearing has not been issued at the time the applicant moves to terminate the operating license proceeding, a licensing board has no jurisdiction under 10 C.F.R. § 2.107(a) to set the terms on the withdrawal of the application for an operating license.

MEMORANDUM AND ORDER TERMINATING OPERATING LICENSE PROCEEDING

I. INTRODUCTION

The Public Service Company of Indiana and Wabash Valley Power Association were issued permits numbered CPPR-170 and CPPR-171 for the construction of Marble Hill Nuclear Generating Station, Units 1 and 2. They began construction and applied for an operating license for the units but have since decided not to operate. Consequently we have before us the Applicants' motion of April 4, 1985, to terminate the operating license proceeding without conditions. The motion is supported by the NRC Staff but opposed by intervention petitioners. The latter urge that the Licensing Board impose conditions that would require the utilities to restore the Marble Hill site. In the order below, we grant the motion to terminate the proceeding and, for want of jurisdiction, deny the Petitioners' requests.

II. BACKGROUND

An Atomic Safety and Licensing Board, having completed hearings in the *Marble Hill* construction permit proceeding, authorized the issuance of construction permits on April 4, 1978. LBP-78-12, 7 NRC 573 (1978). The permits issued that day. In accordance with the provisions of 10 C.F.R. § 2.717(a), the licensing board's jurisdiction in the construction permit phase of the proceeding terminated when its decision became the final Commission decision.

On February 24, 1983, the Applicant, Public Service Company of Indiana, filed an amendment to the licensing application in which it applied for a facility operating license for the Marble Hill units. Notice of opportunity for a hearing on the application was published on March 25, 1983. The notice provided for the traditional NRC process under 10 C.F.R. § 2.714 for the filing of intervention petitions and requests for hearing by persons whose interest may be affected by the proceeding. The notice provided also that an Atomic Safety and Licensing Board (designated by the Chairman of the Licensing Board Panel) would rule on any hearing request or intervention petition and that the Board would issue any notice of hearing or an appropriate order in the event a hearing request or intervention petition was filed. 48 Fed. Reg. 12,609 (Mar. 29, 1983).

During April 1983, timely petitions to intervene were filed by Sassafras Audubon Society of South Central Indiana, Valley Watch, Inc., and Save The Valley. The Chairman of the Licensing Board Panel designated the members of this Board to rule on petitions to intervene and requests for hearing and to preside

over any hearing in the event a hearing were ordered. 48 Fed. Reg. 19,964 (May 3, 1983).

On June 30, 1983, the Board ruled that Audubon Society and Valley Watch had failed to demonstrate standing to intervene but that they could exercise their right to file amended petitions. We also ruled that Save The Valley's petition established the standing of that organization to intervene.

On September 14, 1983, the Board noted in a memorandum that Audubon Society and Valley Watch had filed amended petitions but still had not established standing to intervene. But we deferred making a final ruling on intervention standing. We also provided for the filing of supplemental petitions with proposed contentions. Our expectation was that issues of standing and other threshold aspects of the petitions would be considered at a prehearing conference at the same time we considered the adequacy of the proposed contentions.

On October 21, 1984, Audubon Society and Valley Watch joined in filing a single set of proposed contentions, and Save The Valley submitted its proposed contentions. The Applicants and the NRC Staff responded to the proposed contentions on November 30, 1983. Our next step would have been to convene a prehearing conference to resolve the outstanding preliminary issues. But before that could be done, counsel for the Applicants informed the Board that a special task force appointed by the Governor of Indiana had recommended that construction of the Marble Hill units be cancelled. Counsel suggested that the Board defer any further action in the proceeding.¹ The matter rested in suspense until Applicants' April 4, 1985 Motion to Terminate Proceeding.

The Motion stated tersely that the Marble Hill construction permits had been surrendered to the Director of Nuclear Reactor Regulation and requested the Licensing Board to terminate the operating license proceeding. Applicants also forwarded a copy of the stabilization plan for the Marble Hill site. The NRC Staff² (as did the Board) assumed that the motion was brought under 10 C.F.R. § 2.107 (the general NRC regulation providing for the withdrawal of applications, note 8, *infra*), but the matter was again suspended at the Staff's request pending Staff's review of the Applicants' site restoration plan.

On March 26, 1986, the Staff filed its supplement to the Applicants' motion to terminate, informing the Board that it saw no significant environmental impact that would result from the termination of the proceeding. The Staff then approved

¹ Letter from Harry A. Voigt to Board Members, December 22, 1983.

² Staff Response to Applicants' Motion to Terminate Proceeding, April 24, 1985. The Staff cited *Duke Power Co.* (Perkins Nuclear Station, Units 1, 2, and 3), ALAB-668, 15 NRC 450 (1982).

a plan that would stabilize the Marble Hill site essentially as it exists since construction was halted, i.e., "typical of any abandoned large industrial facility."³

On May 30 and June 18, 1986, the Board invited the parties to file briefs on the reach of the Board's jurisdiction to impose conditions on any withdrawal of the Marble Hill construction permits.

The Applicants,⁴ NRC Staff,⁵ Audubon Society,⁶ and Save The Valley⁷ filed briefs in response to the Board's invitation.

III. DISCUSSION

Our call for briefs last May was driven by two principle concerns. First, we noted a sharp contrast in the Staff's and Applicants' approach to this proceeding compared to such cases as *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), LBP-82-29, 15 NRC 762 (1982); *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), LBP-83-10, 17 NRC 410 (1983); and *Toledo Edison Co.* (Davis-Besse Nuclear Power Station, Units 2 and 3), ALAB-652, 14 NRC 627 (1981). In this case, as noted above, the Staff is satisfied with stabilizing a large abandoned industrial site, while, in the cited proceedings, substantial site restoration agreements were approved by the adjudicating boards.

Second, we did not understand why the Applicants simply sought an end to the operating license proceeding without even a reference to 10 C.F.R. § 2.107(a), note 8, *infra*, which is the controlling NRC regulation for the withdrawal of applications. Nor could we understand why the Applicants apparently believed that they could sever their connection to the NRC simply by sending their construction permits back to the Director of Nuclear Reactor Regulation.

Now we learn from the Applicants' supplement to its motion to terminate that, in Applicants' view, neither the Board nor the NRC itself has jurisdiction over the Marble Hill construction. As we understand it, Applicants' reasoning goes this way:

(1) By its terms, § 2.107(a) applies to the withdrawal of applications. But, in the case of Marble Hill, the construction permits have already issued. The application for the Operating License (Amendment 22 in the licensing application) refers only to an operating license. Therefore

³ Environmental Review Related to Public Service of Indiana's Request to Terminate the Marble Hill Licensing Proceeding, at 2, February 20, 1986. (Attachment to the Staff's March 28, 1986 Supplement to Applicants' Motion to Terminate Proceeding.)

⁴ Applicants' July 2, 1986 Supplement to Motion to Terminate Proceeding.

⁵ NRC Staff July 21, 1986 Response to Memorandum and Order of May 30, 1986.

⁶ Sassafra Audubon Society's August 12, 1986 Response to NRC Staff Position on Marble Hill Site Restoration.

⁷ Save The Valley's August 14, 1986 Response to . . . Board Order of May 30, 1986.

§ 2.107(a) does not apply to the already-issued construction permits. For that reason this Board has no jurisdiction over them under that regulation. Supplement at 10.

(2) Furthermore, according to Applicants, neither the Board nor any other component of the NRC has jurisdiction over the construction permits under any NRC regulation because there is no regulation even covering the voluntary surrender of construction permits as such. The Commission has no authority to promulgate such a regulation — it may regulate the surrender of a licensed facility's license only.

Commercial nuclear power reactors are utilization facilities subject to the licensing requirements of § 103 of the Atomic Energy Act (1982) (42 U.S.C. § 2133). However, Marble Hill never attained the status of a utilization facility (as defined under § 11 of the Act, 42 U.S.C. § 2014(cc)) since construction never progressed far enough to permit the use of special nuclear material. Nor will it. Therefore, Applicants conclude, Marble Hill is not subject to the licensing authority of the Commission. Supplement at 6-9.

Assuming, despite our substantial doubts to the contrary, that Applicants' arguments concerning the Commission's jurisdiction are fully accurate, why would the Board not have jurisdiction to impose site conditions on the withdrawal of the *application for an operating license*? Applicants do not discuss this aspect of their motion. An answer, at first overlooked by the Board, was provided by the Staff in its July 21, 1986 response to our request for briefs. Pursuant to § 2.107(a) a presiding officer may prescribe terms for the withdrawal of an application only after the issuance of a notice of hearing.⁸

According to the scheme for hearings under § 189a(1) of the Atomic Energy Act, where a construction permit has been issued following a hearing, the Commission need not conduct a hearing on the operating license application unless requested by a party whose interest may be affected by the application. Notice of the intent to issue such a license and the opportunity for such a hearing must be published in the *Federal Register* with 30 days' notice.

Consistent with that statutory scheme the Commission, as is always the case in operating license proceedings, delegated to a licensing board (one designated by the Panel Chairman) two areas of jurisdiction. The first was to rule on requests for hearing and petitions for leave to intervene. The second was to exercise the Commission's authority to issue any notice of hearing in the event

⁸ § 2.107 Withdrawal of application.

(a) The Commission may permit an applicant to withdraw an application prior to the issuance of a notice of hearing on such terms and conditions as it may prescribe, or may, on receiving a request for withdrawal of an application, deny the application or dismiss it with prejudice. Withdrawal of an application after the issuance of a notice of hearing shall be on such terms as the presiding officer may prescribe.

a hearing is granted upon a petition or to issue any other appropriate order. 48 Fed. Reg. 12,609 (Mar. 25, 1983).

In compliance with the notice of opportunity for a hearing, and in accordance with 10 C.F.R. § 2.105(e)(2), the Chief Administrative Judge of the Atomic Safety and Licensing Board Panel (who is also the Chairman of the Panel) designated the members of this Board to rule on petitions and to issue a notice of hearing if one were warranted. At this preliminary juncture of an operating license proceeding the Board designated initially to rule on petitions is known as a "Petitions Review Board." The Chief Administrative Judge of the Panel has the continuing authority to designate presiding officers to preside over NRC adjudications. 10 C.F.R. § 2.721(a). For efficiency and continuity, the Chief Administrative Judge, usually in one order, designates the members of the Petitions Review Board as members of the Board to preside over any hearing that may be ordered pursuant to the Commission's notice of opportunity for hearing. That is precisely what the Chief Administrative Judge did in this case. 48 Fed. Reg. 19,964 (May 3, 1983).

As can be seen in the background discussion above, at the time this proceeding was suspended, no notice of hearing on the application had been issued. Standing to intervene had not been established by two of the three petitioners and the Board had not approved any issues for hearing from the lists of contentions filed by any of the petitioners. Nor is there presently any reason to issue a notice of hearing. The matter is patently moot. In view of the discontinuance of the Marble Hill project, none of the contentions advanced for litigation have any basis. Therefore, according to the express terms of § 2.107(a), this Board has no jurisdiction to set terms on the withdrawal of the application.⁹

Petitioner Save The Valley mounts an argument to the effect that the notice of the receipt of the application, notice of proposed action, and notice of opportunity for hearing (*supra*, 48 Fed. Reg. 12,608), issued under 10 C.F.R. § 2.105, was functionally the notice of hearing referred to in § 2.107(a).¹⁰ In fact, the Board's first impression, arrived at without analysis, was just that. But as we discuss above, full analysis leads to the conclusion that the regulations, statutes, and the *Federal Register* notice all anticipate a bifurcated process in operating license proceedings where first the threshold intervention issue is settled, then the notice of hearing is issued.

⁹ Counsel for Applicants avoids calling its actions a petition to "withdraw an application" under § 2.107(a). While we believe that Applicants' analysis is strained, it is immaterial to the Board. Whatever the theory, the Marble Hill units will not operate pursuant to the application. Notice of that fact is either a withdrawal of the application or a sound response to the petitions to intervene. In any event, there will be no notice of hearing issued on the application.

¹⁰ Save The Valley's Response at 2-3.

We have also taken into account petitioners' request that, on the factual merits, the Board should take jurisdiction and order some type of site restoration. We cannot entertain those requests. In the early stages of this very proceeding a decade ago, the Appeal Board cited the jurisdictional standard in NRC proceedings. As agents of the Commission, licensing boards exercise only those powers that the Commission has given them. *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170 (1976).

IV. ORDER

The Motion to Terminate the Proceeding is granted without condition.

V. APPEAL

Since the effect of this order is to wholly deny petitions for leave to intervene, the Board informs the parties that it is appealable in accordance with the provisions of 10 C.F.R. § 2.714a.

THE ATOMIC SAFETY AND
LICENSING BOARD

Oscar H. Paris
ADMINISTRATIVE JUDGE

Gustave A. Linenberger, Jr.
ADMINISTRATIVE JUDGE

Ivan W. Smith, Chairman
ADMINISTRATIVE LAW
JUDGE

Bethesda, Maryland
November 3, 1986

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before Chief Administrative Judge:

B. Paul Cotter, Jr.

In the Matter of

ASLBP No. 87-543-01 Misc.

SUFFOLK COUNTY AND
STATE OF NEW YORK
MOTION TO RESCIND
RECONSTITUTION OF BOARD
BY CHIEF ADMINISTRATIVE
JUDGE COTTER
(Shoreham Nuclear Power Station,
Unit 1

November 7, 1986

In this Memorandum and Order, the Chief Administrative Judge of the Atomic Safety and Licensing Board Panel denies Intervenor's motion to rescind the reconstitution of a Licensing Board.

ATOMIC SAFETY AND LICENSING BOARDS: RECONSTITUTION

The Chief Administrative Judge is responsible for appointing a new member to a licensing board when a sitting member becomes unavailable, whether during or after a hearing, and the term "unavailable" applies when a board member's obligations to a case conflict internally or with the member's obligations to another case.

ATOMIC SAFETY AND LICENSING BOARDS: RECONSTITUTION

The decision to reconstitute a board or create a new one in an particular case is solely a matter of agency discretion. Absent some evidence of an improper exercise of that discretion, the decision is simply not open to question.

MEMORANDUM AND ORDER

On October 22, 1986, Intervenor Suffolk County and the State of New York filed a paper titled, "Motion for Rescission of 'Notice of Reconstitution of Board' and Subsequent 'Clarification' and Motion for Expedited Consideration" (the Motion). In this Motion, Intervenor object to the Chief Administrative Judge's replacement of two Atomic Safety and Licensing Board Panel judges on a Licensing Board that is hearing one set of issues in a proceeding initiated by the Commission as part of the Shoreham proceedings and assigned NRC Docket No. 50-322-OL-5. Intervenor assert that the Chief Administrative Judge is without authority to take the action objected to, that the schedule conflicts stated as the reason for the Board's reconstitution were not explained, and that if schedule conflicts were to arise it would be a matter to be resolved between the judges and the parties. Intervenor cite no legal precedent in support of their motion and do not rely upon any affidavit.

The reconstitution of the Board objected to in the Motion pertained to one segment of the Shoreham proceedings which are presently assigned two separate docket numbers, namely 50-322-OL-5 (the "5" docket) and 50-322-OL-3 (the "3" docket). The notice of reconstitution was issued October 7, 1986, and a "Clarification" was issued on October 17, 1986.

The Clarification stated that the reason for the reconstitution was because of the multiple issues pending in the proceeding. The Clarification noted that the "5" docket concerned the emergency planning *exercise* proceeding instituted by the Commission on June 6, 1986, CLI-86-11, 23 NRC 577 (1986), while the "3" docket concerned all other issues, namely: (1) the adequacy of the *entire* emergency plan remanded by the Commission; (2) issues remanded by the Appeal Board; and (3) new motions to reopen the record on several other issues. The Clarification also noted that the two judges replaced in the "5" docket continue to serve on the larger body of issues under the "3" docket number and that one judge would serve on both dockets.

In an October 22, 1986 letter, counsel for the NRC Staff responded that the Motion was not well grounded. Staff asserts its understanding that there are three controlling concerns in subject reconstitution (namely, continuity in boards, a new board's understanding and appreciation of prior limited-appearance statements by the public, and the Commission's mandate that the exercise hearing be expedited). The Staff found those concerns satisfied.

On October 30, 1986, LILCO opposed the motion arguing that the motion was not properly filed, the matter was one committed to agency discretion, no prejudice had been shown, and that the appointments would avoid delay and resultant financial prejudice to LILCO. LILCO noted that the manner of Board

expansion preserves continuity of experience, and that the expansion was done in a manner consistent with the public interest.

On November 7, 1986, Intervenor responded to the LILCO filing renewing its earlier arguments. The only new matter was a reference to a letter written in response to a congressional inquiry. The letter noted that the areas inquired into were protected and that the reconstitution was solely an administrative decision.¹

DISCUSSION

This is at least the second time these Intervenor has filed a motion that "is anomalous and is devoid of basis or apparent precedent" in the Shoreham proceedings. See *Suffolk County and State of New York Motion for Disqualification of Chief Administrative Judge Cotter*, LBP-84-29A, 20 NRC 385, 386 (1984). Intervenor's position would prevent the Chief Administrative Judge (also designated Chairman) of the Atomic Safety and Licensing Board Panel from discharging his responsibility to assign judges so as to provide for the hearing and resolution of controversies ripe for decision. The Chief Administrative Judge is charged with appointing licensing boards to conduct hearings in the most expeditious manner consistent with due process and fundamental fairness. 10 C.F.R. §§ 1.11, 2.704, and Part 2, Appendix A, at 120 (1986). See also *State-*

¹ The letter, dated October 31, 1986, from the Chief Administrative Judge to Congressman Markey and served on the parties, stated in pertinent part:

Your letter inquires into two protected areas: (1) the exercise of my responsibility as Chief Administrative Judge in assigning judges to a particular case and (2) the mental processes and deliberations of the judges on the Shoreham Board itself. Both of these areas are fully protected from inquiry to preserve the integrity of the adjudicatory process. It would be improper for me to compromise that process at this Commission by responding to inquiries into such areas.

Nevertheless, in sympathy with your expression of deep concern, I do want to go so far as to inform you that my reconstitution of the Shoreham Board on the narrow issue of the emergency exercise was wholly an internal Panel decision made solely in carrying out my responsibility under the Administrative Procedure Act. My decision was not influenced by any other consideration. There were absolutely no communications, direct or indirect, with anyone outside this office concerning that decision or the issuance of the October 17, 1986 clarification. . . . [T]he reconstitution was a purely administrative decision made in this case (as well as many others) solely for the purpose of eliminating workload conflicts in order to avoid delay. All parties to the Shoreham proceeding are entitled to a reasonably prompt decision on their concerns at minimal expense. I note also the well-established principle that judges are fungible (at the NRC within their own expertise), a truism particularly apt at this starting point in the emergency planning exercise proceeding.

Moreover, as the public record in this case makes patently clear, it is simply *not* true that the reconstituted board will be dealing with a subject as to which the prior board had "extensive knowledge of the issues." The proceeding concerning the emergency planning exercise at Shoreham was initiated pursuant to a Commission order dated June 6, 1986. Contentions were only recently admitted by order dated October 3, 1986. No hearings have been held, and discovery has just begun. The admitted contentions will, and by law must be decided solely on the basis of evidence and testimony that has yet to be presented.

ment of Policy on Conduct of Licensing Proceedings, CLI-81-8, 13 NRC 452 (1981).

The Chief Administrative Judge is also responsible for appointing a new member to a licensing board when a sitting member becomes unavailable, *even during or after the hearing*. 10 C.F.R. § 2.704(d) (1986). *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir. 1978). The term "unavailable" applies to a variety of situations, the most frequent of which is the need to replace board members when their scheduled obligations to a case conflict either internally in a particular case or with their obligation to another case. Similarly, because of the size and complexity of NRC proceedings, the need to appoint multiple licensing boards in the same case is not uncommon. As a matter of good administrative practice, potential conflicts should be anticipated as early as possible in a proceeding to avoid having the parties waste time, effort, and financial resources.² In the instant case, the citizens of Long Island and all the parties are entitled to a decision on the merits of the controversy as soon as reasonably possible.³

Ultimately, however, the decision to reconstitute a board or create a new one in a particular case is solely a matter of agency discretion. Absent some evidence of an improper exercise of that discretion, the decision is simply not open to question. Intervenor's motion offers no evidence, not even an affidavit. In fact, there is no such evidence.

In light of the total absence of any basis for the motion, it must be denied.

² For example, in the last 2 fiscal years alone, reconstitution has been necessary in 15 instances, and 6 cases have required multiple licensing boards. Since the original Shoreham operating license board was established in February 1977, 14 of the Panel's judges have served on one or more of the case's 4 principal dockets.

³ Intervenor's Motion refers to limited-appearance statements heard by the Licensing Board before reconstitution. Such statements are transcribed and thus are available for review by new judges on a board. However, it is well established that limited-appearance statements are not evidence and can be taken into account only to the extent they may alert the licensing board and the parties to areas where evidence may need to be adduced. 10 C.F.R. § 2.715; Part 2, Appendix A, § III(b); *Iowa Electric Light & Power Co.* (Duane Arnold Energy Center), ALAB-108, 6 AEC 195, 196 n.4 (1973).

ORDER

For all the foregoing reasons, it is, this 7th day of November 1986,
ORDERED

that the Suffolk County and State of New York Motion to rescind the
reconstitution of the Shoreham Board shall be, and it hereby is, denied.

B. Paul Cotter, Jr.
CHIEF ADMINISTRATIVE
JUDGE

November 7, 1986
Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Helen F. Hoyt, Chairperson
Dr. Richard F. Cole
Dr. Jerry Harbour

In the Matter of

Docket Nos. 50-352-OL
50-353-OL

PHILADELPHIA ELECTRIC COMPANY
(Limerick Generating Station,
Units 1 and 2)

November 10, 1986

In this Supplement to the Fourth Partial Initial Decision, the Licensing Board resolves a remanded issue in favor of the Applicant, finding that arrangements in place at the State Correctional Institution at Graterford for the notification and mobilization of off-duty correctional officers in the event of a radiological emergency at the Limerick Generating Station are adequate and meet the requirements of NRC regulations.

APPEARANCES

Robert M. Radar, Esq., and Nils N. Nichols, Esq., of Conner & Wetterhahn, P.C., Washington, D.C., for Philadelphia Electric Company.

Joseph Rutberg, Esq., and Benjamin H. Vogler, Esq., Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, D.C., for the NRC Staff.

Theodore G. Otto, III, Esq., Pennsylvania Department of Corrections, Camp Hill, Pennsylvania, for the Commonwealth of Pennsylvania.

Michael Hirsch, Esq., Office of the General Counsel, Federal Emergency Management Agency, Washington, D.C., for FEMA.

Angus R. Love, Esq., Montgomery County Legal Aid Service, Norristown, Pennsylvania, for the Inmates of the State Correctional Institution at Graterford, Pennsylvania.

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SUPPLEMENT TO THE FOURTH PARTIAL INITIAL DECISION RELATING TO THE REMANDED CONTENTION REGARDING MANPOWER MOBILIZATION AT THE STATE CORRECTIONAL INSTITUTION AT GRATERFORD

I. SCOPE OF DECISION

This Supplement to the Fourth Partial Initial Decision (PID) addresses the remanded contention on manpower mobilization at the State Correctional Institution at Graterford (SCIG) in the event of the need for an evacuation because of an emergency at the Limerick Generating Station (Limerick). On the basis of the record before it, the Board, in the context of the litigation, concludes that there is reasonable assurance that, in the event of a radiological emergency at the Limerick Generating Station that requires the evacuation of the SCIG, the callup system will achieve its designated purpose to notify off-duty personnel needed to implement the evacuation. In considering the effectiveness of the callup system, and the several available options for mobilizing off-duty correctional officers, the Board also finds that the previous evacuation time estimates made for the SCIG are reasonable and compatible with the notification and mobilization plan.

II. BACKGROUND

On August 28, 1986, the Atomic Safety and Licensing Appeal Board (Appeal Board) issued ALAB-845¹ in which the Appeal Board decided the appeals of the Inmates from the Licensing Board's Fourth PID² and the Licensing Board's earlier rejection of some of the Inmates' proffered contentions.³ The Appeal Board affirmed the Fourth PID in all respects except for its rejection of the Inmates' contention concerning manpower mobilization. This one contention was reversed and remanded to the Licensing Board for further consideration. The Inmates' revised manpower mobilization contention alleges that

¹ ALAB-845, 24 NRC 220 (1986).

² LBP-85-25, 22 NRC 101 (1985).

³ Licensing Board Order of June 12, 1985 (unpublished), *reconsideration denied*, Licensing Board Order of July 2, 1985 (unpublished).

[t]here is no reasonable assurance that the call up system to be utilized in the event of a nuclear emergency in order to mobilize the entire work force of the State Correctional Institute [sic] at Graterford will achieve its designated purpose.

Proposed Revised Contentions (May 13, 1985) at 2.

In the event of an emergency requiring evacuation, the SCIG Radiological Emergency Response Plan (RERP) provides for the mobilization of its off-duty employees through a pyramiding telephone callup system. According to the Inmates' contention, this plan could fail if the commercial telephone lines become overburdened during an emergency and thus limit the SCIG's ability to carry out its manpower mobilization plan. In support of their contention, the Inmates noted the previous testimony of Richard T. Brown, Chairman, Lower Providence Township Board of Supervisors, who stated that during a past emergency (Hurricane Agnes), the local commercial telephone network was overburdened and its service impaired. Tr. 18,149-50.

In the opinion of the Appeal Board,

[t]he contention clearly raises as issue that can be the proper subject for litigation in an operating license proceeding — the adequacy of the communications system to be used in the event of an emergency.

ALAB-845, *supra*, 24 NRC at 231 (footnote omitted. The Appeal Board concluded that the overall adequacy of the public telephone network had not been directly addressed at the hearing, nor had Mr. Brown's testimony been refuted. *Id.* at 232. Therefore, the Appeal Board reversed the Licensing Board's rejection of this contention and remanded the matter for further action consistent with the Commission's Rules of Practice and its opinion. *See id.* at 232-33. In this regard, the Appeal Board noted that some means to notify the off-duty SCIG personnel in the event of an emergency did exist, i.e., the telephone callup system. It was only the adequacy of this telephone callup system in the event of an overload that was in question. The Appeal Board, in affirming the Licensing Board's decision as to the Estimated Time of Evacuation (ETE) for the SCIG issue, also directed the Licensing Board and the parties in the course of their consideration on remand of the Inmates' manpower mobilization contention to determine what effect, if any, the resolution of that issue had on the ETE for the SCIG. *Id.* at 247.

In response to the Appeal Board's remand order, the Licensing Board held a conference call with the parties on September 3, 1986. During the conference call the Licensing Board sought the views of the parties and then advised that it would hold a hearing on the remanded contention in Philadelphia, Pennsylvania,

on September 22, 1986.⁴ The Licensing Board also advised that no prefiled testimony would be ordered; that witness lists should be exchanged no later than September 12, 1986; and that discovery should begin immediately.⁵

The hearing was held in Philadelphia, Pennsylvania, on September 22, 1986, and pursuant to the Licensing Board's Order of September 4, no prefiled testimony was presented. A total of five witnesses presented "live" testimony at the hearing. Richard A. Buell, District Manager, Network Technical Services, Bell Telephone Company of Pennsylvania, and Charles Zimmerman, Superintendent of the State Correctional Institution at Graterford, testified on behalf of the Pennsylvania Department of Corrections. Richard T. Brown, Chairman of the Board of Supervisors, Lower Providence Township, and a Communications Technician, American Telephone and Telegraph Corporation, and William Miller, Manager, Switching Services, Bell Telephone Company of Pennsylvania, testified at the request of the Inmates. Mr. James R. Asher, Federal Emergency Management Agency (FEMA), testified on behalf of FEMA.

The Board has considered all of the proposed findings of fact and conclusions of law presented by the parties. Those not incorporated directly or inferentially in this Supplement to the Fourth PID are rejected as unsupported by the record of the case or as being unnecessary to the rendering of this Supplement to the Fourth PID. Therefore, as discussed below, this Licensing Board finds, in the context of the litigated contention, and, on the basis of the record before it that there is reasonable assurance that, in the event of a radiological emergency at the Limerick Generating Station that requires the evacuation of the State Correctional Institution at Graterford, the callup system will achieve its designated purpose to notify any off-duty personnel needed to implement the evacuation, and that our previous decision on evacuation time estimates for the SCIG is unaffected.

III. FINDINGS OF FACT

A. Manpower Needs to Effectuate an Evacuation of Graterford

1. Charles A. Zimmerman is the Superintendent of the State Correctional Institution at Graterford. Zimmerman, Tr. 21,450. Mr. Zimmerman previously testified in this proceeding on two other contested issues concerning emergency planning and preparedness for the inmates at Graterford. Zimmerman, Tr. 20,760-853.

⁴As we noted at that time, the schedules of the Board members for other hearings would not permit a hearing for this remand issue until next year, unless it were heard promptly.

⁵September 4, 1986 Order at 1.

2. As Superintendent, Mr. Zimmerman is familiar with the radiological emergency response plan for Graterford, the manpower needs to implement that plan, and the number of staff on duty during the available shifts at Graterford. Zimmerman, Tr. 21,450.

3. The total staff employed at the SCIG, including correctional officers and all other categories of personnel except contracted medical staff, presently numbers about 628 persons. Commonwealth Exh. 1 at 3; Zimmerman, Tr. 21,459-60, 21,496.

4. All SCIG staff personnel are trained in prisoner custody, care, and control. Zimmerman, Tr. 21,453.

5. Graterford utilizes several manpower shifts. Three correctional officer shifts run from 6:00 a.m. to 2:00 p.m.; 2:00 p.m. to 10:00 p.m.; and 10:00 p.m. to 6:00 a.m. Between 7:00 a.m. and 9:00 a.m., other staff shifts commence. The Culinary Department runs on other shifts. Zimmerman, Tr. 21,450-51.

6. Superintendent Zimmerman compared the number of assigned staff on duty at Graterford during these shifts to the manpower needed to evacuate the institution under its emergency plan. During daytime shifts between the hours of 6:00 a.m. and 10:00 p.m., the on-duty complement of staff is adequate to accomplish an emergency evacuation without mobilizing additional off-duty personnel. Between the hours of 8:00 a.m. and 4:00 p.m. there are in excess of 300 people on duty. Zimmerman, Tr. 21,452, 21,469, 21,495.

7. If it were necessary to lock down Graterford inmates to initiate an evacuation, routine prison operations would cease. This would free enough staff during the two 6:00 a.m. to 10:00 p.m. shifts to complete the evacuation according to the emergency plan. Zimmerman, Tr. 21,452.

8. During the 10:00 p.m. to 6:00 a.m. shift, the inmates are locked down in their cells. Even during this period of minimum staffing, only 15% of the off-duty staff would be required to supplement the on-duty complement to implement the institution's emergency plan. Zimmerman, Tr. 21,451-54. Fifteen percent of the total Graterford staff would be less than 100 individuals. Zimmerman, Tr. 21,496-97; *see* Commonwealth Exh. 1 at 3.

9. If an evacuation were necessary, correctional officers on duty would not be assigned any other responsibilities. Securing the institution would be accomplished by a skeleton crew once evacuation had been completed. Zimmerman, Tr. 21,469-70.

10. The Pennsylvania State Police are notified at the time of any emergency situation at Graterford. They could be used, as in other situations, for perimeter assignments. Zimmerman, Tr. 21,491.

B. Procedures and Capabilities for Notifying Off-Duty Correctional Officers

11. As reflected in the Commonwealth of Pennsylvania's plan, the Pennsylvania Emergency Management Agency ("PEMA") will notify the Department of Corrections if an alert is declared at Limerick. *See* Commonwealth Exh. E-1 at E-7-E-1 (initial notification procedures) and E-17 (listing the Department of Corrections as among responsible state agencies receiving notification).

12. Upon notification by PEMA at the alert stage, the Department of Corrections would notify off-duty correctional officers to report to Graterford. At the beginning of an alert stage, the general public will not have been advised of any radiological emergency. Therefore, telephone lines should not be overly burdened when correctional officers are summoned. Zimmerman, Tr. 21,506; Asher, Tr. 21,560; *see supra*, Finding 11.

13. Even in a rapidly developing scenario which proceeds immediately to a sounding of the sirens at the general emergency stage, off-duty personnel would understand that they are required to report. Enough Graterford personnel live in the EPZ to supply the additional staff required to effect the evacuation. The entire Graterford staff has been trained to report or inquire as to the need to report for any number of emergencies. Zimmerman, Tr. 21,506.

14. All off-duty officers would be called as required by means of a callup system which is utilized for notifying Graterford staff whenever they are needed for an emergency situation. Zimmerman, Tr. 21,454.

15. Although the capacity exists to utilize a "pyramid" system of notification by which off-duty administrative and management staff notify each other in turn over their residential phones, Graterford authorities have found it more practical and efficient to notify their correctional officer staff directly from a centralized control center within the institution. Zimmerman, Tr. 21,454, 21,473.

16. Under the Graterford callup system, all management officers have telephone lists of their staff. A checkoff list is utilized. Zimmerman, Tr. 21,471.

17. At Graterford, there is a total of sixty-six telephone lines present in the institution. Zimmerman, Tr. 21,456; Commonwealth Exh. 1 at 1.

18. Five of these are private or direct lines, one of which is a hot line to the Pennsylvania State Police. Zimmerman, Tr. 21,457; Commonwealth Exh. 1 at 1; Buell, Tr. 21,435. There are also ten lines that are part of the Commonwealth telephone network, a system that is utilized by departments and agencies of the Commonwealth for official business, and that is switched in Philadelphia. Zimmerman, Tr. 21,457-58; Buell, Tr. 21,390-92, 21,403-04, 21,440-41.

19. Additionally, Graterford has a combined law enforcement assistance network, or "CLEAN" machine, which could be used to notify the Department of Corrections office in Harrisburg to make telephone calls to notify support

personnel. Zimmerman, Tr. 21,462. By use of the CLEAN system. Graterford has the capacity to notify the central office, other law enforcement agencies, and all other institutions simultaneously. Zimmerman, Tr. 21,470.

20. Fifteen key supervisory staff at Graterford carry personal pagers, which would be used in an emergency. Zimmerman, Tr. 21,459; Commonwealth Exh. 1 at 1-2.

21. The callup system at Graterford is tested regularly. It is also routinely implemented because of the incidents at the institution requiring off-duty staff to report. During such incidents, more than enough support staff have reported. Zimmerman, Tr. 21,462-63.

22. The "in-house" lines of the Graterford phone system are dependent upon the institution's own power supply. During power failures, backup generators supply power to those lines. Thus, power outages at Graterford only affect "in-house" phones, not outgoing calls on the five phones in the institution's Administration Building which would be used for notifying off-duty correctional officers. Zimmerman, Tr. 21,475, 21,485-90.

C. Design and Capacity of the Commercial Phone Network

23. Telephone calls over the commercial telephone network are handled by local switching systems located at a Bell Telephone of Pennsylvania ("Bell") switching station, also called a central office. The central office for the State Correctional Institution at Graterford is located in Collegeville, Pennsylvania. Buell, Tr. 21,388.

24. The Collegeville central office presently utilizes a No. 2 Electronic Switching System ("ESS"). This system is scheduled to be upgraded in February 1987 to a No. 5 ESS. *Id.* The No. 5 ESS is the state-of-the-art system utilized by Bell at this time. Buell, Tr. 21,406. Four other central offices contiguous to the Collegeville central office utilize, or will be upgraded in the near future to utilize, the No. 5 ESS. Buell, Tr. 21,406-07.

25. Each central office is engineered to provide a grade of service estimated to meet demand for a projected service period of about 2 to 3 years. This projection is based on the number of customers expected to be served from a particular office and the known load that those customers will place on the switching system. Buell, Tr. 21,389.

26. Business customers normally generate a heavier calling demand during the business day than residential customers for the same period of time. This is a factor in engineering the demand capacity of the switching system. Buell, Tr. 21,390.

27. Telephone service is designed for the busy hour of the busy season, which is normally the winter. Buell, Tr. 21,424; Miller, Tr. 21,539. Bell's

engineered objective is to provide a dial tone during the "busy hour" to 97% of its customers within 3 seconds. Buell, Tr. 21,393.

28. Bell is able to measure the number of calls that are placed on each trunk line to each central office and the duration of each call on each trunk route during the busy hour. Buell, Tr. 21,402-03. From this subscriber use data, Bell derives the number of calls during the busy season which are normally placed between one central office and another. Bell provides the switching capacity and the number of trunks between each central office necessary to handle the expected load during that busy hour. Buell, Tr. 21,399, 21,432-34.

29. AT&T long-distance phone service, like Bell's local service, is engineered to handle the busy hour of the busy day, which typically occurs during the winter months. Brown, Tr. 21,511. Once a call goes beyond a certain area served by local switching equipment, usually between area codes, a long-distance line is necessary. Brown, Tr. 21,527.

30. Emergency (or essential) service lines, termed Class A lines, can be assigned to a customer. Bell assigns Class A lines to no more than approximately 10% of its subscribers, but has never been requested to assign that many at Collegeville. This affords a customer priority service in obtaining a dial tone if there is a severe overload. This service is necessary only under the gravest of conditions and is very seldom invoked. Buell, Tr. 21,393, 21,410.

31. Class A lines are made available by computerized scanning of all lines available for service to provide priority for the Class A line. This information is stored in the operating instructions of the computer that operates the ESS. Buell, Tr. 21,437-38.

32. During an emergency where there were competing requests for service between Class A and regular lines, the priority afforded Class A subscribers would enhance their chances of completing their calls first. Buell, Tr. 21,439, 21,448; Brown, Tr. 21,528.

33. Class A service gives a priority in obtaining a dial tone, but not in completing a call through a central office. Buell, Tr. 21,393-94. The design of any switching system is such, however, that it attempts to complete a call prior to attempting to originate a new call. Buell, Tr. 21,394-95, 21,410; Miller, Tr. 21,550.

34. If one central office's circuits are overloaded, other offices in the locale would not be affected. Buell, Tr. 21,397. Bell has no way, however, to estimate the exact number of calls that can be handled at one time by any particular central office. Buell, Tr. 21,411.

35. As noted in Finding 18, *supra*, there are ten lines that run out of the Graterford switchboard to Philadelphia that are part of the Commonwealth's telephone network. These ten lines pass through the Collegeville central office, but are switched at Philadelphia. Switching problems, or an overload, at the Collegeville central office would not affect the pass-through of these ten lines

to Philadelphia switching localities. Buell, Tr. 21,391-92, 21,398. The Commonwealth's network is comprised of five major switching centers in the State which utilize state-of-the-art equipment comparable to the No. 5 ESS. Buell, Tr. 21,440.

36. Once calls over the Commonwealth network lines from Graterford are switched in Philadelphia, they could be routed over the Commonwealth network or directed to a line off the network and terminated at any other central office. In other words, Graterford could use Commonwealth network lines to call the Department of Corrections in Harrisburg or Graterford staff at their private residences. Buell, Tr. 21,404.

D. Reliability of Commercial Telephone Network for Notifying Off-Duty Graterford Staff

37. Normal phone usage within the hours of 10:00 p.m. to 6:00 a.m. in a typical service area is so "minimal" as to be incomparable to other times. Brown, Tr. 21,532; Buell, Tr. 21,409-10; Miller, Tr. 21,550-51.

38. At the Pottstown office, for example, where there are about 20,000 lines, calls during 10:00 p.m. through 6:00 a.m. are so few in number that they could be counted by the office operator listening to the mechanical equipment. Miller, Tr. 21,548.

39. Because Graterford's ten Commonwealth network lines are switched at Philadelphia, outgoing calls over those lines would not be affected by overloaded circuits at the Collegeville central office unless they were routed back to that office. Buell, Tr. 21,391-92. Of the 628 Graterford staff, it appears that 110 officers reside in areas served by the Collegeville central office. Commonwealth Exh. 1 at 3.

40. The dedicated line connecting Graterford with the Pennsylvania State Police would not be affected by overloaded telephone circuits. Buell, Tr. 21,391.

41. If there is an overload at one particular switching system, calls would not be handled as quickly as they would during normal conditions. Buell, Tr. 21,392. But this does not mean that the telephone system is inoperative. Even if local central offices in and around the Limerick area experienced overloaded circuits, the systems are still working. Calls are generated and completed within the capability of the system. Some callers would experience a delay in completing their calls, but others would get through. Eventually, all callers would be served. Buell, Tr. 21,430-31.

42. There are approximately 6300 telephone subscribers who utilize the Collegeville central office. Buell, Tr. 21,403. Approximately 630 lines switched at the Collegeville central office could be predesignated for emergency use by Class A subscribers. Buell, Tr. 21,405.

43. Although Superintendent Zimmerman stated that Graterford had never experienced a need for priority telephone service, he stated his intention to obtain such service. Zimmerman, Tr. 21,458, 21,464.

44. If Graterford experienced delays in telephone service, other means are available to notify off-duty correctional officers. Besides the dedicated line to the State Police, Graterford could utilize its radio system to contact Montgomery County emergency officials and other agencies. These agencies could notify the news media or other radio systems (including the Emergency Broadcast System) to make a public announcement for off-duty correctional officers to report. Zimmerman, Tr. 21,461. Graterford could also request the Department of Corrections office in Harrisburg to notify correctional officers by telephone. *Id.*

45. If necessary, the Pennsylvania State Police telephone network could be utilized to initiate off-duty staff notification by the central office in Harrisburg. *Id.*

46. It would also be possible to utilize correctional officers at other state institutions who could arrive on the buses supplied for evacuation of the inmates at the time of an actual emergency. Those arriving staff could provide all or most of the additional staff necessary to implement an evacuation. These officers routinely carry out assignments of loading and unloading inmates on buses because inmates are routinely transferred from one institution to another for various reasons. Zimmerman, Tr. 21,461-62, 21,467.

47. Of the 628 total Graterford staff, only 257 reside within areas that may be inside the emergency planning zone plume exposure pathway ("EPZ") for Limerick, i.e., Skippack Township/Graterford area; Boyertown Township; the Borough of Phoenixville/Royersford Township; Borough of Pottstown; and Borough of Collegeville, Zimmerman. Tr. 21,459; Commonwealth Exh. 1 at 3. While these areas within the EPZ would have the greatest potential for telephone overloading, if such were to occur during an emergency at Limerick, the areas also are those covered by the emergency notification siren system. Thus, those Graterford employees from these areas, and not already on duty, would receive timely notification along with the general public, in the event of a fast-breaking emergency at Limerick, even if not notified at the alert stage. *See supra*, Finding 13.

48. Seventy-two Graterford employees live at distances from the institution such that their estimated response time equals or exceeds 2 hours, i.e., 25 in the Central Pennsylvania Area, 39 in the North Eastern Pennsylvania Area, and 8 in the Western Pennsylvania Area. Even adding these 257 employees living within the EPZ and subtracting from the total complement of Graterford staff (628) leaves a pool of 299 staff personnel available from other areas outside the EPZ from which to draw the less-than-100 personnel required to augment an evacuation during the period of minimum staff on hand at SCIG. Commonwealth Exh. 1 at 3; *see supra*, Finding 8.

49. It is the Board's view that the residential areas under consideration outside the Limerick EPZ are sufficiently dispersed from the plant and each other that telephone circuit overloading in an emergency at Limerick would not delay notification of such personnel, if at all, for any unacceptable duration. Commonwealth Exh. 1 at 3. In all, the number of staff residing outside the Limerick EPZ who would be unaffected by congested telephone service at the time of an emergency, and have reasonable response times, far exceeds the maximum of 15% of all off-duty guards necessary for an evacuation. Zimmerman, Tr. 21,467.

E. Events in Northeastern Pennsylvania Involving Overloaded Telephone Circuits

50. Two Bell witnesses were asked to testify about instances, such as severe snowstorms, during which telephone circuits had been overloaded. The witnesses testified that such occurrences were infrequent. They were unable to provide specific information as to the severity, duration or geological extent of delay in telephone service during those events. Buell, Tr. 21,426-28, 21,442, 21,444; Miller, Tr. 21,540-41.

51. An AT&T employee testified that there were dial tone delays of up to half an hour in the Pottstown area during Hurricane Agnes in 1972. Brown, Tr. 21,518. The witness acknowledged, however, that downed telephone lines and equipment problems may have contributed to these delays. Brown, Tr. 21,530; Buell, Tr. 21,405-06. Also, flooding in certain areas resulted in lines shorting out. To the phone user in the area, the dead line from downed or shorted lines would have been indistinguishable from a delay in receiving a dial tone. Brown, Tr. 21,531. Thus, the witness could not state the degree to which dial tone delays in the Pottstown area during Hurricane Agnes were attributable to overloaded circuits or shortened or downed lines. Brown, Tr. 21,535.

52. During Hurricane Agnes, many central offices utilized older, less-efficient types of switching system equipment than in place today. Buell, Tr. 21,395-96. The switching system most commonly in use throughout most of southeastern Pennsylvania was either the "step-by-step" or No. 5 Crossbar system. The step-by-step switching machine is antiquated equipment, which was replaced by the No. 5 Crossbar and in turn replaced by the ESS equipment. Brown, Tr. 21,514. The No. 5 Crossbar is an electromechanical system, as opposed to the No. 5 ESS, which is a computer digital system. Buell, Tr. 21,396, 21,409; Brown, Tr. 21,532.

53. At the time of the Three Mile Island accident, there were dial tone delays in the Middletown central office for an extended period of time. That office, however, was using antiquated "step-by-step" equipment. Brown, Tr. 21,529, 21,533. Also, the witness providing this testimony was unable to state even roughly what number or proportion of all subscribers experienced a dial tone

delay. He stated his belief that, during the overall period of dial tone delay, the longest delay to an individual subscriber was up to 30 minutes. Brown, Tr. 21,534. As with the other testimony noted, the Board is unable to translate this limited information into specific projections of the severity, duration, or geographical extent of any circuit overloading that might result from an emergency at Limerick.

F. Corroborating FEMA Testimony

54. While FEMA did not observe the use of the Graterford callup system during the exercise of its major emergency plan (Asher, Tr. 21,552-53), the FEMA witness was present to hear the testimony of Superintendent Zimmerman as to plans for notifying off-duty correctional officers at Graterford. Based upon that testimony and his knowledge of Graterford planning, he agreed that there is reasonable assurance that off-duty correctional officers needed to implement the plan can and will be notified in the event of a radiological emergency at Limerick. Asher, Tr. 21,554-55.

55. Further, the Board has had extensive testimony on this narrow issue and therefore has an adequate record upon which to base its evidentiary conclusions. We reiterate the views expressed in our earlier decision that FEMA's evaluation of offsite emergency planning exercises and its testimony during hearings provides only part of the evidence comprising the record. *Limerick, supra*, LBP-85-14, 21 NRC at 1229. Aside from FEMA's corroborative testimony, the evidence adduced at hearing is sufficient to establish that the Commission's regulatory requirements and guidance criteria have been met for notification and mobilization of off-duty correctional officers at Graterford.

56. The Board agrees with FEMA that changes in any emergency plan should be acknowledged and incorporated in the plan. Asher, Tr. 21,561. Accordingly, the Board has ordered the Department of Corrections to incorporate within its emergency plan the callup system for notifying off-duty correctional officers which is actually in use now and would be used in the event of a radiological emergency at Limerick. Hoyt, Tr. 21,564-66. By letter dated October 1, 1986, counsel for the Department of Corrections confirmed that this action has been taken.

G. Effect of Notification and Mobilization Procedures upon Evacuation Time Estimates

57. One component of the overall evacuation time estimates for Graterford previously approved by this Board was the 1- to 2-hour (normal conditions) and 2- to 3-hour (adverse conditions) estimate for off-duty personnel to report. *Lim-*

erick, supra, LBP-85-25, 22 NRC at 111. In considering the effectiveness of the callup system for Graterford and the various options available for notifying off-duty correctional officers, Superintendent Zimmerman determined that these previous estimates remain accurate. Zimmerman, Tr. 21,468.

H. Comparability of Telephone Systems Used to Notify Graterford Staff and Other Emergency Response Organizations

58. James R. Asher is an Emergency Management Program Specialist in the Natural and Technological Hazards Division, Region III, FEMA, and Chief of the Technological Hazards Branch. Mr. Asher is also FEMA's representative to the Regional Assistance Committee ("RAC") and Chairman of that Committee. Asher, ff. Tr. 20,150 (Professional Qualifications). Mr. Asher previously testified, along with another FEMA representative, at other hearings on offsite emergency planning and preparedness for Limerick. *See* Asher, Tr. 20,131-332, 21,278-89.

59. Mr. Asher is familiar with emergency response plans for other nuclear power plants throughout the country, including organizational chains of command and the means of notifying off-duty emergency workers. From his experience, he testified that other plans utilize commercial telephone lines in the same manner they are utilized for Graterford. In fact, Mr. Asher is unaware of any nuclear power plant that does not utilize commercial lines to notify off-duty emergency workers. Asher, Tr. 21,554.

60. Since its inception, FEMA has utilized group commercial phone lines to notify its emergency response teams. Its call-down system is very similar to that in use at Graterford. Asher, Tr. 21,556. To Mr. Asher's knowledge, there has never been an instance in which FEMA has been unable to notify its off-duty emergency response teams by means of commercial telephone lines. Asher, Tr. 21,557.

IV. CONCLUSIONS OF LAW

In reaching this decision on the remanded issue of off-duty Graterford staff notification and mobilization, the Board has considered all the evidence of the parties and the entire record of this proceeding, including all proposed findings of fact and conclusions of law filed by the parties. Based upon a review of that record and the foregoing Findings of Fact, which are supported by reliable, probative, and substantial evidence, the Board, with respect to the issue in controversy before us, reaches the following conclusion pursuant to 10 C.F.R. § 2.760a.

Arrangements in place at the State Correctional Institution at Graterford for the notification and mobilization of off-duty correctional officers in the event of a radiological emergency at the Limerick Generating Station meet the requirements of 10 C.F.R. § 50.47, and Appendix E to 10 C.F.R. Part 50, as well as the criteria of NUREG-0654, and provide reasonable assurance that adequate protective measures for the Graterford inmates can and will be taken in the event of a radiological emergency.

V. ORDER

WHEREFORE, in accordance with the Atomic Energy Act of 1954, as amended, and the Rules of Practice of the Commission, and based on the foregoing Findings of Fact and Conclusions of Law, IT IS ORDERED that:

Pursuant to 10 C.F.R. § 2.760(a) of the Commission's Rules of Practice, this Supplement to the Fourth Partial Initial Decision will constitute the final decision of the Commission forty-five (45) days from the date of issuance, unless an appeal is taken in accordance with 10 C.F.R. § 2.762 or the Commission directs otherwise. *See also* 10 C.F.R. §§ 2.764, 2.785, and 2.786.

Any party may take an appeal from this Decision by filing a Notice of Appeal within ten (10) days after service of this Decision. 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. *See* 10 C.F.R. § 2.762(c).

IT IS SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Helen F. Hoyt, Chairperson
ADMINISTRATIVE JUDGE

Richard F. Cole
ADMINISTRATIVE JUDGE

Jerry Harbour
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 10th day of November 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

GENERAL ELECTRIC COMPANY'S
BOILING WATER REACTORS

November 6, 1986

The Director of Nuclear Reactor Regulation denies a request by Mr. Marvin Lewis that all boiling water reactor plants be shut down until resolution of all residual heat removal (RHR) system problems described in four Commission documents.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING (GROUNDS)

To warrant an order shutting down all boiling water reactors pending resolution of four unrelated RHR system problems at certain plants, substantial health or safety problems affecting all such plants must be raised. *Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 176 (1975); *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984).

TECHNICAL ISSUE DISCUSSED

Residual Heat Removal (RHR) Systems.

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

INTRODUCTION

By letter dated July 1, 1986, Mr. Marvin Lewis requested Commissioner Assestine to shut down all boiling water reactor plants (BWRs) until all problems involving their residual heat removal (RHR) systems described in four NRC notifications¹ have been resolved, and alleged that such individual problems, cumulatively, have the potential to cause accidents exceeding the design-basis accidents considered in licensing these facilities. On August 7, 1986, I acknowledged the receipt of Mr. Marvin Lewis' letter to Commissioner Assestine and informed Mr. Lewis that his request was being reviewed and appropriate action will be taken pursuant to 10 C.F.R. § 2.206 of the Commission's regulations. The Staff has prepared a Safety Evaluation addressing each of Mr. Lewis' concerns, which I have considered in reaching my decision.²

My decision in this matter follows.

DISCUSSION

Pursuant to § 2.206, any person may file a request to institute a proceeding pursuant to 10 C.F.R. § 2.202 to modify, suspend, or revoke a license, or for such other action as may be proper. Mr. Lewis' request is, in the context of § 2.206, a request for an order to shut down all BWR plants pending resolution of four unrelated RHR system problems at certain BWR plants. To warrant such an order, substantial health or safety issues affecting all such plants must be raised. *Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 176 (1975); *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). For the reasons discussed below, the four RHR problems referenced by Mr. Lewis, whether considered either individually or cumulatively, do not raise substantial health or safety issues that would warrant suspending the operating license of any facility.

¹NRC Bulletin No. 86-01, and NRC Information Notices 86-34, 86-39, and 86-40.

²The Staff's Safety Evaluation has not been appended to this decision, but can be found in the NRC Public Document Room, 1717 H Street, NW, Washington, DC 20555.

A. Bulletin No. 86-01

On May 23, 1986, the NRC issued Bulletin No. 86-01 to inform BWR licensees and applicants of a recently identified problem with RHR system minimum-flow logic for which a single failure could disable all RHR pumps. Bulletin 86-01 discussed a potential safety problem at the Pilgrim Nuclear Power Plant. It was determined that a single failure in the control logic of the RHR system could result in all RHR minimum-flow bypass valves being signaled to close while all other pump discharge valves are also closed. This condition could result in no flow through the RHR pumps and could lead to the pumps running deadheaded with potential pump damage. All BWR licensees were required to review their facilities for this single-failure problem. The responses from the licensees indicated that this problem is limited to Pilgrim, Quad Cities Units 1 and 2, and Dresden Units 2 and 3. All other BWR plants used separate logic trains for each minimum-flow valve to preclude the single failure of the flow-sensing instrument from causing all the minimum-flow valves to close.

Pilgrim is presently in cold shutdown status. The Staff will evaluate the Pilgrim plant licensee's solution to the problem before the plant is allowed to restart. The licensee for Dresden Units 2 and 3, and Quad Cities Units 1 and 2, has taken corrective actions to modify the operating procedures of the affected units. The operators are instructed to immediately verify that when an RHR pump is started, a flow path is established via the minimum-flow valves or the injection valves. If neither of these flow paths is verified, the operator is instructed to establish flow via other flow paths available. The Staff has determined that the above corrective actions are appropriate and sufficient to allow continued operation in the short term of Dresden Units 2 and 3 and Quad Cities Units 1 and 2. The licensees of the Pilgrim, Quad Cities, and Dresden plants also are investigating modifications of their RHR systems as long-term solutions as required by the NRC Bulletin 86-01. These actions are sufficient to provide reasonable assurance that the affected plants can be operated safely. No further action by the licensees of these facilities, or any other BWR facilities, is necessary.

B. Information Notice No. 86-34

On May 13, 1986, the NRC issued Information Notice No. 86-34 informing licensees and applicants of a potential problem resulting from improper material selection and improper assembly procedures for safety-related power-actuated valves. These problems caused the power actuator to detach from the valve, as reported by the licensees for River Bend and Shoreham. Evaluation of the cause indicated that the material and the installation torque of the bolts connecting the actuator to the valve were improper.

The licensees for these units have voluntarily instituted a special inspection program to ensure that similar problems will not occur. Since the NRC Notice was issued to alert all licensees regarding this potential problem, no events of this nature have been reported. Furthermore, review of the operational records of the emergency core cooling systems (ECCS) for all BWRs for the past 5 years indicates that no similar occurrences of this type have been reported. The Staff is satisfied based on this review that current practices for maintenance and surveillance testing are sufficient for minimizing the occurrence of problems of this nature. No other action by the licensees for the River Bend or Shoreham facilities, or any other BWR facility, is necessary.

C. Information Notice No. 86-39

On May 20, 1986, the NRC issued Information Notice No. 86-39 to alert licensees and applicants to serious damage that occurred to the RHR pump at the Peach Bottom facility due to the failure of the impeller wear rings. The Peach Bottom RHR pumps were manufactured by Bingham-Willamette with motors supplied by General Electric. Plants using this specific pump design in the RHR system include Peach Bottom Units 2 and 3; Browns Ferry Units 1, 2, and 3; Cooper; Pilgrim; and Vermont Yankee.

With respect to the failure of the wear rings for the RHR pump impeller, the root cause has been determined. This problem is limited to a specific pump design and is caused by degradation of the wear rings. If the wear rings start to fail, excessive vibration and/or high temperature of the pump will alert the operator to take appropriate actions in time to prevent failure of the affected wear ring and motor bearing systems. At the request of the Staff, all affected licensees have either performed a special inspection of their RHR pumps or have committed to such an inspection. Monitoring for early warning signals will provide adequate assurance that the affected plants can be safely operated until such inspections are performed. No other action by the licensees of the above facilities, or any other BWR facility, is necessary.

D. Information Notice No. 86-40

On June 5, 1986, the NRC issued Information Notice No. 86-40, providing licensees and applicants supplementary information on leakage of high-pressure reactor coolant into the low-pressure RHR system with the potential for a loss-of-coolant accident involving primary containment bypass. Two recent events described in the information notice occurred in the RHR systems at Pilgrim and Duane Arnold Energy Center. The two plants experienced leakage from the

primary system to the RHR system through an isolation valve. This caused the low-pressure RHR system to be overpressurized.

The problem related to the leakage of high-pressure reactor coolant into the RHR system can be readily detected by system leak detection instrumentation that will alert the operator to take appropriate actions to protect the RHR system. In addition, analyses of the RHR system indicate that even if the system is subjected to reactor operating pressure, the resulting RHR piping hoop stress will not exceed the yield value for the piping. Consequently, catastrophic failure is extremely unlikely without the presence of a significant crack in the pipe. The low-pressure portion of the RHR piping is made of carbon steel, which is not susceptible to the stress corrosion problem that has occurred in other BWR piping made of austenitic stainless steel. Carbon steel piping in BWRs has operated very successfully, with no cracks reported from any mechanism. Therefore, the probability of cracks of significant size in the low-pressure piping is very low, and the risk of serious accident is very low. The issue of assuring the integrity of all pressure isolation valves as barriers against abnormal leakage and gross pipe rupture is being evaluated by the Staff as Generic Issue No-105. A resolution of this issue is in progress and is expected to result in generic requirements for operating reactors, further increasing the confidence that all pressure isolation barriers will be maintained free from potential leakage.

E. Consideration of the Cumulative Effect of the Four RHR Problems

Based on the above discussion, it is evident that the events discussed in the NRC Bulletin 86-01 and Information Notice 86-39 are limited to specific designs, and can occur only at those plants that use such designs. All affected licensees have satisfactorily addressed these concerns. The Pilgrim plant, which is cumulatively affected by the two unique design concerns (Bulletin 86-01 and Notice 86-39), is currently in shutdown status and will not be allowed to restart without satisfactory resolution of the RHR problems that could possibly affect it, including the cumulative effect of the four problems discussed above.

The other problems related to valve actuators (NRC Notice 86-34) and interfacing system leakage (NRC Notice 86-40) are not dependent on specific designs and are random and independent failures. Since such failures are accounted for in the licensing basis for all power reactors in the analyses of the accidents, the redundancies provided in the safety system designs are sufficient to provide reasonable assurance that the plants can be safely operated. With the exception of the above-discussed potential further requirements resulting from Generic Issue No. 105, related to leak-free maintenance of pressure interface valves, no further action by any licensee is necessary. The actions taken by all

licensees in response to Bulletin No. 86-01 and Information Notices 86-34, 86-39, and 86-40 are sufficient to address the above RHR problem, individually and cumulatively.

Therefore, the Staff finds that the concerns expressed in Mr. Lewis' July 1, 1986 letter do not constitute any substantial health or safety issues associated with the operation of BWR plants and that the stated RHR problems do not, individually or cumulatively, provide a basis to suspend operation of all BWR plants, as requested.

CONCLUSIONS

In the absence of substantial health or safety issues associated with the operation of the BWR plants, I decline to institute proceedings pursuant to 10 C.F.R. § 2.206. Accordingly, I decline to grant Mr. Marvin Lewis' request. As provided by 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary for the Commission's review.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland,
this 6th day of November 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

James M. Taylor, Director

In the Matter of

Docket No. 50-346

TOLEDO EDISON COMPANY
(Davis-Besse Nuclear Power
Station, Unit 1)

November 19, 1986

The Director of the Office of Inspection and Enforcement declines to take action based upon the alleged failure of the Toledo Edison Company (Licensee) to comply with the Nuclear Regulatory Commission's (NRC) emergency planning regulations with regard to the Davis-Besse Nuclear Power Station.

Two petitions were considered by the Director. The first petition was submitted on October 24, 1986, by the State of Ohio. The second petition was submitted on October 28, 1986, by the Toledo Coalition for Safe Energy and Susan A. Carter. Both petitions opposed restart of the Davis-Besse facility which was then shut down for facility modifications.

The Director reviewed the overall state of emergency planning for the Davis-Besse facility including the specific concerns raised by the Petitioners. The findings of the Federal Emergency Management Agency (FEMA) with regard to Davis-Besse were also considered. The Director concluded that, based upon the lengthy oversight and review of emergency planning efforts at Davis-Besse by both the NRC and FEMA, including consideration of the issues raised in the petitions, emergency preparedness planning for the facility is adequate.

EMERGENCY PLAN: COMPLIANCE WITH REGULATIONS

While there can be deficiencies in the emergency planning and preparedness associated with a nuclear facility, there must be sufficient compliance to find that there is reasonable assurance that adequate protective measures can and will be taken in a radiological emergency.

DIRECTOR'S DECISION PURSUANT TO 10 C.F.R. § 2.206

INTRODUCTION

On October 24, 1986, the State of Ohio, by its Attorney General, submitted to the Nuclear Regulatory Commission (NRC) a petition pursuant to 10 C.F.R. § 2.206 seeking institution of proceedings to suspend the operating license for the Davis-Besse Nuclear Power Station of the Toledo Edison Company (Licensee), or the taking of such other actions as may be necessary to prevent operation of this facility, until such time as the Licensee is in compliance with the Commission's emergency planning regulations, specifically 10 C.F.R. § 50.47.¹ The petition opposes restart of the facility and notes that, on August 15, 1986, the Governor of Ohio withdrew his support for the evacuation plans for the Davis-Besse facility and also instituted the Ohio Emergency Evacuation Review Team (EERT). The petition alleges that the EERT has found serious deficiencies in the evacuation plan for the Davis-Besse facility. The petition goes on to allege that, although the Federal Emergency Management Agency (FEMA) has been examining state and local emergency plans associated with the Davis-Besse facility for over 4 years, to date, FEMA has not issued any formal statement of adequacy concerning the Davis-Besse plan. Thus, the petition argues that the Davis-Besse facility has operated without an approved emergency plan since its inception, in violation of NRC regulations.

On October 28, 1986, a second petition of the Toledo Coalition for Safe Energy and Susan A. Carter was submitted to the NRC also seeking action with respect to the Davis-Besse facility pursuant to § 2.206. This petition also opposes restart of the facility and seeks institution of proceedings for license suspension. This petition alleges deficiencies with respect to the offsite emergency plan for Lucas County, Ohio, in that it fails to include preparations for Jerusalem Township, a part of Lucas County. This petition further alleges that, on October 20, 1986, members of the Northwest District of the Ohio Association of Public School Employees, American Federation of State, County and Municipal Employees, AFL-CIO (Union), voted not to participate in planning or evacuation in case of an emergency at the Davis-Besse facility. Union members were to participate in an emergency at Davis-Besse as bus drivers and as operators of refugee reception centers. The petition alleges that the passage of this resolution by the Union raises serious questions and doubts regarding the efficacy of existing emergency plans since extensive reliance is placed upon the participation of Union members in facilitating an evacuation in the event of

¹ The Davis-Besse facility is currently shut down for facility modifications. The facility is scheduled to resume operations on November 21, 1986, subject to NRC approval.

a nuclear accident at the Davis-Besse facility. A November 12, 1986 letter from the Licensee notified the NRC of an impending response to the petitions.

On November 17, 1986, the Licensee submitted its "Response to § 2.206 petitions of Ohio Attorney General and Toledo Coalition/Carter." On November 10, 1986, the NRC requested that FEMA address the issues raised by the October 20, 1986 resolution of the Union. FEMA's response was received on November 14, 1986. My decision in this matter follows.

DISCUSSION

The Commission's regulations in 10 C.F.R. § 50.54(q) and (s) require the submission and implementation of licensee and state and local governmental emergency plans which meet the standards in 10 C.F.R. § 50.47(b) and Appendix E to 10 C.F.R. Part 50.² As described in the Memorandum of Understanding between FEMA and NRC (50 Fed. Reg. 15,485 (Apr. 18, 1985)), FEMA has lead responsibility for assessing offsite radiological emergency response plans and preparedness.³ The NRC assesses onsite emergency planning and reviews FEMA's assessment of offsite plans for the purpose of making findings on the overall state of emergency preparedness. The NRC must find reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

For nuclear power plants that held a license to operate at the time the NRC final rule on emergency planning became effective (November 3, 1980), as was the case with Davis-Besse, the NRC based its reasonable assurance findings for each operating reactor on consideration of (1) the licensee and state and local governmental emergency plans upgraded to substantially meet the requirements of the final rule; (2) a review of the onsite plans by the NRC; (3) a comprehensive appraisal conducted by the NRC at the operating reactor site to verify the implementation of the licensee plan; and (4) the evaluation of a joint exercise involving the licensee and state and local governmental organizations. The reviews and appraisals were conducted between 1980 and 1982. The onsite portions of such exercises were observed by the NRC while the offsite portions were observed by FEMA and other members of the Regional Assistance Committee

²"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," NUREG-0654/FEMA-REP-1, Revision 1, provides guidance for the implementation of the standards in 10 C.F.R. § 50.47.

³In addition to making reviews of offsite emergency preparedness as requested by the NRC with respect to nuclear facilities, FEMA has in place procedures set forth in 44 C.F.R. Part 350 for the assessment of the offsite plans submitted by state and local governments.

(RAC).⁴ FEMA provided the NRC with its findings assessing the exercise. Consideration of the plans and this series of events constituted the means by which the NRC determined there was an adequate level of emergency preparedness at nuclear power plants with operating licenses.

For all plants licensed to operate since November 3, 1980, NRC has requested and received from FEMA either formal approval or interim findings that offsite plans and preparedness are adequate and capable of implementation, prior to full-power operation. The FEMA process for formal approval of offsite plans is set forth in 44 C.F.R. Part 350. However, this formal process need not be completed for the purpose of NRC licensing reviews either for operating plants or plants being licensed. The fact that a FEMA approval of offsite plans in accordance with Part 350 has not been received for a particular facility does not mean that an inadequate level of emergency preparedness exists. During the approval process, FEMA may issue interim findings of reasonable assurance that adequate measures can be taken in the event of a radiological emergency, based on reviews of emergency plans and in conjunction with exercise observations. In cases of plants licensed before November 3, 1980, FEMA findings were based primarily on observations during exercises and the existence of upgraded plans in contrast to detailed reviews of such plans.

With this background, a review of the history of emergency preparedness at the Davis-Besse Nuclear Power Plant is appropriate in light of the allegation of the State of Ohio that resumed operation of Davis-Besse would violate the Commission's regulations. The general criteria for determining an adequate level of emergency preparedness at operating nuclear power plants were described above. Specifically, the Licensee's upgraded emergency plans were submitted to the NRC in March 1980. The emergency preparedness implementation appraisal of the Licensee's plans was conducted at Davis-Besse during February 8-19, 1982. The NRC reviewed and approved those plans as subsequently revised on October 7, 1982.

The Davis-Besse Offsite Plan was submitted by Ohio in February 1981 to FEMA for review and evaluation in accordance with 44 C.F.R. Part 350. During the review process, FEMA found that a plan for Lucas County, Ohio, had not been included in the State's submission and concluded that a separate Lucas County plan was required. FEMA notified the Ohio Disaster Services Agency

⁴There exists in each of the 10 standard federal regions a Regional Assistance Committee (RAC) (formerly the Regional Advisory Committee) chaired by a FEMA regional official and having members from the Nuclear Regulatory Commission, Department of Health and Human Services, Department of Energy, Department of Transportation, Environmental Protection Agency, the U.S. Department of Agriculture, and Department of Commerce. The RACs assist state and local government officials in the development of their radiological emergency response plans, and review plans and observe exercises to evaluate the adequacy of these plans and related preparedness. This assistance does not include the actual writing of state and local government plans by RAC members.

(ODSA) that further processing of the State's submission was postponed pending the submittal of a Lucas County plan. On February 13, 1985, FEMA notified ODSA of the need to submit a Lucas County plan, or alternative solutions, by March 15, 1985.

During the ensuing year, ODSA and FEMA sought mutually agreeable solutions. On May 12, 1986, ODSA submitted a proposed schedule to resolve the various issues raised by the absence of a Lucas County plan. However, the proposal did not schedule resolution of outstanding issues until the Summer of 1987. A number of subsequent interactions culminated in the July 8, 1986 correspondence from ODSA to FEMA which identified additional actions taken or proposed and specified milestones and completion dates. In a Memorandum of Understanding, Lucas County, Jerusalem Township, ODSA, and the Toledo Edison Company instituted interim measures, including a provision for the availability of all facilities and resources at the disposal of Lucas County and Jerusalem Township officials "to implement any and all necessary protective actions." The Memorandum of Understanding also provides for the completion of certain activities prior to the Davis-Besse startup, as well as other measures that will remain in place until the final approved Lucas County Radiological Emergency Response plans and facilities are in place. The final resolution of all issues related to planning for Lucas County was scheduled for April 30, 1987, when a public meeting would be held in accordance with FEMA regulations. The milestones and completion dates included a September 3, 1986 Lucas County plan submission for state review; a September 23, 1986 participation by Lucas and Ottawa counties and ODSA in a Davis-Besse exercise; a December 30, 1986 submission of the Lucas County plan and revisions of the Davis-Besse Offsite Plan to FEMA for review under 44 C.F.R. Part 350; a March 31, 1987 exercise involving full participation by Lucas County; and an April 30, 1987 public meeting in accordance with FEMA regulations. A July 23, 1986 FEMA letter to the NRC summarized these planning efforts and noted a good-faith effort on the part of state and local governments in resolving the outstanding issues as indicated by the agreed interim measures and the mutual commitments to a specified schedule. FEMA has committed to monitoring progress concerning the interim measures and the meeting of formal requirements for offsite safety. In an October 21, 1986 status report, FEMA concluded that the state and local governments are carrying out their commitments within the required time frames.

Apart from the Lucas County plan, which is being developed for inclusion into the Davis-Besse Offsite Plan, this latter overall plan was evaluated by FEMA during exercises conducted on November 6, 1980, April 13, 1983, and July 16, 1985. The FEMA report on the 1980 exercise concluded that the exercise demonstrated a level of preparedness offsite adequate to protect the health and safety of the public in areas around the Davis-Besse Nuclear Power

Plant.⁵ FEMA further concluded that significant areas of the State plan and site exercise judged deficient were corrected by the State and work was continuing on minor deficiencies not yet totally resolved. FEMA found the 1983 exercise for the State of Ohio and Ottawa County demonstrated an overall capability to protect the health and safety of the public.⁶ During the 1985 joint full-participation exercise for Ohio and Ottawa County, FEMA also found that the overall demonstrated capability to protect the public health and safety was not affected by two identified exercise inadequacies.⁷ An exercise of the Davis-Besse Offsite Plan including the Lucas County plan is scheduled for March 31, 1987.

The Commission recognizes that there can be deficiencies in the emergency planning and preparedness associated with a nuclear facility. However, there must be substantial compliance with the regulations, i.e., compliance sufficient to find that there is reasonable assurance that adequate protective measures can and will be taken in a radiological emergency. Indeed, even in those instances where the Commission can no longer make its reasonable assurance finding, emergency preparedness deficiencies may not require facility shutdown. See 10 C.F.R. § 50.54(s)(2)(ii). In practice, radiological emergency response plans are rarely if ever perfect and complete. This is the reason for the continuing FEMA and NRC oversight of this area. Deficiencies will be found and assessed for significance. While all deficiencies are expected to be corrected, not all will change a finding of reasonable assurance by the NRC.

In the case of Davis-Besse prior to the submission of the petitions herein considered, the NRC had reasonable assurance based on NRC and FEMA findings that adequate protective measures could and would be taken in the event of a radiological emergency notwithstanding the minor deficiencies and the lack of an approved plan for Lucas County. Specifically, as described above, interim measures have been implemented and the schedule for completion has been approved by FEMA and has been met to date. With respect to other deficiencies noted during exercises conducted at Davis-Besse, these have been of minor significance and either have been or are being corrected.

Consideration of the issues and concerns regarding FEMA's review process raised by the petitions has not altered that conclusion of reasonable assur-

⁵ Memorandum from Richard W. Krimm, FEMA, to Brian Grimes, NRC, dated March 30, 1982, with attachment "Post-Exercise Evaluation, State of Ohio, Ottawa County and Toledo-Edison Exercises of the Peacetime Radiological Emergency Response Plan for Davis-Besse Nuclear Power Plant, Port Clinton, Ohio," November 6, 1980, FEMA Region V.

⁶ Memorandum from Richard W. Krimm, FEMA, to Edward L. Jordan, NRC, dated May 4, 1984, with attachment, "Final Report, April 19, 1983, on the Davis-Besse Nuclear Power Station, Small-scale, Joint Emergency Exercise, April 13-14, 1983."

⁷ Memorandum from Richard W. Krimm, FEMA, to Edward L. Jordan, NRC, dated December 13, 1985, with attachment, "Davis-Besse Nuclear Power Station, Toledo Edison Company, Joint Exercise, October 1985."

ance. The petitions raised three specific issues calling into question the sufficiency of emergency planning at Davis-Besse. These are

1. The withdrawal of the Governor's support on August 15, 1986, for evacuation plans;
2. The alleged failure in planning for Lucas County in that Jerusalem Township is not accounted for;
3. The resolution of the Union calling into doubt the participation by Union members in the evacuation plans for the Davis-Besse facility.

With respect to the first issue, since Ohio Governor Celeste's August 15, 1986 withdrawal of support for the evacuation plans for the Davis-Besse Nuclear Power Plant, the State of Ohio has continued to work actively and cooperatively in the development of emergency preparedness planning and exercises.⁸ For example, on September 9, 1986, the State completed a review of the Lucas County plan, and on September 23, 1986, key players from ODSA participated in a Davis-Besse exercise to demonstrate certain emergency response functions. In addition, on September 5, 1986, FEMA testified at a public Commission meeting with full knowledge of the Governor's August 15, 1986 action, and reaffirmed its earlier finding of reasonable assurance regarding offsite emergency preparedness for the Perry facility.⁹ There appears to be no sound reason to distinguish Davis-Besse from Perry on the issue of whether or not, in FEMA's belief, the State of Ohio can perform its emergency planning role. Certainly, FEMA has not informed the NRC that it sees such a distinction although it has had the opportunity to do so. Therefore, in light of the above, it is the NRC's conclusion that the Governor's withdrawal of support for the evacuation plans has not significantly affected the offsite emergency preparedness for the Davis-Besse Nuclear Power Plant.

With respect to the second issue, as discussed above, the interim measures taken and the schedule of corrective actions to upgrade the Davis-Besse Offsite Plan with respect to Lucas County identified in FEMA's July 23, 1986 letter and the completion of scheduled milestones to date as reflected in the October 21, 1986 FEMA status report provide reasonable assurance that the planning deficiencies in the Davis-Besse Offsite Plan are being corrected in an acceptable manner, and that the public health and safety will be adequately protected in the event of a radiological emergency.

With respect to the third issue, FEMA is monitoring the bus driver issue. In its letter of November 14, 1986, FEMA described the resolution of the Ohio As-

⁸The concerns of the Governor of Ohio regarding emergency planning have recently been considered in the context of the Perry proceeding. See *Cleveland Electric Illuminating Co. (Perry Nuclear Power Plant, Units 1 and 2)*, CLI-86-22, 24 NRC 685 (1986).

⁹CLI-86-22, *supra*, 24 NRC at 692-93.

sociation of Public School Employees as a nonbinding resolution and provided a status report.¹⁰ FEMA also noted that ODSA and the Licensee are meeting with the involved school systems and union members to discuss the resolution and to schedule additional training. In FEMA's view the union members are willing to cooperate, attend meetings, and participate in training related to their emergency duties. As of this time, FEMA has not revised its position that there is reasonable assurance that adequate protective measures can be taken in the event of a radiological emergency at Davis-Besse.

In addition to the specific concerns raised by both Petitioners in the two petitions under consideration and discussed above, the State of Ohio also referred in its petition to the work of the EERT created on August 15, 1986, by Governor Celeste to reevaluate evacuation plans for the State of Ohio nuclear facilities. The petition listed sixteen outstanding issues that the EERT is continuing to examine and asserted that the EERT's investigation has uncovered numerous and serious deficiencies in evacuation planning. The petition goes on to allege that these deficiencies pose grave threats to the safety of the residents in the affected area. The Ohio petition does not specify any of the deficiencies alleged. The EERT met with the NRC Staff on October 28, 1986, at the NRC's offices in Bethesda, Maryland. During that discussion, which included a presentation by the EERT Chairman, William Denihan, the NRC noted the absence of specific deficiencies in the Ohio petition and further noted that the NRC could not deal with issues until it is provided with a reasonable amount of specificity. Such a need for specificity is set out under the provisions by which the State of Ohio has petitioned the Nuclear Regulatory Commission to act. Particularly, 10 C.F.R. § 2.206(a) notes that requests for action under this section shall set forth the facts that constitute the basis for the request. *See Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), DD-85-11, 22 NRC 149, 154 (1985). *See also Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 175 (1975), which instructs that the Director, in considering a request pursuant to § 2.206, must make an inquiry "appropriate to the facts asserted." Consequently, in the absence of specific deficiencies as a result of the efforts of the EERT, no action is warranted in this regard.¹¹

¹⁰ Memorandum from Richard W. Krimm, FEMA, to Edward L. Jordan, NRC, dated November 14, 1986.

¹¹ It should be noted that the Governor of Ohio also raised the EERT concerns before the Commission in the Perry proceeding. *See* CLI-86-22, *supra*, 24 NRC at 693-94. The Commission declined to stay issuance of an operating license based on the EERT concerns presented to it. The Commission noted that the EERT findings presented by the State of Ohio were preliminary and lacked detailed technical and factual support. The Commission, however, directed that the NRC Staff review the final EERT report and transmit a copy promptly to FEMA for consideration in conjunction with its ongoing 44 C.F.R. Part 350 review of the Ohio emergency plans.

CONCLUSION

Both Petitioners seek the institution of proceedings pursuant to 10 C.F.R. § 2.202 to revoke or suspend the operating license for the Davis-Besse facility. Included within the Petitioners' requests for relief is a requests that the Commission bar the restart of the Davis-Besse facility, presumably thereby requesting immediately effective actions pursuant to 10 C.F.R. § 2.202(f). The institution of proceedings pursuant to § 2.202 is appropriate only where substantial health and safety issues have been raised. See *Indian Point, supra*, 2 NRC at 176, 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 Petitioners in this decision to determine whether enforcement action is warranted.

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

James M. Taylor, Director
Office of Inspection and
Enforcement

Dated at Bethesda, Maryland,
this 19th day of November 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-528

ARIZONA PUBLIC SERVICE
COMPANY, *et al.*
(Palo Verde Nuclear Generating
Station, Unit 1)

November 20, 1986

The Director of the Office of Nuclear Reactor Regulation denies the petition of the Coalition for Responsible Energy Education (CREE) alleging that the integrated leak-rate test (ILRT) performed for the containment at Unit 1 of the Palo Verde Nuclear Generating Station (PVNGS) was deficient. The petition sought relief in the form of service upon the Arizona Public Service Company of an Order to Show Cause, pursuant to 10 C.F.R. §2.206, why the operating license for PVNGS Unit 1 should not be suspended and the PVNGS Unit 1 containment ordered immediately retested in accordance with federal regulations. The Director concluded that the allegations raised by CREE were not valid and that the PVNGS Unit 1 test was successfully performed in accordance with the Commission's requirements.

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

INTRODUCTION

By petition dated January 31, 1986, and submitted to the Commission pursuant to 10 C.F.R. § 2.206 on February 3, 1986, Myron L. Scott, on behalf of the Coalition for Responsible Energy Education (Petitioner), alleges that the

integrated leak-rate test (ILRT)¹ performed for the containment at Unit 1 of the Palo Verde Nuclear Generating Station (PVNGS) was deficient in various respects and, therefore, is invalid. The allegation is based on an affidavit of Dr. Zinovy V. Reytblatt, dated December 26, 1985, which is included with the petition.

The Petitioner requests relief in the form of service upon the Arizona Public Service Company, *et al.* (Licensees) of an Order to Show Cause, pursuant to § 2.206, why the operating license for PVNGS Unit 1 should not be suspended and the PVNGS Unit 1 containment ordered immediately retested in accordance with federal regulations.

On February 18, 1986, I acknowledged receipt of this petition and informed the Petitioner that appropriate action would be taken within a reasonable time. I also informed the Petitioner that immediate action on the relief request was not warranted since the Staff's preliminary review determined that the containment leak test for PVNGS Unit 1 was performed in accordance with NRC-approved procedures and the results met the appropriate acceptance criteria.

The petition raises the following concerns, which are specifically addressed in the affidavit of Dr. Reytblatt, regarding the validity of the containment leak-rate test for PVNGS Unit 1:

(1) The Test Report on the PVNGS Unit 1 containment leak rate test does not contain the real temperature data but rather the averages so that no independent verification of the leak rate resulting from the test is possible.

(2) The Test Report employed the wrong mass equation which might or might not significantly affect the calculated leak rate.

(3) The test methodology was based on ANSI/ANS 56.8-1981 and, therefore, the test was performed on an exemption basis.

(4) The test used the ventilating (i.e., the containment atmosphere mixing) method of "equalizing-stabilizing." However, ANSI/ANS 56.8-1981 does not allow excessive ventilation. No evidence was presented in the Test Report to show that the ventilation was not excessive, nor was there any estimate presented of the magnitude of the error due to the particular ventilation level.

(5) The test duration was shorter than 12 hours which violates the requirements of ANSI Standard N45.4-1972.

(6) One of the Test Report's justifications for performing a shorter duration test was because of the "diurnal effect" (on the containment atmosphere). However, no regulations allow any duration reduction on the basis of "diurnals."

¹The results of this ILRT and Licensee's conclusions regarding this test were published in a document entitled "Summary Technical Report, Arizona Public Service Company, Reactor Containment Building Integrated Leak Rate Test for Palo Verde Nuclear Generating Station, Unit No. 1, dated March 7, 1983" (hereinafter referred to as the Test Report).

A discussion of the issue involved and my decision in these matters follows.

DISCUSSION

Background

The Commission's requirements for integrated leak-rate testing are set out in 10 C.F.R. § 50.54(o) and Appendix J to 10 C.F.R. Part 50. These requirements call for preoperational and periodic leak-rate testing of commercial nuclear power plants in accordance with ANSI Standard N45.4-1972, "Leakage Rate Testing of Containment Structures for Nuclear Reactors, March 16, 1972." Experience gained with integrated leak testing of commercial nuclear facilities has been drawn together in an industry consensus document, specifically, ANSI/ANS 56.8-1981, "Containment System Leakage Testing Requirements," which provides detailed measures for performing the integrated leak-rate testing required by Appendix J. Paragraph 7.6, "Period of Test," in ANSI Standard N45.4-1972 states:

The leak-rate test period, for any method, shall extend to 24 hours of retained internal pressure. If it can be demonstrated to the satisfaction of those responsible for the acceptance of the containment structure that the leakage rate can be accurately determined during a shorter period, the agreed-upon shorter period may be used.

In Topical Report BN-TOP-1, Revision 1, dated November 1, 1972, the Bechtel Power Corporation provided testing criteria for conducting containment leak-rate tests that are shorter in duration than 24 hours and as short as 6 hours. In an evaluation of this report issued by letter dated February 1, 1973,² the Staff concluded that these testing criteria meet the requirements of Appendix J to 10 C.F.R. Part 50 and that the report may be referenced in Safety Analysis Reports for both BWR and PWR containments as an acceptable leak-rate testing method.

In § 6.2.6.6 of the Final Safety Analysis Report (FSAR) for PVNGS, Units 1, 2, and 3, the Licensees described the leak-rate testing program to be performed on the containment for each unit. The FSAR states there that the ILRT pretest requirements of Appendix J would be met and that the test would be performed in accordance with BN-TOP-1, Revision 1, and Appendix J. In its November 1981 Safety Evaluation Report, § 6.2.6, the NRC approved the containment leakage program described in the PVNGS FSAR.

The preoperational ILRT of the PVNGS Unit 1 containment was conducted in December 1982. A summary report (the Test Report) was submitted by Li-

²Letter from R.C. DeYoung, Assistant Director for Pressurized Water Reactors, Directorate of Licensing, to Mr. R.D. Allen, Vice President, Bechtel Corporation, dated February 1, 1973.

censees, by letter dated April 15, 1983, from E.E. Van Brunt to G.W. Knighton, which provided the results of the ILRT for PVNGS Unit 1 and included the raw data taken during the test. The duration of the ILRT was 8 hours. Licensees concluded in this report that an acceptable test had been performed in accordance with Appendix J to 10 C.F.R. Part 50, ANSI Standard N45.4-1972, and ANSI/ANS 56.8-1981.³

The ILRT for PVNGS Unit 1 was witnessed by an NRC Inspector and the inspector's observations of the test are provided in a report dated October 13, 1983 (Inspection Report No. 50-528/82-35). In the report, the inspector concluded that the ILRT for PVNGS Unit 1 was performed in accordance with Appendix J criteria.

Staff's Response to Allegations

The Staff's responses to the specific allegations raised by the Petitioner are presented below.

Allegation (1) — The Test Report on the PVNGS Unit 1 containment leak rate test does not contain the real temperature data but rather the averages so that no independent verification of the leak rate resulting from the test is possible.

The Staff's review of the report indicates that individual temperature data from twenty-four different temperature sensors were recorded and reported in Appendix A to the report. These data and the other recorded raw data in Appendix A were used by APS to calculate averages and to determine the containment leak rate.⁴ Therefore, Petitioner's statement that real temperature data are not contained in the report is not correct.

Allegation (2) — The Test Report employed the wrong mass equation which might or might not significantly affect the calculated leak rate.

Currently neither ANSI Standard N45.4-1972 nor ANSI/ANS 56.8-1981 specifically prescribes how to calculate the mean containment temperature. An ANSI/ANS working group is currently considering the use of a volume-weighted mean temperature equation to determine mean containment temperature. Nevertheless, as was stated in earlier NRC Directors' Decisions in answer to this same mass equation issue raised by Dr. Reytblatt in previous § 2.206 petitions, it is not wrong to use the mass equation for computing the leak rate, but the manner in which the mean containment temperature is calculated for use in the equation

³See Test Report at 25.

⁴See Test Report, Appendix A at 60-62.

is important. Either a mass-weighted mean temperature or a volume-weighted mean temperature is acceptable if the leak-rate testing is properly conducted to assure stable conditions and proper evaluation of test data.⁵

The PVNGS Unit 1 test results were evaluated by the Licensees using the mass-weighted mean temperature method. A review by Staff of PVNGS Unit 1 test data has confirmed that the temperature changes that occurred during the test were temporally and spatially small, uniform, and consistent.⁶ Because these characteristics are indications that the containment was in a stabilized condition, the calculated leak rate would not have been significantly affected by using either temperature equation.

Allegation (3) — The test methodology was based on ANSI/ANS 56.8-1981 and, therefore, the test was performed on an exemption basis.

The Commission's requirements for the ILRT of PVNGS Unit 1 are contained in Appendix J to 10 C.F.R. Part 50 and ANSI Standard N45.4-1972 which is incorporated by reference in Appendix J. ANSI Standard N45.4-1972 allows shorter-duration leak-rate tests than 24 hours if they are demonstrated to the NRC Staff to be acceptable. The duration of the test was based on the methodology and testing criteria in BN-TOP-1, Revision 1, which was previously reviewed and approved by Staff for meeting these requirements. The actual test at PVNGS Unit 1 therefore was performed pursuant to Appendix J and ANSI Standard N45.4-1972 and did not involve exemptions from any of the Commission's requirements. In addition to analyzing the data using the NRC-approved methodology, the Staff suggested that the Licensees use the methodology of ANSI/ANS 56.8-1981, which is based upon industry experience with integrated leak testing, to assist in establishing a basis for the future acceptability of the test results by using the method in the ANSI-ANS 56.8-1981 standard.

Allegation (4) — The test used the ventilating (i.e., the containment atmosphere mixing) method of "equalizing-stabilizing."⁷ However, ANSI/ANS 56.8-1981 does not allow excessive ventilation. No evidence was presented in the Test Report to show that the ventilation was not excessive, nor was there any estimate presented of the magnitude of the error due to the particular ventilation level.

Appendix J requires containment stabilization during the entire period of the ILRT. The ILRT for PVNGS Unit 1 used the containment atmosphere mixing

⁵ *Commonwealth Edison Co.* (LaSalle County Station, Units 1 and 2), DD-84-6, 19 NRC 891, 894 (1984); *Commonwealth Edison Co.* (Zion Station, Unit 1), DD-85-10, 22 NRC 143, 145 (1985).

⁶ See Test Report at 60-62.

⁷ It is assumed that what Petitioner intends by use of this term is the stability and uniformity of the containment atmosphere.

method of equalizing-stabilizing with six portable circulating fans. Section 3.2.1.6 of ANSI/ANS 56.8-1981 and §§ 6.1 and 7.4 of ANSI Standard N45.4-1972 suggest the use of internal air-circulation to aid in providing containment stabilization and uniformity.

The excessiveness of containment mixing can only be judged by whether a stable condition is maintained during the test. As long as the mixing is a steady function, its effect will be reflected by the stability of the containment condition and, if this stability is established, there is no need to determine the level of mixing action. In the case of PVNGS, the Test Report establishes that a stable condition was maintained throughout the testing period as reflected by the temperature changes during the test that were reasonably slow, small, and consistent, both temporally and spatially.⁸ Accordingly, the Staff concludes that the PVNGS Unit 1 leak-rate test has met the stabilization requirement called for by Appendix J.

Allegation (5) — The test duration was shorter than 12 hours which violates the requirements of ANSI Standard N45.4-1972.

Petitioner has incorrectly contended that the test duration for PVNGS is required to be at least 12 hours. ANSI Standard N45.4-1972 permits a test duration of less than 24 hours when it can be demonstrated to the satisfaction of those responsible for accepting the results (i.e., the Nuclear Regulatory Commission) that the leakage rate can be accurately determined during a shorter period. Bechtel's report BN-TOP-1, Revision 1, which has been approved by Staff, demonstrates acceptability of testing criteria for conducting ILRT which are as short as 6 hours. The PVNGS Unit 1 test was performed in accordance with BN-TOP-1, Revision 1, with a test duration in excess of 8 hours. Based on these criteria, the duration of the PVNGS Unit 1 ILRT did not violate the requirements of ANSI Standard N45.4-1972.⁹

Allegation (6) — One of the Test Report's justifications for performing a shorter duration test was because of the "diurnal effect" (on the containment atmosphere). However, no regulations allow any duration reduction on the basis of "diurnals."

⁸Test Report at 60-62.

⁹The Staff is currently considering changing the duration for preoperational leak-rate testing for new operating licenses. However, it is not expected that any such changes are significant enough to invalidate tests for existing plants. The Staff is satisfied that the testing requirements implemented at the Palo Verde Nuclear Station met existing requirements and that the results were acceptable.

The Staff has reviewed the documents that relate to the basis for the duration of the test performed at PVNGS Unit 1. These include the Test Report, the PVNGS FSAR, BN-TOP-1, Revision 1, and the Staff's evaluation of BN-TOP-1, Revision 1. None of these documents state that a shorter-duration test can be performed because of "diurnal effects" nor, with the exception of a single comment in the Test Report,¹⁰ do they use the term "diurnal effects." Therefore, contrary to the allegation of Dr. Reytblatt, the shorter-duration tests were not based on any "diurnal effects" and there is no basis for this allegation.

CONCLUSION

The issues raised by the Petitioner have been reviewed by my Staff. These reviews have determined that (1) the allegations raised by the Petitioner are not valid, (2) the petition does not establish that the ILRT for PVNGS Unit 1 failed to meet applicable federal regulations, and (3) the PVNGS Unit 1 test was successfully performed in accordance with the Commission's requirements.

Accordingly, the Petitioner's request for action pursuant to §2.206 is 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 for the Commission's review.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland,
this 20th day of November 1986.

¹⁰The only mention of the term "diurnal effects" in the Test Report is at page 21 where it is stated that "it should be noted that during this [the ILRT] period there were no apparent diurnal effects due to overcast sky, no sunshine and light rain." Read in context, this comment does not mean that a shorter test duration was based upon the absence of "diurnal effects."

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. 50-400-OL

CAROLINA POWER & LIGHT
COMPANY and
NORTH CAROLINA EASTERN
MUNICIPAL POWER AGENCY
(Shearon Harries Nuclear Power
Plant)

December 5, 1986

The Commission denies Petitioners' request for a hearing on Applicant's request for an exemption from the NRC's emergency preparedness exercise requirement, 10 C.F.R. Part 50, Appendix E, § IV.F.1, that a full-scale emergency planning exercise be held 1 year prior to issuance of a full-power operating license. The Commission finds that Petitioners have failed to raise any material issue of fact with respect to whether Applicant has met the exemption standards of 10 C.F.R. § 50.12.

REGULATIONS: EXEMPTIONS

The standards to be met under 10 C.F.R. § 50.12(a)(1) and (2) for a grant of an exemption from the NRC's licensing requirements are as follows:

- (1) the exemption must be authorized by law, not present an undue risk to the public health and safety, and be consistent with the common defense and security; and
- (2) "special circumstances" must be present.

NRC: POLICY STATEMENT ON CONDUCT OF LICENSING PROCEEDINGS

The Commission may reject nonresponsive pleadings and may find parties that consistently ignore Commission directives to be in default. *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 454 (1982). *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-2, 21 NRC 282, 286-87 (1985).

ADJUDICATORY HEARINGS: PROCEDURAL REQUIREMENTS

Since adjudicatory hearings are intended only for the resolution of disputed issues of material fact, a person seeking a hearing must meet the threshold requirement of tendering sufficient information to establish that there are material issues of fact that warrant a hearing.

NRC: AUTHORITY (EXEMPTION FROM LICENSE REQUIREMENTS)

The Commission has the legal authority to grant exemptions from its licensing requirements. See 50 Fed. Reg. 50,764, 50,766-67 (Dec. 12, 1985), citing *United States v. Allegheny-Ludlum Steel*, 406 U.S. 742 (1972), and *Alabama Power Co. v. Costle*, 636 F.2d 323, 357 (D.C. Cir. 1979).

REGULATIONS: EXEMPTIONS

The appropriate method for seeking a waiver or an exemption from Commission regulations depends on the circumstances of each case. If an exemption request regarding whether another full-participation exercise must be held prior to licensing is not directly related to a contention in the operating license proceeding, there is no requirement that the exemption request be addressed under 10 C.F.R. § 2.758. See, e.g., *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), LBP-85-33, 22 NRC 442 (1985), *aff'd*, ALAB-841, 24 NRC 64 (1986).

REGULATIONS: EXEMPTIONS

When a proposed grant of an exemption is based on a finding that the requirements of 10 C.F.R. § 50.12(a)(1) and (a)(2)(ii) have been met, a person seeking a hearing on the exemption request must demonstrate that there exists a material issue of fact regarding the appropriate application of either of those two subsections.

EMERGENCY PLANNING: PREDICTIVE FINDINGS

Staff review of exercise results is consistent with the predictive nature of emergency planning, and is restricted to determining if the exercise revealed any deficiencies that 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 PLAN: PARTICIPATION

Commission regulations do not require public participation in emergency preparedness exercises. See 10 C.F.R. Part 50, Appendix E, § IV.F.1.

MEMORANDUM AND ORDER

The Commission has before it a request for a hearing on an exemption request. Finding no material issues of fact that would warrant a hearing, the Commission denies the hearing request.

I. BACKGROUND

The Commission's regulations require a full-participation emergency preparedness exercise "within 1 year before the issuance of the first operating license for full power and prior to operation above 5% of rated power of the first reactor" 10 C.F.R. Part 50, Appendix E, § IV.F.1.¹ Applicant Carolina Power & Light (CP&L), projecting fuel load in March 1986, conducted a full-participation exercise on May 17-18, 1985. Applicant did not meet its projected schedule for fuel load. Since CP&L did not have another full-participation exercise planned for 1986, on March 4, 1986, CP&L requested an exemption from the emergency preparedness exercise requirements of Appendix E, § IV.F.1.

On April 3, 1986, Wells Eddleman, intervenor in the ongoing Shearon Harris operating license proceeding, requested a hearing on this exemption

¹ A "full-participation" exercise is defined as meaning:

[A]ppropriate offsite local and State authorities and licensee personnel physically and actively take part in testing their integrated capability to adequately assess [sic: assess] and respond to an accident at a commercial nuclear power plant. "Full participation" includes testing the major observable portions of the onsite and offsite emergency plans and mobilization of State, local and licensee personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario.

10 C.F.R. Part 50, Appendix E, n.4.

request. While Eddleman's request was pending, CP&L on June 10, 1986, asked the NRC to suspend consideration of the exemption request. On July 10, 1986, CP&L asked for resumed consideration of its request. The NRC Staff on July 24, 1986, filed an opposition to the Eddleman request for a hearing. On August 5, 1986, Eddleman, joined this time by the Coalition for Alternatives to Shearon Harris (CASH), again requested a hearing on the exemption request. CP&L filed a motion in opposition on August 28, 1986.

On September 12, 1986, the Commission requested briefs on whether there were any material issues of fact regarding whether the exemption request should be granted. The Commission explained that it had decided to determine whether there were any material issues of fact warranting a hearing before it decided whether the Atomic Energy Act granted interested persons any hearing rights on the exemption request.

Eddleman and CASH ("Petitioners") submitted their brief on October 6, 1986.² As pertinent to the issues addressed in this order, they argued that the exemption request requires a full evidentiary hearing under § 189a of the Atomic Energy Act, that deficiencies in the May 1985 exercise raise material issues of fact regarding whether necessary improvements have been made and the plan is now feasible, and that occurrences subsequent to the May 1985 exercise raise material issues of fact and compel rejection of the exemption request.³

CP&L and the NRC Staff opposed the hearing request. Both argued that Petitioners had failed to raise any material issue of fact regarding whether the exemption request should be granted.

²The Commission in its September 12 order (unpublished) reserved whether CASH's hearing request was timely, and whether CASH, which did not intervene in the operating license proceeding, would have any rights to participate in any hearing. In view of the Commission's decision that there are no material issues of fact warranting a hearing, and in view of the fact that CASH and Eddleman filed a joint brief, the Commission need not reach those questions.

³Some comment regarding the responsiveness of Petitioners' brief is in order. The Commission's September 12 order directed Eddleman and CASH to "indicate what contentions they seek to litigate, what the specific disputed material facts are for which they believe a hearing must be held, what position they take on such issues, and the factual basis for such position." The order further stated they should "explain why these issues are material to a determination under 10 C.F.R. 50.12," and "set forth their rationale for believing an oral hearing is needed for a full and true discussion of the facts on these issues." The Commission by requesting this information intended to resolve whether Petitioners had raised any litigable contentions.

Petitioners' brief is somewhat less than responsive to the Commission's order. For instance, Petitioners have failed to identify the contentions they seek to litigate, or to set forth any rationale for believing an oral hearing is needed for a full and true discussion of the factual issues they raise.

The Commission in another proceeding was also faced with such nonresponsive pleadings. The Commission in that case stated that it would "not tolerate such clear disregard for its orders in the future . . . [N]onresponsive pleadings may be rejected, and parties which consistently ignore Commission directives may be found to be in default. *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 454 (1982)." *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-85-2, 21 NRC 282, 286-87 (1985). The Commission does not intend to have to repeat this warning. When the Commission specifies issues it wishes to have addressed, it expects those issues to be briefed. In the present case, the failings in Petitioners' brief alone could serve as a basis for denying their hearing request. Nonetheless, the Commission has considered their arguments regarding whether there are any material issues of fact warranting a hearing.

II. REGULATORY BACKGROUND AND THE EXEMPTION REQUEST

The Commission's regulations set up two requirements for the grant of an exemption. First, the exemption must be "[a]uthorized by law, . . . not present an undue risk to the public health and safety . . . and [be] consistent with the common defense and security." 10 C.F.R. § 50.12(a)(1). Second, there must be a "special circumstance" as defined in 10 C.F.R. § 50.12(a)(2).

Applicants in their March 4, 1986 exemption request maintained that the criteria of § 50.12 are met. They argued that four of the categories of special circumstances — (ii), (iii), (v), and (vi) — are present.

The NRC Staff has concluded that the exemption requirements are met in the present case. See "Safety Evaluation in Support of Granting an Exemption Request for an Exemption from Section IV.F.1 of Appendix E to 10 C.F.R. 50, Shearon Harris Nuclear Power Plant" ("SER"). In particular, Staff found that the following factors support the granting of the requested exemptions:

1. The conduct of a full participation emergency preparedness exercise in May, 1985 where the Staff identified no significant deficiencies in onsite preparedness and leading to a favorable FEMA finding on offsite preparedness on August 7, 1985.
2. Full participation by the State of North Carolina in the exercise at Catawba in February 1986 and the planned full participation by the State in the scheduled exercise at SHNPP [Shearon Harris Nuclear Power Plant] in February 1987.
3. The participation of local response organizations in a partial participation exercise at SHNPP in October 1986 and the involvement of these organizations, with the assistance of the licensee, in an ongoing training and development program.

SER at 3. Staff concluded that granting the exemption is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security. With regard to the requirement for a "special circumstance," Staff found that application of the regulation "is not necessary to achieve the underlying purpose of the rule" under 10 C.F.R. § 50.12(a)(2)(ii). *Id.* Staff explained that the "underlying purpose" of the rule is "to ensure that adequate emergency response capability exists at the time of licensing." *Id.* at 1. Based on the available information, Staff concluded that this purpose is met without another full-participation exercise.⁴

⁴Before the merits of Petitioners' arguments are addressed, there is one other preliminary matter that warrants discussion. There is a full-participation exercise scheduled at Shearon Harris for February 27, 1987. On October 29, 1986, the North Carolina Attorney General's office requested that the Commission determine the probability of readiness before February 27 for full-power operation at Shearon Harris. The Attorney General argued that, unless there is a reasonable probability that CP&L will be ready for a full-power license by February 27, the request for an exemption is moot.

(Continued)

III. ANALYSIS

A. Whether § 189a Creates Hearing Rights

Even if § 189a of the Atomic Energy Act required an adjudicatory hearing on this exemption request, as Petitioners assert, threshold procedural requirements for institution of a hearing would still have to be met. *See, e.g., BPI v. AEC*, 502 F.2d 424 (D.C. Cir. 1974). Since adjudicatory hearings are intended only for the resolution of disputed issues of material fact, *Costle v. Pacific Legal Foundation*, 445 U.S. 198, 214 (1980), one such procedural requirement is that a person seeking a hearing must tender sufficient information to establish that there are material issues of fact warranting a hearing. Petitioners have failed to meet this threshold requirement, and therefore the Commission need not address whether § 189a gives interested persons hearing rights on the exemption request at issue here, either within the operating license proceeding or as a separate matter.⁵

B. Whether There Are Any Material Issues of Fact

The issue here is not, as a cursory reading of Petitioners' brief might indicate, solely whether there are any material issues of fact regarding whether emergency preparedness is adequate. Rather, as explained in the Commission's September 12 order, the issue is whether there are any material issues of fact regarding

The NRC Staff responded to this motion on November 17, 1986. The Staff stated its view that CP&L would be ready to exceed 5% of rated power in January 1987.

The Commission in this order is not addressing the merits of the exemption request, including whether the requested relief is necessary. Unless there is a hearing on the request, the NRC Staff has the authority to grant or deny the request. However, the Commission notes in this regard that even if the plant were not ready to exceed 5% power until February 27, the mere fact that an exercise is scheduled for February 27 does not mean that the results of that exercise will be available on February 27. FEMA and the NRC Staff must thereafter evaluate the exercise, a process that could take several weeks.

⁵ Petitioners raise numerous other issues that can be addressed summarily. First, Petitioners contend that the Commission does not have the legal authority to grant exemptions. There is no merit to this contention. *See* 50 Fed. Reg. 50,764, 50,766-67 (Dec. 12, 1985), citing *United States v. Allegheny-Ludlum Steel*, 406 U.S. 742 (1972), and *Alabama Power Co. v. Costle*, 636 F.2d 323, 357 (D.C. Cir. 1979).

Petitioners next argue that this exemption is related to an issue in the operating license proceeding and should be addressed under 10 C.F.R. § 2.758, not § 50.12. Contrary to Petitioners' assertion, this exemption request — regarding whether another full-participation exercise must be held prior to licensing — is not directly related to a contention in the operating license proceeding. Moreover, §§ 2.758 and 50.12 offer alternative methods for seeking waivers or exemptions from the Commission's regulations. Which is more appropriate depends on the circumstances of each case, and there is no requirement that CP&L proceed under § 2.758 here. *See, e.g., Cleveland Electric Illuminating Co. (Perry Nuclear Power Plant, Units 1 and 2)*, LBP-85-33, 22 NRC 442 (1985), *aff'd*, ALAB-841, 24 NRC 64 (1986). The earlier Commission decisions indicating that § 50.12 was only to be used in emergency situations were issued before the revisions to § 50.12. *See* 50 Fed. Reg. 50,764 (Dec. 12, 1985).

Petitioners further maintain that CP&L has not met the criteria for issuance of an exemption, and that the exemption request should be denied solely because of the lapse of time since the May 1985 exercise. Petitioners' arguments in this regard are beyond the scope of this order, which addresses only whether to institute a hearing on this request. *See* note 4, *supra*.

whether the standards of § 50.12 are met. Hence, even if Petitioners did raise a material issue of fact regarding emergency preparedness,⁶ they would still have to show how that issue was material to a determination under § 50.12.⁷

The NRC Staff proposes to grant the exemption by finding that the requirements of 10 C.F.R. § 50.12(a)(1) and (a)(2)(ii) are met. Therefore, to demonstrate that a hearing is warranted, Petitioners must raise a material issue of fact regarding either one of those two subsections, i.e., Petitioners must raise a material issue of fact regarding whether (1) the exemption is "[a]uthorized by law, will not present an undue risk to the public health and safety, and [is] consistent with the common defense and security," 10 C.F.R. § 50.12(a)(1), or (2) "[a]pplication of the regulation in the particular circumstances . . . is not necessary to achieve the underlying purpose of the rule." § 50.12(a)(2)(ii).

Petitioners make essentially the same arguments for both sections. With regard to whether the exemption will present an undue risk to public health and safety, Petitioners maintain that "the Plan that now exists is not the Plan that was tested." Pet. Br. at 14. Petitioners argue that the May 1985 exercise demonstrated "serious defects" in the plan, and substantial modifications have been made subsequent to the exercise. Petitioners claim that without a full-participation exercise there can be no reasonable assurance that the defects have been corrected, or the modifications implemented. Petitioners also argue that significant population growth and a lack of public confidence require a full-participation exercise to show that there is no undue risk to public health and safety.

With regard to whether application of the regulation is necessary to achieve the underlying purpose of the rule, Petitioners maintain that the purpose of the requirement for a full-participation exercise within 1 year before issuance of a full-power license "is to establish reasonable assurance that the emergency plan in place can and will be implemented." Pet. Br. at 17.⁸ Petitioners maintain that

⁶The Commission in its September 12 order stated that to the extent relevant it would consider allegations of deficiencies in emergency preparedness only where the basis for the allegation, if shown to be true, would demonstrate a "fundamental flaw" in preparedness. See, e.g., *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-86-11, 23 NRC 577, 581 (1986); *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-85-49, 22 NRC 899, 908-10 (1985), *aff'd*, ALAB-843, 24 NRC 200 (1986).

The Commission in this Order resolves all of Petitioners' claims without relying on the "fundamental flaw" standard.

⁷For instance, issues concerning matters that would not be tested in a full-participation exercise would be irrelevant to the exemption request at issue here.

⁸The Commission agrees with the thrust of Petitioners' statement of the purpose of the regulation. The Commission's regulations require that there be "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." 10 C.F.R. § 50.47(a). The exercise requirements are designed to assist in ensuring that this standard is met. Hence the underlying purpose of the requirement for a full-participation exercise within 1 year of license issuance is to help ensure that emergency preparedness is adequate at the time of licensing the facility to ascend above 5% of rated power.

The Commission has recently issued a Notice of Proposed Rulemaking which would change the 1-year requirement to a 2-year requirement. 51 Fed. Reg. 43,369 (Dec. 2, 1986). The Commission in that Notice explained

(Continued)

the regulation requires that "readiness and training actually exist within one year before operation above five percent power," *id.*, but that the May 1985 exercise fails to establish such assurances. Hence, Petitioners conclude, an exemption would defeat the purpose of the regulation. Petitioners, to support this argument, cite the same factual arguments regarding preparedness as discussed above, i.e., they cite defects in the May 1985 exercise, modifications subsequent to the exercise, population growth, and a lack of public confidence.⁹

In sum, Petitioners maintain that defects in preparedness pose an undue risk to public health and safety and demonstrate that the underlying purpose of the regulation cannot be met without another exercise. Below we discuss each of Petitioners' alleged defects. For the sake of simplicity, we will divide Petitioners' claims into two categories, those based on the May 1985 exercise and those based on events subsequent to the May 1985 exercise. The issue in each case is whether the alleged defect raises a material issue of fact regarding whether the exemption should be granted.

a. The May 1985 Exercise

Petitioners, to support their argument that the May 1985 exercise raises material issues of fact, rely on various deficiencies noted in the FEMA and state evaluation reports. However, they ignore the fact that these individual criticisms did not affect the overall conclusion that emergency planning was adequate. The overall FEMA findings on the Shearon Harris exercise were that:

"The State and local emergency plans are adequate and capable of being implemented, and the exercise demonstrated that offsite preparedness is adequate to provide reasonable assurance that appropriate measures can be taken to protect the health and safety of the public living in the vicinity of the Shearon Harris Nuclear Power Station in the event of a radiological emergency."

LBP-85-49, 22 NRC 899, 910 (1985) (*quoting* Memorandum from Richard Krimm, FEMA, to Edward Jordan, NRC, at 2 (Aug. 7, 1985)).

that it had determined in an earlier rulemaking that biennial exercises by state and local governments were adequate for plants with operating licenses, and that there was no reason to have a biennial post-license exercise requirement and an annual pre-license requirement. The Commission explained that the only requirement regarding the timing of a pre-license exercise should be that the participants be in place and trained so that the exercise is meaningful. *Id.* at 43,369-70.

⁹ Petitioners also claim that Applicant is suggesting that less than a full-participation exercise can substitute for a full-participation exercise. Applicant is using a partial exercise and other measures to show that it is continuing to maintain an adequate level of preparedness. As noted by the NRC Staff, subsequent to May 1985 "additional training has been provided, fire drills have been conducted . . . and other activities commenced that convince the Staff that the May 1985 level of response capability has been maintained." Staff Br. at 9.

The purpose of reviews of exercise results was explained by the Commission in the Shoreham proceeding as follows:

Staff review of exercise results is consistent with the predictive nature of emergency planning, and is restricted to determining if the exercise revealed any deficiencies which preclude a finding of reasonable assurance that protective measures can and will be taken, i.e., fundamental flaws in the plan.

Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), CLI-86-11, 23 NRC 577, 581 (1986). Even though the results of the May 1985 exercise show some problems, they do not show a flaw in planning or implementation that would require another exercise prior to issuance of a full-power license. Rather, the May 1985 exercise showed that both planning and implementation were adequate to meet the regulatory requirements. Petitioners have failed to explain how the deficiencies they cite raise a material issue of fact regarding whether the exemption should be granted, given that FEMA's overall conclusions were favorable.¹⁰

Moreover, Petitioners' allegations lack nexus to the exemption request in the sense that Petitioners would have had the same complaints even if the plant had commenced full-power operation within 1 year of the exercise, thus obviating any need for the exemption. In sum, Petitioners' reliance on the May 1985 exercise to raise a material issue of fact regarding the exemption request is misplaced.

b. Events Subsequent to the May 1985 Exercise

Petitioners list eight events subsequent to the May 1985 exercise which, in their view, raise material issues of fact regarding whether granting the exemption would create an undue risk to public health and safety and would defeat the underlying purpose of the regulation. We will discuss each in turn.

Petitioners first argue that one or more warning sirens were inadvertently set off in the early morning hours in the summer of 1986, that many citizens nearby did not hear the sirens and were not awakened, and that persons who did hear the sirens and call the authorities were unable to determine what the

¹⁰In fact, Eddleman filed twelve contentions alleging deficiencies in the 1985 exercise with the Licensing Board. The Licensing Board rejected seven of those contentions because they alleged "minor, ad hoc, correctable problems. . . ." LBP-85-49, *supra*, 22 NRC at 911. It rejected two because they mischaracterized the documents on which they were based and failed to show any deficiencies. It rejected one contention alleging problems with the siren system because the system had not yet been installed, and because the problems, if there, appeared correctable. *Id.* at 913. Finally, the Licensing Board granted summary disposition on the remaining two contentions. LBP-86-11, 23 NRC 294, 398-407 (1986). The Appeal Board affirmed the Licensing Board's decisions. ALAB-843, 24 NRC 200 (1986); ALAB-852, 24 NRC 532 (1986).

sirens meant. Petitioners also state that tone alert radios distributed to persons living within the 5-mile zone "reportedly have malfunctioned." Pet. Br. at 34.

Applicant and the NRC Staff point out that the inadvertent sounding of the alarm was due to vandalism, and did not provide a true test of the emergency system. This inadvertent sounding was fully addressed in a decision by the Director, NRR, denying a 10 C.F.R. § 2.206 petition by Eddleman and CASH. DD-86-15, 24 NRC 618 (1986). Moreover, the adequacy of nighttime public alert/notification systems at Shearon Harris — including the use of tone alert radios — was litigated and found adequate by the licensing and appeal boards. LBP-86-11, 23 NRC 294, 364 *et seq.* (1986), *aff'd*, ALAB-852, 24 NRC 532 (1986).

Petitioners have offered no reason to believe that the act of vandalism provided a true test of the siren system, and their claim that tone alert radios "reportedly" malfunctioned is vague and unsupported. Moreover, another full-participation exercise — which would not require a test of the notification system at night — is not even relevant to these concerns.

Petitioners next argue that the lapse of time since the May 1985 exercise, personnel changes, modifications in the chain of command, and the need for retraining raise material issues of fact. Petitioners' bare assertions are insufficient to demonstrate a flaw in preparedness. Personnel changes, modifications in the chain of command, and the need for continual training are all a constant part of emergency preparedness. Neither the passage of 21 months until the next scheduled full-participation exercise nor bare allegations that changes have occurred, without more, raise material issues of fact regarding the exemption request. Here Applicant has taken numerous steps to ensure that preparedness after the May 1985 exercise remains adequate. *See, e.g., SER, supra*, at 2. Petitioners have not raised any material issues of fact regarding the adequacy of those measures.

Petitioners' single example of a specific change is the transfer of responsibility for traffic control in Lee County from the Police Chief to the Sheriff. By itself this switch does not raise a material issue of fact. Applicant points out that this change does no more than reverse primary and secondary responsibility, and Petitioners have advanced no evidence to show that the Sheriff will be unable to fulfill the primary responsibility. Indeed, the Sheriff's participation in traffic control in the May 1985 exercise demonstrates his capabilities in that role. Hence Petitioners have failed to raise a material issue of fact regarding the exemption.

Petitioners' third argument concerns responsibility for evacuation and management of the Jordan Lake recreational area. Petitioners state that the Chairman of the Board of Commissioners, Chatham County, has stated that the County will take no responsibility for the Jordan Lake recreational area, and that these statements contradict the provisions under the plan. Petitioners have made no attempt to draw a nexus between their concerns and the exemption request, and

their allegation fails to raise a material issue of fact. First, such alleged statements, without more, are insufficient to raise a material issue of fact regarding whether Chatham County will fulfill its responsibilities. Second, even if Chatham County took no responsibility for the Jordan Lake recreational area, as Petitioners assert, Applicant points out that there would still be a large complement of other available resources. For instance, the North Carolina Wildlife Resources Commission has direction and control of emergency operations at Jordan Lake, with assistance provided by the State Division of Forest Resources, the Jordan Lake Division of the Army Corps of Engineers, and the Division of Parks and Recreation. Petitioners have not suggested why another exercise is needed in view of the complement of available resources.

Petitioners' fourth argument is that public statements by the President of CP&L contradict provisions of the emergency plan, and require another full-participation exercise to avoid confusion and to reassure the public. The two alleged statements are that (1) in a worst-case discharge, evacuated residents would be able to return the day after the accident, and (2) in the event of a radiological discharge, persons living more than 2 miles from the site might be safe.

Again, Petitioners fail to explain how these alleged statements, even if made, relate to the exemption request at issue here. Exercises are not conducted for the education of the public, but to test the emergency workers who would actually respond in the event of an emergency. Moreover, Petitioners have failed to explain how a lack of confidence in the emergency plan among some members of the public, if true, would constitute a flaw in planning that would be tested by another exercise. In fact, it is not apparent why another exercise, if successful, would achieve any more public confidence than the exercise already held.

Petitioners' fifth argument concerns revisions in the plan after the May 1985 exercise regarding what hospitals and medical facilities would be available to provide decontamination and medical services. Petitioners assert that questions have arisen regarding whether binding commitments with Chatham Hospital have been reached, and whether North Carolina Memorial Hospital is willing to participate to the extent required by the plan, since it is willing to treat only persons in need of in-patient treatment.

Applicant responds to this argument by stating that negotiations toward arrangements with Chatham Hospital are ongoing, and by noting that the existing plan does not rely on Chatham Hospital for the treatment of contaminated persons. Since the existing plan does not rely on Chatham Hospital, questions regarding the commitments by Chatham Hospital are irrelevant to whether the exemption request should be granted. With regard to North Carolina Memorial Hospital, that hospital's policy is consistent with the NRC's regulatory guidance, which provides for separate, nonmedical facilities for monitoring and decontamination of the general public. See NUREG-0654, Criterion J.12. The hospital's

policy seems to be a reasonable allocation of resources, and certainly does not suggest a flaw in the plan, or raise a question regarding the exemption request at issue here.

Petitioners' sixth argument relies on affidavits of county employees subsequent to the May 1985 exercise which state that they will participate in exercises, but not in actual emergencies. Again, Petitioners fail to draw a nexus between their allegation and the exemption request at issue. Holding another exercise in which these workers will participate is irrelevant to the question raised by Petitioners, which is whether they would participate in an actual emergency.

Petitioners' seventh argument is based on the growth in population in and near the emergency planning zone since May 1985. Petitioners appear to be arguing that a full-participation exercise is necessary to educate and assure those who have moved into the area since the May 1985 exercise, and to determine whether the major roadways can handle the current population in the event of an evacuation. As stated *supra*, exercises are not training tools for the public. The Commission's regulations do not require public participation in exercises, *see* 10 C.F.R. Part 50, Appendix E, § IV.F.1, and the exercises do not test the adequacy of the roadway systems. Thus again Petitioners have failed to establish any linkage between their concerns and the exemption request.

Finally, Petitioners maintain that subsequent to May 1985 the onsite fire service provider (Apex Fire Department) has withdrawn and been replaced by another fire service provider (Fuquay-Varina Rural Fire Department). Petitioners assert that the replacement fire service company must be tested through an exercise. However, there is no requirement that all fire departments participate in all exercises. Indeed, CP&L points out that in the present case it was the Holly Springs Fire Department, another onsite fire service provider, which participated in the May 1985 exercise, and that the Apex Fire Department did not even participate in that exercise. Thus the change from the Apex Fire Department to the Fuquay-Varina Rural Fire Department has not occasioned a loss of exercise experience. Petitioners do not identify which significant facts are in dispute, the basis for any such facts, or what it is that the Fuquay-Varina Rural Fire Department cannot do and why it cannot perform its assigned function. The Commission therefore concludes that there are no material issues of fact presented here regarding this exemption request.¹¹

¹¹ Petitioners also argue that the State's efforts to evacuate Bogue Banks in anticipation of Hurricane Charlie were inadequate, and that this demonstrates that a full-participation exercise for Shearon Harris is required. Petitioners have failed to show any connection between the State's efforts regarding Hurricane Charlie and preparedness at Shearon Harris.

IV. SUMMARY

Petitioners have failed to raise any material issue of fact regarding whether this exemption request should be granted. Rather, they have raised concerns without any supporting factual basis, minor problems, and issues that are unrelated to the exemption request at issue here. In the absence of a material issue of fact, the Commission concludes that there would be no purpose in initiating a hearing on the exemption request. Accordingly, the request for a hearing is denied.

Commissioner Asselstine was not available to participate in this Order. It is so ORDERED.

For the Commission

JOHN C. HOYLE
Acting Secretary of the
Commission

Dated at Washington, D.C.,
this 5th day of December 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Gary J. Edles
Howard A. Wilber

In the Matter of

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

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

December 8, 1986

The Appeal Board affirms the Licensing Board's memorandum and order, LBP-86-34, 24 NRC 549 1986, authorizing the issuance of a license allowing fuel loading and precriticality testing.

OPERATING LICENSE PROCEEDINGS: REQUEST FOR
LOW-POWER LICENSE

Section 50.57(c) of the Commission's regulations permits an applicant in an operating license proceeding to make a motion in writing for a 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. It also establishes the criteria for action on such motion by the presiding officer.

RULES OF PRACTICE: CONTENTIONS (APPEALABILITY OF DISMISSAL)

Licensing Board ruling dismissing contentions and paving the way for issuance of a license is immediately appealable to an appeal board. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-765, 19 NRC 645, 648 n.1 (1984), *aff'd mem.*, *Anthony v. NRC*, 770 F.2d 1066 (3d Cir. 1985).

RULES OF PRACTICE: SUMMARY DISPOSITION (APPEALABILITY OF DECISION)

An opponent of a licensing board order authorizing the issuance of a license allowing fuel loading and precriticality testing may challenge the licensing board's summary disposition of issues relevant to fuel loading or precriticality testing in connection with its attack upon the order authorizing issuance of the license.

OPERATING LICENSE: CRITERIA FOR ISSUANCE

An applicant for an operating license need only demonstrate, and a licensing board need only find, that there is reasonable assurance that a reactor will operate as proposed. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 741 (1985), *review declined*, CLI-86-5, 23 NRC 125 (1986); *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 421 (1980).

OPERATING LICENSE: LOW-POWER LICENSE (SECURITY PLAN)

Commission regulations require each plant to have a detailed security plan to protect against external and internal sabotage. 10 C.F.R. Part 73. The theoretical possibility of sabotage cannot justify the denial of a license for fuel loading and precriticality testing. *Cf. Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 699-701 (1985).

OPERATING LICENSE: LOW-POWER LICENSE EMERGENCY PREPAREDNESS)

Section 50.47(d) requires that the Commission be satisfied regarding the state of onsite emergency preparedness before a low-power license may be issued but does not assign the responsibility for that determination to any component within the agency. Section 50.47(c) requires the Licensing Board to make findings with

respect to contested issues while the NRC staff must make all other necessary determinations. *See Consolidated Edison Co. of New York* (Indian Point, Units 1, 2 & 3), ALAB-319, 3 NRC 188, 190 (1976).

OPERATING LICENSE: LOW-POWER LICENSE (RESPONSIBILITY OF LICENSING BOARDS, STAFF)

The distinction set out in 10 C.F.R. 50.57(c) between the responsibilities of a licensing board and the NRC staff in granting a low-power license reflects well-established NRC procedure in operating license cases. *See, for example*, 10 C.F.R. 2.760a, 10 C.F.R. 2.104(c) and 10 C.F.R. Part 2, Appendix A, VIII(b).

TECHNICAL ISSUES DISCUSSED

Prevention of Unintended Criticality.

APPEARANCES

Robert A. Backus, Manchester, New Hampshire, for the intervenor Seacoast Anti-Pollution League.

Thomas G. Dignan, Jr., R.K. Gad III, and Kathryn A. Selleck, Boston, Massachusetts, for the applicants Public Service Company of New Hampshire, *et al.*

Robert G. Perlis for the Nuclear Regulatory Commission staff.

DECISION

The Seacoast Anti-Pollution League (SAPL) seeks reversal of the Licensing Board's October 7, 1986 memorandum and order in this operating license proceeding.¹ That order authorized the issuance of a license allowing fuel loading and precriticality testing at the Seabrook nuclear power facility. We earlier took up the appeal from the same order filed by the Attorney General of Massachusetts.² SAPL had joined in that appeal but raised other issues as

¹See LBP-86-34, 24 NRC 549.

²See ALAB-853, 24 NRC 711 (1986).

well. In considering the appeal, we evaluated SAPL's arguments in support of those advanced by the Attorney General, but deferred review of SAPL's separate assertions. We also declined either to affirm or to reverse the Licensing Board's October 7 order until we could examine those separate matters. Upon such examination, we now affirm the Board's order.³

A. The applicants filed a motion with the Licensing Board pursuant to 10 C.F.R. 50.57(c) seeking authorization to load fuel and conduct precriticality testing.⁴ That regulation provides, in part:

An applicant may, in a case where a hearing is held in connection with a pending proceeding under this section make a motion in writing, pursuant to this paragraph (c), for an operating license authorizing low-power testing (operation at not more than 1 percent of full power for the purpose of testing the facility), and further operations short of full power operation. Action on such a motion by the presiding officer shall be taken with due regard to the rights of the parties to the proceedings, including the right of any party to be heard to the extent that his contentions are relevant to the activity to be authorized. Prior to taking any action on such a motion which any party opposes, the presiding officer shall make findings on the matters specified in paragraph (a) of this section as to which there is a controversy, in the form of an initial decision with respect to the contested activity sought to be authorized. The Director of Nuclear Reactor Regulation will make findings on all other matters specified in paragraph (a) of this section.

The applicants asserted that none of the pending intervenor contentions was relevant to fuel loading or precriticality testing. SAPL claimed, to the contrary, that a portion of its Supplemental Contention 6 concerning the Seabrook control room design review and associated human engineering deficiencies was relevant to the requested authorization. It also argued that some error or malicious act might permit criticality to occur. In this connection, it suggested that leakage of borated water from the reactor coolant system could affect the applicants' ability to maintain boron concentration at a level sufficient to prevent criticality.

The Licensing Board rejected SAPL's claims. It pointed out that the part of Supplemental Contention 6 that adverted to the control room and human engineering discrepancies had earlier been decided in response to the applicants' motion for summary disposition.⁵ It also indicated that SAPL had not submitted any contention that questioned the applicants' leakage reduction program. Finally, it concluded that the assertions about possible errors that might lead to accidental criticality were "vague" and did not challenge the applicants' methods

³The applicants argue that when a party "joins" in another's appeal, it is confined to the issues and arguments made by the original appellant and may not advance separate issues and arguments. Given our substantive disposition of SAPL's claims, we need not address the applicants' argument in this regard.

⁴Applicants' Motion for Authorization to Issue License to Conduct Fuel Load and Precriticality Testing (August 22, 1986) at 1-2 (hereafter, Applicants' Motion).

⁵LBP-86-34, 24 NRC at 553.

for assuring maintenance of boron concentration in the reactor coolant system sufficient to prevent the occurrence of criticality.⁶

Before us SAPL makes three arguments. First, it claims that the Licensing Board's reliance on the summary disposition of the contention dealing with control room design review and associated human engineering deficiencies deprives it of an opportunity to obtain appellate review of the Board's determination. Second, it maintains that the Board erred in authorizing issuance of the license because there is no guarantee that criticality will not occur during fuel loading or precriticality testing. Third, it asserts that the Licensing Board failed to make a finding regarding the state of onsite emergency preparedness as required by 10 C.F.R. 50.47(d). The applicants and the NRC staff oppose each assertion.

B.1. SAPL first contends that the issue raised in Supplemental Contention 6 and decided in response to the applicants' motion for summary disposition⁷ is relevant to fuel loading and precriticality testing. It argues from this that the Board's authorization of fuel loading and precriticality testing "deprives [it] of the right to seek redress at the appropriate point in future of the denial of hearing on this issue"⁸ Contrary to its claim, SAPL has not been deprived of an opportunity to seek appellate redress of the Board's decision. If, as it contends, the control room design issue is relevant to fuel loading or precriticality testing (a matter we need not decide), SAPL could have challenged the Board's summary disposition of that issue in connection with its attack upon the October 7 order authorizing issuance of the license.⁹ But SAPL has not availed itself of the opportunity to challenge the substance of the Board's summary disposition determination. In fact, it has not referred us to any instance where the control room design or an associated human engineering deficiency might affect the safety of fuel loading or precriticality testing. That being so, we find no impediment to issuance of the license by virtue of the Board's disposition of Supplemental Contention 6 matters. Whether SAPL may also attack the Board's decision at a later date must abide future events.

2. For a reactor to achieve criticality, i.e., a self-sustaining nuclear chain reaction, a sufficient number of neutrons must be captured by the uranium fuel. Control rods or dissolved boron in the reactor coolant are used to absorb neutrons if it is necessary to prevent criticality. (Boron is a neutron-absorbing

⁶ *Id.* at 554.

⁷ LBP-86-30, 24 NRC 437 (1986).

⁸ Seacoast Anti-Pollution League's Brief in Support of Appeal of Licensing Board Order Authorizing Issuance of Operating License to Conduct Fuel Load and Precriticality Testing (October 29, 1985) at 8 (hereafter, SAPL Brief).

⁹ See *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-765, 19 NRC 645, 648 n.1 (1984), *aff'd mem.*, *Anthony v. NRC*, 770 F.2d 1066 (3d Cir. 1985) (licensing board ruling dismissing contentions and paving the way for issuance of a license is immediately appealable to appeal board).

"poison" and decreases reactivity.¹⁰) The applicants propose to protect against inadvertent criticality (even in the event that all control rods are withdrawn from the reactor core) by maintaining a boron concentration of 2000 parts per million (ppm) or greater.¹¹

SAPL agrees that criticality could not occur if the boron concentration in the reactor coolant system is maintained at a level of 2000 ppm. But it contends that the Licensing Board erred in authorizing issuance of the license because there is no "guarantee" that criticality will not occur.¹² In particular, SAPL hypothesizes the occurrence of criticality as a result of the inadvertent or malicious addition of insufficiently borated water during the replacement of leakage from the reactor coolant system. SAPL notes that the applicants have not submitted the results of leak rate measurements. Its concern over the leakage reduction program was sparked by the appearance of a requirement regarding the submission of leak rate data in a draft of the license authorizing fuel loading and precriticality testing (and in the subsequently issued license itself). In accordance with that requirement, before exceeding 5% of rated power the applicants must submit the results of leak rate measurements in order to demonstrate that the leakage reduction program has been implemented successfully.¹³

SAPL has not set forth any justification for withholding the license for fuel loading and precriticality testing. To begin with, the license requirement cited by SAPL has little, if any, bearing on the safety of fuel loading or precriticality testing. The submission of leak rate data is ordinarily required before the ascension to power levels above five percent. In the instant case, the applicants committed to submit these data before initial criticality.¹⁴

Moreover, SAPL has not shown that the applicants' leakage reduction program will be ineffective. The efficacy of the program comes into play (if at all) only because water to replace routine leakage must be added to the reactor coolant system at the proper boron concentration. The applicants described the method of ensuring that the boron concentration of the reactor coolant and makeup water supplies will be maintained at the proper level. In particular, they indicated that

¹⁰ See *Public Service Electric and Gas Co.* (Salem Nuclear Generating Station, Unit 1), ALAB-650, 14 NRC 43, 47 n.2 (1981), *aff'd*, *Township of Lower Alloways Creek v. Public Serv. Elec. and Gas Co.*, 687 F.2d 732 (3d Cir. 1982).

¹¹ Applicants' Motion at 5.

¹² SAPL Brief at 8.

¹³ See Seabrook Station, Unit No. 1 Facility Operating License NPF-56 (October 17, 1986) at 5. See also SAPL's and NECNP's Response and Objection to Applicants' Motion for Authorization to Issue License to Conduct Fuel Load and Precriticality Testing (August 29, 1986) at 4.

¹⁴ See Safety Evaluation Report for the Seabrook Station, NUREG-0896, Supplement No. 5 (July 1986) at 15-13.

[g]rab samples will be manually taken from the reactor coolant and makeup water supply and analyzed at least once per shift to verify that the boron concentration is at least 2000 ppm. In addition, the makeup water supply will be sampled and analyzed in this manner each time any water is added to the supply to verify this concentration. To preclude inadvertent boron dilution which could reduce the concentration below 2000 ppm, nonborated water sources will be isolated from the reactor coolant system by mechanically locking closed the appropriate valves with chains and padlocks.¹⁵

The staff reviewed the applicants' approach and procedures and found that they provided reasonable assurance that the boron concentration of the reactor coolant system would be maintained at or greater than 2000 ppm throughout fuel loading and precriticality testing.¹⁶

Based on its review of the parties' submittals, the Licensing Board determined that SAPL's arguments were unpersuasive. The Board explained:

SAPL's vague concerns about possible errors associated with addition of borated makeup water, and possible analytical errors in monitoring boron concentration, do not challenge any of the physical and administrative controls, or their implementation, devised by the Applicants to ensure maintenance of boron concentration in the reactor coolant system sufficient to prevent occurrence of criticality in the reactor fuel.¹⁷

We agree with the Licensing Board that SAPL has failed to point to any deficiency in the applicants' method or controls. Although criticality is not an impossibility, an applicant need only demonstrate, and a Board need only find, that there is reasonable assurance that the reactor will operate as proposed.¹⁸ SAPL concedes that analytical errors leading to a concentration of boron insufficient to prevent criticality is "not a high likelihood event."¹⁹ Furthermore, it does not allege that harm to the public would result even if criticality occurred. In the circumstances, the applicants have demonstrated that they have an acceptable program for ensuring that criticality will not occur during fuel loading and precriticality testing.

SAPL also argues that a disgruntled employee might attempt intentionally to cause criticality. The Commission has recognized the potential for sabotage as a contributor to accident risk. Commission regulations require each plant to have a detailed security plan to protect against external and internal sabotage.²⁰ SAPL does not challenge the adequacy of the Seabrook security plan. Indeed,

¹⁵ Applicants' Motion, Affidavit of George S. Thomas at 2-3.

¹⁶ Letter from Robert G. Perlis to Licensing Board (September 18, 1986), Affidavit of Warren C. Lyon at 3-4.

¹⁷ LBP-86-34, 24 NRC at 554 (footnote omitted).

¹⁸ *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 741 (1985), review declined, CLI-86-5, 23 NRC 125 (1986); *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 421 (1980).

¹⁹ SAPL Brief at 9.

²⁰ See 10 C.F.R. Part 73.

it characterizes a deliberate attempt to cause criticality as "remote."²¹ In the circumstances, the theoretical possibility of sabotage cannot justify denial of the requested license.²²

3. Section 50.47(d) of 10 C.F.R. provides that a license authorizing fuel loading or operation up to five percent of rated power can be issued "after a finding is made by the NRC that the state of onsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." SAPL contends that the regulation imposes on the Licensing Board "an affirmative responsibility" to make the requisite finding despite the absence of an applicable contention raised by a party in the proceeding.²³ As support, SAPL points to the Commission's response to a public comment on the rule change to allow low-power testing without state and local emergency plans in place. There, the Commission stated that "the NRC will review [certain] offsite elements of the applicant's emergency plan"²⁴

The applicants and the staff disagree with SAPL's argument. They acknowledge that, in accordance with section 50.47(d), the *Commission* must be satisfied regarding the state of onsite emergency preparedness before the license may be issued. But they contend that the *Licensing Board* need not make such a finding. They point to section 50.57(c), which authorizes the issuance of low-power licenses and provides in pertinent part:

Prior to taking any action on . . . a motion [for issuance of a low-power license] . . . , the presiding officer shall make findings on the matters specified in paragraph (a) of this section as to which there is a controversy The Director of Nuclear Reactor Regulation will make findings on all other matters specified in paragraph (a) of this section. [Emphasis added.]

We agree with the applicants and the staff.

Contrary to SAPL's interpretation, the regulations do not require the Licensing Board to make findings with respect to issues not before it. Section 50.47(d) provides that the Commission will make a finding as to the state of onsite emergency preparedness but does not assign this responsibility to any component within the agency. Section 50.57(c) does. As noted above, licensing boards are to make findings as to contested issues, while the NRC staff (i.e., the Director of Nuclear Reactor Regulation) must make all other necessary determinations.

The distinction set out in section 50.57(c) between the responsibilities of a licensing board and the NRC staff in granting a low-power license reflects

²¹ SAPL Brief at 9.

²² Cf. *Limerick*, ALAB-819, 22 NRC at 699-701.

²³ SAPL Brief at 6.

²⁴ 47 Fed. Reg. 30,232, 30,234 (1982).

well-established NRC procedure in operating license cases. For example, 10 C.F.R. 2.760a directs that

In any initial decision in a contested proceeding on an application for an operating license . . . , the presiding officer shall make findings of fact and conclusions of law on the matters put into controversy by the parties to the proceeding and on matters which have been determined to be the issues in the proceeding by the Commission or the presiding officer. Matters not put into controversy by the parties will be examined and decided by the presiding officer only where he or she determines that a serious safety, environmental, or common defense and security matter exists. . . .²⁵

As we pointed out in our *Indian Point* decision, "once an operating licensing board has resolved any contested issues and any issues raised *sua sponte* [by the board], the decision as to all other matters which need to be considered prior to the issuance of the requested license is the responsibility of the staff and it alone."²⁶ It is thus evident that the Board is required to make the reviews and findings referred to in 10 C.F.R. 50.47(d) for only those matters that were contested.²⁷

The Licensing Board's October 7, 1986 memorandum and order is *affirmed*. It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

²⁵ See also 10 C.F.R. 2.104(c) and 10 C.F.R. Part 2, Appendix A, VIII(b).

²⁶ *Consolidated Edison Co. of New York* (Indian Point, Units 1, 2 & 3), ALAB-319, 3 NRC 188, 190 (1976) (footnote omitted).

²⁷ In this instance, the NRC staff has reviewed the state of onsite emergency planning at Seabrook and found it adequate. NRC Staff Brief in Opposition to Seacoast Anti-Pollution League's Appeal from the Licensing Board's Order of October 7, 1986 (November 14, 1986) at 5.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Gary J. Edles
Howard A. Wilber

In the Matter of

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

LONG ISLAND LIGHTING
COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

December 12, 1986

The Appeal Board affirms the portion of the Licensing Board's decision in LBP-85-31, 22 NRC 410 (1985), requiring the applicant, in formulating its emergency response plan for Shoreham, to estimate and plan (in addition to planning for the number of evacuees likely to seek sheltering) for the number of evacuees likely to come to the designated relocation center for radiological monitoring and decontamination alone in the event of a radiological emergency at the plant.

EMERGENCY PLANNING: REGULATORY GUIDANCE
(NUREG-0654)

NUREG-0654 (a joint issuance of the Nuclear Regulatory Commission and the Federal Emergency Management Agency entitled "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants) is a generally accepted guidance document

used to evaluate the adequacy of emergency preparedness at nuclear power plant sites.

REGULATIONS: INTERPRETATION (10 C.F.R. 50.47(b))

Monitoring and decontamination services are within the "range of protective actions" that 10 C.F.R. 50.47(b)(10) requires be developed for all members of the public within the Emergency Planning Zone.

EMERGENCY PLANNING: REGULATORY GUIDANCE (NUREG-0654)

NUREG-0654 leaves room for satisfying regulatory requirements in ways other than those specifically set forth in that document as guidance.

APPEARANCES

James N. Christman, Richmond, Virginia, for the applicant Long Island Lighting Company.

Martin Bradley Ashare, Hauppauge, New York, **Herbert H. Brown**, Lawrence Coe Lanpher, and **Karla J. Letsche**, Washington, D.C., **Fabian G. Palomino**, Albany, New York, and **Stephen B. Latham**, Riverhead, New York, for the intervenors State of New York, Suffolk County, New York, and the Town of Southampton, New York.

Bernard M. Bordenick for the Nuclear Regulatory Commission staff.

DECISION

In ALAB-847,¹ acting on the appeal of the applicant Long Island Lighting Company (LILCO) from portions of two partial initial decisions rendered by the Licensing Board in the emergency planning phase of this operating license proceeding involving the Shoreham nuclear facility, we remanded two issues to that Board for further consideration. One of those issues concerned the portions of LILCO's emergency response plan pertaining to the monitoring,

¹24 NRC 412 (1986).

decontamination and sheltering of persons departing from the facility's plume exposure pathway emergency planning zone (EPZ) in the event of an accident at Shoreham necessitating such evacuation.

More specifically, in LBP-85-31 the Licensing Board had concluded that, in addition to planning for the number of evacuees likely to seek sheltering, LILCO was obliged to estimate and to plan for the number of evacuees likely to come to the Nassau Veterans Memorial Coliseum (the then designated relocation center) for radiological monitoring and decontamination alone.² In challenging this result, LILCO had asserted on its appeal both that the Board's determination went beyond the issues admitted for litigation and that the imposition of the additional obligation was not justified by any regulatory requirement.³

As explained in ALAB-847, we decided to return the matter to the Licensing Board to enable it to consider in the first instance whether the issue of LILCO's plan for evacuees not seeking sheltering (hereafter, the "evacuee issue") had been properly raised for litigation.⁴ In light of that step, we declined "at this juncture to rule on LILCO's alternative argument that the obligation imposed by the [Licensing] Board runs afoul of applicable regulatory requirements."⁵

In response to ALAB-847, the Licensing Board advised us that, in its judgment, the evacuee issue was properly raised for litigation.⁶ The Board further observed (as we had in ALAB-847) that the Nassau Coliseum is no longer available as a relocation center and called attention to the pendency of a recent LILCO motion to reopen the record for the purpose of substituting three other facilities for the Coliseum. The Board indicated, however, that it would not act on that motion prior to our ruling on whether the obligation imposed upon LILCO in LBP-85-31 flowed from a properly raised issue and an existing regulatory requirement.⁷

In light of this response, we entered an unpublished order on November 4 in which, after reciting the foregoing history, we stated:

In our view, substantial deference should be given to the belief of the trial tribunal that a particular issue was presented to it by one of the litigants before it. This is particularly so where, as here, the relevant procedural history is exceptionally complex. Thus, it should be enough that, as also appears to be the case in this instance, the Licensing Board has supplied a reasonable foundation for its determination.

We nevertheless will withhold final disposition of the matter to afford the parties an opportunity to comment on the Licensing Board's discussion in its October 29 issuance. In addition, the parties may address further the regulatory requirements question. We are par-

²22 NRC 410, 417, 430-31 (1985).

³See LILCO's Brief on the Relocation Center Issues (October 7, 1985) [hereafter "LILCO Brief"].

⁴See 24 NRC at 420.

⁵*Id.*

⁶LBP-86-36, 24 NRC 561, 572 (1986).

⁷*Id.* at 573.

ticularly interested in obtaining an elaboration by the staff of its views on that question. Possibly because its principal claim was that the Board-imposed obligation was not rooted in a properly raised evacuee issue, the staff's treatment in its prior submission of the regulatory requirements question was quite indecisive. At this stage, however, we are entitled to an unequivocal response from the staff on the question whether the obligation imposed upon LILCO by the Licensing Board can be squared with the Commission's emergency planning dictates.

All of the parties accepted that invitation to comment. LILCO maintains that the Licensing Board clearly erred in concluding that the evacuee issue had been properly raised for litigation and, additionally, adheres to its previously expressed view that, in any event, the issue was incorrectly decided by the Board.⁸ The intervenors Suffolk County, *et al.*, disagree with LILCO on both scores.⁹ Adopting the standard of review suggested in our November 4 order, the staff no longer questions the Licensing Board's determination that the evacuee issue had been put before the Board.¹⁰ Moreover, in the staff's opinion, the disposition of that issue below is consistent with the Commission's emergency planning regulations.

1. We have reexamined the Licensing Board's conclusion that the evacuee issue was properly raised by the intervenors and thus warranted disposition on the merits. As a threshold matter, we remain persuaded that the determination of a trial tribunal that an issue has been squarely presented to it is entitled to substantial deference and should be overturned only when it lacks a rational foundation. Although certain of LILCO's arguments have merit, we cannot find that the Board's determination lacks such a foundation.

In ALAB-847, we pointed out that the intervenors argued that there was general language in their contentions that was intended to permit inclusion of the issue. Contention 24.O, for example, stated in pertinent part:

The Plan designates Suffolk County Community College as the relocation center to be used by evacuees from eight of the nineteen zones in the EPZ. LILCO estimates the population of these zones to be 18,599 (26,574 in the summer). . . . LILCO has no agreement with Suffolk County to use [the] . . . College as a relocation center. . . . Therefore, there is no relocation center designated for a significant portion of the anticipated evacuees. . . .¹¹

⁸ See LILCO's Supplemental Memorandum of Law on the Number of People Who Might be Monitored in a Radiological Emergency (November 21, 1986) [hereafter "LILCO Supplemental Memorandum"].

⁹ See Suffolk County, State of New York, and Town of Southampton Response to Appeal Board Memorandum and Order of November 4, 1986, Concerning Monitoring of Evacuees (November 21, 1986).

¹⁰ See NRC Staff Comments Pursuant to Memorandum and Order Dated November 4, 1986 (November 21, 1986). As noted in our November 4 order quoted above, in its initial response to the applicant's appeal the staff had taken the position that the issue was not embraced by the intervenors' contentions. See NRC Staff's Brief in Support of "LILCO's Brief on the Relocation Center Issues" (November 21, 1985) at 4-11.

¹¹ See LBP-85-12, 21 NRC 644, 979 (1985).

This contention can be construed narrowly — as LILCO asks us to do — to attack simply the lack of a formal agreement for the use of the Community College. But, given that the contention ultimately had to serve as a basis for litigation in light of substantial changes made by LILCO in its emergency plan, it can also be construed to reflect a concern that any center selected must be adequate to accommodate all anticipated evacuees. In an effort to determine the meaning accorded to the contention by the Licensing Board during the course of the proceedings below, we asked the Board to indicate whether it was significant that the intervenors did not expressly challenge LILCO's alleged failure to estimate and to plan for the number of evacuees who might seek monitoring and possible decontamination alone. The Board answered our inquiry in the negative. It explained:

The contention specifically stated the total population of the zones to be served by the relocation center and, at the outset, the Board presumed from the wording of the contention that some subset of that population would be identified in testimony as the number that would require service in the event of an emergency. This expectation was later borne out when LILCO stated its planning basis for population in prefiled testimony.¹²

The Board's construction of Contention 24.O is not unreasonable. Indeed, its reading of Contention 24.O is consistent with the language of, and purpose behind, other contentions as well. Contentions 74-77 dealt generally with the adequacy of the relocation centers. A preamble to those contentions read, in part:

[R]elocation centers are essential to provide food and shelter to those evacuees who have no alternative places to stay and also to provide radiological monitoring and decontamination for evacuees and their vehicles. The relocation centers must have sufficient personnel and equipment to monitor evacuees within a 12-hour period. NUREG-0654, § II.J.12.

.....

The intervenors contend that LILCO will be unable to provide adequate relocation centers and services for evacuees, and thus the Plan fails to comply with 10 C.F.R. §§ 50.47(a)(1), 50.47(b)(8), 50.47(b)(10), and NUREG-0654 § II.J. [emphasis added].¹³

The language of the preamble reveals the intervenors' basic position that *all* evacuees may seek monitoring but that food and shelter will need to be provided only to those evacuees who do not have an alternative place to stay.

It also appears that LILCO was aware of the import of the intervenors' contentions. LILCO's direct testimony specifically took the preamble to contentions

¹² LBP-86-36, 24 NRC at 565.

¹³ LBP-85-12, 21 NRC at 1020.

74-77 into account¹⁴ and, on cross-examination, its witnesses seemed to acknowledge that more people may need to be monitored than need to be sheltered.¹⁵

As far as we can now tell, the intervenors' position at the hearing was that LILCO needed to provide facilities sufficient to monitor and, if necessary, to decontaminate, the entire population of the EPZ, i.e., all 160,000 persons.¹⁶ LILCO disagreed. But, as the Licensing Board observes, it offered no estimate other than to project that 32,000 individuals would require sheltering.¹⁷ The 32,000 figure was premised on a study that showed that roughly 10-20 percent of any population requires sheltering in the event of a disaster. The Board explains, however, that the study was based on *natural disasters*,¹⁸ where individuals seeking emergency services ordinarily need only temporary sheltering and do not require radiation monitoring. Hence, LILCO's planning estimate simply failed to take into account that radiological accidents produce a category of individuals who require monitoring and decontamination, even if they do not require sheltering.

In sum, the Licensing Board determined:

We conclude that Contentions 24.O and 75 taken together properly raised the issue of population planning basis for evacuees arriving at a reception center, that LILCO had a fair opportunity to litigate the matter, and that when the smoke had cleared it had simply failed to carry its burden of proof on that point.¹⁹

Because we believe that these conclusions are reasonable, we decline to overturn its action in reaching the merits of the evacuee issue. We therefore must now turn to whether that issue was correctly resolved.²⁰

2. As recognized explicitly or implicitly by each of the parties, the Commission's regulations do not address in so many words the question whether emergency response planning must encompass suitable provision for the mon-

¹⁴ See Direct Testimony of Cordaro *et al.*, fol. Tr. 14,707, at 7-8.

¹⁵ Tr. 14,825-30, 15,898.

¹⁶ The Board now explains that the intervenors' direct testimony did not address the issue because, at least as to Contention 24.O, they elected to pursue their case on the basis of cross-examination alone. LBP-86-36, 24 NRC at 568. Such an approach is perfectly permissible. See *Louisiana Power and Light Co. (Waterford Steam Electric Station, Unit 3)*, ALAB-732, 17 NRC 1076, 1096 n.30 (1983).

¹⁷ LBP-86-36, 24 NRC at 568. The 32,000 figure is 20 percent of the 160,000 EPZ seasonal resident population. *Ibid.*

¹⁸ *Ibid.*

¹⁹ *Id.* at 571.

²⁰ We disagree with LILCO that according deference to the Licensing Board's determination that the evacuee issue was presented to it for litigation runs afoul of the approach we employed in our *Limerick* decisions, *Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2)*, ALAB-836, 23 NRC 479, 504-05 (1986), and ALAB-819, 22 NRC 681, 707-09 (1985). Here, as in *Limerick*, we endorse the construction of the contentions placed upon them by the trial tribunal. To be sure, we took a somewhat closer look at the Licensing Board's determinations in *Limerick*. In those situations, however, we were called upon to decide whether an intervenor's contentions had been construed *too narrowly* — a matter that gets our closest review in order to ensure that an intervenor is not deprived of its statutory hearing rights. Cf. ALAB-743, 18 NRC 387, 404 n.1 (1983) (Mr. Edles, dissenting).

itoring and decontamination of EPZ evacuees not in need of sheltering. Although requiring that offsite emergency response plans reflect the development of a "range of protective actions . . . for the plume exposure pathway EPZ for emergency workers and the public," 10 C.F.R. 50.47(b)(10) neither specifies what that range must include nor makes mention of monitoring of evacuees from the EPZ. Similarly, section IV of Appendix E to 10 C.F.R. Part 50, also concerned with the content of emergency response plans, is devoid of any direct reference to offsite radiological personnel monitoring.

The parties (particularly LILCO) have therefore looked to a different source in fashioning their positions on whether the Licensing Board went beyond the regulations. That source is Revision 1 of NUREG-0654 (FEMA-REP-1), a November 1980 joint issuance of this Commission and the Federal Emergency Management Agency entitled "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."²¹ NUREG-0654 is a generally accepted guidance document used to evaluate the adequacy of emergency preparedness at nuclear power plant sites.²²

The relevant broadly-stated planning standard of 10 C.F.R. 50.47(b)(10) — i.e., the development of a "range of protective actions" for (inter alia) the members of the public within the EPZ — is covered in section II.J of NUREG-0654, which also sets forth a number of more particularized planning standards (or "evaluation criteria"). In support of its assertion that it is not obliged to concern itself with the monitoring of evacuees who do not seek sheltering, LILCO points to Planning Standards J.10.g, J.10.h, and J.12. The first two are to the effect that the "organization's plans to implement protective measures for the plume exposure pathway shall include . . . [m]eans of relocation [and] [r]elocation centers in host areas which are at least 5 miles, and preferably 10 miles, *beyond* the boundaries of the plume exposure emergency planning zone." Planning Standard J.12 states:

²¹ All subsequent references to NUREG-0654 are to Revision 1.

²² At one time, 10 C.F.R. 50.47(b) contained a footnote to the effect that the standards set forth in that section for emergency response plans "are addressed by specific criteria in NUREG-0654." While the footnote was removed in 1984, the Commission was careful to explain that its deletion would not affect the use of NUREG-0654 "as a guidance document for emergency planning," adding that that document "is endorsed by Regulatory Guide 1.101, and will continue to be used by reviewers in evaluating the adequacy of emergency preparedness at nuclear power reactor sites." 49 Fed. Reg. 27,733, 27,734 (1984).

Regulatory Guide 1.101, Revision 2 (October 1981), entitled "Emergency Planning and Preparedness for Nuclear Power Reactors," states that:

The criteria and recommendations contained in Revision 1 of [NUREG-0654] are considered by the NRC staff to be generally acceptable methods for complying with the standards in § 50.47 of 10 C.F.R. Part 50 that must be met in onsite and offsite emergency response plans. Furthermore, FEMA, NRC, and other involved Federal agencies intend to use the guidance contained in Revision 1 of [NUREG-0654] in their individual and joint reviews of the radiological emergency response plans and preparedness of State and local governments and the plans and preparedness of applicants for and holders of a license to operate a nuclear power reactor.

Each organization shall describe the means for registering and monitoring of evacuees at relocation centers in host areas. The personnel and equipment available should be capable of monitoring within about a 12 hour period all residents and transients in the plume exposure EPZ arriving at relocation centers.

As LILCO sees it, "when read together and in context" these provisions suggest that emergency planners are to provide a "relocation" center — i.e., "a place for 'relocating' people who have had to leave their homes without another sufficient predetermined destination" — and not a monitoring center.²³ On this premise, LILCO moves forward to the conclusion that all that it need do is to "provide for housing temporarily homeless people and then also for registering and monitoring these people."²⁴

The Commission does not appear to view Planning Standard J.12 in that light. For, in a decision involving the San Onofre facility, it specifically referred to that standard in observing that NUREG-0654 "requires relocation centers capable of registering and monitoring *all* residents and transients in the plume exposure EPZ."²⁵ LILCO asks us, however, to disregard that statement. According to LILCO, apart from being dictum, the statement (1) erroneously attributes "requirements" to NUREG-0654 and (2) inaccurately restates Planning Standard J.12.²⁶

There is no occasion to explore here the bounds of our obligation to give effect to a Commission pronouncement that, albeit clear-cut, might not have been essential to the decision where it is found. Nor is it of present moment that NUREG-0654 is not a Commission regulation but, as its foreword points out, contains "guidance and upgraded acceptance criteria," said to be "consistent with NRC and FEMA regulations," for the purpose of providing "a basis for NRC licensees, State and local governments to develop radiological emergency plans and improve emergency preparedness."²⁷ LILCO itself stresses that, even though not enjoying the status and effect of a regulation, NUREG-0654 is nonetheless instructive on the question whether, in LILCO's words, "there is a requirement for 'relocation' centers for the homeless (with an attendant requirement to be able to monitor those people) or a requirement for 'monitoring and decontamination centers' for the public."²⁸ And there seemingly is no disagreement among the parties respecting the probative value of NUREG-0654. Rather, the controversy

²³ LILCO Brief at 24.

²⁴ *Ibid.*

²⁵ *Southern California Edison Co. (San Onofre Nuclear Generating Station, Units 2 and 3)*, CLI-83-10, 17 NRC 528, 536 n.12 (1983), *rev'd in part on other grounds*, *GUARD v. U.S. Nuclear Regulatory Comm'n*, 753 F.2d 1144 (D.C. Cir. 1985) (emphasis supplied).

²⁶ See LILCO Supplemental Memorandum at 10 n.8.

²⁷ NUREG-0654 at i. See also *Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2)*, ALAB-819, 22 NRC 681, 709-10 (1985), *review declined*, CLI-86-5, 23 NRC 125 (1986).

²⁸ LILCO Supplemental Memorandum at 10.

focuses upon whether it supports LILCO's assertion that there is no obligation to plan for those evacuees not asking to be sheltered.

We think such support to be wholly lacking. To begin with, LILCO offers no basis in the terms of NUREG-0654 or its history for the premise that a "relocation" center is designed to serve only those individuals "who have had to leave their homes without another sufficient predetermined destination."²⁹ In our view, the term "relocation" can justifiably be given a much broader scope than LILCO accords to it. In a real sense, any person who voluntarily or involuntarily leaves the EPZ as a direct consequence of a radiological accident at the nuclear power facility is undertaking a "relocation." This is so irrespective of whether that person requires only monitoring and possible decontamination (i.e., is prepared to make his or her own sheltering arrangements) or, instead, expects sheltering to be provided as well. In this regard, it is worthy of note that a report prepared for the NRC by the Sandia Laboratories (which was specifically referred to in section IIJ of NUREG-0654) defines "relocation" as "essentially a post-accident evacuation of persons in affected areas."³⁰ We know of no good reason (and LILCO assigns none) for inferring that the authors of Planning Standard J.12 intended "relocation" to have a more limited ambit. To the contrary, had it been their purpose to confine the reach of the term "evacuees" as used in that planning standard to persons in search of sheltering in addition to monitoring, the authors of NUREG-0654 presumably would have said so explicitly.

But the flaws in LILCO's position go beyond the unduly restrictive interpretation it gives the term "relocation." LILCO does not explain why it should make a difference whether the person seeking monitoring and possible decontamination also desires sheltering. Surely, the need of evacuees for monitoring and decontamination services does not hinge to any extent upon whether they have been able to make their own sheltering arrangements.³¹ This being so, it seems beyond serious dispute that monitoring and decontamination services must be regarded as within the "range of protective actions" that 10 C.F.R. 50.47(b)(10) *requires* be developed for *all* members of the public within the EPZ.

To be sure, in the case of persons not seeking sheltering, LILCO might choose to arrange for the availability of such services at a facility other than a designated "relocation" center. (As noted above, NUREG-0654 leaves room for satisfying regulatory requirements in ways other than those specifically set forth in that

²⁹ See *supra*, p. 799.

³⁰ Examination of Offsite Radiological Emergency Measures for Nuclear Reactor Accidents Involving Core Melt, SAND 78-0454 (June 1978), at 52.

³¹ It seems highly probable that many individuals who manifestly should be monitored as a matter of caution will both wish and be able to obtain sheltering at other than a facility supplied by LILCO or another participant in the emergency response plan.

document as “guidance.”) There is nothing in the record, however, to indicate that LILCO has that intent; to the contrary, insofar as we can tell, the LILCO emergency response plan contemplates that all monitoring and decontamination activities take place at the “relocation” center(s).³² In any event, to ensure the fulfillment of the section 50.47(b)(10) mandate, the Licensing Board justifiably imposed upon LILCO the added duty of estimating and planning for the number of evacuees desiring monitoring but not sheltering — whether the monitoring would be made available at the “relocation” center(s) or elsewhere.

That portion of LBP-85-31 considered in this opinion is *affirmed*. With the foregoing determinations as guideposts, the Licensing Board should now proceed to consider the pending LILCO motion to reopen the record for the purpose of substituting other facilities for the Nassau Coliseum.³³

Should that motion be granted, the Board may be called upon to examine an additional assertion LILCO put before us. In LILCO’s judgment, its planning basis of 32,000 persons is “conservative” and therefore “can be expected to cover, in most cases, both evacuees who need housing and others who want monitoring or are advised to be monitored.”³⁴ This factual claim is not pertinent to the narrow legal issue presented by the LILCO appeal and, moreover, appears to us to be of dubious validity.³⁵ If it so desires, however, LILCO may reassert the claim before the Licensing Board. Alternatively, it may proffer a new estimate.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

³² See Tr. 14,825-26.

³³ See *supra*, p. 794.

³⁴ LILCO Brief at 28.

³⁵ See *supra*, p. 797.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:*

Thomas S. Moore, Chairman
Howard A. Wilber

In the Matter of

Docket No. 50-400-OL

CAROLINA POWER & LIGHT
COMPANY and
NORTH CAROLINA EASTERN
MUNICIPAL POWER AGENCY
(Shearon Harris Nuclear Power
Plant)

December 31, 1986

The Appeal Board affirms the Licensing Board's second partial initial decision in this operating license proceeding, LBP-85-28, 22 NRC 232 (1985). The Appeal Board also affirms the lower Board's license authorization granted in its initial decision, LBP-85-11, 23 NRC 294 (1985), *aff'd*, ALAB-852, 24 NRC 532 (1986), which affirmation the Appeal Board had withheld pending completion of review of this decision.

RULES OF PRACTICE: BRIEFS

A party's failure to submit a brief containing sufficient information to allow an appeal board to make an intelligent disposition of the issues raised "is tantamount to their abandonment." *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 413, *reconsideration denied*, ALAB-359, 4

*Dr. Reginald L. Gotchy resigned from the Appeal Panel October 1, 1986, and he is, therefore, no longer a member of the Board.

NRC 619 (1976). *See Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-693, 16 NRC 952, 956-57 (1982).

RULES OF PRACTICE: BRIEFS

The Commission's Rules of Practice require that the appellants "clearly identify the errors of fact or law that are the subject of the appeal" and "the precise portion of the record relied upon in support of the assertion of error." 10 C.F.R. § 2.762(d)(1).

RULES OF PRACTICE: DISCOVERY (SANCTIONS)

The Licensing Board's dismissal of the appellants' contentions for their failure to respond to discovery requests was an action well within the Licensing Board's authority and not an abuse of discretion in the circumstances. *See* 10 C.F.R. § 2.707; *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 454 (1981).

RULES OF PRACTICE: APPELLATE REVIEW

An appeal board will only overturn a lower board's factual findings when it is "convinced that the record compels a different result." *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 357 (1975). *See* ALAB-837, 23 NRC 525, 531 (1986).

RULES OF PRACTICE: SUBPOENA(S) (STAFF WITNESSES)

The Commission's Rules of Practice provide that, in a proceeding where the NRC staff is a party, the agency will make available one or more witnesses designated by the Executive Director for Operations to testify on the issues involved. The Rules further dictate that the "attendance and testimony of . . . named NRC personnel . . . may not be required by the presiding officer, by subpoena or otherwise, . . . [except] upon a showing of exceptional circumstances." 10 C.F.R. § 2.720(h)(2)(i).

RULES OF PRACTICE: BRIEFS

The appellants' newly asserted ground was never presented to the Licensing Board so the appeal board may not entertain it for the first time on appeal. *See Duke Power Corp.* (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 82-83 (1985).

REGULATIONS: INTERPRETATION (10 C.F.R. § 20.4)

The Commission's regulations, 10 C.F.R. §§ 20.4(b), (c) define units of radiation dose, not in terms of absolute values, but as a measure of the dose received: "The rad . . . is a *measure* of the dose of any ionizing radiation to body tissues in terms of the energy absorbed per unit mass of the tissue"; and "[t]he rem . . . is a *measure* of the dose of any ionizing radiation to body tissues in terms of its estimated biological effect relative to a dose of one roentgen (r) of X-rays." (Emphasis added.) See also 10 C.F.R. § 20.4(d). It is thus apparent that the Commission's regulations, in setting dose limits, speak in terms of measured doses, not theoretical absolutes.

APPEARANCES

John Runkle, Chapel Hill, North Carolina (with whom Wells Eddleman, Durham, North Carolina, was on the brief) for the intervenors Conservation Council of North Carolina and Wells Eddleman.

Thomas A. Baxter, Washington, D.C. (with whom John H. O'Neill, Jr., Pamela H. Anderson, Michael A. Swiger, Washington, D.C., and Richard E. Jones, Samantha Francis Flynn and Dale E. Hollar, Raleigh, North Carolina, were on the brief) for the applicants Carolina Power and Light Company and North Carolina Eastern Municipal Power Agency.

Charles A. Barth (with whom Janice E. Moore was on the brief) for the Nuclear Regulatory Commission staff.

DECISION

We have before us the consolidated appeals of the intervenors, Conservation Council of North Carolina (CCNC) and Wells Eddleman, from the Licensing Board's second partial initial decision resolving in the applicants' favor a number of contested safety issues in the Shearon Harris operating license proceeding.¹ On appeal, the intervenors complain that in earlier procedural rulings the Licensing Board erred in rejecting a host of their proffered safety contentions. They also assert that the Board erred in granting summary disposition against them on

¹ See LBP-85-28, 22 NRC 232 (1985).

an additional number of their contentions. Finally, the intervenors challenge the Board's findings and conclusions on several issues that went to hearing. As explained below, we affirm the results reached by the Licensing Board in its second partial initial decision.

I.

In their brief, the intervenors claim that the Licensing Board wrongly excluded many of their contentions as well as several contentions introduced by other intervenors who are not parties to this appeal. The brief does not state the grounds for the Licensing Board's rejection of the contentions or why the Board's rulings are erroneous. Indeed, the intervenors do not even reference all the Board's rulings rejecting these contentions.² Rather, the intervenors simply make declarations such as "the CHANGE contentions on failure modes and QA (14, 16, 23, 25, 26) not withdrawn are good contentions," or "[t]he Anticipated Transient Without Scram (ATWS) issue on Contention 115 is adequately specific, and the denial of hearing on unresolved safety issues (Contention 107) was not proper."³ Even putting aside the improper attempt of CCNC and Wells Eddleman to appeal the Licensing Board's rejection of contentions that they did not sponsor,⁴ the intervenors' bare pronouncements, without more, do not qualify as legitimate argument and adequate briefing under the Commission's Rules of Practice.⁵ The intervenors' failure to submit a brief containing sufficient information to allow us to make an intelligent disposition of the issues raised "is tantamount to their abandonment."⁶ Accordingly, with the exception of those contentions noted below, we deem the intervenors' appeal of rejected contentions waived.

Viewed most charitably, the intervenors make a minimally adequate argument with respect to the contentions listed in their brief as Eddleman 132A, 132B, 132C(1) and 132D, concerning the Shearon Harris control room. The intervenors claim that the Licensing Board rejected these contentions "on the grounds that the Staff is to review the matters in question."⁷ They then argue that the "[u]se of pending Staff review as a means to avoid admitting contentions is not proper"

²It appears that the intervenors seek to challenge the Licensing Board rulings contained in LBP-82-119A, 16 NRC 2069, 2083-2108 (1982), and its Memorandum and Order (October 6, 1983) at 2-10.

³Intervenors' Brief (October 8, 1985) at 21-22.

⁴See ALAB-843, 24 NRC 200, 203 n.3 (1986); ALAB-837, 23 NRC 525, 542 n.58 (1986); *Houston Lighting & Power Co.* (Allens Creek Nuclear Generating Station, Unit No. 1), ALAB-631, 13 NRC 87, 89 (1981).

⁵See 10 C.F.R. § 2.762(d)(1).

⁶*Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 413, *reconsideration denied*, ALAB-359, 4 NRC 619 (1976). See *Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-693, 16 NRC 952, 956-57 (1982).

⁷Intervenors' Brief at 23.

and violates their right to a hearing.⁸ Had the Licensing Board rejected these contentions on the grounds averred in their brief, the intervenors' argument might have merit. But the Board did not reject the contentions for the reasons claimed by the intervenors and they have asserted no other grounds of error for the Board's exclusion of them.

The circuitous procedural history of these Eddleman contentions perhaps helps to explain the intervenors' misunderstanding of the Licensing Board's action. As originally proffered by Mr. Eddleman, contention 132 alleged that the design of the Shearon Harris control room failed to meet regulatory requirements because it lacked sufficient instrumentation to detect inadequate core cooling. It also alleged that the design of the control room had not been subjected to a human factors review.⁹ Mr. Eddleman then amended the contention to add specific information on reactor vessel level instrumentation.¹⁰ Although both the applicants and the NRC staff opposed the admission of contention 132 as originally proffered,¹¹ neither party objected to the admission of a narrowly drawn reformulation of the contention (suggested by the applicants) asserting only that the applicants had failed to provide the design for a reactor water level indicator.¹² Apparently believing that the applicants and the staff had conceded the admissibility of Mr. Eddleman's original contention 132, the Licensing Board admitted it.¹³ Upon the objection of the applicants and the staff,¹⁴ the Licensing Board reconsidered its prior ruling, accepted that portion of the contention reformulated by the applicants, and deferred ruling on the portion of the original contention concerning human factors analysis.¹⁵ The Board also provided that Mr. Eddleman could file new or amended contentions on this subject after one of the applicants' consultants filed a then-anticipated control room design report.¹⁶

Prior to the Licensing Board's ruling, however, the intervenors had filed additional proposed contentions dealing with the applicants' control room. Those contentions included, *inter alia*, 132B dealing with the safety parameter display system, 132C concerning the qualifications of the control room design review team, and 132D regarding the lack of a control room design review for Shearon

⁸ *Id.*

⁹ Supplement to Petition to Intervene by Wells Eddleman (May 14, 1982) at 239.

¹⁰ Amendment to Petition to Intervene by Wells Eddleman (June 28, 1982) at 22-23.

¹¹ Applicants' Response to Supplement to Petition to Intervene by Wells Eddleman (June 15, 1982) at 145-46; NRC Staff Response to Supplemental Statements of Contention by Petitioners to Intervene (June 22, 1982) at 68.

¹² Applicants' Response to Amendments (Second Set) to Contentions of Petitioner Wells Eddleman (July 13, 1982) at 14; Tr. 448-50.

¹³ LBP-82-119A, 16 NRC at 2109.

¹⁴ See Applicants' Objections and Requests for Clarification Relating to the Board's Memorandum and Order (October 15, 1982) at 15-16; NRC Staff Response to Memorandum and Order (October 25, 1982) at 1-2.

¹⁵ Memorandum and Order (January 11, 1983) at 6.

¹⁶ *Id.*

Harris Unit 2.¹⁷ At the second prehearing conference on February 24, 1983, the Licensing Board again deferred any consideration of Mr. Eddleman's pending control room contentions. The Board ordered Mr. Eddleman to await the filing of the applicants' planned supplement to their control room design review report and then, on a schedule set by the Board, to revise, amend or renew his contentions on this subject.¹⁸ After another delay in the issuance of the applicants' supplement, the Board altered the contention filing schedule,¹⁹ and on July 2, 1983, Mr. Eddleman filed his revised, amended and renewed contentions dealing with applicants' control room.²⁰ The Licensing Board then admitted a number of Mr. Eddleman's contentions but rejected those at issue here.²¹

Although Mr. Eddleman's revised filing contained a section entitled "Old Contentions," he did not reassert that part of his originally filed contention concerning human factors review or any other contention labeled 132A.²² By not including such a contention in his July 2 filing, Mr. Eddleman abandoned it and that contention was never presented to the Licensing Board for a ruling on its admissibility. Consequently, the intervenors' argument that the Board rejected the contention because the staff would review the assertions made in it is totally without merit and does not accurately represent the procedural history surrounding contention 132A.

Nor did the Licensing Board reject contention 132B for the reason claimed by the intervenors. That contention alleged that the applicants' control room design did not provide for a safety parameter display system as called for by applicable Commission policy statements. The Board rejected the contention because the materials available to Mr. Eddleman demonstrated that the allegation was factually incorrect²³ — a reason not challenged by the intervenors on appeal.

Contention 132C(I) challenged the applicants' control room design report on the ground that it failed to establish that the applicants' review team had appropriate interdisciplinary qualifications as called for by Commission

¹⁷ See Wells Eddleman's Motion Concerning DCRDR Information (January 8, 1983) at 4-7.

¹⁸ Tr. 604-05.

¹⁹ LBP-83-27A, 17 NRC 971, 985 (1983).

²⁰ See Wells Eddleman's Response to 1983 Updated DCRDR Including Revised and New Contentions (July 2, 1983).

²¹ See Memorandum and Order (October 6, 1983).

²² See Wells Eddleman's Response to 1983 Updated DCRDR Including Revised and New Contentions (July 2, 1983) at 5-8.

²³ Memorandum and Order (October 6, 1983) at 4.

Although no other issue regarding contention 132B is before us, any question regarding the correctness of the Licensing Board's stated reasons for rejecting the contention is largely academic in light of subsequent events. After rejecting the contention, the Board ordered the applicants to provide Mr. Eddleman with a copy of the safety analysis for their proposed parameter display system and gave him a further opportunity to file contentions on the adequacy of the system. Mr. Eddleman filed such contentions (see Wells Eddleman's New Contentions re SPDS (January 3, 1984)) and the Board rejected them (Tr. 773), although it once again gave him an additional opportunity to bolster his proffered contentions — an opportunity he never pursued. Mr. Eddleman has not appealed, however, the Board's rejection of any of these contentions.

policy. Here again, however, the Licensing Board did not reject the contention for the reasons assigned by the intervenors. Rather, the Board excluded contention 132C(I) for a lack of specificity because it failed to dispute the credentials of any members of the applicants' review team;²⁴ and, on appeal, the intervenors have not questioned this basis for rejecting the contention.

Finally, contention 132D, which alleged that the applicants had failed to perform a control room design review for Unit 2, was withdrawn by Mr. Eddleman in his July 2, 1983 filing.²⁵ Hence, it was not rejected by the Licensing Board for the reason asserted by the intervenors. Although Mr. Eddleman proffered a revised contention that he denominated 132DII, the intervenors have not appealed its rejection.²⁶ In any event, the applicants' cancellation of Unit 2 makes all questions concerning that unit moot. Accordingly, the Licensing Board's rejection of Eddleman contentions 132A, 132B and 132C(I) is affirmed.

II.

The intervenors next assert that the Licensing Board erred in granting various of the applicants' motions for summary disposition by holding the intervenors to an unreasonable standard of proof. Once again, however, the intervenors' arguments are merely a disjointed miscellany of charges.

In their brief, the intervenors first assert that by admitting their contentions, the Licensing Board "recognized that there are issues of fact inherent in the contention."²⁷ They next state that, in order to prevail on motions for summary disposition, the applicants have the burden of establishing the absence of any genuine issues of material fact; but here, the Licensing Board "required an unreasonable burden of proof of Intervenor by ruling for the party who presented the most or weightiest evidence," instead of determining whether there were issues of fact or law to be heard.²⁸ They then claim this "standard for review" applies to the Licensing Board's grant of summary disposition of Eddleman contentions 11, 29, 45, 64(f), 132 and 132C(II) and joint contentions V and VI. This assertion is followed by six short paragraphs of one, two

²⁴ Memorandum and Order (October 6, 1983) at 5.

²⁵ See Wells Eddleman's Response to 1983 Updated DCRDR Including Revised and New Contentions (July 2, 1983) at 7.

²⁶ See *id.*; Memorandum and Order (October 6, 1983) at 10.

²⁷ Intervenor's Brief at 24.

²⁸ *Id.* at 25.

or three sentences containing various purported claims of error for the listed contentions.²⁹

Nowhere in their brief do the intervenors explain, for example, what genuine issues of material fact the Licensing Board overlooked with respect to each of these contentions or how the Board placed the burden on the intervenors. The intervenors do not mention the detailed affidavits of experts filed by the applicants with their summary disposition motions or suggest how the applicants failed to meet their burden on each issue. Indeed, the intervenors do not even note the subject matter of the contentions at issue, much less reference the Licensing Board rulings they purport to appeal. Thus their brief does not comply with the Commission's Rules of Practice requiring that the intervenors "clearly identify the errors of fact or law that are the subject of the appeal" and "the precise portion of the record relied upon in support of the assertion of error."³⁰ The intervenors' arguments are so woefully deficient in setting forth information sufficient to allow us to understand their allegations of error that we deem their appeal of these issues abandoned.³¹

Even though the intervenors have not briefed adequately the issues they seek to raise, we nevertheless have reviewed the Licensing Board's rulings and find that the result reached by the Board with respect to each of these contentions is correct. No purpose would be served by freighting this opinion with a discussion of the individual contentions. It suffices to note that the applicants filed motions for summary disposition for each contention and that Mr. Eddleman filed no response with respect to four of the contentions and that his limited responses to the other contentions were totally insufficient to raise any legal issue or to establish any factual one.³² The applicants' motion papers for each contention clearly established that there were no genuine issues of material fact and that the applicants had met their burden on each issue, thereby entitling them to summary disposition. The Licensing Board properly granted the applicants' motions with respect to Eddleman contentions 11, 29, 45, 64(f), 132 and

²⁹ The intervenors' assertions concerning Eddleman contention 11 are illustrative of their treatment of each of the other contentions. Their brief states, without more, that

the main error may have been in not allowing it to be amended to include the neoprene that CP&L [Carolina Power & Light Company] principally uses as cable insulation. However, the evidence produced on summary disposition was insufficient to close off the issue, even though the intervenor did not directly respond beyond what was available on discovery and a request to look into the neoprene issue.

Id. at 26.

³⁰ 10 C.F.R. § 2.762(d)(1).

³¹ See *Susquehanna*, 16 NRC at 956-57; *Catawba*, 4 NRC at 413.

³² See 10 C.F.R. §§ 2.749(a), (b). Contrary to the intervenors' suggestion before us (*see supra* p. 808), the mere admission of a contention does not establish genuine issues of material fact within the meaning of the summary disposition section of the Commission's Rules of Practice. *Mississippi Power and Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 425 n.4 (1973).

132C(II).³³ Contrary to the intervenors' assertion, however, the Board did not grant summary disposition on joint contentions V and VI. Rather, it dismissed the contentions — albeit after the applicants filed their motion for summary disposition and the intervenors failed to file a response — for the intervenors' failure to respond to the applicants' discovery requests.³⁴ That action was well within the Licensing Board's authority and was not an abuse of discretion in the circumstances.³⁵ Accordingly, the Licensing Board's rulings with respect to these contentions are affirmed.

III.

A. Of the issues that went to hearing in the proceeding, the intervenors first challenge the Licensing Board's findings and conclusions on joint contention 1. That contention, the result of a stipulation by all parties, stated:

The Applicants have not demonstrated the adequacy of their managing, engineering, operating and maintenance personnel to safely operate, maintain and manage the Shearon Harris Nuclear Power Plant as evidenced by their record of safety and performance at their other nuclear power facilities. A pattern of management inadequacies and unqualified and/or inadequate staff is likely to be reproduced at Shearon Harris Nuclear Power Plant and result in health and safety problems.³⁶

The Licensing Board found that the applicants, supported by the NRC staff, effectively refuted the contention. The Board basically determined that, although CP&L's management of its Brunswick nuclear facility had shown some significant deficiencies prior to 1982, the company instituted corrective actions and, with the strict oversight of the NRC, improved greatly.³⁷ It then concluded that CP&L was technically qualified and that it possessed the requisite management ability and commitment to safety to operate Shearon Harris.³⁸ In reaching this conclusion, the Board specifically noted that "[t]he Joint Intervenors' rather miscellaneous collection of evidence unfavorable to CP&L largely derives from events occurring in 1982 and earlier. This evidence has been superseded (substantially, if not entirely) by a sustained period of improved

³³ See, respectively, Tr. 2167 (with rationale set out in LBP-85-28, 22 NRC at 297); Memorandum and Order (November 30, 1983) at 3-5; Memorandum and Order (July 24, 1984) at 3-4; Memorandum and Order (November 30, 1983) at 5-7; Memorandum and Order (April 13, 1984) at 20-22; Tr. 2167 (with rationale set out in LBP-85-28, 22 NRC at 295-96).

³⁴ Order (May 10, 1984) at 6-7.

³⁵ See 10 C.F.R. § 2.707; *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 454 (1981).

³⁶ LBP-85-28, 22 NRC at 236.

³⁷ *Id.* at 245-53.

³⁸ *Id.* at 257.

CP&L management performance since that time.”³⁹ Before us, the intervenors merely list this same “miscellaneous collection of evidence” referred to by the Licensing Board and charge that “a review of the entire record” demonstrates the applicants’ lack of management competence.⁴⁰

As we have pointed out to the intervenors previously, we will only overturn a lower board’s factual findings when “we are convinced that the record compels a different result.”⁴¹ But our review of the extensive record on this issue convinces us that the Licensing Board was correct. The Licensing Board’s role as fact finder is to weigh and consider all the record evidence. Here, the Board did precisely that and the record amply supports its findings. It fully explained its findings and responded to the intervenors’ arguments raised in their proposed findings.⁴² Although the intervenors disagree with the Board’s results, they have failed to present us with anything demonstrating the Board’s judgment was wrong. Indeed, the intervenors’ brief does not even mention the Board’s finding, much less explain how those findings are erroneous. Accordingly, we affirm the Board’s findings and conclusion on joint contention 1.

In addition to challenging the Licensing Board’s findings on joint contention 1, the intervenors also raise a related procedural issue. They aver that the Board erred in denying their request for a subpoena directed to then NRC Region II Administrator, James P. O’Reilly, to compel his testimony on this contention.

In this regard, the Commission’s Rules of Practice provide that, in a proceeding like this one where the NRC staff is a party, the agency will make available one or more witnesses designated by the Executive Director for Operations to testify on the issues involved. The Rules further dictate that the “attendance and testimony of . . . named NRC personnel . . . may not be required by the presiding officer, by subpoena or otherwise . . . [except] upon a showing of exceptional circumstances.”⁴³ Here, the Executive Director for Operations did not designate Mr. O’Reilly as a witness and, in denying the intervenors’ subpoena request, the Licensing Board found, in effect, that Mr. O’Reilly’s testimony would be duplicative and not add materially to the existing record. It concluded, therefore, that the intervenors failed to make the required showing.⁴⁴

Before us, the intervenors do not attack directly these Licensing Board determinations. Instead, they point out that Mr. O’Reilly was the supervisor of another staff witness, Paul Bemis, upon whose testimony the Licensing Board

³⁹ *Id.*

⁴⁰ Intervenors’ Brief at 16.

⁴¹ *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 357 (1975). See ALAB-837, 23 NRC at 531.

⁴² LBP-85-28, 22 NRC at 237-56.

⁴³ 10 C.F.R. § 2.720(h)(2)(i).

⁴⁴ Tr. 3894-95.

heavily relied in making its findings on the management contention. They state that "[a] subpoena was requested for [Mr. O'Reilly] in order to delineate the conflicts Mr. Bemis faced in overseeing the Applicants' management and his role in shaping the SALP reports."⁴⁵ The intervenors then argue that "in all fairness [they] should have been afforded the opportunity to attack the credibility of [Mr. Bemis]."⁴⁶

Although the intervenors urged several grounds in support of the subpoena below, they did not, contrary to what they state in their brief, assert that Mr. O'Reilly's testimony was needed to test the credibility of Mr. Bemis. In their subpoena application, they averred that Mr. O'Reilly's position as regional administrator put him in the best position to know about the applicants' management.⁴⁷ Even after Mr. Bemis testified, and the Licensing Board gave them a second opportunity to establish the exceptional circumstances requiring Mr. O'Reilly's testimony, the intervenors still claimed only that he had knowledge of facts not shared by Mr. Bemis.⁴⁸ Thus, the intervenors' newly asserted ground for the subpoena was never presented to the Licensing Board and we may not entertain it for the first time on appeal.⁴⁹ Because the intervenors have asserted no other grounds for reversing the Licensing Board's denial of the subpoena, their appeal on this point must fail.⁵⁰

B. The intervenors next challenge the Licensing Board's findings on joint contention IV.⁵¹ As litigated, that contention questioned "'whether the TLDs and measuring equipment and processes to be used at the Harris facility can measure occupational doses with sufficient accuracy to comply with the NRC

⁴⁵ Intervenors' Brief at 12.

⁴⁶ *Id.* at 13.

⁴⁷ See Joint Intervenors' Request for Subpoenas for Joint Contention 1 (Management Capability) (August 17, 1984) at 2-3. With respect to Mr. O'Reilly, the intervenors' application stated, without more, that

James P. O'Reilly, as the head of NRC staff in Region II, receives reports from all of the inspectors and has been able to develop the most complete picture of the Applicants' management. Mr. O'Reilly was also instrumental in recommending the fines, particularly the 1983 fine for \$600,000, for various violations at the Applicants' nuclear power plants. Additionally, Mr. O'Reilly can also compare the management ability of the Applicants with other similar companies in the Southeast. Again, Mr. Bemis cannot do this.

⁴⁸ See Tr. 3882-86.

⁴⁹ See *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-813, 22 NRC 59, 82-83 (1985).

⁵⁰ The intervenors also charge that the Licensing Board erred in denying their motion to reopen the record on joint contention I in order to receive the affidavit of Chan Van Vo, a terminated employee of CP&L. The Board below denied the reopening motion because it was untimely and raised allegations that, at best, were of marginal significance to the management contention. See Memorandum and Order (December 7, 1984) and accompanying attachment at 7374-76. In their brief, the intervenors do not address the Licensing Board's ruling and otherwise explain how their motion met the test for such motions. See *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit No. 1), ALAB-462, 7 NRC 320, 338 (1978); 51 Fed. Reg. 19,535, 19,539 (1986) (to be codified at 10 C.F.R. § 2.734). Rather, they simply declare that the affidavit is relevant to the management contention because it directly contradicts the testimony of two CP&L officers that no worker had ever brought safety concerns to them. Such bald assertions are obviously insufficient to raise properly the denial of their reopening motion. Nevertheless, we have reviewed the motion and find the Licensing Board's denial of it unassailable.

⁵¹ As filed, the contention consisted originally of four claims, but the Licensing Board granted summary disposition on three of them. See Memorandum and Order (April 13, 1984); Tr. 2218.

regulations.’”⁵² Although NRC regulations do not dictate an explicit standard of accuracy for measurements of radiation doses to workers, the Licensing Board found that the regulations would be satisfied if the applicants’ TLD processing met the allowable uncertainty in the measurement of doses above 5 rem endorsed by the International Commission on Radiation Protection (ICRP).⁵³

The applicants introduced evidence of tests conducted at the University of Michigan that showed that the TLD processing in use at Shearon Harris meets the accuracy standard established by the American National Standards Institute (ANSI) in 1983.⁵⁴ In the Licensing Board’s view, this standard is less stringent than that of ICRP.⁵⁵ Nevertheless, based on the applicants’ expert testimony, it found that the University of Michigan test results would be acceptable even if the ICRP criterion was used.⁵⁶ Hence, the Board concluded that “these test results provide an unusually clear and unequivocal line of evidence that refutes the allegation of dosimetry inaccuracies in [joint contention IV], and demonstrates compliance with NRC regulations.”⁵⁷

On appeal, the intervenors assert that the Licensing Board erred “in allowing the Applicants to violate the regulatory limits for actual exposure to radiation.”⁵⁸ Citing 10 C.F.R. § 20.101(a), the intervenors argue that this section sets “limits for delivered dosage to which workers may be exposed.”⁵⁹ They then refer to 10 C.F.R. § 20.407 and claim that the personnel monitoring information reports required by this rule “are based on the actual delivered dosage received by the workers.”⁶⁰ Thus, they assert, in effect, that the regulations set absolute values and that the Licensing Board was obliged to “correct” for the “difference” between the radiation dose as measured by a TLD and the dose actually received in determining the acceptability of the applicants’ TLDs.

The intervenors are mistaken in their interpretation of the Commission’s

⁵² LBP-85-28, 22 NRC at 258. Thermoluminescent dosimeters (“TLDs”) are commonly worn by persons working in radiologically controlled areas of nuclear power plants for the purpose of determining their radiation exposure. When a TLD is irradiated by ionizing radiation, it absorbs and stores energy. By heating the TLD, some of that stored energy is released in the form of light that then can be measured, with the quantity of light being proportional to the dose received by the person wearing the TLD. *See* Browne, Tr. fol. 6407, at 3-4.

⁵³ *See* LBP-85-28, 22 NRC at 259-62.

⁵⁴ *See* Browne, Tr. fol. 6407, at 8-10. We note that the 1983 ANSI standard, known as ANSI N13.11-1983, is part of the regulatory scheme of a proposed rule concerning the evaluation of dosimetry processors. *See* 49 Fed. Reg. 1205-11 (1984).

⁵⁵ In fact, a detailed comparison of the ANSI and ICRP criteria provided by the applicants demonstrated that the ANSI criterion is more stringent than the ICRP criterion at very low dose levels. *See* Browne, Tr. fol. 6407, at 11-12. *See also* Tr. 6519-21.

⁵⁶ *See* LBP-85-28, 22 NRC at 262-63.

⁵⁷ *Id.* at 263. The Board also found that the applicants’ quality control program for assuring the reliability of their dosimetry processing is adequate. *See id.* at 263-66. The intervenors’ appeal is not concerned with this aspect of the Board’s decision.

⁵⁸ Intervenors’ Brief at 19.

⁵⁹ *Id.* at 17.

⁶⁰ *Id.*

regulations. Section 20.4 defines units of radiation dose as used in Part 20. It does so, not in terms of absolute values, but as a measure of the dose received: "The rad . . . is a *measure* of the dose of any ionizing radiation to body tissues in terms of the energy absorbed per unit mass of the tissue";⁶¹ and "[t]he rem . . . is a *measure* of the dose of any ionizing radiation to body tissues in terms of its estimated biological effect relative to a dose of one roentgen (r) of X-rays."⁶² Even clearer is paragraph (d) of section 20.4:

For determining exposures to X or gamma rays up to 3 Mev, the dose limits specified in §§ 20.101 to 20.104, inclusive, may be assumed to be equivalent to the "air dose". For the purpose of this part "air dose" means that the dose is measured by a properly calibrated appropriate instrument in air at or near the body surface in the region of highest dosage rate.

It is thus apparent that the Commission's regulations, in setting dose limits, speak in terms of measured doses, not theoretical absolutes. Further, the Commission's regulation dealing with personnel monitoring, 10 C.F.R. § 20.202, is fully consistent with this approach. Section 20.202(a) provides that each licensee "shall supply appropriate personnel monitoring equipment to" its employees and then defines that equipment in section 20.202(b)(1) as "devices designed to be worn or carried by an individual for the purpose of measuring the dose received (e.g., film badges, pocket chambers, pocket dosimeters, film rings, etc.)." Thus, contrary to the intervenors' argument, the regulations are based only on measured doses and the Licensing Board did not err in concluding that the applicants' TLD program complied with the agency's rules.

The intervenors also seem to accuse the Licensing Board of approving the accuracy of the applicants' TLD processing on the basis of the 1983 ANSI standard, which they claim is not stringent enough. They apparently misapprehend the Board's decision. While it is true that the Board determined that the applicants' accuracy in reading TLDs satisfies the 1983 ANSI standard, it actually approved the accuracy of the applicants' dosimetry processing program on the basis of its finding that the program met the ICRP criterion, which the Board considered more stringent.⁶³ The intervenors have not attacked this finding on appeal and we see no reason to reject it.⁶⁴

C. Eddleman contention 9G alleged that the program for environmental qualification of electrical equipment at Shearon Harris is suspect because of

⁶¹ 10 C.F.R. § 20.4(b) (emphasis added).

⁶² 10 C.F.R. § 20.4(c) (emphasis added).

⁶³ See LBP-85-28, 22 NRC at 262. See *supra* p. 813.

⁶⁴ As further assurance that worker exposure will be kept within regulatory limits at Shearon Harris, we note that several aspects of the applicants' dosimetry quality control program employ acceptance criteria more restrictive than the ANSI standard. See Browne, Tr. fol. 6407, at 20-23. The applicants do not plan to relax their acceptance criteria. See Tr. 6536.

"inadequate assurance that failure to report all results of environmental qualification tests, including failures, has been brought to light This includes past test failures of equipment which subsequently passes an [environmental qualification] test and test failures of equipment which is said to be qualified by similarity."⁶⁵ As filed, the sole basis for this contention was a reference to a portion of a report by the Sandia National Laboratories. That report concerned inspections of the Rockbestos Company, a supplier of several types of cable used in Shearon Harris. According to the Sandia report, that manufacturer failed to reveal in its environmental qualification reports on five types of cable, that four of the cable types had substantially degraded during testing. Instead, Rockbestos qualification reports claimed that these four cable types were qualified by similarity to the fifth type of cable, which had not degraded. That fifth type of cable, however, apparently had degraded during previous qualification attempts — a fact not mentioned in the Rockbestos report.⁶⁶

Shearon Harris contains five types of Rockbestos cable.⁶⁷ The applicants had originally intended to rely on the manufacturer for assurance that the cables were environmentally qualified. After learning of the unreliability of the Rockbestos reports, however, the applicants demonstrated the environmental qualification of the cables used in Shearon Harris by relying upon environmental qualification testing by the Conax Corporation of assemblies that included Rockbestos Company, RSS-6-105/LD cable.⁶⁸ The applicants determined that the qualification test parameters used by Conax include the necessary parameters for the Shearon Harris plant and, because only minor differences exist among the three RSS cable types, the results of the Conax testing are applicable to the other Rockbestos coaxial and triaxial cables.⁶⁹ Further, the applicants obtained two reports that describe environmental qualification tests on Firewall III control

⁶⁵ LBP-85-28, 22 NRC at 267.

⁶⁶ See *id.* at 286; Prunty, *et al.*, Tr. fol. 5515, at 4-6.

⁶⁷ Two of the cables, RSS-6-104/LD and RSS-6-105/LD, are both coaxial cables of identical construction, and their conductors, insulation shields, and jackets are of the same materials. A third cable, RSS-6-108/LD, is a triaxial cable that uses the same materials but has a thicker insulation and jacket and an additional concentric shield. The similarity of construction and materials of these three cables provides a basis to apply the qualification of either of the coaxial cables to all three. The two remaining cables are Firewall III insulated thermocouple cables and Firewall III insulated control cables that utilize the same insulating material. The insulation on the thermocouple cable is only 25 mils (i.e., 0.025 inch) thick, however, while that on the control cable is 30 mils. But, there is an additional metallic shield and a jacket on the thermocouple cable that more than compensate for this smaller insulation thickness. Prunty, *et al.*, Tr. fol. 5155, at 6-7; Supplemental Testimony of Prunty, *et al.*, Tr. fol. 5515 [hereinafter cited as "Supplemental Testimony"], at 4-6.

⁶⁸ The applicants qualified the quality assurance program of Conax Corporation by using an audit by another utility as part of the Coordinating Agency for Supplier Evaluation (CASE) program. See Tr. 5529-30. In their brief, the intervenors appear to question the validity of such an audit because it was not performed by the applicants or the staff. Even though the intervenors did not raise this question below, undisputed testimony establishes that this is an acceptable method of qualifying a supplier. See *id.* In addition, the quality assurance program at Conax (which is a direct vendor at Shearon Harris) has been reviewed and found acceptable by CP&L (the lead applicant) and Ebasco Services, Inc. (the architect/engineer for Shearon Harris). See Supplemental Testimony at 4.

⁶⁹ See *id.* at 3-4.

cable performed by Sandia National Laboratories. One of the Rockbestos control cables used at Shearon Harris was among the cable types tested. Once again, the applicants determined that the test parameters encompass the applicable Shearon Harris parameters and, because of the similarity between cables, the Sandia tests demonstrate qualification of both Firewall III cables in question.⁷⁰ Based on this evidence, and the fact that the intervenors "did not present [any] evidence . . . which would raise a question as to the adequacy of the Applicants' environmental program to address concerns regarding . . . Rockbestos cables," the Board resolved this contention in the applicants' favor.⁷¹

As best we can decipher their brief, the intervenors first assert that the Licensing Board "misinterpret[ed]" the scope of contention 9G to deal solely with test results when "[o]n its face . . . it is concerned with fraudulent testing."⁷² But Mr. Eddleman authored contention 9G and the language of the admitted contention neither mentions nor deals with fraud.⁷³ Moreover, the stated basis for the contention concerns only the environmental qualification of Rockbestos cable in use at Shearon Harris.⁷⁴ It is clear from the record and the decision that this was precisely the concern of the parties and the Licensing Board. As far as we can determine, the first mention of fraud is contained in Mr. Eddleman's proposed findings of fact on this contention that he filed after the hearing.⁷⁵ Thus, the intervenors are bound by the literal terms of their contentions and they cannot now complain that the Board misinterpreted contention 9G.⁷⁶

The intervenors also appear to dispute the practice of qualification by similarity. But this concept is recognized as acceptable in the Commission's regulations and the intervenors have not directed us to any part of the record that challenges the adequacy of the applicants' qualification methods.⁷⁷ Thus, we see no grounds for disturbing the Licensing Board's findings and conclusions on contention 9G.

D. As originally filed, Eddleman contention 65 broadly challenged the quality of concrete placement in the Shearon Harris containment. By the time

⁷⁰ See *id.* at 4-6.

⁷¹ LBP-85-28, 22 NRC at 288.

⁷² Intervenors' Brief at 28.

⁷³ See Memorandum and Order (July 24, 1984) at 2. See also Applicants' Motion for Substitution of Contention and for Revision of Schedule to File Direct Written Testimony on Eddleman Contention 9 (July 12, 1984) at 3-7.

⁷⁴ See *supra* p. 815.

⁷⁵ See Wells Eddleman's Proposed Findings on Contentions 41 (Pipe Hangers QA/QC), 116 (Fire Protection) and 9 (Environmental Qualification of Electrical Equipment) (January 8, 1985) at 16.

⁷⁶ See ALAB-852, 24 NRC 532, 545 (1986).

⁷⁷ See 10 C.F.R. § 50.49(f)(2). In pertinent part that section states:

(1) Each item of electric equipment important to safety must be qualified by one of the following methods:

...

(2) Testing a similar item of equipment with a supporting analysis to show that the equipment to be qualified is acceptable.

the contention was litigated, the Licensing Board had narrowed it to thirteen specific concrete placements⁷⁸ — a scope the intervenors do not challenge on appeal. With regard to these concrete pours, the Board concluded that “the record provides no evidence that concrete was inadequately placed” during construction of the containment building.⁷⁹ The intervenors now challenge this finding.

First, the intervenors question the Board’s conclusion with respect to a problem of insufficient clearance in one concrete placement. Based on NRC staff testimony, the Board found that the problem had been identified and corrected. In addition to discussions with the applicants’ employee, the staff witnesses based their conclusion on the applicants’ field inspection report for this activity wherein both the problem and its later correction were noted.⁸⁰ The intervenors now assert that “correction of the problem is not documented.”⁸¹ This position ignores the record and is clearly without merit.⁸²

The intervenors’ final complaint regarding Eddleman contention 65 concerns the strength testing of a particular concrete pour. Compressive strength tests conducted on samples from this pour after 28 days revealed that the test samples did not have the required design strength. A further test conducted after 90 days, however, yielded an average strength of 5660 psi (pounds per square inch), well above the design strength of 5000 psi.⁸³ On the basis of this evidence, the Licensing Board found that “the Applicants properly identified a nonconformance and properly resolved it.”⁸⁴ The Board was satisfied that the subject concrete had the requisite compressive strength. In the intervenors’ view, the Board erred in making this finding because it ignored evidence that the applicants violated one of the American Concrete Institute Standards.

According to American Concrete Institute Standard 359-74, concrete in a particular area will be considered structurally adequate, even though it fails to meet the 28-day strength criterion, if the average strength value of three drilled

⁷⁸ See LBP-85-28, 22 NRC at 289-93.

⁷⁹ *Id.* at 295.

⁸⁰ See *id.* at 293-94; Harris, *et al.*, Tr. fol. 6320, at 45; Applicants’ Exh. 21, Field Inspection Report for Reinforcing Steel for Placement No. 1CBSL216001, sheet 1. Correction of the problem is indicated in the fourth row of the third column of the field report: “A final re-bar inspection was made and all violations corrected.”

⁸¹ Intervenors’ Brief at 30. The intervenors also assert that the Board erred in relying on the staff witnesses’ “hearsay” about conversations with an unnamed employee. The intervenors failed to object to the staff testimony below so they cannot now be heard to complain.

The intervenors also suggest that the staff is “covering something up” because a staff witness did not mention in his prepared testimony all of the inspection reports that he had previously listed in an earlier filed affidavit in support of a motion for summary disposition on Eddleman contention 65. The intervenors have not given us any further explanation of their allegation nor did they raise this issue before the Licensing Board. We have, nevertheless, reviewed both the affidavit and the testimony in question, and find no basis for such a claim.

⁸² The intervenors’ confusion probably resulted from the simple fact that the applicants’ witness on this matter, besides citing the wrong page of Applicants’ Exh. 21, misread the inspection report. The inspection findings should be read vertically; the witness appears to have read them horizontally. See Tr. 6069-71.

⁸³ Harris, *et al.*, Tr. fol. 6320, at 26-27.

⁸⁴ LBP-85-28, 22 NRC at 294.

test cores is equal to at least 85% of the design strength and if no single core is less than 75% of that strength.⁸⁵ The intervenors focus on the fact that two of the five test cores taken from the concrete pour were less than 75% of the design strength. Although two cores did fail to meet the 75% requirement, the other three yielded an average strength value above 85%, and none of those three was less than 75% of the design strength. In addition, the industry standard recognizes that results of these tests may be erratic and allows retesting near the location of a concrete core that fails the strength test. In this regard, staff testimony explained that experience in concrete testing with cores as small as those used here has shown variable results.⁸⁶ Each of the two cores that failed the strength test was in close proximity to one that passed.⁸⁷ Hence, contrary to the intervenors' assertion, no violation of the pertinent code or standard occurred.⁸⁸ We, therefore, fully concur with the Licensing Board's conclusions on Eddleman contention 65.

Having reviewed the intervenors' assertions of error on appeal, we conclude that there is nothing in the challenged Licensing Board's rulings, findings or conclusions that warrants reversal. Further, we have conducted our customary *sua sponte* review of the balance of the Licensing Board's second partial initial decision and have found no errors requiring correction. Accordingly, LBP-85-28, 22 NRC 232 (1985) is *affirmed*.

In ALAB-852, 24 NRC 532 (1986), we affirmed the Licensing Board's findings and conclusions on the last two contested issues in this proceeding. We withheld our affirmation of the Licensing Board's operating license authorization, however, because we had yet to complete our review of the Board's second partial initial decision. Now that we have affirmed that decision, we also *affirm* the Licensing Board's license authorization.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

⁸⁵ See the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, section III, division 2 (1975) (incorporating American Concrete Institute Standard 359-74), art. CC-5234.2. The applicants are committed to abiding by this code and industry standard in their Final Safety Analysis Report. See Applicants' Exh. 9 at 3.8.1-12.

⁸⁶ Harris, *et al.*, Tr. fol. 6320, at 27.

⁸⁷ *Id.*

⁸⁸ See *id.* Moreover, the results of the 90-day compressive test confirms the strength of the concrete.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

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

In the Matter of

Docket No. 50-322-OL-5
(ASLBP No. 86-533-01-OL)
(EP Exercise)

LONG ISLAND LIGHTING
COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

December 11, 1986

In the proceeding concerning the exercise of the Applicant's offsite emergency response plan, Licensing Board rules on a motion for reconsideration filed by FEMA objecting to the scope of the proceeding, objections to the denial of certain contentions filed by Intervenor, settles differences of opinion among the parties concerning which contentions had been admitted, and denies Intervenor's motion that it lacks competence to make the above rulings.

LICENSING BOARD: COMPETENCE

The fact that a licensing board has been reconstituted does not render the board incompetent to rule on objections to an order issued prior to reconstitution. While the new members of the board cannot know what was in the minds of the former members, the reconstituted board remains legally competent to decide all matters within its jurisdiction.

EMERGENCY PLAN EXERCISE: ADMISSIBILITY OF CONTENTIONS

Where a party maintains that an exercise of an emergency plan was the "full-participation exercise" called for by 10 C.F.R. Part 50, Appendix E, § IV.F.1, contentions that allege that the scope of the exercise was too limited to meet that requirement are admissible.

MEMORANDUM AND ORDER (Ruling on FEMA's Motion for Reconsideration of and Intervenor's Objections to October 3, 1986 Prehearing Conference Order)

INTRODUCTION

This Board's¹ October 3, 1986, Prehearing Conference Order (unpublished) ruled on the contentions advanced by Suffolk County, the State of New York, and the Town of Southampton (Intervenor). These contentions were advanced following a Commission Memorandum and Order² which initiated this proceeding in order to decide any matters in controversy concerning the February 13, 1986 exercise of the Long Island Lighting Company's (LILCO) emergency plan.³

The Prehearing Conference Order has prompted a motion to reconsider from the Federal Emergency Management Agency (FEMA) and objections from Intervenor.⁴ FEMA's motion raises questions concerning the proper scope of the hearing, while Intervenor's objections challenge the denial of some of their contentions. Additionally, all parties have expressed confusion with respect to the Board's rulings on contentions. In this Memorandum and Order, we resolve these matters.⁵ However, we must first address a preliminary matter.

¹This Board was reconstituted on October 7, 1986. A clarification of the October 7 notice was issued on October 17, 1986. On November 7, the Chief Administrative Judge denied a motion for rescission of the notice of reconstitution and clarification filed by Intervenor (LBP-86-37A, 24 NRC 726). Intervenor filed a motion for reconsideration on December 3 which was denied on December 8.

²CLJ-86-11, 23 NRC 577 (1986).

³*Union of Concerned Scientists v. NRC*, 735 F.2d 1437 (D.C. Cir. 1984), required the Commission to permit such litigation.

⁴FEMA conducted the exercise and will furnish testimony concerning its evaluation. The motion and objections were filed on October 27, 1986, pursuant to an extension of time granted by the Board on October 16.

⁵FEMA's motion was filed on October 27. Intervenor, LILCO, and Staff responded, and FEMA filed a supplement to its motion on November 10. Pursuant to a Board request, LILCO filed its so-called "Revised Standard Version" of the contentions on November 17. Intervenor responded to these and filed their version of the contentions on November 24. Staff also responded on November 24, but did not submit its version of the contentions.

(Continued)

In their response (at 4-8) to FEMA's motion, the Intervenor challenge the competence of the reconstituted Board to rule on "the FEMA motion or other exercise-related issues now pending before it." We overruled this objection in footnote 1 of our November 13 Memorandum and Order (unpublished). In a letter of November 17, Intervenor object that this ruling did not deal with the substance of their objection. Therefore, we address this matter below.

Intervenor's objections raise two points. First, they cite their pending motion to rescind the notice reconstituting the Board. That motion and a motion for reconsideration have since been denied (*see* November 13 Memorandum and Order, n.1, *supra*); thus this argument is moot.

Second, Intervenor argue that the Frye Board cannot know what the Margulies Board intended and that the schedule conflicts that dictated the reconstitution would not prevent the latter Board from passing on the matters dealt with herein. Intervenor allege that rulings by the Frye Board on these matters will deny them due process. However, they cite no authority for this proposition.

Intervenor's argument is premised on the existence of two boards in this portion of the *Shoreham* proceeding. In point of fact there has been only one. It was appointed pursuant to the Chief Administrative Judge's authority following issuance of the Commission's Order (CLI-86-11) that a board be appointed to review and decide matters in controversy concerning the February 13 exercise. It was reconstituted pursuant to the Chief Administrative Judge's authority. While intervenors are correct that the two new members of the Board cannot know what was in the minds of the two former members, that fact does not render the Board legally incompetent to pass on the matters now before it. The Board was and is legally competent to decide all matters within its jurisdiction.

Moreover, we note that the question of which contentions were admitted by the Prehearing Conference Order, decided in this Memorandum and Order, is the question to which Intervenor's argument is most relevant in a practical sense. That question has been decided in Intervenor's favor, thus largely mooting the objection. We do not believe this argument has any practical relevance to our competence to decide whether errors were made in the denial of contentions. Apparently Intervenor agree, for their objections allege numerous errors in this regard.

Intervenor's objections were filed on October 27. LILCO, Staff, and FEMA all responded on November 10.

A conference of counsel was held on December 4 during which many of the matters raised by these pleadings and a schedule were discussed.

FEMA MOTION FOR RECONSIDERATION

Ambiguity in Prehearing Conference Order

In its Motion for Reconsideration, FEMA noted that the October 3 Prehearing Conference Order was not clear with regard to the contentions that had been admitted. (Motion at 16.) In their objections to the Prehearing Conference Order, the Intervenor's noted that in many instances we denied separate admission to a contention but indicated that the facts alleged in the denied contention could be litigated in connection with another, admitted contention. (Objections at 2-3.) In a motion of October 30 requesting leave to respond to FEMA's motion and Intervenor's objections, LILCO took issue with the Intervenor's interpretation of the Prehearing Conference Order set forth in the latter's objections (*see id.* at 2-3) and indicated that it would file a so-called "Revised Standard Version" of the contentions if permitted to respond.

In our November 13 Order, we noted the confusion among the parties with respect to which contentions had been admitted and called for LILCO's "Revised Standard Version," which had not accompanied its responses. On November 18, we indicated that Intervenor's, Staff, and FEMA might file their versions of the admitted contentions in response to LILCO should they desire to do so. Only Intervenor's did so.

The differences of opinion among the parties are shown in the following table. A separate column indicates Intervenor's, Staff's, and LILCO's views. An "S" indicates that a contention was "subsumed" in another and an "E" indicates that it stated matters that might be offered in evidence under another contention. An "A" indicates admitted and a "D" indicates denied.

Contention Ex	Intervenor's	Staff	LILCO
15L	A	A	D
16A-D, F-J	A	S	D
18C	A	S	D
22F	A	S	D
22I	A	S	D
22K	A	S	D
23	A	E	D
24	A	E	D
25	A	E	D
26	A	E	D
27	A	E	D
28	A	E	D
29	A	D	D
30	A	E	D

Contention Ex	Intervenors	Staff	LILCO
31	A	S	D
32	A	S	D
37	A	E	D
42A-G	A	D	D
44(first sentence)	A	S	A
45A-H	A	E	D
46	A	D	D

The table makes it clear that the confusion stems principally from the use of the terms "subsumed" and "evidence" with respect to some of the contentions. Only Contentions Ex 15L, Ex 29, Ex 42A-G, and Ex 46 do not involve the use of these terms.

The term "subsumed" was used repeatedly in the Prehearing Conference Order. *Webster's Third New International Dictionary* (Unabridged, 1976) defines subsume "1: to view, list, or rate as compared in an overall or more comprehensive classification, summation, or synthesis: encompass as a part, example, or phase: classify as a part of a larger scheme or judge as a specific instance governed by a general principle" Thus when a contention was said to be "subsumed" within another contention, it was consolidated within that other contention. Any other view simply ignores the meaning of the term "subsumed."

Staff has indicated those contentions that in its view, state matters that may be offered as evidence relevant to other contentions. A review of the rulings on those contentions indicates that Staff's interpretation is correct.

At the conference of counsel held December 4, the Board handed the parties a version of the contentions that reflects this treatment. Those contentions subsumed within others were stated with the others. Similarly, for convenience of reference, the bases of those contentions that state evidentiary matters relevant to other contentions were stated with those other contentions. The remaining contentions are discussed below.

LILCO takes the position (Response to Intervenors' Objections at 2-5) that Contention Ex 15L should not be admitted but that Contention Ex 21 should be interpreted as including the substance of Ex 15L. In essence, that is what has been done in the Board's version of the contentions and LILCO's position is rejected.

LILCO urges (*id.* at 14-15) that Contention Ex 29 be stricken as duplicative of Ex 41B(iii)(a). The contentions are very similar. However, no harm is done by setting out Ex 29 with Ex 41B, particularly in view of the fact that the Prehearing Conference Order (at 17) noted that Ex 29 stated a matter cognizable under Ex 41B. (*See* Staff's Response to the LILCO "Revised Standard Version" at 6.)

LILCO urges that Ex 42 was rejected and should not be set out in connection with any other contentions (Response to Intervenor's Objections at 20). LILCO is correct that this contention was rejected. However, in rejecting it we pointed out that it is redundant to other contentions. To the extent that it sets out additional factual bases for other contentions, it has been incorporated in the Board's version of the contentions.⁶ LILCO's position with respect to Ex 46 (*id.* at 23) is rejected for the same reasons.

Contentions Ex 15 and Ex 16

In our Prehearing Conference Order, we held that contentions that allege that the February 13 exercise failed to meet the requirements of 10 C.F.R. Part 50, Appendix E, §IV.F.1 are acceptable. Under this holding, we admitted Contentions Ex 15 and Ex 16. These contentions allege that the exercise did not include demonstrations or evaluations of major portions of the plan or of the capabilities of many persons and entities relied upon for implementation.

FEMA, supported by LILCO and Staff, seeks a reversal of this holding. FEMA suggests (Motion at 8) that we have ignored the limitations contained in CLI-86-11 and have opened the hearing to challenges to the conduct, design, and scope of the exercise. FEMA believes (*id.* at 10) that the exercise design and conduct are not relevant or material to the evaluation of the exercise and that FEMA should be subjected to scrutiny only on its evaluation. It maintains that it should not be required to "engage in a contest as to how to design a better exercise or exercise scenario particularly in a situation where FEMA has made no finding of reasonable assurance," and notes that its "regulations do not require every element of every plan to be tested every time. This does not make the exercise meaningless. . . . The primary reason is that FEMA's regulations contemplate an exercise continuum wherein the plan's various elements are tested periodically." (*Id.* at 10-11.) In short, FEMA believes that questions of exercise design and scope or conduct are committed to its discretion and are not challengeable in NRC licensing hearings. (*See id.* at 14.)

LILCO supports FEMA's position; LILCO's position is summarized on pages 3 and 4 of its response.

1. The Board's construction of the UCS Case erroneously neglects both the latitude conceded by the Court of Appeals to the Commission to design the manner in which it would permit litigation over exercise results, and the fact that the Commission has exercised that latitude in structuring such litigation in CLI-86-11, by limiting the admissibility of

⁶In its version of the contentions, the Board erroneously included the preamble to this contention. The preamble should be stricken.

contentions to those that allege a demonstration of fundamental flaws in an emergency plan based on exercise *performance*.

2. The Board's open-ended admission of contentions challenging the scope of the exercise, without requiring any showing that FEMA has departed from its normal practice, incorrectly fails to accord the deference due FEMA in the exercise of functions within the area of its expertise, disregards the presumption of regularity properly granted FEMA in the performance of its duties, and disregards FEMA's function under the FEMA-NRC Memorandum of Understanding.

3. Admission of contentions challenging the scope of the exercise is irreconcilable with the expert description of FEMA's implementation of its duties with respect to the licensing of nuclear power plants set forth in the motion for reconsideration filed by FEMA and in the attached affidavit of Robert S. Wilkerson.

4. Admission of contentions challenging FEMA's performance of its duties in structuring the scope of the exercise raises generic policy questions concerning the implementation of the NRC-FEMA Memorandum of Understanding which are appropriate for a rulemaking proceeding or interagency agreement, but are not appropriate for resolution in an individual licensing proceeding.

In its response, Staff takes the position that even if proved true, Contentions Ex 15 and Ex 16 do not demonstrate a fundamental flaw in the plan revealed by the exercise.

In opposition, the Intervenor's assert that their contentions do not challenge FEMA's design of the exercise scenario or its exercise processes. Rather, they maintain that the contentions challenge the exercise results and evaluations. This, they maintain, is clearly proper under *UCS*, *supra* note 3. (See Government's Response at 12-21.)

The Governments have alleged in Contentions Ex 15 and 16 that there is no basis upon which reliable conclusions can be drawn from the February 13 exercise about the adequacy and implementability of the LILCO Plan, because major portions of the Plan and LILCO's ability to implement it were not demonstrated or evaluated and because the response capabilities of persons and entities essential to plan implementation were not demonstrated or evaluated. Such contentions do not challenge the scenario or FEMA's alleged role in the design of the scenario. Rather, they take the exercise as it occurred and the FEMA processes as they were applied and challenge the *exercise results*.

(Government's Response at 17, emphasis in original.)

We are not persuaded that we erred in admitting Contentions Ex 15 and Ex 16. While the Intervenor's statement quoted above may stretch a semantic point in asserting that only exercise results are challenged, it is clear that the issues raised by these contentions are litigable.

It is true that the Commission directed that this proceeding be limited to the exploration of alleged fundamental flaws in the plan demonstrated by the exercise. And it is also true that the *results* of the exercise are facially

distinguishable from the *scope* of the exercise. But that distinction does not hold up when viewed in light of the regulatory scheme governing emergency planning.

In our October 3 Prehearing Conference Order, we quoted 10 C.F.R. Part 50, Appendix E, § IV.F.1, which sets out the requirement for full-participation exercises. The paragraph immediately preceding the quoted provision states that "[t]he plan shall describe provisions for the conduct of emergency preparedness exercises. . . ." Indeed, § IV in which this requirement is stated is labeled "Content of Emergency Plans." Thus the exercise is a provision of the plan.

Further, the regulation calls for a "full-participation exercise" to be conducted within a specified period prior to operation in excess of 5% of rated power, and provides guidance with regard to the scope of such an exercise. LILCO maintains that the February 13 exercise was such an exercise. (See Tr. 16,550-51, September 24, 1986; Tr. 47, December 4, 1986.) It has indicated that it will seek a waiver of the requirement that the exercise occur within 1 year of operation if necessary. (Tr. 16,551, September 24, 1986.)

Moreover, the Commission has clearly stated its desire that the exercise be as full as possible and its belief that the exercise would at a minimum measure the effectiveness of LILCO's plan given the restrictions imposed on LILCO by the Intervenor.

The Commission does not disagree with the view that an exercise of the LILCO plan could yield meaningful results, even though such an exercise may not satisfy all of the requirements of NRC's regulations. It could, as a minimum, identify the impact of the limitations of LILCO's plan when executed under the state and county restrictions. Although the Commission is aware that because of the recent court decision a *full* exercise of the LILCO emergency plan may not be possible, the staff should request that FEMA schedule as full an exercise of the LILCO plan as is feasible and lawful at the present time.

(June 4, 1985 Memorandum from S.J. Chilk to W.J. Dirks.)

From the foregoing is clear that:

1. The exercise was conducted pursuant to a provision of LILCO's emergency plan;
2. LILCO asserts that it was a "full-participation exercise" which is required by the Commission's regulations prior to operation at more than 5% of rated power; and
3. If it is found not to comply with the Commission's regulations concerning the scope of a full-participation exercise, it may constitute a deficiency "which preclude[s] a finding of reasonable assurance that protective measures can and will be taken, i.e., [a] fundamental flaw[] in the plan." CLI-86-11, *supra*, 23 NRC at 581.

It is beyond question that licensing hearings exist to permit the public to question whether the Commission's regulatory requirements are satisfied by a

given application. That is precisely what Intervenor's are questioning here. So viewed, Contentions Ex 15 and Ex 16 are admissible.

Moreover, it would be wasteful of the Commission's and the parties' resources to refuse to consider these issues now. While in the circumstances LILCO may bear a heavy burden in seeking to demonstrate that the February 13 exercise met regulatory requirements, it cannot be pronounced an impossible burden now. Further, it is conceivable that a Commission ruling on the preemption issue could lighten that burden considerably. It would be most unfortunate if, at some point in the future, all other issues regarding the exercise were decided in LILCO's favor and those raised by Contentions Ex 15 and Ex 16 remained to be litigated. Moreover, any deficiencies that exist in the scope of the exercise should be identified early so that any feasible corrective action may be taken. Clearly, it is in the Commission's, FEMA's, the parties', and the public's interest to take up these issues and resolve them now.

We do not view our ruling as unduly infringing on FEMA's prerogatives. Contrary to FEMA's fears, we have not opened the hearing to issues concerning its conduct and design of the exercise, nor have we determined that the exercise must be the best possible. The issues litigable under Contentions Ex 15 and Ex 16 are limited to whether the scope of the exercise meets the Commission's regulatory requirements for full-participation exercises. FEMA properly takes no position on that issue. (See FEMA's November 19 Response to Intervenor's Request for Admission at 5.) Indeed resolution of this issue properly belongs to the NRC. While FEMA may be questioned on its evaluation of the exercise, it may not be questioned concerning whether the exercise meets NRC requirements. Because LILCO maintains that the exercise does meet those requirements, it must respond to questions bearing on that issue.⁷

FEMA also objects to the admission of Ex 19, which asserts that FEMA's inability to make a reasonable assurance finding based on the exercise precludes NRC from making such a finding. We admitted this contention for argument only, and we adhere to that ruling. Once the hearing is completed, the parties will be in a position to argue the proposition put forward by Ex 19. Like Ex 15 and Ex 16, this contention should be taken up now. LILCO must meet the legal objection to its position that this exercise satisfies regulatory requirements just as it must meet the factual arguments against its position.⁸

⁷ Staff apparently takes no position on this issue. (Tr. 16,557, September 24, 1986.) We trust that Staff will, at a minimum, advise us of its views on this issue in its proposed findings of fact and conclusions of law following the hearing.

⁸ FEMA requests (Motion at 1) that, in the event we decide not to reconsider our rulings, we certify the question of the standards for admissibility of contentions bearing on FEMA's evaluation. This request is denied. While we have adhered to our rulings, we believe we have also largely allayed FEMA's fears concerning this litigation. We do not believe certification is appropriate.

INTERVENORS OBJECTIONS

Contentions Ex 1-7 and Ex 8-14

Intervenors object to our denial of Ex 1-7 and Ex 8-14. Because we did not believe that Intervenors have raised any substantial reason to depart from our rulings on these contentions, we did not require that the other parties respond to these objections. (*See* Order of November 4, 1986.)

Contentions Ex 1-7 raise the question of LILCO's legal authority to implement its emergency plan. They were rejected because they "allege matters that have already been litigated and were not raised by the exercise . . ." (Prehearing Conference Order at 9-10.) Intervenors attempt to place these contentions in the context of the exercise by arguing that they assert that the exercise demonstrated fundamental flaws in the LILCO plan because of LILCO's lack of legal authority, and point to CLI-86-14, 24 NRC 36 (1986) as authority for the proposition that the Commission desired that the exercise be designed to reveal any defects in the plan as a result of the limitations on LILCO's authority.⁹

Contentions Ex 1-7 do nothing more than allege that LILCO lacks legal authority to take certain specific actions. They are not in any way directed to the Commission's concern that the exercise be used to reveal defects in the plan resulting from this lack of legal authority. These contentions do no more than raise issues that have already been heard. Consequently we adhere to our ruling and overrule Intervenors' objections.

Intervenors' objections (at 6-8) to the denial of Ex 8-14 must also be overruled. These contentions all assert that LILCO's realism argument was not tested by the exercise because the individuals playing the roles of state and local officials assumed a passive role. Intervenors have failed to advance any reason to question our conclusion that these contentions do not raise material facts arising from the exercise which bear on the realism issue. These objections are overruled.

Contention Ex 16M

Intervenors object to the denial of Ex 16M (at 11-13). We denied this contention for the same reasons as we denied Ex 8-14. Intervenors attempt to distinguish Ex 16M from Ex 8-14 on the basis that the former raises the issue of the participation of Nassau County, while the latter do not. We agree with Staff (Response at 4) and LILCO (Response at 26-27) that no meaningful distinction has been raised. This objection is overruled.

⁹ Objections at 4-6. CLI-86-14 was originally served on January 30, 1986, and reserved on February 5 and September 15, 1986. [It appears in the July 1986 NRC Issuances.]

Contentions 15J and 48

Intervenors object (at 8-11, 25-26) to our rejection of Ex 15J and Ex 48. Ex 15J concerns the alleged lack of any demonstration of procedures and arrangements for the treatment of offsite individuals who are both contaminated and injured, while Ex 48 raises the same concerns with respect to offsite individuals who are contaminated but not otherwise injured.

Intervenors assert that our rulings on these contentions amount to a failure to follow Commission regulations and the holding in *Guard v. NRC*, 753 F.2d 1144 (D.C. Cir. 1985). They also assert that these contentions are completely different from the allegations of a similar contention that was rejected in our Memorandum and Order of August 21, 1985.¹⁰

Whatever the merits of Intervenors' last assertion, it is clear that these contentions were properly rejected. At the outset, it must be noted that *Guard v. NRC* had nothing to do with arrangements for the treatment of offsite individuals who are both injured and contaminated. The only issue presented to the court in that case concerned arrangements for the treatment of individuals who had been exposed to high levels of radiation but who were otherwise uninjured. Thus the *Guard* decision is not relevant to Ex 15J.

The arrangements that must be made for the treatment of individuals who are both contaminated and otherwise injured were set forth by the Commission in *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-83-10, 17 NRC 528 (1983). The Commission summarized these requirements as follows:

With respect to individuals who become injured and are also contaminated, the arrangements that are currently required for onsite personnel and emergency workers provide emergency capabilities which should be adequate for treatment of members of the general public. Therefore, no additional medical facilities or capabilities are required for the general public. However, facilities with which prior arrangements are made and those local or regional facilities which have the capability to treat contaminated injured individuals should be identified. Additionally, emergency service organizations within the plume exposure pathway emergency planning zone (EPZ) should be provided with information concerning the capability of medical facilities to handle individuals who are contaminated and injured.

Id. at 530.

The Commission addressed these requirements on a generic rather than case-specific basis in *San Onofre*. Thus these requirements are fully applicable to Shoreham.

The Commission's determination that arrangements for the treatment of onsite individuals will suffice for offsite individuals as well dictates that Ex 15J be

¹⁰ Staff and LILCO oppose these objections. See Staff's Response at 3-4, 6-7; LILCO's Response at 24-26, 32-33.

excluded. That contention recognizes that the exercise demonstrated the ability to treat an individual contaminated and injured on site. The remaining requirements stated by the Commission essentially concern the compilation and dissemination of information, matters that are not amenable to exercises. Thus the exercise adequately addressed the question of treatment of contaminated and injured individuals.

The Commission's Policy Statement of September 12, 1986,¹¹ similarly dictates that Contention 48 was properly excluded. That Statement concludes that until detailed guidance on the treatment of offsite individuals exposed to high levels of radiation is developed by Staff (scheduled for November 17, 1986), Boards may continue to limit litigation on this topic to those matters that were litigable prior to the *Guard* decision. In its *San Onofre* decision (which was reviewed in *Guard*), the Commission limited this to an identification of facilities with the capability to treat radiation-induced injuries. This is not a subject that is amenable to exercise.

Contention Ex 18B

Intervenors state (at 13) that they perceive no need to object to our rulings on Ex 18A and C provided that it is understood that the requirement for full-participation exercise stated in 10 C.F.R. Part 50, Appendix E, IV.F.1, is deemed to be a part of Ex 15 and Ex 16. Our ruling on the latter contentions clearly sets out our conclusion that this regulatory requirement is involved in and, indeed, the justification for accepting Ex 15 and Ex 16.

Intervenors do object (at 14) to the denial of Ex 18B. However, Ex 18B does no more than reiterate that certain governments did not participate in the exercise and was properly rejected for the reasons Ex 8-14 were rejected. The objection is overruled.

Contention Ex 22B-E, G, and H

Intervenors object (at 14-16) to the denial of Ex 22 B-E, G, and H. They assert that these contentions challenge the basis for FEMA's conclusions and must be admitted. Staff (Response at 5) and LILCO (Response at 28-29) point out that we were correct in concluding that none of these contentions raise matters that arose during the exercise and that all the matters raised have been or will be litigated elsewhere. We agree; the objections are overruled.

¹¹ 51 Fed. Reg. 32,904 (Sept. 17, 1986).

Contention Ex 33

Intervenors object (at 17-18) to the denial of Ex 33. This contention alleges that notification of local and state government officials consumed more than the 15 minutes called for by Appendix E, §IV.D.3. LILCO correctly states (Response at 29) that it was pointed out in LBP-85-12, 21 NRC 644, 707-09 (1985), that state and local officials are not the offsite authorities to receive initial notification in this unique instance. Rather, it is LERO. This conclusion was not disturbed on appeal. "[LERO] acts, in part, as a substitute for Suffolk County and the State of New York in performing emergency response functions." ALAB-832, 23 NRC 135, 149 (1986). Consequently, regardless whether our original conclusion that the delays involved do not amount to fundamental flaws was correct, this contention was properly denied because the requirement as to notification within 15 minutes applies to LERO, not the governments. The objection is overruled.

Contention Ex 34

Intervenors object (at 18-20) to the denial of Ex 34 which raises the question of the timeliness of backup notification to the public in the event of siren failure. Intervenors argue that failure of these backup procedures could amount to a fundamental flaw in the plan, citing NUREG-0654, Appendix 3 at 3-3. LILCO (Response at 30) opposes, but Staff (Response at 5-6) does not. We agree with Intervenors that this contention should have been admitted. The objection is sustained.

Contention Ex 35

Intervenors object (at 20-22) to the denial of Ex 35 which alleges that LERO personnel failed to independently assess protective action recommendations made by LILCO. Intervenors essentially present the same arguments that were originally advanced in support of Ex 35. Staff (Response at 6) and LILCO (Response at 30-31) oppose on the ground that Ex 35 does not allege a violation of any regulatory requirement. We agree. Intervenors have again failed to point to any stated requirement in the regulations or regulatory guidance that requires offsite authorities to independently assess information furnished by the operator of a nuclear plant. It is true that LBP-85-12, *supra*, 21 NRC at 679-82, concluded that independence between LILCO and LERO was desirable. However, this conclusion falls short of a requirement that LERO independently assess LILCO's protective action recommendations. The objection is overruled.

Contention Ex 38K

Intervenors object (at 22-23) to the denial of Ex 38K and state their belief that we misread the contention. In the prehearing conference order, we stated that the issue had previously been litigated. We should have stated that Ex 38K, which alleges that the ENC was not promptly notified of the designation of congregate care centers, was denied because this designation is not to be made public. (See LILCO's Response at 31.) The objection is overruled.

Contention Ex 43A

Intervenors object (at 24-25) to the denial of Ex 43A which alleges that, because buses to transport transit-dependent individuals were not available when the appropriate public announcement was made, a fundamental flaw exists in the plan. Intervenors assert that the statement in the Prehearing Conference Order that this merely raises an administrative matter easily corrected amounts to an improper determination on the merits. Intervenors may be correct in their view of that statement. Nonetheless, assuming the factual allegations of the contention are true, no fundamental flaw is shown. While it would be better if the buses and the announcement were synchronized, the fact that the buses were later than announced simply is not a fundamental flaw. The objection is overruled.

SCHEDULE

At the December 4 conference of counsel (Tr. 82-85), it was agreed to designate December 24 as the cutoff date for the designation of witnesses. Depositions were deferred pending issuance of this Memorandum and Order, but interrogatories were not (Tr. 80). As a result, eight depositions scheduled for this week will not be taken. Counsel for Intervenors estimates that, in addition to the depositions scheduled for the week of December 15 (which should proceed), another 30 remain to be taken. Assuming none can be taken over the holidays, and that two per day can be taken beginning in January as has been the practice (Tr. 86), depositions should be completed by January 21, 1987. LILCO's testimony could then be filed by February 4 and the hearing commenced on February 16. Intervenors', FEMA's, and any Staff testimony would be due 15 days prior to presentation.

Consequently, we adopt the following schedule:

December 19, 1986

Termination of discovery except for
depositions and discovery ordered
pursuant to motions to compel

December 24, 1986	Deadline for designation of witnesses
January 21, 1987	Deadline for completion of depositions
February 4, 1987	Deadline for LILCO's testimony
February 16, 1987	Commence hearing
15 days prior to week of presentation	Deadline for Intervenor, FEMA, and Staff (if applicable) testimony

ORDER

In consideration of the foregoing, it is, this 9th day of December 1986,
ORDERED

1. Intervenor's objection to this Board's competence to rule on matters concerning the October 3, 1986 Prehearing Conference Order is DENIED.

2. The Board's rulings concerning which contentions were admitted are embodied in the version of the contentions handed the parties by the Board on December 4 as modified on pages 824-25 and 831 above.

3. FEMA's motion to exclude Contentions Ex 15, Ex 16, and Ex 19 is DENIED.

4. FEMA's request for certification is DENIED.

5. Intervenor's objections to the denial of Contentions Ex 1-7; Ex 8-14; Ex 15D; Ex 18C; Ex 22B-E, G, and H; Ex 33; Ex 35; Ex 38K; Ex 43A; and Ex 48 are OVERRULED.

6. Intervenor's objection to the denial of Contention Ex 34 is SUSTAINED.

7. The schedule set out above is adopted for this proceeding.

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. Jerry Harbour
Gustave A. Linenberger

In the Matter of

Docket Nos. 50-329-OL
50-330-OL
(ASLBP No. 78-389-03-OL)

CONSUMERS POWER COMPANY
(Midland Plant, Units 1 and 2)

December 17, 1986

The Licensing Board authorizes the NRC Staff to permit Consumers Power Co. to withdraw its application for operating licenses, and dismisses the operating license proceeding.

TECHNICAL ISSUE DISCUSSED

Environmental impacts of withdrawal of OL application.

MEMORANDUM AND ORDER
(Authorizing Withdrawal of Operating License Application
and Dismissing Operating License Proceeding)

On July 11, 1986, Consumers Power Co. (CPC), the Applicant in this operating license (OL) proceeding, filed a motion for authorization to withdraw its application for operating licenses, for dismissal of the OL proceeding, and for termination of the then-pending Order of Modification (OM) proceeding. In

our Memorandum and Order (Motion to Dismiss/Terminate Proceedings), dated September 26, 1986, LBP-86-33, 24 NRC 474, we dismissed the OM proceeding as moot but deferred action on the OL application and proceeding pending preparation, pursuant to 10 C.F.R. § 51.21, of the Staff's Environmental Assessment (EA) and the receipt of comments (if any) on that EA by other parties.

The Staff served its EA on November 17, 1986. By our Memorandum and Order (Granting Motion to Expedite Completion of Withdrawal Proceedings and Posing Questions to Parties), dated December 3, 1986 (unpublished), we provided that comments on the EA were to be in our hands by close of business December 11, 1986. We also posed certain questions to various parties, to be answered by the same date. We received timely responses from CPC and the Staff, each dated December 11, 1986 (CPC Response; Staff Response). No other party has responded. The Staff response was supported by the affidavit of Gary B. Staley, an NRC hydraulic engineer.

After considering all the material filed, we are authorizing the Staff to permit CPC to withdraw its application for operating licenses and are dismissing the OL proceeding. Although we are imposing no terms or conditions, we expect CPC to honor certain commitments (described below) which it has made.

A. Background

The background of the withdrawal request is set forth in LBP-86-33 and need not be repeated. Suffice it to say that, in July 1984, CPC for financial reasons discontinued all construction at the Midland facility, and that in the Spring of 1986 it determined to abandon the nuclear project. It now plans to convert the facility to a gas-fired cogeneration project, in partnership with Dow Chemical Co. and others.

CPC's withdrawal motion is governed by 10 C.F.R. § 2.107(a), which provides:

(a) The Commission may permit an applicant to withdraw an application prior to the issuance of a notice of hearing on such terms and conditions as it may prescribe, or may, on receiving a request for withdrawal of an application, deny the application or dismiss it with prejudice. Withdrawal of an application after the issuance of a notice of hearing shall be on such terms as the presiding officer may prescribe.

In considering the withdrawal motion, we have been mindful of NRC's responsibilities under the National Environmental Policy Act (and the implementing regulations in 10 C.F.R Part 51) to consider environmental impacts that may stem from the withdrawal. In doing so, we have examined CPC's July 11, 1986 motion (including attached affidavits), the Staff's EA, two inspection reports on which the EA is based (dated October 28, 1986, and November 14, 1986,

respectively), the environmental report (ER) prepared by CPC, dated October 2, 1986 (titled "Midland Site Stabilization Report"), and the responses of CPC and the Staff to our December 3, 1986 inquiries.

As we understand it, CPC is taking steps to convert a portion of the partially constructed facility to a gas-fired cogeneration facility, but site construction (e.g., demolition of unnecessary buildings and extension of fill area for gas turbines) would begin no earlier than 1987. The nuclear steam supply systems and other buildings and components of the project which are not usable for the gas-fired plant would be abandoned. ER at 1; November 14, 1986 Inspection Report, at 3-5. The cooling pond would be used for the gas-fired facility and such use would be controlled by an NPDES permit (under the jurisdiction of the Michigan Department of Natural Resources (MDNR)).

B. Environmental Impacts of Withdrawal

According to the Staff's EA, the Midland site was found to be adequately stabilized and there were no areas where erosion could lead to detrimental offsite environmental impacts. In addition, the Staff determined that the planned underpinning work to support the auxiliary building had been completed; and that, in the 2 years since construction shutdown, the auxiliary building has experienced virtually no movement except for seasonal variations with temperature. Moreover, physical barriers are in place to prevent unauthorized access to the underpinning area. EA at 3. The cooling pond was drained in 1984-85 and currently remains in that state. November 14, 1986 Inspection Report, at 10-13.

The Staff further inspected the transmission line corridor from the plant to the Tittabawassee substation and from that substation to the Kewowa/Thetford substation at several locations. It determined that the corridors are predominantly through farmland that has reverted to its natural state since construction, and that there is "no evidence of any adverse environmental impact." November 14, 1986 Inspection Report, at 15-17; EA at 2.

Finally, the Staff found that the site cannot be used as a utilization facility (EA at 3). It concluded that the termination of the existing construction permits (and the concomitant withdrawal of the OL application and dismissal of the OL proceeding) would "not have a significant effect on the quality of the human environment" (EA at 4).

After examining the environmental submissions, we determined that two items in the Staff's November 14, 1986 inspection report warranted further exploration. Therefore, we posed certain questions concerning those items in our December 3, 1986 Memorandum and Order. The items are relevant in alternative situations: one if the plant were to be used for the gas-fired facility, the other if it is not to be so used and is abandoned. We will discuss these items *seriatim*.

1. Underpinning Excavations

The first item concerns the situation where the cooling pond is refilled, as would occur if the plant were to be used as a gas-fired cogeneration facility. The Staff's November 14, 1986 inspection report states (at 7) that "if the cooling pond is ever re-filled, something will have to be done to the partially completed underpinning to alleviate the possibility of soil washouts (the positive gradient would induce flow to the excavated area, thus possibly making the building unstable)." To the same effect, see the October 28, 1986 Inspection Report, at 3.

We asked questions seeking to delineate the extent of any problem (i.e., washouts or stagnant water), the nature of any corrective action, and CPC's intent to carry out such action. CPC indicated that it had not yet determined what steps were appropriate but that

[t]he contractor selected to do the design and construction work for the gas-fired cogeneration facility will be required to complete the Midland soils remedial program in a way that addresses such concerns and assures that the structures, facilities and surrounding areas will be stable and suitable for their intended use in the contemplated plant.

CPC Response at 2. CPC further made the commitment that "[i]f the site is used for a gas-fired cogeneration facility, the contractor will be required to take the appropriate steps" (*id.* at 3).

In its December 11, 1986 response to our questions, the Staff opines that a soil washout under the turbine building could lead to the development of "sinkholes" outside the fenced excavated area into which workers or visitors could fall. It characterizes this possibility as "a very low probability event." Nonetheless, it suggests that commitments from CPC to alleviate such conditions would be "appropriate." Staff Response at 2.

We understand the aforesaid commitment by CPC to be broad enough to encompass the "sinkhole" condition referenced by the Staff. We also understand the commitment to be broad enough to encompass areas of the auxiliary building beyond those to be utilized in the gas-fired facility. As so construed, we accept such commitment and find it to be sufficient to obviate the need for our imposing a specific condition to that effect on the withdrawal of the application for operating licenses or on dismissal of the OL proceeding.

We note that, in our December 3, 1986 questions, we inquired whether the permanent dewatering system would be utilized for the gas-fired facility. CPC responded that it would not be so used (CPC Response at 2). Since the dewatering system was planned to be used to meet NRC safety requirements and was not planned for environmental reasons — indeed, the potential environmental impacts of the system were among the matters previously considered by us —

we have no reason to expect that the failure to use the system for the gas-fired facility will result in any adverse environmental impacts.

2. *Emergency Cooling Water Reservoir*

The second item concerns the drainage of the emergency cooling water reservoir (ECWR), in the event the site were not used for a gas-fired facility and were abandoned prior to any other industrial use. The ECWR consists of a small, depressed portion of the 800-acre cooling pond, in the northeast portion of that pond (SER, § 2.4.5). The ECWR presently does not drain by gravity, and rainfall accumulation must be pumped (November 14, 1986 Inspection Report, at 14). The inspection report states (at 13) that "if CPCo were to completely abandon this site, it would be necessary to provide a gravity drain for this portion of the pond [ECWR] to preclude eutrophication and an undesirable mosquito breeding habitat." The report adds that "[t]his regulatory responsibility should be assumed by the MDNR under the revised NPDES Permit."

Our December 3, 1986 questions sought information concerning the effectiveness of the gravity drain and the jurisdiction of MDNR to require its installation in the event of site abandonment. Such a drain would apparently be effective. But the Staff and CPC indicate that MDNR may lack the authority to require CPC to provide gravity drainage (or, alternatively, backfill) for the ECWR prior to site abandonment (Staff Response at 4; CPC Response at 5).

Nonetheless, CPC has made a commitment that "[i]n the event the site is completely abandoned, CPCO will modify the ECWR by backfilling and then trenching to the #003 outfall structure on the east side of the cooling pond, so that the entire ECWR can be gravity drained" (CPC Response at 5). We find this commitment to be satisfactory. Given this commitment, we need no explicit condition to assure that, if the site were abandoned, the drainage of the ECWR would not lead to untoward environmental consequences.

3. *Other Environmental Questions*

The Staff's December 11 response to our questions observes that, if CPC relinquishes control of the site, the excavation for the underpinning should be backfilled (Staff Response at 2). Although we did not inquire whether CPC would commit to such backfilling, we note that CPC has recognized its responsibility for the site as long as it maintains its ownership. In our view, such responsibility would include placing the excavation for the underpinning in a condition where it would pose no significant threat to the human environment, either by backfilling or by some other means of control (e.g., barriers) (see ER at 3).

We would expect CPC to take steps of this type. But we perceive the Staff to have authority to alleviate the effects of the abandonment of nuclear structures. Because we did not raise this matter in our December 3, 1986 inquiry, we are not imposing any conditions with respect thereto. But since we regard a condition requiring backfilling or other means of control as appropriate, we would have no objection to the Staff's imposing a condition of this type which it finds to be warranted.

We note that the record of this proceeding reflects certain other commitments of CPC — e.g., the November 14, 1986 inspection report observes (at 9) that CPC has committed to dispose of debris from the Poseyville Laydown Area in a licensed landfill area when certain temporary facilities are removed. Our emphasis in this Memorandum and Order on commitments made to us in CPC's December 11, 1986 response should not be construed as limiting any commitments that the Staff may have obtained or as precluding the Staff from imposing such environmental conditions as it finds warranted.

4. Reporting to the Staff

Because the Staff's environmental responsibilities depend on CPC's eventual use of the site, we inquired concerning CPC's intent to advise the Staff of such use. CPC stated that it would advise the Staff "when conversion [i.e. actual construction] to a gas-fired facility begins or, alternatively, when the site is abandoned" (CPC Response at 6). This commitment is satisfactory.

C. Order

Based on the foregoing, and the entire record, it is, this 17th day of December 1986, ORDERED:

1. The NRC Staff is *authorized* to permit the withdrawal of CPC's OL application, subject to such conditions as it finds to be warranted.
2. The OL proceeding is *dismissed*.
3. No conditions are imposed hereby, but the foregoing authorization and dismissal are premised on CPC's commitments as described herein.
4. In accordance with 10 C.F.R. §§ 2.760, 2.762, 2.764, 2.785, and 2.786, as amended, this Memorandum and Order shall become effective immediately and will constitute the final action of the Commission thirty (30) days after issuance hereof, subject to any review pursuant to the above-cited Rules of Practice. Any party may take an appeal from this Memorandum and Order by filing a Notice of Appeal within ten (10) days after service hereof. Each appellant must file a brief supporting its position on appeal within thirty (30) days after filing its Notice of Appeal (forty (40) days if the Staff is the appellant). Within thirty (30) days after

the period has expired for the filing and service of the briefs of all appellants (forty (40) days in the case of the Staff), a party who is not an appellant may file a brief in support of, or in opposition to, any such appeal(s). A responding party shall file a single, responsive brief *only*, regardless of the number of appellants' briefs filed.

THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Jerry Harbour
ADMINISTRATIVE JUDGE

Gustave A. Linenberger
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 17th day of December 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judge:

Dr. Oscar H. Paris

In the Matter of

Docket No. 70-364-MLA
(ASLBP No. 815-511-01-ML)

BABCOCK AND WILCOX
(Parks Township, Pennsylvania,
Volume Reduction Facility)

December 23, 1986

In this Decision in an informal hearing involving an application for an amendment to a materials license to authorize the operation of a Volume Reduction Services Facility (VRSF) utilizing a high-force compactor and an incinerator to reduce the volume of noncombustible and combustible low-level radioactive wastes generated by medical facilities, research institutions, industry, and nuclear power plants, the Presiding Officer authorizes immediate issuance of the license amendment to allow operation of the compactor, but rules that the NRC Staff is authorized to issue the license amendment to allow operation of the incinerator only after certain conditions have been met, the most significant of which is that additional testing must demonstrate clearly that the incinerator will perform to the standards adopted by the Licensee to protect the public health and safety.

TECHNICAL ISSUES DISCUSSED

Operation of compactor and incinerator.

Release of tritium, carbon-14, and I-125 by the VRSF and their health effects.

Release of dioxins by the incinerator and their health effects.

Performance of the scrubbers, HEPA filters, and charcoal adsorber in the incinerator exhaust stack.

Accidents that could occur with the incinerator and their consequences.

Emergency plan of the Licensee.

APPEARANCES

Maurice Axelrad, Michael A. Bauser, and Frank R. Lindh, Esqs., Newman & Holtzinger, P.C., Washington, D.C., for the Licensee, Babcock and Wilcox.

Dennis Paul Zawacki, Esq., Pittsburgh, Pennsylvania, for the Intervenors, John P. Bologna and Frutie Johnson.

Thomas Au and John R. McKinstry, Esqs., for the Commonwealth of Pennsylvania.

George E. Johnson, Esq., for the Nuclear Regulatory Commission Staff.

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DECISION

I. INTRODUCTION

A. Nature of Proceeding and This Decision

This proceeding is an informal hearing involving an application by Babcock and Wilcox (B&W or Licensee) for an amendment to its Materials License No. SNM-414 to authorize the operation of a Volume Reduction Services Facil-

ity (VRSF) for low-level radioactive waste (LLW) at its plant in Parks Township, Pennsylvania. The license amendment would authorize B&W to operate a high-force compactor and an incinerator to reduce the volume of noncombustible and combustible low-level wastes generated by medical facilities, universities, research institutions, industry, and nuclear power plants. Wastes treated at the VRSF would be returned to the waste generator or shipped to a licensed waste disposal facility. Intervenor John P. Bologna and Frutie Johnson, whose residences are near the Parks Township site, contest the application. The Commonwealth of Pennsylvania participated informally as an interested State, and the NRC Staff, although having elected not to become party to the proceeding, also participated informally. In this decision, fourteen Intervenor complaints concerning health and safety and environmental issues are considered, and decisions are rendered independently on the amendment to authorize operation of the compactor and the amendment to authorize operation of the incinerator.

The Presiding Officer concludes that there is reasonable assurance that, if the license is amended to authorize operation of the compactor (which has been installed and is operable), the activities authorized will not be inimical to the common defense and security, can be conducted without endangering the health and safety of the public or the environment, and will be conducted in compliance with applicable NRC regulations. The incinerator, on the other hand, is still under development and had not, as of the date of the hearing, performed to the standards committed to by B&W and accepted by the NRC Staff. Consequently, the Presiding Officer has concluded that the Staff must withhold amending the license to authorize operation of the incinerator until further testing has shown that the incinerator is capable of meeting the performance criteria committed to by B&W and accepted by the Staff. Those performance criteria are made a licensing condition, *infra*, in this Decision.

B. Development of the Proceeding

The Licensee applied for an amendment to Materials License SNM-414 on October 31, 1984, for authorization to operate the VRSF at its Parks Township facility. Specifically, the amendment would authorize receipt and possession of up to 500 curies of byproduct material in the form of LLW; storage of the material in the Parks Township plant formerly used for plutonium fuel activities; processing the material in the VRSF; and waste packaging and shipment under the byproduct material authorization of the license. The processed LLW would be shipped either to a licensed waste disposal facility or returned to the generator of the waste. NRC Staff's Safety Evaluation Report Related to the Volume Reduction Services Facility, April 1986 (SER), § 1.1.

A petition for hearing on the proposed license amendment was filed by Messrs. John P. Bologna and Frutie Johnson on February 15, 1985.¹ B&W responded by letters dated February 25, 1985, and April 12, 1985. The NRC Staff responded by a filing dated March 25, 1985, in which it suggested that the Commission order an informal hearing before a single member of the Atomic Safety and Licensing Board Panel (ASLBP). On July 24, 1985, the Commission ordered (July 24 Order) (unpublished) that an informal hearing be convened before a single ASLBP administrative judge and that a notice of opportunity for hearing be published in the *Federal Register*, inviting petitions to intervene.

A Presiding Officer to conduct the informal hearing was appointed by the Chief Administrative Judge on August 1, 1985.² Notice of Appointment, 50 Fed. Reg. 32,128 (Aug. 8, 1985). As directed by the July 24 Order, the Presiding Officer issued a Notice of Hearing and Opportunity to Become Party. 50 Fed. Reg. 32,782 (Aug. 14, 1985). On September 12, 1985, Messrs. John P. Bologna and Frutie Johnson (Intervenors) petitioned to intervene; they raised a number of complaints in their petition, which they asked be addressed in the proceeding. The Commonwealth of Pennsylvania (Commonwealth) also petitioned to participate, as an interested State pursuant to 10 C.F.R. § 2.715(c). The NRC Staff, by letter dated September 26, 1985, advised the Presiding Officer and the parties that it would not participate as a party in the informal hearing, but it reserved the right to present information, either on its own initiative or in response to requests from the Presiding Officer.

By a Memorandum and Order (Ruling on Petition for Leave to Participate in an Informal Proceeding, dated October 3, 1985 (unpublished) (October 3 Order), the Presiding Officer admitted petitioners Bologna and Johnson as intervenors in the proceeding and accepted three of their complaints for hearing. The balance of their complaints were denied as premature in light of the fact that the Staff had not yet issued its SER or the NRC Staff Environmental Assessment (NRC EA). The Intervenors, however, were granted the right to file additional complaints based on the SER and NRC EA within 30 days of the issuance of these documents. October 3 Order at 8. The October 3 Order also denied the Commonwealth's petition to participate as an interested State pursuant to § 2.715(c) because the Commission, in its July 24 Order, did not apply that

¹ Another petition for hearing was filed by Joseph H. White, III, on February 14, 1985. Subsequently, however, Mr. White did not file a request to participate in the informal hearing ordered by the NRC on July 24, 1985. Consequently he is not a party to this proceeding.

A late petition to intervene was filed by Ms. Cindee Virostek on August 2, 1986. B&W filed an answer opposing the petition on August 19, 1986. No other responses were filed. The Presiding Officer issued a summary Order on September 4, 1986 (unpublished) denying the petition, on grounds set forth later in a Memorandum (Explaining the Denial of the Late-Filed Request to Intervene by Ms. Virostek) issued on September 11, 1986 (unpublished).

² The Presiding Officer originally appointed to conduct the proceeding was Dr. Peter A. Morris. Because of a schedule conflict, the Chief Administrative Judge, ASLBP, replaced Judge Morris with Dr. Oscar H. Paris on March 25, 1985. 51 Fed. Reg. 11,120.

provision to this informal hearing. The October 3 Order did, however, recognize that the Commonwealth had an interest in this informal proceeding and special responsibilities with respect to the VRSF. It ruled that the Commonwealth could suggest questions to the Presiding Officer if oral presentations were scheduled and directed that the Commonwealth be put on the service list for the proceeding. *Id.* at 9-11.

The NRC Staff issued its NRC EA on March 6, 1986, and its SER on April 9, 1986.³ On April 11, 1986, Intervenor filed a Supplemental Petition with respect to the NRC EA, and on May 9, 1986, they filed a Supplemental Petition with respect to the SER. B&W filed its answer to both supplemental petitions on May 27, 1986. In a Memorandum and Order (Ruling on Supplemental Petitions, Procedure, and Schedule), LBP-86-19, 23 NRC 825 (1986) the Presiding Officer admitted eleven new complaints, which, with the three complaints accepted in the October 3 Order, made a total of fourteen complaints to be considered in this proceeding. LBP-86-19 also directed the parties to file written testimony on the complaints, by affidavit, on or before August 1, 1986; it ruled that discovery and cross-examination were not permitted, but directed that the parties were to submit questions about the testimony, to be asked by the Presiding Officer, by August 22, 1986. *Id.* at 842. Further, the Order stated that oral presentations would be heard at an informal hearing held in the vicinity of the Parks Township site, at a time and place to be announced later. *Id.* The order also prescribed procedures for the oral presentations. Witnesses were ordered to answer under oath or affirmation the questions to be asked by Presiding Officer, and the parties were advised that they could offer supplemental oral testimony and submit additional questions on the oral testimony during the hearing. *Id.* LBP-86-19 also provided the opportunity for persons not party to the proceeding to present written or oral limited appearance statements. *Id.* at 843.

B&W and the Intervenor filed sworn testimony on August 1, 1986. In addition, the Staff, pursuant to a Memorandum and Order (Ruling on Supplementary Information from Staff Relating to Complaints Admitted for Hearing) dated July 18, 1986 (unpublished),⁴ filed Supplemental Clarifying Information from Staff Relating to the Staff's Safety and Environmental Evaluations (Staff Clarification) on July 31, 1986. On August 13, 1986, B&W filed a motion to

³ By letter dated June 3, 1986, B&W requested that the Presiding Officer find that none of the admitted complaints related to the compactor, so that the Staff could consider issuing a license for the compactor immediately. By letter dated June 19, 1986 Intervenor opposed the request and maintained that certain of their complaints as originally filed related to both compactor and incinerator. B&W replied to the Intervenor's letter on June 27, 1986. The Presiding Officer found that certain of the complaints filed by Intervenor related to the VRSF as a whole, and hence to both compactor and incinerator. Therefore B&W's request was denied by a Memorandum and Order (Ruling on Licensee's Request Relating to License Amendment for Compactor) issued July 1, 1986 (unpublished) (July 1 Order).

⁴ On July 17, 1986, counsel for the Staff had telephoned the Presiding Officer and requested leave to provide supplementary information relating to the complaints admitted for hearing by LBP-86-19. The request was granted.

strike certain portions of the testimony of John P. Bologna, on the grounds that those portions of the testimony were not relevant to the fourteen admitted complaints. The Presiding Officer granted in part and denied in part B&W's motion, in a Memorandum and Order (Ruling on Applicant's Motion to Strike) dated September 3, 1986 (unpublished).

Suggested questions were submitted by the parties and the Commonwealth on August 22, 1986. All of the suggested questions were accepted by a Memorandum and Order (Ruling on Questions for Witnesses) issued September 8, 1986 (unpublished) (September 8 Order). In addition, the order included questions for the witnesses from the Presiding Officer. A Notice of Informal Hearing issued on August 28, 1986 (unpublished), directed that the oral hearing would commence on September 30, 1986, in Apollo, Pennsylvania. The September 8 Order advised that a site visit would be made while the parties were in Apollo for the hearing. The parties, the Commonwealth, and the Staff were requested to have a least one representative on the site visit.

The site visit occurred on the afternoon of September 29, 1986, and was attended by the Presiding Officer, by Messrs. Bologna and Johnson and their counsel, by counsels for the Commonwealth, by the NRC Staff counsel and technical staff, and by representatives of B&W and their counsel. The visit included a tour of the facility, where the super-compactor's operation was demonstrated, and of the area surrounding the site, including the village of Kiskimere.

The oral hearing commenced at 9:00 a.m. on September 30, 1986, in the Apollo Community Center, and continued until mid-day on October 2, 1986. Licensee submitted prefiled testimony by six witnesses, and those witnesses appeared at the hearing to answer questions and provide supplemental testimony, if needed. Those witnesses were

Mr. Cary R. Bowles, Manager, B&W Waste Reduction Services. Mr. Bowles participated in the design of the VRSF, the preparation of license documentation, and the testing of equipment and certification of operations personnel.

Mr. Ronald D. Corridoni, Supervisor of Health & Safety at B&W's Pennsylvania Nuclear Services Operation, which includes the Parks Township facility.

Mr. A. Scott Dam, Manager, B&W Waste Technology Services. Mr. Dam has been Project Director of the VRSF since its conception and has supervised and participated in all aspects of the facility's design and implementation. Recently he was placed in charge of overall operations of B&W's Pennsylvania Nuclear Services Operation.

Mr. David M. Fogel, Production Manager, B&W Pennsylvania Nuclear Services Operation, and, until April 1986, Product Manager of the

VRSF. As Production Manager, Mr. Fogel will be the official responsible for operations of the VRSF.

Mr. Thomas E. Potter, member of the consulting firm of Morton & Potter. Mr. Potter performed many of the calculations and analyses relating to radiation contents of VRSF effluents and resulting doses set forth in the B&W Environmental Analysis (B&W EA).

Mr. Stanley E. Spas, Manager, System and Process Design, Aerojet Energy Conversion Company (AECC). AECC is the designer and builder of the incinerator that B&W proposes to install in the VRSF.

Dr. Niel Wald, Professor of Radiation Health and Chairman, Department of Radiation Health, Graduate School of Public Health, University of Pittsburgh, and Professor of Radiology, University of Pittsburgh School of Medicine. Dr. Wald served B&W as a private consultant.

In addition to these witnesses who presented prefiled written testimony as well as oral testimony, B&W presented three additional witnesses to respond to Intervenors' prefiled testimony or to concerns raised during the oral presentations. These witnesses were

Mr. Thomas A. Bauman, Health & Safety Operations Coordinator, B&W Pennsylvania Nuclear Service Operation.

Mr. Jack D. Lauber, Associate Air Pollution Control Engineer, New York State Department of Environmental Conservation. Mr. Lauber served B&W as a private consultant.

Mr. Lawrence Ozimek, Manager, Engineering and Specialty Manufacturing Department, B&W Pennsylvania Nuclear Services Operation.

Intervenors presented two witnesses who presented prefiled written testimony and oral testimony at the hearing. They were

Mr. John P. Bologna, one of the Intervenors. Mr. Bologna owns and lives in a residence located in Parks Township about one-half mile from the proposed VRSF site.

Dr. Marvin Resnikoff, Nuclear Scientist, Sierra Club Radioactive Waste Campaign. Dr. Resnikoff obtained his doctoral degree in high-energy physics from the University of Michigan, has served on the faculties of several universities, and has been working on nuclear waste management issues since 1984.

The Commonwealth presented one witness, to answer a question relating to the state which came up during the oral presentations. The witness was

Mr. James G. Yusko, Western Area Health Physicist, Bureau of Radiation Protection, Pennsylvania Department of Environmental Resources (PaDER).

The NRC Staff, at the request of the Presiding Officer, presented a panel of witnesses to address several issues that arose during the hearing. The panel consisted of the following individuals:

Mr. Roger M. Blond, Division Manager, Science Applications International Corporation. Mr. Blond was a consultant to the NRC Staff on the Staff's NRC EA.

Mr. Peter Loysen, Senior Chemical Engineer, NRC Office of Nuclear Material Safety and Safeguards (NMSS). Mr. Loysen is the NRC Staff Project Manager for review of the proposed VRSF, including preparation of the Staff's NRC EA and SER.

Mr. Frederick Sturz, Health Physicist, NMSS. Mr. Sturz reviewed the B&W EA and B&W's safety analysis study.

At the conclusion of the informal hearing on October 2, 1986, the parties agreed to an expedited schedule for filing proposed findings and conclusions, and the Presiding Officer so ordered.⁵ Accordingly, B&W filed its proposed findings on October 23, 1986, Intervenor filed their proposed findings on October 30, 1986, and B&W filed its response on November 6, 1986. By letter to the Presiding Officer on October 22, 1986, the Commonwealth advised that it elected not to file proposed findings in this proceeding, but would cover its "concerns regarding B&W's monitoring and emissions . . . later, if and when B&W applies for its permits with the Pennsylvania Department of Environmental Resources."

This Decision is based upon the Findings of Fact and Conclusions of Law which follow. Any proposed findings or conclusions submitted by the parties and not incorporated directly or inferentially in this Decision are rejected as being unsupported in law or in fact or as being unnecessary to the rendering of this decision.⁶

⁵ Because of a delay in delivery of the transcripts and the need for transcript corrections when they arrived, the Presiding Officer postponed the filing dates in a Memorandum and Order (Rescheduling Filing Dates) issued October 10, 1986 (unpublished) (October 10 Order). During a telephone conference on October 16, 1986, at which the Presiding Officer directed the parties to have their witnesses review the transcripts and suggest appropriate corrections for their testimony, the parties advised that they could still meet the original expedited schedule. Therefore the October 10 Order was vacated by a Memorandum and Order (Memorializing Telephone Conference Call and Vacating Order Rescheduling Filing Dates) issued October 17, 1986 (unpublished). Licensee, Intervenor, and the Staff all filed suggested transcript corrections, and a Memorandum and Order (Transcript Corrections) issued November 10, 1986 (unpublished) set forth the corrections to be made in the transcripts of the hearing. The order also granted the parties leave to file corrections to their proposed findings, if necessary, on the basis of the permitted transcript corrections. Only Licensee filed such corrections, by letter dated November 6, 1986.

⁶ On December 15, 1986, Intervenor filed "Intervenor's Supplemental Submission" consisting of a copy of a paper by C. Waldren, *et al.*, entitled "Measurement of low levels of X-ray mutagenesis in relation to human disease," *Proc. Natl. Acad. Sci. USA*, Vol. 83, at 4839-43, with the request that it be considered by the Presiding Officer. Because the record was closed and the filing was unsupported by affidavits, however, it was not considered.

II. FINDINGS OF FACT

A. Background

1. In response to the Low-Level Radioactive Waste Policy Act of 1980 (Pub. L. 96-573; 42 U.S.C. § 2021b, *et seq.*), the Commission issued its October 1981 Policy Statement on Low-Level Radioactive Waste Volume Reduction (46 Fed. Reg. 51,100) in which it encouraged its licensees to limit the quantities of waste produced and to reduce the volume of waste shipped for disposal at burial sites. The Commission noted that both compaction and incineration were among the volume reduction methods to be applied. In July 1985 the NRC warned licensees that curtailment of access to radioactive waste disposal sites could occur, and it recommended that licensees develop contingency plans for such an event. NRC EA § 1.0; Dam (Overview), ff. Tr. 415, at 3-4.

2. To assist waste generators to cope with these developments, B&W has proposed the VRSF to be located at its Parks Township site. NRC EA § 1.0. The VRSF would consist of two functionally separate and independent volume reduction processes: high-force compaction and high-temperature incineration. Because of the diversity of radioactive waste generators to be served by the VRSF, the waste will include a wide variety of physical and chemical characteristics. B&W EA § 2.8. Wastes such as metal and plastic are suitable for compaction. Other wastes, such as scintillation fluids, biological material, and lubricating oils are not suitable for compaction but can be incinerated. Dam (Overview), ff. Tr. 415, at 3; NRC EA §§ 3.2, 9.4.

3. Because the compactor and the incinerator and their operation are entirely separate, they will be considered separately in this decision.

B. The Compactor and Its Operation

4. B&W's high-force compactor (often referred to as a "super-compactor") consists of a materials handling system utilizing conveyors and hoists, the compacting system, a waste solidification system for liquid wastes produced in the compaction process, and a remotely operated process control system. Dam, ff. Tr. 415, at 7; NRC EA §§ 3.2.3, 3.2.4; Babcock & Wilcox VRSF Systems Description Manual (SDM) §§ II.A. The compacting system uses a 1500-ton force press manufactured by A. Fontijne Company of Holland and associated handling equipment manufactured by Stock Equipment Company of Ohio. *Id.*

5. The compaction process is operated by a remote, automated control system, except for the unloading of waste drums and loading of over-packs in the shipping and receiving area, which is done by forklift. The process begins by the loading of 55-gallon metal drums onto a powered conveyor leading to the compactor. The drums are fed by the conveyor through an airlock into the press cell enclosure. The enclosure is kept at negative atmospheric pressure with

respect to the rest of the VRSF building and is exhausted through a roughing filter, a high-efficiency particulate air (HEPA) filter, a charcoal filter, and finally through two more HEPA filter banks in series which are part of the building ventilation exhaust system. Dam (Overview), ff. Tr. 415, at 7.

6. Once inside the press cell enclosure, each metal drum will be pierced by hardened steel punches driven by pneumatic cylinders, to permit release of air during compaction. *Id.* at 7-8. The punctured drum is then loaded into the press, positioned for compaction, and compacted by the press into a "hockey puck." The hockey puck will then be moved from the press onto a turntable inside the press cell enclosure, which will then revolve to position the hockey puck under a hatch. A hoist will remove the hockey puck through the hatch and deposit it in an over-pack located on a second turntable outside the press cell enclosure. When filled to capacity, the over-pack will be remotely capped and sealed. The sealed over-packs will be moved by a conveyor system to the over-pack shipment staging area, where they will be loaded onto trucks by forklift for shipment to disposal sites. *Id.* at 8; SDM §§ II.A, III.C.

7. Any liquid that might be forced out during puncturing or compaction of the 55-gallon waste drums will be collected in catch pans and directed to a liquid sump within the press cell enclosure. Liquid from the sump will be pumped to a 100-gallon holding tank and later pumped to the solidification system. In the solidification system the liquid is mixed in steel drums with dry cement and capped remotely. The solidification drums will then be moved to a post-process staging area by forklift or overhead crane and shipped with other processed waste to a licensed disposal site. Dam (Overview), ff. Tr. 415, at 8-9.

8. The super-compactor is now installed at the Parks Township site. B&W personnel have been trained in its operation and all attendant operational procedures have been written. Internal B&W final design and operational readiness reviews have been performed, and follow-on actions have been completed. Once the necessary authorizations are received, B&W is prepared to put the compactor into operation. The company must obtain Air Quality Control Permits for the compactor from PaDER, in addition to the NRC license amendment. B&W has been told by PaDER that PaDER will await the NRC license amendment authorizing compactor operation before completing its own review and holding public meetings.⁷ *Id.* at 15.

⁷ During the site visit, the Presiding Officer and parties observed the operation of the compactor, as several 55-gallon drums loaded with nonradioactive cinder blocks were compacted into hockey pucks and loaded into an over-pack.

C. The Incinerator and Its Operation

9. The incinerator will employ separate equipment which will be housed in three trailers and a 5 ft x 14 ft secondary scrubber skid located on a 60-foot square concrete pad adjacent to the VRSF building. Only one of the trailers, the operations trailer, will be physically connected to the VRSF building, by an enclosed incinerator feed corridor and an enclosed ash transfer area. The incinerator system is being manufactured by AECC and is designated their Mobile Volume Reduction System (MVRS). As originally designed for incinerating nuclear reactor LLW, the MVRS is described in the AECC MVRS Topical Report (Rev. 1) (Jan. 15, 1986). The MVRS to be installed at Parks Township has several modifications that are designed to permit the incineration of medical, institutional, and industrial LLW as well as reactor waste. Dam (Overview), ff. Tr. 415, at 9; B&W EA, Appendix E.

10. Material to be incinerated will be placed in fiber drums and boxes. These will be moved by a powered conveyor from the VRSF building into the incinerator trash preparation area in the operations trailer, via the incinerator feed corridor. The incinerator operator will remove the container from the conveyor and feed it into the incinerator feed chute in the incinerator trailer. The chute outer door will then be closed, the chute inner door will be opened remotely and the container positioned in front of the waste charging ram. The operator then will remotely close the inner chute door and remotely open the incinerator fire box door. This system provides a double airlock between the incinerator primary chamber and the trailer atmosphere. Dam (Overview), ff. Tr. 415, at 9. By means of the waste charging ram the operator then will push the feed container into the incinerator fire box; this process will also push any ash in the incinerator into an ash drop. This feed process will take about 2 minutes and will be repeated two to three times per hour. *Id.* at 10.

11. Incineration will occur in a two-stage, negative pressure process. The first stage will occur in air-limiting, underfire conditions at a minimum temperature of 1700°F, and the second with high excess air (about 100% excess) at a temperature of 2100°F. *Id.*

12. Off-gas from the secondary combustion chamber will be quenched to approximately 1000°F with a water spray. It will then be processed through a series of two liquid scrubber systems, which scrub acid gases from the gas stream, provide particulate scrubbing, and further cool the gas stream to about 180°F. A gas discharge system will draw the cleaned, saturated off-gas from the wet scrubbers, heat it slightly by compressing in an induction fan, and pass it through a HEPA filter, a charcoal adsorber, and a final HEPA filter before releasing it to the atmosphere. The chemicals discharged will be principally carbon dioxide and water vapor. *Id.* In addition, volatile radioisotopes, such as

tritium, carbon-14, and iodine-125, will be driven off during the incineration process. NRC EA at 6-3 thru 6-6.

13. Ash from the incinerator will be accumulated in an ash container located below the primary combustor, conveyed to an ash hopper, mixed with a binder, and metered directly to a container (55-gallon drum). The ash containers will be remotely capped and transferred to an ash transfer cart for post-process staging and shipment. Dam (Overview), ff. Tr. 415, at 10.

14. The MVRS that B&W plans to use was, at the close of the hearing, still at the AECC facilities in Sacramento, California, awaiting the completion of tests on the first MVRS which is destined for the Dresden Nuclear Power Station. *Id.* at 14. In addition, there are design changes for the B&W MVRS, resulting from the tests on the Dresden unit, which must be implemented before the B&W unit can be delivered. *Id.*; Potter and Spas (Complaint 8) at 11;⁸ see Findings 149 and 150, *infra*.

D. Complaints Heard in the Proceeding

15. Rather than taking the complaints in the order in which they were listed and numbered in LBP-86-19, Licensee grouped its witnesses and organized their oral testimony on the basis of issue-related complaints. The same approach has been taken in the proposed findings and will be used in this Decision. Rather than list all fourteen complaints at the outset, each complaint will be stated in full, as set forth in LBP-86-19 and amended by the July 1 Order, at the place in the Decision where evidence on the complaint is discussed.

(1) Administrative Controls

16. Institutional, medical, and industrial LLW processed at the VRSF is expected to contain the radioisotopes tritium (H-3), carbon-14 (C-14), and iodine-125 (I-125). Administrative controls would limit the amounts of these isotopes released by incineration. NRC EA §§ 4.1, 4.1.1.2, 4.1.2.2, 6.1, 10.1; B&W EA §§ 3.2, Tables 3.1, 7.1. Intervenors challenged the reliance on administrative controls to limit the amounts of these volatile radioisotopes released, in Complaints 4, 5, 9, 12, and 6. The evidence adduced with respect to these complaints will be discussed, using the above sequence, in this section of the Decision.

⁸ The prefiled "Testimony of Thomas E. Potter and Stanley E. Spas on Complaint 8" should have been bound into the record following Tr. 391 but was not. The same is true of the prefiled testimony of a number of the other witnesses. Citations to the unbound prefiled testimony in this Decision will follow the example given here, viz., the witness(es) name(s) will be followed by the complaint number (for further identification), plus number(s) of the page(s) where the cited information can be found in the prefiled testimony.

Complaint 4 (Limits on Emissions of H-3, C-14, and I-125)

The administrative controls that are to be used to limit emissions of Hydrogen-3 to 80 curies/year, Carbon-14 to 4 curies/year, and Iodine-125 to 0.012 curies/year have not been adequately described by Licensee or Staff. Consequently whether the controls will protect the public health and safety cannot be assured. Licensee should specify exactly how the administrative limits will be achieved.

17. B&W has adopted administrative controls to limit emission of H-3, C-14, and I-125 isotopes in the incinerator off-gas effluents because of the difficulty in utilizing real-time control measures. The administrative limits would provide for a safety margin that is less than 10% of the most restrictive (40 C.F.R. Part 190) limitation on exposure to the nearest resident. Bowles and Fogel (Complaint 4) at 2. The administrative controls that will be used to limit releases of H-3, C-14, and I-125 to the specified limits are described in part in the B&W EA (§§ 2.2 through 2.7), the NRC EA (Chap. 5 and § 6.1), and in the B&W SDM (§ II). Bowles and Fogel (Complaint 4) at 3.

18. Upon receipt of a waste shipment by the VRSF, VRSF management will review the shipment's manifest to ensure that it is properly filled in with all the information necessary for processing waste and that the information is consistent with contractual requirements and with NRC and Department of Transportation (DOT) regulations governing shipment of radioactive wastes (10 C.F.R. § 20.311(d)(4) through (8); 40 C.F.R. Part 172, Subpart C, and 40 C.F.R. Part 173). B&W Health and Safety (H&S) personnel will survey the shipment vehicle's external surfaces prior to its entry to the VRSF loading dock. After opening the vehicle but prior to off-loading it, H&S personnel will survey the interior surfaces of the vehicle. As the waste packages are off-loaded, B&W personnel will verify that the shipper's manifest number is on each package, and a VRSF bar code label will be affixed to each package. B&W H&S personnel will check each package's external radiation level and check the surface of the package for contamination; the results of these surveys will be compared to the shipper's manifest. Each package will also be checked for damage, leaks, punctures, etc. Packages that require sorting will be segregated, and as the sorting occurs, records will be made of the package's contents, weight, and radiation level. Finally, upon completion of the off-loading the vehicle will again be surveyed by H&S personnel for radiation and radioactive contamination levels. The results of all H&S surveys will be made available for inspection by regulatory personnel. *Id.* at 3-5.

19. When a package is received that is found to deviate significantly from the shipper's manifest, B&W will immediately notify the shipper. If the problem can be resolved, B&W will notify the shipper and allow the material to be processed. Otherwise B&W will take the corrective action necessary and either return the shipment to the shipper or transfer it, without processing, to an authorized disposal facility. When circumstances require it, B&W will notify

the appropriate NRC and DOT personnel. During the processing of waste, when problems are noted with a shipper's manifest, B&W will immediately notify the shipper so that corrective action(s) can be initiated. Repeated or serious problems will result in discontinuation of service to the client and may also result in sanctions being imposed by regulatory agencies. *Id.* at 6.

20. The bar code affixed to each package will enable B&W to characterize and trace each waste generator's material from the time it is received, through the processing, to the time that the processed waste is shipped from the VRSF. The tracking system will utilize B&W's proprietary CENTRK computer program, which embodies the NRC-approved RADMAN program. NRC EA § 5.1.8.2; Bowles and Fogel (Complaint 4) at 6. CENTRK provides for the characterization and tracking of packaged wastes received for processing and of waste processed at the VRSF; it will also provide for the preparation of manifests for shipment of processed waste and reports on current and historic waste management activities at the VRSF. Bowles and Fogel (Complaint 4) at 7.

21. B&W will perform continuous effluent monitoring of the VRSF release points. Pursuant to NRC Staff recommendations, B&W has committed to install and operate a real-time particulate monitor capable of detecting emissions in the incinerator off-gas discharge stack that exceed the concentrations set forth in 10 C.F.R. Part 20, Appendix B. Because the real-time monitor will be incapable of detecting H-3, C-14, and I-125 emissions, B&W will use appropriate methods for the continuous collection of these gaseous isotopes. Samples from these collections will be analyzed daily when industrial and institutional waste containing these radionuclides is being processed and weekly when other waste, including nuclear reactor waste, is being processed. *Id.* at 8; see NRC EA § 7.2.1 and SER § 5.2. A real-time monitor and continuous sampling devices will also be installed on the building ventilation stack which includes the compactor enclosed cell ventilation exhaust. Bowles and Fogel (Complaint 4) at 8-9.

22. B&W will maintain particulate stack discharge plots, which will be updated daily and summarized on a semiannual basis for the required 10 C.F.R. Parts 40 and 70 semiannual reports to the NRC. This requirement applies to the stack discharge particulate activity plots, the compactor ventilation, the incinerator ventilation, and the incinerator off-gas effluents. B&W will also maintain stack discharge plots for H-3, C-14, and I-125. The plots will be updated following completion of each sample analysis (daily or weekly) and will contain monthly, current quarter, and yearly summations. *Id.*

23. The most restrictive limits on releases are annual dose limits. The periodic (at least weekly) collection of data on H-3, C-14, and I-125 releases will be used by B&W to evaluate and, if necessary, adjust the administrative control process to ensure compliance with administrative release limits and annual dose limits. *Id.* at 10. The Staff has concluded that adherence to these administrative

control procedures will enable B&W to ensure that concentrations of radioactivity in air and doses to individuals in unrestricted areas are maintained within the limits of 10 C.F.R. Part 20 and 40 C.F.R. Part 61. SER at 37.

24. Questions seeking clarification of various aspects of B&W's administrative controls were raised during the oral presentations. The evidence on these questions, as well as evidence bearing on auxiliary matters that can be considered to fall within the scope of Complaint 4 (concerning offsite monitors recently installed by the NRC and PaDER, and actions in the event of the physical collapse of the crane operator at VRSF), will be considered below.

25. Although the real-time monitor that B&W presently plans to install in the incinerator off-gas stack will be unable to detect H-3, C-14, and I-125, B&W has been evaluating and will continue to evaluate commercially available real-time monitors that can detect these volatile radioisotopes and could be used in the off-gas stack to take the place of the continuous sampling devices. To date, however, no real-time monitors have been found that are rugged enough for use in the off-gas stack. Apparently, monitors that are sensitive enough to detect H-3, C-14, and I-125 are incapable of withstanding the severe environmental conditions that will exist in the off-gas stack. Hence, B&W will use continuous sampling devices until suitably reliable and sensitive real-time monitors become available. Tr. 333-34 (Bowles).

26. Questions were raised as to whether B&W will perform any testing of incoming waste packages prior to processing, other than the H&S external radiation survey already discussed, to verify that the quantities of H-3, C-14, and I-125 stated on the manifests are accurate. B&W is unaware, as is the NRC Staff, of any instruments that would be capable of verifying the concentrations of H-3 and C-14 in unopened incoming packages. Tr. 345-46 (Bowles); Tr. 346 (Johnson). Under NRC and DOT regulations, however, it is the shipper's responsibility to ensure that the contents of the shipment conform to the manifest. B&W's sampling and analysis program will enable it to verify, indirectly, the customer's shipping manifest. Tr. 332 (Fogel).

27. In response to a question asking whether B&W would use administrative controls to limit the number of waste generators using the VRSF and thus restrict emissions of H-3, C-14, and I-125, B&W's witness attested that the number of users would not be administratively limited. B&W recognizes the possibility, however, that at some time during the course of a year the releases of these radionuclides might approach their respective limits. In that unlikely event, B&W would schedule any packages on hand in a manner that would ensure compliance with annual limits. If the packages containing these isotopes could not be incinerated for a significant period of time without exceeding the limits, customers would be notified that shipments of such packages should be deferred. Tr. 335 (Bowles).

28. In response to a question concerning when and how often B&W will sample incineration stack releases, B&W again attested that it would continuously collect gaseous H-3, C-14, and I-125, and analyze it daily when industrial and institutional wastes containing these isotopes are processed. Moreover, although sampling for I-125 is not required if only nuclear reactor waste is being processed, B&W has committed to collect off-gas samples for I-125 continuously even if only reactor waste is being processed, and will analyze such samples weekly (rather than daily, the frequency of analysis when industrial and institutional waste is processed). Tr. 336 (Bowles); Tr. 436-38 (Dam).

29. Questions about the offsite monitors concerned their location and whether they had been installed yet. The Presiding Officer ruled that the precise location of the monitors should not be put on the public record, because of the risk of vandalism. The Commonwealth offered a witness from PaDER who testified that forty-one of the planned forty-two monitors had been installed in various sectors around the Parks Township site. Sixteen are within a 5-mile zone around the plant and the remainder are scattered around at a distance of at least 5 miles. Tr. 348-49 (Yusko). These monitors are thermoluminescent dosimeters (TLDs) that are incapable of detecting H-3, C-14, and I-125, a matter of concern to the intervenors. Intervenor's witness Bologna suggested, in his prefiled testimony, that the offsite monitors had been put in place "merely to placate" local residents. Bologna (prefiled testimony) at 15; Tr. 459-61. If the VRSF is authorized, however, the current environmental sampling contract between the NRC and the Commonwealth will be expanded to include analyses for H-3, C-14, and I-125 in the environment surrounding the plant. Tr. 475 (Bologna, quoting from a letter from Thomas T. Martin, NRC Region I, to Ms. Mildred Chelko, dated July 8, 1986, at 2). Because there is no direct testimony that these additional detectors will be added to the NRC/Commonwealth detector system around the plant, their installation will be made a condition of this Decision.

30. An additional question relating to administrative controls, although not directly related to Complaint 4, was raised by the Presiding Officer as a result of a concern raised in an oral limited appearance statement. The question was whether the crane operator at the VRSF had a backup who could replace him should he suddenly collapse. Tr. 343. A B&W witness explained that the crane could be operated in either of two modes, automatic or manual. If the operator collapsed while the crane was in automatic mode, the crane would simply complete the programmed task and then stop to await further input. For manual operation, the unit is equipped with a deadman switch; if the operator collapses, the control would return to the neutral position, thereby terminating the crane operation. Tr. 343 (Fogel).

31. Intervenor's argue that B&W's "poor past compliance history" indicates that B&W is not "capable of handling administrative controls." Intervenor's Proposed Findings of Fact and Conclusions of Law (Intervenor's Find-

ings), ¶ 3. Complaint 6, considered *infra*, deals with B&W's compliance with radioactive release limits over the past 10 years. B&W offered supplemental testimony, however, on compliance history since it acquired the Parks Township facility in 1971, in response to a request from the Presiding Officer that the Licensee address allegations of noncompliance made in limited appearance statements. Tr. 183, 417-20.

32. B&W acknowledges that it "is not proud of its compliance history during these early years" (1971-1979), but it is "pleased with the substantial improvements . . . achieved by 1979." During those early years the Parks Township plant averaged about thirty-one items of noncompliance per year — of various degrees of severity. In 1979 the NRC issued a Safety Evaluation Report (1979 SER) in conjunction with the renewal of License No. SNM-414, which included a review of inspection and enforcement reports for the period July 1973 to February 1979. The 1979 SER raised two items of concern: (1) Incorrect procedures for fitting and testing of respirators had been used earlier, but the problem had been corrected; and (2) B&W had been slow to recognize generic or persistent causes for some of its problems, but B&W's management had become aware of it and improved results were observed for the later years. Tr. 418 (Dam).

33. In the mid-1970s, B&W management developed and made a commitment to a program of zero noncompliance. A B&W Compliance Department was organized for the purpose of auditing for compliance with federal, state, and corporate regulations; that organization is still in place today. There has been a shift toward less severe noncompliance items as well as a downward trend to an average of less than two items per year since 1981. Tr. 418-19 (Dam). The only release in excess of the maximum permissible concentration (MPC) at Parks Township occurred in 1973 at the Type II facility of the Parks Township plant. From a furnace vent in the plant there was a release of insoluble uranium-235 that averaged, over a period of 24 hours, 7449 times the maximum permissible concentration (MPC). This measurement was made in the vent at the point of release; although the NRC routinely applies 10 C.F.R. § 20.106 limits to the vent itself for the purpose of conservatively simplifying implementation of the regulation, the regulation itself clearly applies the limits to the site boundary, i.e., to unrestricted areas. Continuous air samples located at the restricted area boundary showed that the concentration there remained less than the MPC during the releases. The accident occurred during the startup of the furnace and resulted from the fact that two out of three effluent filter cartridges installed in the vent were of improper pore size. Tr. 373-75 (Corridoni).

34. Since 1979, compliance history at Parks Township has been very good. According to the Staff's SER, during the 6-year period from 1979 to 1986 there were ninety-three inspections of the Parks Township plant, with about two-thirds of them being for H&S compliance purposes. An average of approximately one violation was noted in every two inspections. Most of the

violations were for minor procedural inadequacies, including record keeping and submittal of reports. All were corrected within a reasonable time, and none resulted in the imposition of civil penalties. Tr. 417 (Dam); SER § 4.3. The Staff concluded in the section on "Compliance History" in the SER as follows:

This record of compliance with NRC regulations and license conditions does not provide cause for imposing unusual conditions of operation or denial of the application for license amendment. B&W has been cooperative with the NRC staff in complying with regulatory requirements and requests for information.

At the hearing, the NRC Staff Project Manager for review of the VRSF emphasized the Staff's finding in the SER and again stated that the Staff would have no problem with issuing the amendment for the VRSF with respect to B&W's compliance history. Tr. 492 (Loysen).

35. The compliance history at Apollo under License SNM-145, while obviously less relevant to this proceeding, generally parallels that at Parks Township. At Apollo there was a relatively large number of compliance problems in the years immediately after B&W acquired the facility in 1971, followed by significant improvement in more recent years. Prior to 1978 the annual average number of noncompliance items was 44. Since 1981 there have been only three items of noncompliance, all level V. There have been no level III noncompliances since 1974. There was one release in excess of regulatory limits at Apollo in 1972. The material released was most likely soluble uranium, in which case it would have been 6000 times the MPC averaged over 24 hours. Again, this was a stack measurement. Air samples taken off site and environmental samples taken during and after the release were all within permissible limits, indicating that the release did not result in danger to the public health and safety. Tr. 421-24 (Dam).

36. In conclusion, while B&W clearly had significant compliance problems prior to the initiation of its zero noncompliance program in the mid-1970s, it is equally clear that Licensee has made substantial improvements in its performance in the years since then. The evidence supports the conclusion that B&W can and will apply its administrative controls so as to maintain releases of H-3, C-14, and I-125 within the limits of 80, 4, and 0.012 curies per year, respectively, and that these controls will protect the public health and safety.

Complaint 5 (Commitment to Install Monitor on Incinerator Stack)

Licensee has not committed to install the stack monitors which Staff has proposed as a license amendment condition, and the Staff has not made their installation a requirement. Public health and safety cannot be assured unless Licensee commits to install the monitors or Staff requires that they be installed.

37. Complaint 5 was admitted solely "to the extent of assuring that the Licensee commits to or is required to install the stack monitors recommended by the Staff." LBP-86-19, *supra*, 23 NRC at 831. B&W has committed to install and operate a real-time continuous monitor for particulate radionuclides in the VRSF incinerator off-gas discharge stack whenever the incinerator is operating. The monitor will annunciate in the operations trailer control room and will be capable of working if concentrations of expected mixtures of particulate radionuclides should exceed 24 MPC-hours, or equivalent, using Appendix B, Table II values of 10 C.F.R. Part 20. Dam (Complaint 5) at 2. The Staff also clarified its position by stating that if it issues the requested license amendment, the "proposed" license amendments set forth in the SER would be added to the conditions section of Materials License No. SNM-414. Staff Clarification at 1-2. Thus it is clear that the monitor will be installed and operated.

38. Intervenors submitted two questions purportedly related to Complaint 5, but both pertained to other complaints and were answered by B&W accordingly. The first asked about sampling of incinerator releases and was addressed by B&W in connection with Complaint 4. *See* Finding 28, *supra*. The second asked about monitoring dioxin releases and was addressed by B&W in connection with Complaint 2. *See* Finding 131, *infra*. Tr. 57-58 (Bowles); Tr. 438-39 (Dam).

Complaint 9 (I-125 in Scrubber Solution)

Licensee has not adequately described how the scrubber solution will be monitored and adjusted to assure that Iodine-125 emissions will be as low as expected. Intervenors believe that iodine will build up in the scrubber solution and result in the release of higher amounts of Iodine-125.

39. Administrative controls will limit the amount of I-125 released to 0.012 curies per year (Ci/yr). Buildup of I-125 in the scrubber solution will not create a problem in maintaining this limit because the scrubber solution will be drawn off periodically and replaced with new caustic solution. The current intent is to reinject spent caustic solution with the incinerator feed. If the fraction of iodine that goes to ash is significant, buildup in the scrubber solution will be small. On the other hand, if more iodine goes to the scrubber solution than expected, buildup of iodine in the scrubber solution can be limited by processing the scrubber solution in some manner other than recycling. Two alternatives would be (1) to inject the scrubber solution into ash drums, a technique that has been successfully tested by AECC, or (2) to solidify it using the VRSF solidification equipment. Spent caustic solution processed by either of these two methods would ultimately be sent to a licensed disposal facility. The sampling and analysis of I-125 in the off-gas exhaust stack will provide an indication of whether the scrubber solution can be recycled or should be disposed of by

another method. In any event, B&W commits to comply with the annual I-125 release limits. Potter and Bowles (Complaint 9) at 2-3.

40. B&W will monitor and control the scrubber system to maintain its removal efficiency with respect to iodine. The monitoring and control of the scrubber solution requires monitoring its pH and controlling pH by metering sodium hydroxide into the recirculation piping. After mixing with the gas stream and particulates in a Venturi throat, where the scrubber solution is divided into small (120-micron) droplets, the scrubber droplets are disentrained from the gas stream and collected in a 200-gallon sump. Solution is pumped from the sump back to the Venturi throat for recycling. A portion of the recirculating scrubber solution passes through a pH indicator, which transmits a proportional signal to a microprocessor. The microprocessor regulates the speed of the metering pump that adds sodium hydroxide to the solution. In addition to this automatic monitoring and control system, there are high- and low-pH alarms that will alert the operator to a process deviation. The scrubber sump level is also measured by a proportional-level transmitter that sends a signal to a microprocessor which regulates the quantity of fresh scrubber solution required to maintain the level in the sump. *Id.* at 3-4.

41. The concentration of solids, including iodine particulates, in the scrubber solution must also be controlled to maintain a specific gravity of not more than 1.2, because above that level crystals will form in the solution. This control will be accomplished by a density transmitter which monitors the operation and continuously logs density. Upon reaching a specific gravity of 1.15, approximately one-third of the scrubber solution will be transferred to a holding tank and fresh solution used to refill the scrubber system; this procedure will reduce the specific gravity to about 1.08. In addition, a high-density alarm is provided to alert the operator of a process deviation. *Id.* at 4.

42. These controls will provide a constant pH level and a safe operating range of solids concentrations, with appropriate alarms to alert the operator of process deviations. Each alarm function has a respective corrective action that the operator can easily accomplish once he has verified the deviation. Thus the scrubber system can perform at its design efficiency even under adverse conditions. *Id.*

43. The scrubber is expected to have a decontamination factor (DF) of 3 for iodine, based on test data reported by AECC for a similarly designed scrubber. Tr. 116-17 (Bowles), *citing* reports AECC-4-NP-A at 113, and AECC-1-A. In his prefiled testimony, Intervenor's witness Dr. Resnikoff questioned whether the reported DF of 3 for iodine would be achieved, because "temperatures are so high one would assume all the iodine would be volatilized in the first combustion chamber." Telephonic Statement of Dr. Marvin Resnikoff, dated July 29, 1986 (Resnikoff Testimony), at 20. In response to a question from the Presiding Officer about the basis for this belief, Dr. Resnikoff described the

veloxidation process used in reprocessing facilities, in which the fuel is heated to 550°C, which is "expected to drive off organic and elemental iodides greater than ninety-nine and a half percent," citing ORNL-TM-4901. Since the first chamber of the VRSF incinerator will operate at an even higher temperature, 870°C, the witness believes that all the iodine will be volatilized. He said that he was "quite surprised" by the reported test data that showed that half the iodine stayed with the ash. Tr. 133-34, 159 (Resnikoff).

44. B&W's witness provided additional information about ORNL-TM-4901, entitled "Veloxidation, Removal of Volatile Fission Products from Spent LMFBR Fuel" and dated January 1973; he attested that the cited report stated that 99% of tritium was removed from the spent fuel by veloxidation, but only up to 75% of the iodine would be removed. In many of the tests, the removal fractions were less than 50%. Moreover, it was also found that much of the iodine that was removed condensed and plated out on cooler parts of the system. Tr. 355-56. (Potter).

45. Dr. Resnikoff acknowledged that the veloxidation process may not be relevant to the incineration of LLW. Tr. 149-50. To the extent that it is relevant, however, the results reported in ORNL-TM-3901 appear to support B&W's assumption of a DF of 2 in the combustion chamber rather than Dr. Resnikoff's theory that all of the iodine would be volatilized.

46. In conclusion, B&W has demonstrated that the buildup of iodine in the scrubber solution will be adequately monitored and controlled. No basis was provided by the Intervenor to support the suggestion of their witness that B&W should assume that 100% of the iodine will go into the off-gas and hence into the scrubber solution. Be that as it may, the limit of 0.012 Ci/yr for I-125 releases would still apply and can be achieved by administrative controls.

Complaint 12 (I-131 in Reactor Wastes)

The assumption that no iodine-131 will be released from reactor wastes processed at the VRSF may not be valid. If not, the iodine dosage would be 7.5 times greater, thus endangering the public health and safety.

47. B&W does not believe that I-131 will be present in significant quantities in the incoming reactor waste because data drawn from statistical surveys of wastes shipped for disposal indicate that concentrations of I-131 in reactor dry active wastes are negligibly low. Potter (Complaint 12) at 1-2, citing "Identification of Radiowaste Sources and Reduction Techniques, Volume 2: Project Evaluation" (EPRI NP-3370), Gilbert Associates, Inc., January 1984 (EPRI Report). The major components of reactor wastes are cesium, cobalt, and manganese isotopes. I-131, if present at all, is included in an "others" category of the EPRI Report which constitutes less than 3% of the activity in the waste. *Id.*; EPRI Report at 4-14, 4-15, and 4-27.

48. Only a very small amount of I-131 escapes from the fuel during reactor operations. The NRC estimates that the concentration of I-131 in reactor coolant can be expected to be about 0.045 microcuries per gram ($\mu\text{Ci/g}$) of coolant. Potter (Complaint 12) at 3, *citing* "Calculations of Releases of Radioactive Materials in Gaseous and Liquid Effluents from Pressurized Water Reactors," NUREG-0017 (Rev. 1), 1985 (p. 2-4, Table 2-2, and p. 2-6, Table 2-3). The reactor dry waste that would be incinerated at the VRSF would contain primarily protective clothing and protective coverings that have been contaminated with the equivalent of only a few drops of reactor coolant. Because I-131 has a half-life of only 8 days, normal storage and shipping times will result in any I-131 activity decaying to negligible levels by the time the material is processed in the VRSF. *Id.* at 3.

49. For purposes of evaluation, B&W conservatively assumed that the dry waste packed into a drum that it received and immediately processed had been contaminated by an unusually large amount of reactor coolant (i.e., the equivalent of 1000 grams of reactor coolant). This assumption ignored the administrative controls and other considerations already described which would prevent such an event from occurring. Such a drum could contain 45 microcuries of I-131 at the time of incineration.⁹ After the combustion products from this drum are cleaned by the two off-gas scrubbers and the 6-inch-thick charcoal filter, only 0.045 microcuries of I-131 would be released to the environment — an amount that would give an insignificant dose to any offsite individual. The possibility of frequent or continuous incineration of such drums would be precluded by the analysis of off-gas samples that would detect the presence of I-131. Detection of I-131 would initiate an investigation into the source of the radioisotope, followed by appropriate action to avoid a recurrence.

50. Finally, if any appreciable quantity of I-131 were present in reactor waste received for processing at VRSF, applicable regulations require that the shipper's manifest indicate the presence of I-131; a large shipment not reflected in the manifest would probably be detected during the radiation surveys conducted by B&W's H&S personnel.¹⁰ An inconsistency between the external radiation exposure measurement on a package and the shipping manifest for that package would be cause for an investigation prior to processing the material. Tr. 358-59 (Bowles). Should waste containing I-131 be charged to the incinerator, the analysis of effluent gas normally performed for I-125 would detect the presence of I-131. In addition, I-131 processed through the incinerator

⁹ The 45 microcuries figure assumes a specific activity of 0.045 $\mu\text{Ci/g}$ in the coolant and no radioactive decay between the moment of contamination to the moment of processing at the VRSF.

¹⁰ I-131 has a much more energetic gamma emission than I-125. Consequently it is very likely that a large amount of I-131 in a package would be detected by the radiation survey of the package by B&W's H&S personnel upon receipt of the shipment.

would result in an increased gamma radiation level in the charcoal filter. The occurrence of any of these increases would result in an investigation. These considerations make it unlikely that I-131 would be processed in any significant quantity and make it unlikely that any regulatory limit would be inadvertently exceeded in the event some I-131 is processed. *Id.* at 359-60.

51. In conclusion, the evidence shows that the likelihood that a significant amount of I-131 would be processed at the VRSF is very remote. If a shipment of waste contained a large amount of I-131, the manifest should so indicate. If a shipment contained a large amount that was not indicated on the manifest, radiation surveys of the packages should reveal the discrepancy. Finally, if a significant amount of I-131 were processed in spite of the foregoing considerations, the resulting releases would be small but would be detectable, and they would be counted against the administrative release limit for radioiodine of 0.012 Ci/yr. Thus the release of I-131 by the VRSF should be insignificant and should not endanger the public health and safety.

Complaint 6 (Radioactive Releases During the Past 10 Years)

The safety significance of the radioactive releases at the Parks Township facility during the past 10 years has not been adequately addressed by Licensee or Staff. Therefore B&W's ability to keep emissions from the VRSF within safe limits cannot be assured.

52. Complaint 6 was limited to a 10-year period, in spite of the fact that the Intervenor originally requested data going back to 1957, because of the questionable relevance of earlier release data, especially that which pre-dated B&W's acquisition of the facility in 1971.¹¹ The prefiled testimony submitted by B&W's witnesses included a table (Table 6-1) which listed annual air and water discharges from B&W's Plutonium Plant for the years 1976-1985. The table also listed the fraction of the MPC represented by the discharges. B&W considers the MPC values in Table 6-1 to be conservative because (1) it used the most restrictive MPCs to calculate fractions of the MPC, and (2) when the releases were below the level detectable by the measurement equipment being used, it was assumed that the releases were equivalent to those levels, even though they might have been much lower or zero. Corridoni and Potter (Complaint 6) at 2.

53. The 10-year history of releases from the Parks Township Plutonium Plant shows that discharges of radioactivity were well below the applied MPCs. The highest MPC fraction obtained, 0.58 for the year 1985, resulted from an instrumentation problem. A breakdown of measurement equipment required

¹¹ In addition to testimony responding to Complaint 6, B&W also provided testimony at the hearing about its compliance history in the years from the date of its acquisition of the facility in 1971 through 1976, in response to concerns expressed at the hearing by citizens who made limited appearance statements. *See* Findings 31-34, *supra*.

that B&W use less-sensitive equipment for a 6-month period in that year. The substitute equipment had a minimum detectable activity level (MDA) of about 50% of the MPC. *Id.* at 2-3 and Table 6-1. If a sample had an activity level lower than the instrument's MDA, the MDA was recorded as the observed activity level, even though the real activity level may have been much lower. Tr. 376 (Corridoni). There is no evidence to indicate that the releases in 1985 were, in fact, significantly higher than in other years. Corridoni and Potter (Complaint 6) at 3.

54. The 10-year history of releases from B&W's Type II and Metals Facilities at Parks Township shows no releases to air or water in excess of 2% of the MPC. In most years the levels averaged less than 1%. Tr. 370-71 (Corridoni).

55. The safety significance of these release rates have not been converted to effective dose equivalents because there is no regulatory requirement that such a conversion be performed. B&W and the NRC Staff did, however, estimate the doses to the public from releases during fuel fabrication operations at Parks Township prior to 1976, in relation to B&W's application for renewal of License No. SNM-414. Potter (Complaint 6) at 3, *citing* B&W, "Environmental Data for the Parks Township Site Materials Plants," September 1, 1975, at XI-1 through XI-21; and NRC, "Environmental Impact Appraisal of the Babcock and Wilcox Company Nuclear Materials Division, Leechburg, Parks Township, Pennsylvania" (1979 EA) February 1979, at 5-10 through 5-14. The doses calculated by both B&W and the NRC were small, less than 3 millirem per year (mrem/yr) to any organ from airborne effluents and less than 0.01 mrem/yr to any organ from liquid effluents. Because the reported releases after 1976 were comparable to or less than the releases analyzed by B&W and the NRC for prior years (with the exception of the anomalous year of 1985 discussed, *supra*, in Finding 53), doses during the post-1976 years were comparable to or less than the calculated doses for the pre-1976 years. Potter (Complaint 6) at 4.

56. As already noted, *supra*, in Finding 33, the only release in excess of the MPC at Parks Township occurred in 1973 at the Type II fuel facility. The concentration in the effluent from the furnace stack, as already noted, averaged 7499 times the MPC over 24 hours. B&W immediately reported the occurrence to the Atomic Energy Commission (AEC), as required by 10 C.F.R. § 20.403(a)(2). Offsite monitors showed no levels of radioactivity in excess of the MPC during or after the release. Thus, the release posed no danger to the public health and safety, and no violation was found by the AEC as a result of the release. Tr. 374-75 (Corridoni).

57. The evidence summarized in Findings 51-55 effectively resolve Complaint 6 in Licensee's favor. Additional testimony on releases and doses was adduced, however, in response to questions raised at the hearing. Although not

directly related to Complaint 6, it is appropriate to consider that additional testimony here.

58. In response to a question raised during the hearing, B&W also presented testimony on the total dose from all sources, including background, past operations at the Parks Township site, and proposed operations. Tr. 377 (Potter). Background radiation is the largest contributor to total radiation doses to people in the vicinity of the Parks Township site, ranging from 61 to 210 mrem/yr depending on location. The NRC has estimated that the dose from all natural sources in the Parks Township area was approximately 130 mrem/yr. *Id.* at 378, *citing* the 1979 EA, § 2.8. Medical exposure adds an amount that varies from person to person but averages about 70 mrem/yr. Dose assessments for the Parks Township facility covering a period of several years prior to 1976 gave a maximum committed annual dose to any organ of 3 mrem/yr. *See* Finding 64, *infra*. Taking 130 mrem/yr as background dose, assuming 3 mrem/yr from past B&W operations, and assuming 3 mrem/yr from operation of the VRSF, one gets a total of 136 mrem/yr. For the thyroid dose, the background dose is again 130 and the dose from past operations is again 3 millirems; from projected VRSF operations the thyroid dose is 13 millirems. The total thyroid dose adds up to 146 mrem/yr. *Id.* at 381. It is inappropriate to compare these doses to regulatory dose limits because regulatory dose limits are increments to background. *Id.*

59. The Intervenor raised a concern in their prefiled testimony about radioactive releases from materials buried by B&W's predecessors at the Parks Township site. Statement of John P. Bologna, dated July 29, 1986 (Bologna Testimony), at 13-14. Such burials were permitted under the then-effective 10 C.F.R. § 20.304 but are permitted no longer. The record shows no releases of radioactivity in air or water from the burial ground, and there has been no migration of the material through the soil. Tr. 368-70 (Corridoni), *citing* "Radiological Assessment of the Parks Township Burial Site" [Babcock & Wilcox], Leechburg, Pennsylvania," Oak Ridge Associated Universities (1984) at 51; Tr. 485-86 (Loysen); Tr. 387 (Potter).

60. The evidence regarding releases from the Parks Township facilities and the burial site shows that B&W is a responsible and capable licensee.¹² Thus, it has been shown that there is reasonable assurance that B&W is qualified to carry out the administrative controls that will be required to protect the public health and safety under the requested SNM-414 license amendment.

¹² As noted in Finding 34, *supra*, the NRC Staff commented in the SER section on compliance history that B&W had been cooperative with the NRC in complying with regulations and requests for information. B&W was also very cooperative during the hearing, to an extent not often seen in litigants. For example, it very willingly offered substantial supplemental testimony that was outside the scope of the contentions in order to respond to concerns raised by the public in the limited appearance statements.

Conclusion on Administrative Controls

61. The evidence adduced with respect to administrative controls shows that the administrative controls adopted by B&W will enable it to restrict releases of H-3, C-14, and I-125 to the conservative limits imposed by the NRC Staff of 80, 4, and 0.012 Ci/yr, respectively. These controls include a continuous incinerator stack monitor for particulate releases and continuous sampling and periodic analysis of incinerator off-gas. Neither the buildup of I-125 in the scrubber solution nor the presence of I-131 in reactor waste can be expected to be a significant problem, because B&W has adopted adequate controls to ensure that neither is likely to occur. Further, the evidence shows that, in spite of compliance problems in the early years of its operation of the Parks Township and Apollo facilities, B&W has become a responsible licensee with a very good record of compliance during the past 10 years. I conclude, therefore, that B&W's proposed administrative controls will provide a reliable means of keeping emissions from the VRSF within safe limits.

(2) Health Effects of Radiation Releases

62. The radiation doses received by the population surrounding B&W's VRSF at Parks Township would be very low. According to NRC Staff estimates, for the average individual total body dose from operation of the compactor is expected to be 1.5×10^{-9} rem/yr and from operation of three incinerators 2.6×10^{-7} rem/yr.¹³ Dose to the thyroid of the average individual is expected to be 6.3×10^{-8} rem/yr from operation of the compactor and 2.1×10^{-6} rem/yr from operation of three incinerators. NRC EA § 6.1.5 and Table 6.10. The annual dose to the maximally exposed individual, defined as the individual located at the residence in the region of maximum offsite emissions, total body commitment is expected to be 1.6 mrem/yr from the operation of three incinerators and the compactor. The dose to the thyroid of the maximally exposed individual is expected to be 11.0 mrem/yr.¹⁴ NRC EA § 6.1.5 and Table 6.11. For comparison, NRC's total body dose limit set forth in 10 C.F.R. Part 20 is 500 mrem/yr, and the Environmental Protection Agency's (EPA) limits set forth in 40 C.F.R. Part 61 are 25 mrem/yr total body and 75 mrem/yr thyroid. Intervenors challenged the methods used to calculate dose projections in the NRC and the B&W analyses. In

¹³ Staff's analysis in the EA assumed, for bounding purposes, that three incinerators rather than one incinerator would be in operation. B&W's application, however, requests a license amendment to operate only one incinerator. EA § 6.1. Consequently the actual doses received by the population would probably be less than the expected doses discussed here.

¹⁴ Staff's estimates in the EA were based on the belief that the nearest residence was located 200 meters from the site. Evidence adduced at the hearing, however, revealed that the nearest residence was actually about 175 meters from the site. The effect of this discrepancy on dose to the maximum individual is discussed, *infra*, in Finding 95.

addition to challenging the correctness of the dose projection, Intervenors allege that even the projected doses will cause adverse health effects to themselves and their families. Challenges relating to radiation releases and health effects are contained in Complaints 1, 3, 13, 10, and 11, which are discussed using that sequence in this section of the Decision.

Complaint 1 (Effects on Health of Petitioners and Their Families)

63. The concentrations of effluent radioisotopes in air at the site boundary are expected to be 0.6% of the MPC set forth in 10 C.F.R. Part 20, Appendix B, Table II. There will be no liquid releases and no onsite disposal of radioactive material. Potter (Complaint 1) at 2.

64. Assessments of radiation doses from routine operations of the VRSF are described in the B&W EA. The doses were calculated using the mathematical model suggested by NRC Regulatory Guide 1.109 (Rev. 1), "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 C.F.R. Part 50, Appendix I," (October 1977) (Reg. Guide 1.109). Default data (recommended values in Reg. Guide 1.109 for use when site-specific data are not available) were used except where site-specific data were warranted. B&W's assessment is in substantial agreement with those reported in the NRC EA, which were calculated independently by the Staff. Potter (Complaint 1) at 2-3.

65. Complaint 1 specifically refers to "cumulative exposures." Doses calculated in the B&W EA reflect accumulation of radioactive materials in the environment of the facility for a 15-year period of operation, a default value from Reg. Guide 1.109. B&W's facility, however, is expected to operate for about 30 years. Therefore B&W performed a sensitivity study to determine the effects of changing the accumulation period from 15 to 30 years and found that individual and population doses increase by less than 10%. Radioactivity intake was converted to dose using factors described in NUREG-0172 that integrated the doses for a period of 50 years following intake. Thus the doses reported in the B&W EA represent "cumulative exposures." Potter (Complaint 1) at 3.

66. B&W calculated total doses from all sources (including direct radiation from transportation and from the VRSF inventory) to the maximally exposed individual living 200 meters SSE from the incinerator release point (more than 90% of the dose is expected to result from incinerator effluents). Estimated total dose to this individual would be 3 mrem/yr total body, 13 mrem/yr thyroid, and 6 mrem/yr maximum other organ. *Id.* at 4, citing B&W EA § 7.

67. Conservatively assuming that the Intervenors receive the calculated maximum doses, even though they live much more than 200 meters from the site, their doses would be low. The doses are small fractions of the most restrictive EPA limits for radionuclides from NRC-licensed facilities, which are

25 mrem/yr total body, 75 mrem/yr thyroid, and 25 mrem/yr to other organs. *Id.*, citing 40 C.F.R. Part 190. The calculated doses are also small fractions of the radiation dose from naturally occurring radiation and radioactive materials in the environment; these sources contribute a dose of approximately 100 mrem/yr total body (range 61 to 210 mrem/yr). The EPA estimates that 80% of the U.S. population receives annual total body doses from background radiation from 75 to 115 mrem. *Id.* at 5, citing "NESHAP Background Information Document for Final Rules — Radionuclides," EPA 520/11-84-022-1, Vol. I, October 1984 (1984 EPA Report), p. 8-64. Thus background is large relative to the maximum total dose expected per year to an individual from VRSF operations. *Id.*

68. B&W's witness Dr. Niel Wald, a leading authority on radiation effects, stated that health effects have been demonstrated only "at doses and dose rates which are orders of magnitude higher than those calculated for the B&W facility." Wald (Health Effects) at 5. Thus, while there is no direct evidence of health effects in humans at the dose levels expected for VRSF routine operations, evidence of health effects from higher doses suggests that it is prudent for regulatory purposes to assume that the higher dose hazards exist through the range of low doses down to dose zero, with risk decreasing as dose decreases in a manner consistent with observations at higher doses. *Id.* at 6; Potter (Complaint 1) at 6-7. Such assumptions are not universally accepted as realistic but were adopted by B&W and the NRC Staff for conservatism. *Id.* at 7.

69. To estimate the risk of cancers (including thyroid), genetic effects, and teratogenic effects from the low doses resulting from operation of the VRSF, B&W used risk coefficients contained in Chapter 8 of the 1985 EPA Report and in the National Council on Radiation Protection and Measurements (NCRP) report, "Induction of Thyroid Cancer by Ionizing Radiation," NCRP Report No. 80 (1985) (NCRP 80). Potter (Complaint 1) at 7. The maximum individual health risk from all exposure sources resulting from routine operation of the VRSF was estimated to be 1.7×10^{-6} per year for cancer incidence, or 1.7 in a million chances per year. This is much lower than the normal risk of cancer incidence, which is 4×10^{-3} per year. Similarly, the risk of other health effects from routine operation of the VRSF were all much lower than the normal risk. Thus, even assuming that an intervenor and his family receive the maximum calculated dose, there is a very low probability that any health effect will occur. *Id.* at 8 and Table 1-1.

70. Doses from compactor effluents are a small part of the low total dose from the routine operation of the VRSF. While effluents from the entire facility are estimated to give a maximum whole-body dose of approximately 2 mrem/yr, only 0.022 millirem comes from the compactor, and the compactor contributes only 0.83 mrem/yr to a total maximum individual thyroid dose of 12 mrem/yr. The compactor also contributes 0.031 mrem/yr of 5 mrem/yr total maximum dose to other organs. Finally, compactor effluents contribute 0.026

of 2 person-rem/yr whole-body population dose and 1.9 of 27 person-rem/yr thyroid population dose. Therefore, risk to the health of the population from compactor operations would be much lower than the already very low risk from the facility as a whole. *Id.* at 9.

71. Both B&W and the NRC Staff performed analyses of several accident scenarios to estimate their radiological impact. The Staff evaluated the potential effect of an incinerator explosion, scrubber-loop pipe rupture, staging area fire, container rupture, transportation accident, loss-of-power accident, and off-gas system pipe-rupture accident. NRC EA §§ 8.1-8.8. B&W analyzed the incinerator fire, the staging area fire, and the container rupture. B&W EA § 8.2.

72. Although the AECC Topical Report claims that the design characteristics of the incinerator assure that even events such as processing a container of flammable liquid would not result in a fire or explosion, the accident analyses nevertheless assumed that an explosion occurred. NRC EA § 8.3.1. Staff estimated that if the explosion occurred with reactor material being processed, the total dose to a maximally exposed individual would be 2.44 rem; if it occurred with institutional/industrial material being processed, total dose would be 1.60 rem. *Id.* § 8.3.1.1 and Tables 8.1-8.3. B&W's estimates were smaller than the NRC Staff's estimates, perhaps because B&W assumed that the maximally exposed individual was located 200 meters SSE of the release point, whereas Staff assumed that the maximally exposed individual was located at the VRSF boundary in the region of maximum offsite emissions. *Id.* § 8.2. The only accident scenario to cause a greater total dose than the incinerator explosion would be a staging area fire involving institutional/industrial waste. The Staff estimated that the total dose to the maximally exposed individual resulting from such a fire would be 2.75 rem. *Id.* and Table 8.1. B&W estimated the total body dose from such a fire to be 0.150 rem and the thyroid dose to be 0.200 rem. B&W made the point that the doses it calculated for accidents were well below the EPA Protective Action Guides (PAGs), which are 1 rem whole-body dose and 5 rem thyroid dose.¹⁵ Potter (Complaint 1) at 9-10, citing "Manual of Protective Action Guides and Protective Actions for Nuclear Accidents," EPA 520/1-75-001 (September 1975). The values Staff obtained for the incinerator explosion, the staging area fire, and the transportation accident apparently are above the PAGs, however. Staff correctly noted that there are no numeric criteria for accident evaluation. It also observed that the doses it calculated were fractional portions of the annual occupational limits prescribed by 10 C.F.R. Part 20 regulations. NRC EA § 8.2. It should be noted, however, that Staff's estimates were intended to be overestimates in the interest of conservatism. *Id.* §§ 8.1, 8.2;

¹⁵ An EPA Protective Action Guide is the projected dose to individuals in the population which warrants taking protective action to minimize the risk from an event that is either occurring or has already occurred. EPA-520/1-75-001 at 1.1.

Tr. 481 (Blond). For example, Staff's dose was calculated for the site boundary, only 65 meters from the facility. If the Staff doses are extrapolated to the nearest residence, they are reduced by a factor of 3, which puts them below the PAGs. Tr. 482 (Blond).

73. In conclusion, the radiation doses that will be released by routine operation of the VRSF are much lower than the regulatory limits designed to protect the public health and safety and are lower than doses from natural background. These low doses will have no discernible effect on the health of the Intervenor and their families. Potential radiation doses from an accident at the VRSF, involving either the incinerator, the staging area, or waste material in transit, probably would not be high enough to warrant individuals who live in the nearest residence taking protective action to avoid exposure. Considering the distance from the plant of the residences of the Intervenor, it is virtually assured that even an accident would not necessitate their taking protective action.

Complaint 3 (Effects of H-3, C-14, I-125, and Cs-137 Within 2 Miles)

Petitioners' health and their environment, including their plants, trees, shrubs, ground water, reservoir, wells, springs, grasses and grazing animals existing in any area within two miles of the plant will be adversely affected by the incineration and the resulting releases of Carbon 14, Tritium, Iodine 125 and Cesium 137. These radioactive isotopes would be inhaled or ingested and incorporated into living tissue.

74. To the extent that Complaint 3 alleges that releases of H-3, C-14, I-125, and Cs-137 by routine operation of the incinerator will adversely affect the health of the Intervenor, or for that matter any persons living within 2 miles of the facility, the complaint is resolved by Finding 73, *supra*, which concluded that the low doses from releases will have no discernible effect on the health of the maximally exposed individual. Beyond that concern, the Decision will consider the four isotopes specified in the Complaint and any effects they may have on the environment within 2 miles of the facility.

75. Both B&W and the NRC Staff have assessed the environmental effects of H-3, C-14, I-125, and Cs-137 as well as other isotopes that will be released by the VRSF. B&W EA § 3; NRC EA § 6. These assessments took into account the effects of the uptake of isotopes by vegetation and the inhalation and ingestion of isotopes by animals in assessing the dose to people from ingestion of locally grown fruits and vegetables and food animals. The assessment also estimated the dose to people from inhaling these isotopes. Potter (Complaint 3) at 2. A specific assessment of radiation doses and health impacts from these isotopes in aquatic pathways to man was not performed, because there will be no burial of isotopes and no liquid discharge. Thus, the only route available to these pathways would be by transport of deposited effluents, and consequently it seemed reasonable to expect that radiation doses from the four isotopes through this indirect route

would be negligibly small relative to the more direct atmospheric and terrestrial pathways for which doses were evaluated. *Id.* at 2-3.

76. B&W performed an analysis to determine potential doses from H-3, I-125, and Cs-137 indirectly introduced into the water ingestion pathway in response to Complaint 3. C-14 was omitted from the analysis because water is not a significant source of carbon. In the analysis, B&W assumed that the quantity of isotope deposited on vegetation and soil at the point of the maximum exposed individual in the B&W EA is dissolved in rainfall which is then directly ingested. The concentration of H-3 in rainwater was assumed to be the same as the concentration of H-3 in the atmosphere water vapor at the same location. Water consumption rates used in the analysis were taken from Reg. Guide 1.109 (Rev. 1), Table E-5. The maximum doses calculated on the basis of these assumptions were 0.10 mrem/yr for total body, 13 mrem/yr for the thyroid, and 1.1 mrem/yr for any other organ. Potter (Complaint 3) at 3. This bounding assessment ignores the reduction in concentration of these isotopes which would result from decay, from dilution by uncontaminated ground water and surface water flows during transport, and by removal of isotopes from water to sediments. I-125, which has a half-life of approximately 60 days, would decay during its transport through the soil, through the watershed, and through the reservoir systems. Cs-137, which has a strong tendency to adsorb on clays and other materials, would be retarded during transport through the pathway, and also its concentration would be reduced by removal of Cs-137 in sediments. Both isotopes would be diluted by flows of uncontaminated waters in ground water or surface water systems. *Id.* at 4, *citing* National Council on Radiation Protection and Measurements (NCRP), "Radiological Assessment: Predicting the Transport, Bioaccumulation, and Uptake by Man of Radionuclides Released to the Environment," NCRP Report No. 76 (1984) (NCRP 76).

77. To the extent that Complaint 3 is also expressing a concern that plants and animals within 2 miles of the VRSF may be adversely affected, apart from the relationship of plants and animals to human health, there is ample evidence in the scientific literature that protection of man from environmental radiation is adequate to ensure protection of biota. This conclusion is supported by Chapter IV, "Environmental Transport and Effects of Radionuclides," in "Effects on Populations of Exposure to Low Levels of Ionizing Radiation" (PB-239-735), published in 1972 by the National Academy of Sciences Advisory Committee on Biological Effects of Ionizing Radiation (BEIR) (1972 BEIR Report).¹⁶ After distilling a large store of research data, the 1972 BEIR Report concluded (at 34):

¹⁶In response to a question about a later BEIR Report published in 1980, B&W's witness replied that he was "unaware of any comprehensive evaluations of the subject published since BEIR 1972 or of any studies which would invalidate the BEIR conclusions cited in my testimony." Tr. 399 (Potter).

Evidence to-date indicates that probably no other living organisms are very much more radiosensitive than man so that if man as an individual is protected, then other organisms as populations would be most unlikely to suffer harm. In fact, it is very difficult if not impossible to detect any effects of radionuclides in the environment even at concentration much higher than the minimum established by regulation agencies.

The EPA, in proposing dose limits that were ultimately codified in 40 C.F.R. Part 190, expressed a similar conclusion in the explanatory statement:

Standards developed on this basis are believed to also protect the overall ecosystem, since there is no evidence that there is any biological species sensitive enough to warrant a greater level of protection than that adequate for man.

40 Fed. Reg. 23,420 (May 29, 1975). In view of the fact that releases from routine operation of the VRSF will be substantially lower than the limits established by regulatory agencies, it can be inferred that there will be no adverse effects on organisms in the environment. Potter (Complaint 3) at 6, 7.

78. To conclude, the testimony shows that releases of H-3, C-14, I-125, and Cs-137 from routine operation of the VRSF will be well below regulatory limits and hence will have a negligible effect on human health and safety. Since scientific evidence indicates that probably no organisms are very much more radiosensitive than man, it can be inferred that the releases will also have a negligible effect on other organisms in the environment.

Complaint 13 (Effects on Residences and Schools Within 1 Mile)

Licensee and Staff have not analyzed the population in residences and schools within one mile of the VRSF, and the danger to them from its operation. The facility should be located in an area with lower population density.

79. No computation was made of doses to the particular groups specified in Complaint 13. They were included in the 50-mile population, for which doses were calculated and discussed in the B&W EA, § 7. As discussed earlier, doses were computed for the maximally exposed individual. In response to Complaint 13, B&W conservatively assumed that each individual in the two specified population subgroups received the same dose as the maximally exposed individual living only 200 meters from the incinerator stack. Potter (Complaint 13) at 1-2.

80. The resident population within 1 mile of the VRSF is approximately 4500. *Id.* at 2, citing B&W EA at 5-3. The maximum exposed individual would receive 0.0019 rem/yr whole body, 0.012 rem/yr thyroid, 0.005 rem/yr to any other organ, and about 0.001 rem/yr to each of these organs from other facility sources, such as direct radiation from inventory and transportation. *Id.*, citing B&W EA, Table 7.3. The resulting population dose to the population within 1

mile would be 14 person-rem/yr total body, 59 person-rem/yr thyroid, and 27 person-rem/yr to other organs. These population doses convert to small fractions of one health effect.¹⁷ *Id.* at 2.

81. B&W was unable to obtain the size of the school population within 1 mile of the VRSF. Therefore it estimated the school population based on a total enrollment in 1985-1986 of 1026 students in the Leechburg school system grade school and high school, even though some of these students attend an elementary school beyond 1 mile from the VRSF. It was assumed that the school population of interest totaled 1200, which allowed for a full-time staff numbering 20% of the enrollment. The analysis ignored not only the fact that some of the students attended a school beyond 1 mile but also the fact that some of the school population was included in the calculation of doses to residents within 1 mile. Students and school staff would get lower doses than the population living within 1 mile because at school they would not be exposed through food pathways and because they are not present in school 24 hours a day, 7 days a week. The calculated resulting dose to the school population within 1 mile would be 3.6 person-rem/yr whole body, 15.6 person-rem/yr thyroid, and 7.2 person-rem/yr to other organs. These doses are also equivalent to a small fraction of one health effect. Furthermore, the foregoing population doses are upper-bound estimates because few residents and no student and staff in school would get doses as high as the maximally exposed individual. *Id.* at 2-3. Finally, it should be noted that only small fractions of the doses from the VRSF will result from operation of the compactor. *Id.* at 4.

Conclusions on Health Effects of Radioactive Releases

82. In conclusion, even if every individual within 1 mile received a dose equivalent to the maximally exposed individual, the health effects would not be significant. Considering the fact that the doses are without doubt overestimates, it can be concluded that health effects from doses to the population within 1 mile of the VRSF would be negligible.

(3) Consideration of Factors Used in Dose Analyses

83. An overall conclusion concerning health effects of radiation doses from the VRSF must be deferred until after consideration of issues relating to factors used in calculating doses. This general subject matter was covered by testimony in response to questions raised during the hearing as well as testimony on several complaints and is considered in this section of the Decision.

¹⁷ Health effects were calculated using the risk coefficients discussed, *supra*, in Finding 69.

Complaint 10 (Effects of Valley Topography on Dispersion)

The topography of the valley area has not been adequately considered in analyzing the health effects of emissions of radioactive iodine. Intervenors believe that releases from the incinerator will move upward and then laterally to impinge on the valley walls, thus possibly having adverse health effects in communities such as Kiskimere.

84. The VRSF site is located in the Kiskiminetas River Valley, approximately 1 mile east of Leechburg, Pennsylvania. Hills along the valley and within 1 mile of the site range from about 900 to 1200 feet above mean sea level. These hills rise from about 100 feet to 400 feet above the river at the floor of the valley. Potter (Complaint 10) at 2 and Figure 10-1 (topographic map). The elevation of the river is about 800 feet above mean sea level. A trace of the 900-foot contour, 100 feet above the river, shows a clearly identifiable valley ranging in width from 0.5 to 1 mile. A trace of the 1000-foot contour, 200 feet above the river, reveals a much wider valley with contours so broken up that they no longer form the bounds of an identifiable valley. The openness of the valley at and above an altitude of 1000 feet is evidenced by the presence of the Leechburg Airport, located on the eastern side of the valley about 160 feet above the river. Tr. 75 (Potter).¹⁸

85. The Intervenors, in their September 12, 1985 petition to intervene characterized the valley as a "basin," creating the image of a natural impoundment within which atmospheric pollutants would accumulate. Potter (Complaint 10) at 2. This characterization is inappropriate, however, for two reasons. First, the river cuts through the valley from northwest to southeast, resulting in a downstream flow of air, and there is slope flow of air into the valley; these flows provide atmospheric transport and dispersion even during atmospheric inversions. Second, the valley is too shallow to be sheltered from winds that occur most commonly and which provide good dispersion of effluents. *Id.* at 3.

86. Low-wind-speed conditions, coupled with atmospheric inversions that restrict turbulent mixing, occur under special conditions which occur fairly frequently at all sites. Atmospheric inversions occur on clear, calm nights, when radiant heat loss cools both the land surface and the air near the land surface more rapidly than air aloft. Mixing is reduced by the tendency of the cooler, denser air to remain near the ground and the warmer, less dense air to remain aloft. Typically under these conditions, however, a sensitive anemometer rarely indicates absolutely calm conditions, even when the air seems absolutely still. Even at low wind speeds mixing is not eliminated, because some frictional turbulence exists. If wind speed increases during the night, it can break

¹⁸ During the site visit on October 29, 1986, the Presiding Officer and the parties were taken on a tour of the valley and the hills on the eastern side of the valley. In addition to a drive through Kiskimere, the tour included a drive past the airport.

up inversions and improve dispersion conditions. If wind speed remains low throughout the night, the inversion will break up shortly after sunrise. The sun will heat the land surface and adjacent air layer more rapidly than air aloft, and the warmer, less dense air near the land will rise, to form convection currents which promote rapid atmospheric conditions. *Id.* at 3-4.

87. At the Parks Township site, inversions may occur at a slightly higher frequency than at other sites in the region not located in river valleys. The hills shade the valley in the morning and in the evening, so that the valley land surface is quicker to cool by radiant heat loss in the evening and slower to warm the following morning. For purposes of analysis, B&W assumed an inversion frequency of 33%. Data from Pittsburgh International Airport indicate an inversion frequency of slightly less than 30%. Inversion frequency in the Kiskiminetas River Valley would be expected to be higher, but only slightly higher, because the time available for shadowing is small and the sheltering effect is slight based on wind measurements at the site. *Id.* at 4; Tr. 77.

88. In their September 12, 1985 petition to intervene, Intervenor included photographs taken in the Kiskiminetas River Valley which purported to show that "[a]ir hovers around the perimeters of this basin." Petition to Participate in Informal Hearing, September 12, 1985, at 2; Exhibit 1-A. B&W's witness attested that the photograph appears to show high morning fog. If so, it illustrates the surface-warming phenomenon that occurs in the morning following a nighttime inversion. The higher air mass containing fog is cooler than the dew point, so that water vapor in it is condensed into fog. The clear air below contains water vapor in approximately the same concentration, but the temperature has risen to above the dew point so that water is present as vapor only. Potter (Complaint 10) at 4.

89. The dispersion model employed in the B&W EA was the standard, widely used Gaussian atmospheric dispersion model. *Id.* at 6; B&W EA at 61; Tr. 72 (Potter); Tr. 150 (Resnikoff). B&W determined that the model was appropriate to use for the VRSF because at the location of the maximum offsite dose, and at nearer locations, dispersion is limited not by the river valley but by turbulence. Potter (Complaint 10) at 5. The NRC Staff, following a site visit during which they gained extensive knowledge about the terrain around the site, came to the conclusion that using a terrain model rather than the Gaussian model would have no substantive effect on the calculations because the terrain has little effect until some kilometers downwind. Tr. 93-94 (Blond). The distance downwind at which point the valley would begin to limit dispersion is about 3000 meters, and the full effect of the valley would be exerted at more than 8000 meters. Tr. 79 (Potter). The distance used to calculate the maximum dose to an individual is, of course, much closer than these distances (i.e., 200 meters). Any doses that might be calculated for more distant receptors, such as at Kiskimere, would be lower than that calculated for the maximally exposed individual in

Table 7.3 of the B&W EA. *Id.*; Tr. 95 (Sturz). Hence the doses at these distant receptors would have no discernible health effects.

90. B&W's calculations for dispersion of VRSF effluents discharged into the atmosphere under normal operating conditions take into account both the occurrence of atmospheric inversions and the confinement of releases in the valley. Potter (Complaint 10) at 5; B&W EA at 6-1; Tr. 71-72 (Potter). Inversions were accounted for by assuming that stable (F stability), unstable (B stability), and neutral (D stability) conditions each exist one-third of the time. Potter (Complaint 10) at 5-6. The release was modeled as a ground-level release so that the value of sigma could be used as a measure of the depth of the plume with downwind travel. About 68% of the plume is contained within an elevation of 1 sigma and 95% is contained within an elevation of 2 sigma. At a distance of 0.5 mile the values for sigma were 98 meters for B stability (unstable), 28 meters for D stability (neutral), and 12 meters for F stability (stable). Thus for both F and D stability the plume is assumed not to rise above the height of the valley within 0.5 mile of the plant. Therefore, in calculating the maximum individual dose for annual average conditions, it was conservatively assumed that the plume was confined to the valley two-thirds of the time. *Id.* at 6.

91. For the accident analysis, dose evaluations were based on the assumption that highly stable, light wind (1 meter per second) conditions exist throughout the release. The plume was contained within the valley for the duration of the accident. *Id.*

92. As B&W acknowledges, in the 1979 EA the Staff employed a dispersion model that did simulate terrain effects. The site boundary dispersion factor (55 meters WNW) was 7.9×10^{-4} second per cubic meter (sec/m^3), which is reasonably close to the value of 3.1×10^{-4} calculated in the B&W EA for a location slightly farther away (65 meters WNW). *Id.* at 6-7. The difference is not significant, and may result from more than just the different models used. The 1979 Staff analysis used meteorological data from the Pittsburgh International Airport, and it also apparently double-counted the occurrence of inversion conditions. *Id.*; Tr. 72-73. The valley model used in the Staff's 1979 EA was developed for use at Johnstown, Pennsylvania, where the valley is deeper than at Parks Township. Tr. 75-76, 78-79 (Potter). As indicated, *supra*, after a thorough study of the Parks Township site Staff came to the conclusion that the Gaussian rather than the valley model is appropriate. Tr. 93-94 (Blond).

93. An important element of conservatism in B&W's analysis is the assumption that the release occurs at ground level, rather than as an elevated release from the 55-foot incinerator stack. Potter (Complaint 10) at 7-8; Tr. 81 (Bowles).¹⁹ Disregarding the stack resulted in an overestimate of the dose

¹⁹ Witness Bowles testified that the requirement by PaDER that a stack must be 2.5 times the height of the nearest building means that the incinerator off-gas stack must be 55 feet in height.

received by the maximally exposed individual at 200 meters; if the stack had been considered, the dose to receptors farther out, such as at Kiskimere, might be greater than the dose at 200 meters given a stack release, but it would not be greater than the dose calculated in the B&W EA for a receptor at 200 meters with a ground level release. Potter (Complaint 10) at 7-8; Tr. 84-85 (Potter).

94. Whereas the dose to the maximally exposed individual in the B&W EA and the NRC EA was based on a distance of 200 meters, which was assumed to be the distance from the incinerator stack to the nearest residence, B&W's Exhibit 2 (Figure 11-1) showed the actual distance to the nearest residence to be approximately 175 meters. Thus the dose analyses were based on an overestimation of the distance to the nearest residence of approximately 25 meters. Tr. 241-42 (Potter). The error resulted from a small error in the placement of the residence on a U.S. Geological Survey map. Tr. 242 (Potter).

95. B&W estimated that correcting the error would increase calculated doses to the maximally exposed individual from routine operations by about 12%, and from accident by about 5%. Tr. 242 (Potter). The NRC Staff, on the basis of "some rough calculations," estimated that correcting the discrepancy in distance would increase the dose to the maximally exposed individual by about 30%. Tr. 402-03 (Sturz). The change in distance of the maximally exposed individual does not affect any of the population doses. Tr. 242 (Potter). The slight increase in doses to the maximally exposed individual as a result of these corrections is not significant and would not affect the conclusions reached in the B&W EA or in B&W's testimony on the subject. Tr. 242 (Potter).

96. In conclusion, the dispersion analysis performed by B&W was clearly appropriate for the situation. There was no need to use a terrain model. The Gaussian model used adequately accounted for valley topography and the occurrence of atmospheric inversions. Doses calculated for the maximally exposed individual were overestimates, because the calculations were based on a ground-level release when in fact the releases will be from a 55-foot stack. Stack releases may mean that distant receptors, such as at Kiskimere, will receive higher doses than those calculated in the B&W EA; those higher doses will, however, be lower than the doses calculated for the maximally exposed individual in the B&W EA. Thus Complaint 10 has been resolved in Licensee's favor.

Complaint 11 (Assumptions About the Effect of Food Preparation)

The assumption that food preparation, including the washing of fruit and vegetables grown in the valley, will contribute to reducing the adult thyroid dose by a factor of 2/3 is not valid. Many persons may consume raw and unwashed fruit and vegetables, which would change their thyroid dose from 12 mrad/yr to 288 mrad/yr.

97. The B&W EA dose calculations for I-125 are based in part on two site-specific factors that depart from the default values that would otherwise apply

under Reg. Guide 1.109. First, it was assumed that concentrations of I-125 in locally grown vegetation consumed by humans were reduced by a factor of three to account for the effects of food preparation, primarily washing. B&W EA at 7-3 and Appendix F; Potter (Complaint 11) at 2; Tr. 99-100 (Potter). Second, the B&W EA used site-specific consumption rates for fresh vegetation. B&W EA at 7-3 and Appendix G; Potter (Complaint 11) at 2. Reg. Guide 1.109 encourages the use of site-specific factors in lieu of default values when possible and requires that enough information be provided about the site-specific factors used to enable the NRC Staff to determine their validity. Reg. Guide 1.109 at 1.109-2. Essentially, then, Complaint 11 raises the issue of whether B&W's use of these two site-specific factors is validated by the evidence presented.

98. As stated, *supra*, it was assumed in the B&W EA that concentrations of I-125 on locally grown vegetation consumed by humans were reduced by a factor of three to account for food preparation effects. B&W EA, Appendix F. The assumption was based on studies showing that about two-thirds of I-131 in vegetation is removed during preparation for consumption. Potter (Complaint 11) at 3, citing U.S. AEC, "HERMES — A Digital Computer Code for Estimating Regional Radiological Effects from the Nuclear Power Industry," Fletcher, J.F., *et al.*, Hanford Engineering Development Laboratory, HEDL-TME-71-168, December 1971, Table III-14. The studies cited in this publication investigated several types of vegetation, including broccoli, cabbage, spinach, and escarole, and found similar removal factors for all of them. The important mechanism for concentration reduction was washing. The concentration reduction factors that apply to I-131 should also apply to I-125. *Id.*

99. In the September 8 Order, the Presiding Officer called to the attention of the parties a recent paper on the effects of the accident at Chernobyl by a research team at the University of Konstanz in southwestern Germany, where fallout from the accident was heavy. September 8 Order at 6-7. The paper appeared to call into question whether washing removed radioactive contaminants from vegetation as effectively as B&W had assumed.²⁰ Hohenemser, C., *et al.*, "Chernobyl: An Early Report," *Environment*, Vol. 28, No. 5 (June 1986) at 40-41 (German Paper). Testimony with respect to the German Paper was presented by both B&W and the NRC Staff and is considered, *infra*.

100. The NRC Staff testified that it had contacted Mr. Owen Hoffman at the Oak Ridge National Laboratory, who is a leading national expert on

²⁰ The authors of the paper on Chernobyl reported that their results showed that the washing of vegetables had "proved to be wholly ineffective." *Environment*, vol. 28, no. 5, at 40. Because no explanation was given as to how they had proved washing to be ineffective, the Presiding Officer wrote to the senior author requesting additional information. The senior author responded by stating that washing vegetables in cold running water removed only 20% of the radioactivity. Copies of this correspondence were attached to the September 8 Order, and the parties were directed to respond to the question of whether the German research results challenged the assumption being made by B&W.

crop interdiction and decontamination of radioactive material. Mr. Hoffman reported that he had communicated personally with a scientist in Munich, Federal Republic of Germany, who reported that they had obtained a decontamination factor of approximately 3 for iodine on vegetation by aggressive washing and a decontamination factor of 2 by normal washing. Tr. 233 (Blond). This result is consistent with results from the U.S. studies cited by B&W. See Finding 98, *supra*.

101. B&W's witness pointed out that the German Paper indicated that shortly after the accident about one-third of the radioactive material deposited on the ground was I-131 and the remainder consisted of particulate isotopes. Tr. 107 (Potter). Assuming that the isotope distribution on the vegetation was similar to that on the ground, washing would be effective for I-131 but not for some other isotopes in the fallout, such as cesium and strontium. *Id.*²¹ Furthermore, the German Paper indicated that the deposition of radioactive fallout in southwestern Germany occurred during a heavy rain. Given that circumstance, the rain may have deposited the radionuclides, cleansed the atmosphere, and then washed the vegetation leaving residual contamination consisting largely of species resistant to washing. *Id.* at 107-08. B&W's witness reported performing a calculation suggesting that the radioactivity on the ground was six times that on the plants. If true, this fact tends to support the rain-washing theory. For the foregoing reasons, B&W argues that the limited definitive information concerning the Chernobyl experience suggests that it does not apply in this context. *Id.* at 104, 108, 113.

102. Studies conducted in the United States and elsewhere on the effectiveness of washing and food preparation in removing radiiodine from vegetation have indicated that these practices can reduce contamination from around 40 to more than 90%. *Id.* at 105-06. B&W therefore assumed in the calculations performed for the B&W EA that I-125 concentration on vegetables and fruit would be reduced by a factor of 3 through washing. *Id.* at 107. It did not assume that any other radionuclide would be removed by washing, however. *Id.* at 100. B&W believes that most, although not necessarily all, locally grown vegetables and fruits are washed before consumption by humans, for either aesthetic or health reasons. *Id.* People wash fruits and vegetables to remove visible soil particles and various contaminants which are not visible, such as industrial pollutants, lead from leaded gasoline, and asbestos from worn brake linings. *Id.* at 100-01.

103. In addition, B&W conservatively assumed that all regionally grown fruit and vegetables were obtained from the resident's own garden. *Id.* at 101. Moreover, B&W's calculations did not take into account variations in spe-

²¹ The correspondence from the senior author of the German Paper to the Presiding Officer, which was attached to the September 8 Order, mentioned some independent evidence suggesting that Cs-137 had been adsorbed into new growth on plants.

cific activity among different types of fruits and vegetables exposed to similar amounts of deposition. The concentration of deposited contaminants would decrease with decreasing surface-to-mass ratio. Thus, leafy vegetables would be expected to have a higher specific activity than apples or tomatoes. Nor did B&W's calculations take into account the fact that vegetables grown underground, such as potatoes and carrots, would become contaminated primarily by uptake from the soil. The dose assessment model for vegetation in Reg. Guide 1.109 is designed for leafy vegetables. When all of these factors are taken into account, it is very unlikely that the dose estimates in the B&W EA are underestimates, even if the assumption of washing before eating is not entirely valid. *Id.* at 102.

104. The statement in Complaint 11 that elimination of the food preparation assumption would increase the calculated thyroid dose from 12 mrem/yr to 288 mrem/yr, a factor of 24, is a misstatement. Intervenor's witness Dr. Resnikoff testified that the factor of 24 increase resulted from a chain of factors rather than from elimination of the food preparation assumption alone. Tr. 138. Intervenor's analysis included increases due to greater volatilization of iodine in the primary combustion chamber, the buildup of iodine in the scrubber solution, and reduced atmospheric dispersion because of valley topography, as well as the elimination of food preparation. Tr. 137-38. The elimination of food preparation resulted in only a factor of 2 increase in dose. Tr. 138. None of these factors has any validity. The greater volatilization of iodine in combustion, the buildup of radioiodine in the scrubber solution, and reduced dispersion because of topography have all been found to lack merit. *See Findings 45 and 94, supra.* The elimination of the food preparation hypothesis is found invalid in Finding 106, *infra*.

105. In conclusion, B&W's reasoning to explain the results obtained in the German Paper is convincing. It is very likely that rain washed much of the deposited radioiodine from the vegetables, as a result of which the University of Konstanz research team was able to remove only 20% of the residual activity which probably consisted largely of radionuclides that are resistant to washing, such as Cs-137. It is also reasonable to assume that most people do wash fruit and vegetables before consuming them. Finally, the conservatism built into the model with regard to where fresh fruits and vegetables are grown and with regard to differences in specific activities of different types of fruits and vegetables will probably keep the dose estimates in the B&W EA from being underestimates, even if some people do not always wash all the fresh fruits and vegetables they consume. Therefore Complaint 11 is resolved in Licensee's favor.

Conclusion on Dose Analyses

106. In conclusion with regard to radiation releases and their health effects, the evidence shows that the very low level of releases from routine operation of the VRSF will have no discernible health effect on any offsite individual in the vicinity of the VRSF. It follows from that conclusion that operation of the VRSF will have no significant impact on the biota in the environment. The analyses of B&W and the NRC Staff have considered all relevant dose pathways and radionuclides. The doses to the population in residences and schools within 1 mile of the facility will pose no significant risk to their health. Finally, appropriate consideration was given to the topography and meteorology of the site in B&W's analysis, and reasonable assumptions were made with respect to the preparation and consumption of fruits and vegetables grown in the area.

(4) Additional Accident Scenarios

Complaint 7 (Consequences of a Fire in the Off-Gas System)

Licensee and Staff have not assessed the consequences of a fire in the off-gas system trailer, nor the species and amount of radionuclides that would be released if the charcoal and HEPA filters should burn. Consequently, the public health and safety cannot be assured.

107. Intervenors raised two accident scenarios in Complaint 7 that were not assessed in either the NRC EA or the B&W EA. The Intervenors were motivated to propose the additional accident scenarios because of the occurrence in 1983 of a fire in the off-gas handling system of an incinerator operated by Nuclear Fuel Services, Inc. (NFS), and the occurrence in 1985 of a fire in the trailer during testing of the Dresden MVRS at AECC's facilities in Sacramento, California. Resnikoff Testimony at 16-17; Bowles and Potter (Complaint 7) at 2-3; Tr. 307 (Bowles). The two scenarios considered are (1) a fire involving the trailer itself and its contents (other than the filter enclosure), and (2) a fire within the filter enclosure.

108. The fire in the off-gas handling system of NFS's incinerator was believed to have been caused either by ignition of the demister section, which was made of combustible material, or of combustible fiberglass-reinforced plastic, both of which were located downstream of the scrubber system; or by ignition of other combustible material that may have collected downstream of the emission control system. The fire destroyed 20 feet of duct work but did not result in the release of any radioactive material to the atmosphere. Tr. 307-08 (Bowles). The fire in AECC's MVRS trailer started shortly after shutdown of the system. It initiated outside the filter enclosure, presumably by the ignition of highly flammable styrofoam insulation being temporarily stored in the off-gas trailer after system shutdown. The Kemlite walls and roof of the trailer

were ignited, and the fire damaged the induction fan, combustion air blower, motor control center, and trailer's walls, roof, and insulation. The filter housing was distorted but remained structurally intact. Filters had been removed for experimental analysis before the fire occurred. Bowles and Potter (Complaint 7) at 2-3.

109. The fire damage to the MVRS trailer was reviewed by one AECC and two independent teams of investigators; these investigators recommended that all combustible materials be removed from the equipment and trailer structure. Consequently, the unit being developed for use at Parks Township was redesigned to move the motor control center away from the filter enclosure and to remove all combustible materials from the trailer structure and equipment. The only exception to the latter are the charcoal and HEPA filters contained within the filter housing.

110. The filter housing itself is constructed of noncombustible materials. *Id.* at 3. The charcoal within the metal-containing trays of the charcoal filters can burn, but it has an ignition temperature in excess of 660°F. The HEPA filters will have all-metal frames and dividers, and the filter elements are fiberglass. The only process stream that could cause ignition of the charcoal or HEPA filters is the incinerator exhaust. This exhaust is first cooled to 1000°F by a primary quench system and then further cooled by the scrubber system to about 180°F. The scrubber has a 200-gallon liquid sump which can supply coolant for about 1.25 hours should the plant's water supply be lost. There is another emergency plant water cooling system which automatically quenches the exhaust gas if the outlet temperature of the primary scrubber exceeds 200°F. Even if the scrubber system and emergency cooling system fail, the primary quench system water nozzles can be used to cool the exhaust to less than 400°F, well below the ignition temperature of the charcoal filters. Thus it is extremely unlikely that the ignition temperature of the charcoal or HEPA filters could be reached. *Id.* at 3-5.

111. Notwithstanding the low likelihood of a fire in the off-gas system trailer, appropriate fire detection and mitigation systems have been provided. The trailer is equipped with fire detectors which activate an alarm in the main control room if the temperature in the trailer rises at a rate greater than 15°F per minute or if the temperature exceeds 197°F. If the alarm sounds the operator is required to initiate the site fire emergency plan, which provides for assistance, shutting off the combustion and induction fans, and fighting the fire with an extinguisher. If the fire appears to be out of control and threatening to ignite the charcoal, the operator can activate the deluge system, which will deluge the charcoal with water. The deluge system delivers about 200 gallons per minute of fire protection water through nozzles positioned over each charcoal tray. *Id.* at 5.

112. In the event of a HEPA filter/charcoal fire, an exhaust gas temperature alarm will be activated when the temperature reaches 250°F. This alarm will

alert the operator to a possible HEPA filter/charcoal fire or a process upset. The operator can determine if the temperature rise may result from a fire by consulting a data logger which logs inlet and outlet temperatures of the filter system. In addition to the exhaust temperature alarm, there is a continuous thermistor located within the charcoal trays; it will alarm in the event of a charcoal fire in any tray. In the event of a HEPA/charcoal fire, the operator is required to initiate the site fire emergency plan, divert the process gas flow from the filter enclosure to a bypass HEPA filter system, and isolate the filter enclosure using single handswitches located on the main control panel. Isolating the filter enclosure will stop the release of combustion products from the enclosure. The operator must then start the water deluge system from the control panel. Once initiated, the deluge is continued until the entire filter enclosure is flooded with water. This will cool the charcoal to well below the ignition temperature so that it can be safely removed without fear of rekindling the fire. The deluge system is designed to extinguish the fire within 1 minute and to flood the filter enclosure in about 12 minutes. *Id.* at 6.

113. The ability to rapidly detect, isolate, and extinguish a fire in the off-gas trailer of HEPA filter/charcoal would keep the resulting radioactive releases small. The previous analysis of an incinerator explosion bounds the consequences of a fire in the off-gas HEPA filter/charcoal. *Id.* at 7.

114. The maximum particulate load on a HEPA filter would be approximately 12 pounds (4 pounds per filter x 3 filters). *Id.*, citing U.S. Department of Commerce, "Nuclear Air Cleaning Handbook," ERDA 76-21, at 44. The maximum HEPA filter load would be the equivalent of little more than one drum of waste. Thus the consequences of the incinerator explosion analysis would be bounding from the standpoint of particulates, because in that analysis it was assumed that the contents of ten drums were released. With respect to I-125, a conservative estimate of the amount of I-125 on the charcoal was calculated from the release rate, administratively controlled to 0.012 Ci/yr, and the expected I-125 charcoal filter DF of 100. This implies a feed to the charcoal of 1.2 Ci/yr. Assuming feed at a constant rate and accounting for radioactive decay leads to an equilibrium charcoal filter inventory of 0.28 curies. The incinerator explosion analysis was based on a release of 3% of the charcoal filter I-125 inventory. Since combustion of as little as 0.008% of the charcoal would increase the off-gas temperature by 20°F in 1 minute, thereby triggering the alarm, releases would be quickly contained and the fire extinguished by the deluge system. Therefore the releases of I-125 would be substantially less than the bounding incinerator explosion analysis. *Id.* at 7-8.

115. Evidence was adduced, also, on the effect that an incinerator fire would have on patrons in nearby Veador's Restaurant, in response to a question raised by the Intervenor. Tr. 311 (Axelrad). The restaurant is located approximately 175 meters north-northwest of the incinerator site. Tr. 236-37 (Ozimek) and

Licensee's Exh. 2. Although Veadó's is closer than the maximally exposed individual, who was assumed to live 200 meters south-southeast of the plant, the maximum doses to patrons in the restaurant would be lower than that for the maximally exposed individual, for several reasons. The dose pathways that produced most of the dose to the maximally exposed individual in B&W's incinerator explosion analysis (consumption of local vegetation and direct dose from the soil)²² would not be applicable to a restaurant patron. The only pathway of significance to the restaurant patron would be inhalation, which contributed only about 1% of the calculated maximum thyroid or total body dose at 200 meters. The inhalation dose at the restaurant would be about 17 millirem thyroid and 10 millirem total body, far less than the 970 millirem thyroid and 580 millirem total body calculated for the maximally exposed individual living 200 meters from the incinerator. In addition, the dose calculated for the restaurant patron assumes a ground-level release and that the patron is inhaling the plume for the entire duration of the accident. The thyroid dose calculated for the restaurant patron is below EPA's PAG of 5 rem (5000 millirems) by a factor of about 300, and total body dose is below the PAG of 1 rem (1000 millirems) by a factor of 100. Consequently the health risk to a patron or worker at Veadó's as a result of an incinerator fire would be negligible. Tr. 311-13 (Potter).

116. Furthermore, in response to concerns expressed during the limited appearance statements about the difficulty of evacuating Kiskimere with snow or ice on the roads, the NRC Staff testified that doses there would be less than doses to an individual living 200 meters south-southeast of the site. Consequently they would be lower than the EPA PAGs, and no protective actions — including evacuation — would be required. Tr. 482 (Blond); *see also* Tr. 315 (Potter).

117. In response to a question raised in the September 8 Order about whether B&W's emergency plan called for alerting Veadó's Restaurant in case of an accident, B&W's witness testified that in the event of an accident, B&W's procedures called for an evaluation of the accident, including offsite consequences. If circumstances warranted it, local, state, or federal authorities would be notified immediately. Should any actions need to be taken by the nearby population, including persons in Veadó's, the local police would notify the population and provide any necessary assistance. Or if warning should be necessary before local authorities could respond, the Emergency Director of B&W would provide for notification using B&W personnel. Tr. 313-14 (Fogel). There is at least one security officer on duty at the Parks Township

²² In response to a question from the Presiding Officer, the NRC Staff testified that although there were no regulatory limits on the amount of radionuclides that could accumulate in soil of unrestricted areas, if there were an accident that resulted in major soil contamination, the NRC Staff would take appropriate regulatory action. Tr. 483-84 (Loysen).

Facility around the clock, but usually there are other activities going on as well. *Id.* Tr. 317-18.

118. The Intervenor's questioned whether B&W was aware that Parks Township did not have a police officer on duty 24 hours a day. B&W's panel was, in fact, unable to answer the question of whether there was an officer on duty at night. Tr. 318 (Fogel and Bowles). B&W's witness went on to testify that the emergency plan calls for the B&W Emergency Director to notify the appropriate state and local officers and to recommend evacuation at that time, if deemed necessary. Tr. 319 (Fogel). The federal, state, and local officials to be notified of an emergency are the U.S. NRC, the U.S. EPA, the Pennsylvania Emergency Management Agency, the Armstrong County Civil Defense, the Bureau of Radiation Protection in Pittsburgh, the Pennsylvania Department of Environmental Resources in Pittsburgh, the Leechburg Police Department, the Armstrong County Sheriff, and the Pennsylvania State Police. *Id.* at 319-20.²³ When asked by Intervenor's whether it was aware that the director of the Armstrong County Civil Defense department had resigned and had not been replaced, the witness panel stated that it was not aware of the director's resignation. Tr. 321-22 (Fogel). B&W does, however, make telephone contact with each of these agencies every year, when it conducts its annual emergency drill. Tr. 323 (Bowles). A Staff witness attested that the NRC had prepared, and was about to issue, orders to all fuel licensees, including B&W, requiring that they call each of the telephone numbers of the agencies and authorities on their emergency notification lists every 100 days, in order to verify the correctness of the listings. Tr. 493 (Loysen).

119. In conclusion, the fundamental framework of B&W's emergency plan is sound and if properly implemented will be adequate to protect the public health and safety in the event of an accident at the VRSF that would require an offsite response. B&W's witnesses, however, appeared to be not as well informed as they should have been about local agencies with which they would interact in an emergency. The witnesses were unaware of whether Parks Township had a police officer on duty 24 hours a day, and they were uninformed as to whether the Armstrong County Civil Defense department had a designated director. If there is no police officer on duty in Parks Township 24 hours a day, the fact would not necessarily constitute a fatal flaw in the emergency plan, because a State Police barracks is located nearby and either the State Police or the Armstrong County Sheriff's department could be called on to alert and assist the public. B&W should, however, determine whether it would be appropriate to contact either of these law enforcement agencies in lieu of the Parks Township

²³ In response to a question from the Presiding Officer, the witness stated that the Armstrong County Civil Defense is located in Kittanning, which is 16 or 17 miles from the site. The Presiding Officer noted that he had observed a State Police barracks located near the site. Tr. 320-21.

police at night or the Armstrong County Civil Defense. Therefore B&W will be required to make such a determination as a condition to the granting of a license amendment to operate the incinerator. In addition, because the Parks Township facility has a reasonably large population, including schools, within 1 mile of the site, it is deemed essential that B&W keep up-to-date on the availability and accessibility of local emergency agencies. The verification of emergency contacts by calling all the numbers of the agencies and authorities every 100 days, pursuant to the prospective order from the NRC Staff, should serve this purpose adequately. Since as of the hearing that order had been prepared but not issued, the practice called for in the order will also be made a condition of the license amendment to operate the incinerator. Neither condition need be made a condition to the license amendment to operate the compactor, because the compactor is not liable to the accidents that are possible for the incinerator. With these conditions satisfied, the B&W emergency plan will be adequate to protect the public health and safety.

(5) Health Effects of Nonradioactive Releases

Complaint 2 (Generation of Dioxins)

Incineration of polyvinyl chloride will expose petitioners and their families to dioxins, with adverse health effects.

120. Dioxin is a generic name for a class of compounds that can be formed as byproducts of certain chemical reactions and during many combustion/incineration processes. The most common dioxins are the polychlorinated dioxins (PCDDs), of which there are seventy-five different isomers. The toxicity of dioxins to animal species depends on the number and placement of the chlorine atoms on the dioxin molecule. The more toxic dioxins have four to six chlorine atoms with the 2, 3, 7, and 8 positions filled. The simplest is 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD). Other molecules closely associated with the dioxins are the polychlorinated dibenzofurans (PCDFs). NRC EA, Appendix C at C-1.

121. Dioxin is extremely toxic to certain animal species and harmful to humans when they are exposed to relatively large amounts of it. The claim that it is one of the deadliest substances known is based on its toxicity in guinea pigs. A dose of 0.6 g/kg body weight administered orally will kill 50% of male guinea pigs that received the dose. Illness occurs immediately and death occurs within about a week. Its toxicity, however, is highly variable between species. For example, the least-sensitive animal tested is the hamster, which is 500 to 10,000 times less sensitive to TCDD than the guinea pig. Rabbits, mice, and monkeys are roughly 200 times less sensitive than guinea pigs and 50 times more sensitive than hamsters. The acute toxicity in humans is expected

to be about the same as that in monkeys. Considering this, TCDD is about ten times as toxic as hydrogen cyanide, but it does not enter the body as readily as hydrogen cyanide. The long-term, irreversible health effects of dioxins on humans remains unknown. *Id.* at C-2.

122. Although in the United States the EPA has been actively studying the dioxin problem, as yet no regulations limiting dioxin exposure have been promulgated. In Canada, on the other hand, the Ontario Ministry of Health has published a guideline of 30 picograms per cubic meter (pg/m³) for TCDD. The EPA used a decontamination criterion of 1 part per billion (ppb) for the work done at Times Beach, Missouri, and the U.S. Air Force is considering a limit of 10 ppb for decommissioning of former Agent Orange storage sites. All of the foregoing dioxin levels are based on the isomer 2,3,7,8-TCDD. *Id.* at C-3.

123. Various mechanisms have been identified for the formation of PCDDs and PCDFs during incineration processes, including the following:

- (a) PCDDs and PCDFs may be present as components of refuse being incinerated. Because many refuse incinerators operate at combustion temperatures that are too low to destroy PCDDs and PCDFs, these compounds may volatilize and enter the process flue gas stream.
- (b) *In situ* synthesis may occur through thermally initiated reactions of molecular species that are either present or are produced in the high-temperature combustion zone. The reactions involved include rearrangements, free-radical condensation, dechlorination, dehydrogenation, as well as other molecular reactions.
- (c) If the combustion zone temperatures are high enough, PCDDs and PCDFs can be produced *in situ* by elementary recombination reactions of atoms produced by the thermal combustion process.

It is expected that the formation of dioxins and furans could occur in the VRSF incinerator via mechanisms (b) and (c), above; for reasons to be discussed below, however, the concentration of dioxin released to the environment is not expected to be significant. *Id.* at C-5.

124. Materials to be incinerated in the MVRS that could result in dioxin and furan synthesis include benzenes from liquid scintillation fluids and limited quantities of polyvinyl chloride (PVC). The incineration of chlorinated benzenes can yield both PCDDs and PCDFs. PVC can be a source of chlorine and on incomplete combustion yield minute quantities of chlorinated benzene which, as just stated, can be a precursor to both PCDDs and PCDFs. Quantities of PVC incinerated in the MVRS will be limited to 5% of the waste by weight. *Id.* at C-6; B&W EA, Rev. 3 at 3.3; Bowles (Complaint 2) at 2. The limit will be implemented through contract restrictions and shipping manifest documentation. This limitation is placed on PVC as an operations restriction for economic reasons, however, rather than because of environmental concerns as to dioxin releases. *Id.*; Tr. 62-64 (Bowles). High PVC levels in the waste would

result in production of excessive amounts of HCl, which would be removed by the primary scrubber and would cause an increase in density of the scrubber solution. Dilution would be required to maintain an acceptable density, and the resulting volume of scrub liquor would exceed the volume that could be reinjected into the incinerator feed. Bowles (Complaint 2) at 2.

125. Two important features of the MVRS will minimize the release of dioxins. The first relates to the operating conditions of the incinerator. B&W's MVRS will be a two-stage combustion incinerator. Waste would be ignited and burned in the first stage (primary combustion chamber); then the gaseous combustion products would pass to the second stage (secondary combustion chamber) where the oxidation process would be completed. Dioxins would be destroyed in the secondary combustion chamber because of the high temperature, high oxygen concentration, and adequate residence time of the off-gas in the secondary chamber. NRC EA at C-7. The secondary combustion chamber will operate at 2100°F with a retention time of 1.33 seconds and excess air of about 100%. Tr. 253-54 (Lauber); Tr. 279 (Bowles); Tr. 769-80, 282-83 (Spas). A temperature of 2100°F requires 40 milliseconds gas residence time for 99.99% destruction of dioxin. Bowles (Complaint 2), Figure 2-1. Test data from the Dresden MVRS indicate a combustion efficiency of 99.9%. Tr. 279 (Bowles); Tr. 279-80 (Spas). Such efficiency is comparable to what is usually required for a (nonradioactive) hazardous waste incinerator and generally results in highly efficient destruction of hazardous organic compounds. Tr. 254 (Lauber).²⁴

126. The second important feature of the MVRS is that it will have a multistage air cleaning system, which includes caustic scrubbing, with the gases leaving the scrubber system at a temperature of approximately 180°F. The off-gas will then be heated slightly to about 230°F before entering a HEPA filter/charcoal adsorber/HEPA filter system, designed to remove radioactive particulates and radioiodine. This system would also remove particles and flyash on which any dioxins present would be adsorbed following the cooling steps prior to the filters. Bowles (Complaint 2) at 8-9; NRC EA at C-9. The charcoal would also remove any remaining trace vapor-phase dioxins. Tr. 261 (Lauber).

127. B&W will be required to obtain an Air Quality Control Permit from PaDER. Dam (Overview) at 15; Tr. 57 (Bowles). That permit will contain a condition limiting releases of dioxins. Tr. 57 (Bowles). PaDER has provided B&W with a document entitled "Best Available Technology (BAT) Criteria for Municipal Waste Incineration and Resource Recovery Facilities" (August 19, 1986) which contains annual ambient concentration guidelines for specified

²⁴ Witness Lauber, an Associate Air Pollution Control Engineer of the New York State Department of Environmental Conservation and a leading authority on dioxin releases from incinerators, was presented by B&W because Dr. Resnikoff, in his prefiled testimony, incorrectly characterized portions of two articles co-authored by Mr. Lauber. Tr. 41-43, 52-54, 256-61; Licensee's Exh. 1.

contaminants. The guideline for dioxin is 0.3 pg/m^3 for PCDD and PCDF, expressed as 2,3,7,8-TCDD equivalents. The BAT Criteria do not apply to facilities like the MVRS; nevertheless, B&W expects that the BAT dioxin guideline will be taken into consideration in determining the dioxin release limitation for B&W's MVRS. Tr. 67-68 (Bowles). PaDER's dioxin guideline is one of the most stringent restrictions that has been issued, but the advanced features of the MVRS should enable it to satisfy even this guideline. Tr. 261-62 (Lauber). Even Dr. Resnikoff agreed that dilution factors between the stack samples and ground levels at the site boundary would reduce concentrations in nanograms to picograms. Tr. 148 (Resnikoff).

128. The PaDER permit will also require B&W, upon initial startup of the MVRS, to take off-gas samples and analyze them for dioxins. B&W has committed to perform this test pursuant to PaDER requirements. The waste feed for this test will include at least 5% PVC. Tr. 57-58 (Bowles). Following startup, during routine operation, B&W will not be obtaining direct dioxin data, because there is no known instrument that can provide dioxin measurements. Rather, to ensure that dioxin emissions are being properly controlled, B&W will collect information on operating parameters of the incinerator, such as carbon monoxide levels, temperatures, etc., to substantiate that the incinerator is operating at a high combustion efficiency; B&W will also obtain information to show whether the off-gas treatment system is operating as designed. *Id.*; Tr. 272-73 (Lauber).

129. The Intervenor's witness Resnikoff stated, in his prefiled testimony, that the MVRS was similar to some hospital incinerators discussed in a 1985 article co-authored by B&W's witness Lauber, thus implying that dioxin releases from the MVRS would be similar to those from the hospital incinerators. Resnikoff Testimony at 10. Mr. Lauber testified, however, that none of the hospital incinerators discussed in his 1985 article had a combination of operating conditions and a multistage off-gas cleaning system similar to the MVRS, and therefore the MVRS emissions would be significantly lower than those from the hospital incinerators. Tr. 254-55. He described a mobile incinerator of the EPA equipped with a Venturi scrubber and HEPA filter which was tested firing material contaminated with chlorinated dibenzo-*p*-dioxins (CDD). It showed detectable emission levels of only octachlorodibenzo-*p*-dioxin, a relatively non-toxic isomer which is not included in the list of 2,3,7,8-tetrachlorinated dioxin (TCDD) equivalents used by the EPA and PaDER.²⁵ Tr. 255 (Lauber). Witness Lauber expects the MVRS, which also has a Venturi scrubber plus two sets of HEPA filters and a charcoal adsorber, to have extremely low or nondetectable emissions of 2,3,7,8-TCDD or its equivalence. Tr. 255-56 (Lauber).

²⁵ The EPA suspects that the octachlorodibenzo-*p*-dioxin came from a contaminated solvent used in the analysis and not from the incineration process. Tr. 255 (Lauber).

130. Dr. Resnikoff criticized the Idaho National Engineering Laboratory's "Comments on Sierra Club Analysis of Proposed Parks Township Incinerator — RCR-29-86," May 19, 1986 (INEL Report) for asserting that dioxins in the off-gas of the MVRS will be present as particulates which will be captured on the filters, on the basis of a 1983 article co-authored by Lauber; Dr. Resnikoff complained that the INEL Report ignored a 1985 article also co-authored by Lauber that allegedly shows that dioxins will be present in the vapor phase, hence not captured by filters. Resnikoff Testimony at 13. Mr. Lauber testified that it was not true that the two papers expressed different views. Both articles indicated that the combustion of solid wastes can generate dioxins in both the particulate phase and the vapor phase, and each article pointed out that at appropriate exhaust gas temperatures dioxins would be converted to the particulate phase and hence be removable by an efficient emission control system. Tr. 257-59. Thus the discussion in the INEL Report properly reflects the fact that at the operating temperature of the post-scrubber off-gas system of the MVRS, dioxins present would be predominantly in the particulate phase and would be removed by the filters. As already noted, any remaining trace of vaporized dioxin would be removed by the charcoal adsorber. Tr. 260-61 (Lauber).

131. In his oral testimony, Dr. Resnikoff seemed to imply that dioxins could reform in the cooler parts of the stack after being destroyed in the combustion chamber of the incinerator. Tr. 142-44. Later he appeared to refute this suggestion. Tr. 147. Mr. Lauber stated that a theory to that effect had been proposed by Dr. Barry Commoner. Tr. 263. There is no conclusive evidence, however, to prove Dr. Commoner's theory. The preponderance of the literature indicates that incineration at high temperatures with adequate retention time and at an appropriate combustion efficiency destroys dioxins and they do not reform in incinerators. Tr. 264 (Lauber). Even if one assumed that some dioxins are formed in the cooling-down stage after incineration, in the B&W MVRS the cooling down would occur prior to and during the introduction of off-gas into the scrubber system. The dioxins would therefore be removed by the scrubber system and the subsequent HEPA filters and charcoal adsorber. *Id.*

132. Dr. Resnikoff was correct in insisting that dioxins have been released in measurable quantities from some incinerators. As Mr. Lauber explained, some uncontrolled hospital incinerators release dioxins on the order of a thousand times higher than controlled hazardous waste incinerators; but there are many properly controlled hazardous and hospital waste incinerators that release very low or nondetectable levels of dioxins. Tr. 268. The fact that state agencies, such as the PaDER, have established such low criteria or guidelines for dioxin releases indicates what present technology can achieve. Tr. 268-69 (Lauber). The capability of an incinerator to meet such requirements is normally established during a controlled stack test program performed on site during the first few

months of operation. *Id.* This is what is planned for the MVRS. *Id.*; Tr. 57 (Bowles).

133. Finally, in his prefiled testimony Mr. Bologna questioned how the public would be alerted if dioxin emissions exceed standards. Bologna Testimony at 8. Mr. Lauber responded that if an incinerator were to malfunction and exceed its dioxin limitations, the malfunction would have to be corrected, but there would be no need to alert the public to take immediate action because it would not pose an immediate danger to life or health. Dioxin emission standards have been developed because of concern over chronic exposure of the public to small concentrations or quantities of dioxins over many years, such as a lifetime exposure. Tr. 262-63.

134. In their proposed findings, the Intervenor conclude that "[t]he licensee has failed to establish that dioxins will be completely destroyed and will pose no danger to the public health and safety." Intervenor's Proposed Findings at 3-4. In reaching that conclusion they refer to testimony of their own witness, Dr. Resnikoff, but essentially ignore the extensive testimony of Messrs. Bowles, Lauber, and Spas.²⁶ It is the testimony of these expert witnesses that is dispositive.

135. In conclusion, the preponderance of the evidence shows conclusively that the MVRS has been designed to operate without releasing concentrations of dioxins that would create a hazard to the public health and safety. The record demonstrates that the PVC content of incinerator feed material will be controlled to limit HCl production and any resulting dioxin production. Moreover, the MVRS's secondary combustion chamber would operate at a temperature that will destroy dioxin in 40 milliseconds; the residence time of gas in the secondary combustion chamber will be more than 30 times this long. In addition, the off-gas cleaning system planned for the MVRS would remove both particles on which dioxin may be adsorbed and any traces of vaporized dioxin from the off-gas stream. Finally, the PaDER will establish dioxin emissions limits for the MVRS when it issues the air quality control permit for B&W's VRSF.

(6) Design of the Incinerator

136. As was pointed out in Finding 14, *supra*, the MVRS that B&W plans to install at its Park Township facility was still at the AECC facilities in California as of the date of the hearing, awaiting the completion of tests on AECC's first MVRS to be used at Dresden. Dam (Overview), ff. Tr. 415, at

²⁶Intervenor's did include a single citation to testimony by witness Bowles at Tr. 40. At that transcript page the testimony of Mr. Bowles on Complaint 2 is accepted into the record, but the page contains no substantive testimony.

14. The tests on the Dresden MVRS were scheduled for late October and early November 1986. Tr. 445 (Dam). Design changes for the B&W MVRS, based earlier on test results with the Dresden unit, were still to be implemented and tested. Potter and Spas (Complaint 8) at 11-12. Modification work on the B&W unit was awaiting completion of improvements on the Dresden unit. Tr. 445 (Dam). In Complaints 8 and 14 the Intervenor challenged the design of the MVRS, alleging that the incinerator is designed to process reactor waste but not industrial and institutional wastes and that the off-gas scrubber has failed to perform as claimed. Complaint 8 challenged the incinerator design. Complaint 14 challenged the performance of the scrubber. Staff's consideration and acceptance of the incinerator is inextricably entwined with its acceptance of the scrubbers, because incinerator and scrubbers comprise a single, functional unit. Therefore it is logical and expedient to consider Complaints 8 and 14 together in this section of the Decision.

Complaint 8 (Design of Incinerator for Processing Institutional and Industrial Wastes)

The Aerojet incinerator's design for processing medical, industrial, and institutional radioactive waste has not been adequately analyzed or demonstrated. It is not clear that it has been accepted by the Staff for incineration of wastes other than reactor wastes at reactor sites. Therefore, the public health and safety cannot be assured if it is used to incinerate the wastes proposed at the Parks Township site.

Complaint 14 (Performance of Off-Gas Scrubber)

Licensee has failed to demonstrate that the incinerator off-gas scrubber will perform as claimed. Licensee should specify how frequent changes and shutdowns will affect occupational exposure and public health, and calculate releases on a basis of an efficiency of 98.0%.

137. Intervenor is alleging that the MVRS ordered by B&W was designed for incinerating LLW at nuclear power plants. They are also concerned that it may have been accepted by the NRC Staff for incineration of reactor wastes, only. When the Intervenor filed their supplemental petitions in April and May 1986, following issuance of the NRC EA and the SER, the NRC Staff had accepted AECC's Topical Report, AECC-4-NP-A, for referencing in license applications by nuclear power utilities for incineration of dry active waste generated in their plants. SER § 3.8. There were several differences between the NRC-accepted report and the system proposed by B&W, however, described in Appendix E of the B&W EA; Appendix E also addressed the applicability and limitations of the system for incineration of industrial and institutional waste. In addition, Staff received Revision No. 1 of AECC-4-NP-A on January 15, 1986, indicating the addition of a second off-gas scrubber, but that revision

had not been accepted by the Staff by the time it issued the SER for B&W's VRSF. *Id.* On April 28, 1986, Staff advised the Presiding Officer and the parties to this proceeding that it had accepted AECC-4-P/NP-A, Revision No. 1, "for referencing in license applications by *utility* licensees for incineration of low-level radioactive waste at *nuclear power plants*, using AECC's Mobile Volume Reduction System" (emphasis added). Letter from George E. Johnson to Dr. Oscar H. Paris, dated May 28, 1986. Staff's letter indicated, further, that an open item regarding scrubber performance remained to be evaluated for B&W's proposed use of the AECC system at the VRSF. Thus, at the time Intervenor filed their supplemental petitions, the AECC MVRS had not, in fact, been accepted by the Staff for use with industrial and institutions as well as reactor waste.

138. On September 5, 1986, the NRC Staff responded to a July 30, 1986 letter from B&W in which B&W provided information on the open item identified in the SER. Letter from Leland C. Rouse to B&W, Attn: D.G. Culberson. The Staff stated that B&W believed that the scrubbers would perform with a particulate DF of 50, although B&W's summary of tests indicated that the DFs in the tests ranged from 9 to 50 under a variety of conditions. The Staff letter indicated, further, that B&W planned to achieve an overall system particulate DF of at least 4×10^5 by actual demonstration, and Staff stated that such a demonstration would be acceptable. Finally, the Staff indicated that B&W had described in principle additional design modifications for the MVRS that would permit gas to bypass the existing HEPA filters and charcoal adsorber so that B&W could make HEPA filter changes without shutdown and cooldown of the incinerator. Staff requested additional information about the proposed design modifications so it could continue its review.

139. B&W responded to Staff's September 5, 1986 letter with a letter agreeing with certain positions taken by the staff and providing "preliminary answers" to Staff's questions about the design changes associated with the proposed bypass system. Letter from B&W's David G. Culberson to Leland C. Rouse of the NRC, September 25, 1986. The information was "preliminary" because B&W's design changes would not become final until after the testing program was completed. With regard to schedule, B&W stated that although additional tests with the Dresden MVRS were scheduled for the third and fourth weeks of October, the complete program had not yet been developed or scheduled.²⁷ Thus the MVRS was still under development when the hearing in this matter adjourned and the record was closed on October 2, 1986.

²⁷ At the hearing, evidence was introduced indicating that the tests on the Dresden unit would extend into November 1986. See Finding 142, *infra*.

140. At the hearing B&W's witnesses who presented testimony on Complaint 8 stated that the B&W EA, the NRC EA, and the SER all evaluated the incineration of medical, industrial, and institutional as well as reactor waste at the VRSF. Potter and Spas (Complaint 8) at 3-5. They attested that the first MVRS, the Dresden unit, had undergone more than 750 operating hours over a period of 14 months during which more than 100,000 pounds of waste were incinerated. While undergoing these tests, the trailer fire considered under Complaint 7 occurred and a high-temperature excursion occurred while the unit was processing large quantities of polyethylene plastic. *See* Findings 107-109, *supra*. As a result of those experiences, changes were made in the design of the units to prevent a recurrence of either incident. Potter and Spas (Complaint 8) at 10-11. B&W attested that the B&W MVRS has been designed using commercially available equipment which has been used extensively throughout the chemical and petroleum industry. The major engineering task was to integrate the many components into a trailer-mounted system. *Id.* at 9, 13.

141. Neither the Dresden unit nor the B&W MVRS has been tested for waste material types such as scintillation fluids and biological material. Tr. 391 (Bowles). B&W plans to carry out tests with such waste material as part of its onsite testing program after installation of the MVRS at the Parks Township facility, but prior to operation of the MVRS to process radioactive scintillation fluids and biological material. *Id.* The testing performed by AECC in Sacramento, California, has not and will not include such material because scintillation fluid contains toluene, a hazardous waste, and AECC does not have a permit to incinerate hazardous waste. Tr. 392-93 (Spas). In fact, the B&W unit will not be burn tested in California at all, because firebrick which has been fired and cured might be more readily damaged during transportation. Tr. 393-94 (Bowles); Tr. 448 (Dam, Bowles). Therefore B&W plans to conduct burn tests on the unit at Parks Township before it begins processing radioactive waste. *Id.*

142. Testing of the scrubber system has been carried out on the Dresden unit. The original system design included a single Venturi scrubber, for which early tests demonstrated an overall dust collection efficiency of only 77% to 87%. This low efficiency resulted in poor HEPA filter life (less than 12 hours operation time). Therefore a second Venturi scrubber was installed. With two scrubbers, the overall scrubbing efficiency is 89% to 98%. Dam and Bowles (Complaint 14) at 3. Scrubber efficiency varies with density of the waste. High-density waste produces slightly larger particulate concentration in the off-gas than low-density waste. Venturi scrubber efficiency is proportional to the particulate concentration in the off-gas. Since the MVRS is expected to operate with high-density waste, scrubber efficiency is expected to be at the upper end of the efficiency range measured in the Dresden tests. *Id.* at 3-4. The efficiency of the primary combustor will also fluctuate, but no testing of this efficiency had been done prior to the hearing. *Id.* at 4. Tests on primary combustor

efficiency were scheduled with the Dresden unit during late October and early November 1986. Scrubber efficiency tests will be performed concurrently with the combustor efficiency tests. Tr. 444-45 (Dam).

143. Overall MVRS efficiency is based on the combined primary combustor and scrubber efficiencies plus the HEPA filter/charcoal system efficiency. Preliminary testing of the Dresden unit using dioctylphthalate (DOP) in accordance with NRC-recommended procedures demonstrated a removal efficiency of 99.95% to 99.98% across one set of HEPA filters for particulates having a mean particle diameter of 0.3 microns. These efficiencies are equivalent to DFs of 2×10^3 and 5×10^3 , respectively. Dam and Bowles (Complaint 14) at 4. The two sets of HEPA filters placed in series on the B&W MVRS would increase this DF to even higher values. The performance of the HEPA filters, unlike the scrubbers, is independent of the waste feed. *Id.* at 5.

144. "B&W will not accept the MVRS for operation at the VRSF unless the overall MVRS system particulate DF meets or exceeds 4×10^5 " (emphasis in original). *Id.*; also see Letter from B&W's Michael A. Austin to Leland C. Rouse of the NRC, dated December 4, 1985. B&W assumed this DF in the B&W EA. B&W EA at 3-2. B&W believes it can be achieved in several ways. For example, B&W believes that the scrubbers can be operated to consistently achieve an efficiency of 98%, which gives a DF of 50. When combined with a second-stage HEPA filter DF of 2×10^3 and a primary combustor DF of 20, the overall MVRS systems DF would be 2×10^6 . Dam and Bowles (Complaint 14) at 5.

145. If the scrubbers or primary combustor cannot be operated to achieve a consistent particulate DF, B&W states that there are several means whereby B&W could achieve the desired overall MVRS system DF. These measures consist of such things as (1) taking credit for the measured HEPA filter DF of one set of filters of up to 5×10^3 ; (2) performing particulate testing and taking credit for both sets of HEPA filters; (3) placing high-temperature submicron filter units in the off-gas system; (4) evaluating and installing different scrubber(s) which are more efficient for particulate removal. *Id.* at 6.

146. The operational testing which B&W will require for the B&W MVRS prior to acceptance of the unit will be conducted with materials representative of the type of waste B&W expects to receive at the VRSF (wood, paper, cloth, plastic, oil, scintillation fluid, animal carcasses, etc.) "This testing must verify that the minimum overall off-gas system particulate DF equals or exceeds 4×10^5 for the MVRS" (emphasis in original). This DF is equivalent to an overall system efficiency for particulate removal of 99.99975%. *Id.*

147. Complaint 14 also raises the issues of an increase in occupational exposure and risk to public health resulting from the more frequent HEPA filter changes that will result from the lowered scrubber performance. The Staff also raised the occupational exposure issue in the Open Item of the

SER. SER at 44. B&W amended its occupational exposure analysis to include the effects of more frequent HEPA filter changes. This analysis assumed ninety-two filter changes per year, based on the highest expected filter loading with the worst-case radioisotope (Co-60), and it gave an occupational exposure of 2.9 person-rem compared to a total occupational exposure of 63.2 person-rem at the VRSF. *Id.* at 7. The Staff noted in its September 5, 1986 letter to B&W that while this dose increment is a small percentage increase in the annual collective dose, it might represent a significant increase in the dose to a few individuals; consequently it reminded B&W that the proposed license condition (SER-11) (Maintaining Occupational Radiation Exposures As Low As Is Reasonably Achievable) would be applicable. In its September 25, 1986 reply to Staff, B&W agreed with Staff on this point.

148. There will be no added exposure to the general public from more frequent filter changes. Waste will not be processed in the MVRS while the HEPA filters are being changed, and filter changes are done using a temporary containment (plastic bag) within the enclosed off-gas trailer. Dam and Bowles (Complaint 14) at 7. When the HEPA filters are being changed, the incinerator would be placed on standby condition. Standby means that the incinerator is maintained at a standard operating temperature, even though it is not charged with waste, by the use of supplemental burners in each of the two combustion chambers. No waste can be fed when the incinerator is on standby. The off-gas is diverted through the bypass HEPA filter. Tr. 446-47 (Bowles).

149. The bypass HEPA filter is a design change requested by B&W because the test results from the Dresden MVRS indicated that more frequent HEPA filter changes would be required. The combined additional design changes requested consist of

- (1) A bypass line added to the off-gas system to permit bypassing the HEPA filter/charcoal system. The bypass line will be directed through its own HEPA filters and back into the off-gas system upstream of the stack sample location. Under no circumstances will waste be permitted to be charged to the incinerator while the off-gas HEPA filter/charcoal system is bypassed through the bypass HEPA filter.
- (2) Remotely operated (from the incinerator control room) inlet and outlet isolation valves will be included on the bypass line.
- (3) Remotely operated (from the incinerator control room) valves will be added to the off-gas system upstream of the first stage HEPA filter bank. These valves exist on the present design but are manually operated.
- (4) Valve actuators will be extended through the sides of the off-gas trailer for the four valves identified in (2) and (3) above, to allow manual operation of these valves from the outside of the off-gas trailer.
- (5) A remotely operated (from the incinerator control room) water supply valve will be added to the charcoal filter deluge system.

- (6) Temperature detectors will be added in the charcoal filter bed, with an alarm which annunciates at the incinerator control panel.

Dam and Bowles (Complaint 14) at 8-10.²⁸ These changes had only been requested of AECC at the time of the hearing and still required final design, cost estimating, and scheduling prior to being actually made. Tr. 442 (Dam).

150. In conclusion, the preponderance of the evidence on Complaints 8 and 14 lends support to the Intervenors' complaints that the incinerator's design has not yet been adequately demonstrated and that the scrubber system has not performed as expected. The record clearly shows both allegations to be true. The B&W MVRS has been awaiting tests of the improvements made on the Dresden MVRS before the improvements are made on the B&W unit. Those tests were scheduled for late October and early November. Work on the B&W MVRS was suspended until the results of tests on the Dresden unit were available. Also, the combustion efficiency of the primary combustor remained to be tested. All of these tests are to be completed before more work is done on the B&W MVRS. Furthermore, the bypass HEPA system which B&W has requested for its MVRS had not, as of the date of the hearing, even reached the state of final design and cost estimating, let alone scheduling. Granted that the MVRS has been designed using commercially available and presumably proven components, so that the major engineering task has been integrating the components into a trailer-mounted incinerator system. That fact does not in itself necessarily ensure that the components have been well integrated. The whole is not necessarily the sum of its parts. Whether the engineering integration has achieved what B&W and the NRC Staff expect remains to be demonstrated.

Conclusion on Design of the Incinerator

151. B&W has committed not to accept the MVRS unless the overall system particulate DF meets or exceeds 4×10^5 , which is equivalent to an overall efficiency of 99.99975%. If this DF can be achieved, then the MVRS can be operated at the Parks Township site without undue risk to the public health and safety. It remains to be demonstrated, however, that this efficiency can be achieved. Therefore it would be premature to issue a license amendment at this time approving operation of the incinerator. Staff shall defer granting the amendment for incinerator operation until it has been clearly shown that the MVRS can consistently perform with an overall particulate DF no lower than 4×10^5 .

²⁸ Design changes 5 and 6 are not related to the bypass system. They represent design changes decided upon earlier and not yet installed in the B&W MVRS. Tr. 445 (Dam).

III. CONCLUSIONS OF LAW

Based upon the entire evidentiary record in this proceeding and upon the findings of fact set forth above, the Presiding Officer makes the following conclusions of law:

1. B&W's application for an amendment or amendments to NRC Material License No. SNM-414 to authorize the operation of a Volume Reduction Services Facility utilizing a super-compactor and an incinerator at its Parks Township site is for purposes authorized by the Atomic Energy Act of 1954, as amended (the Act), and NRC regulations.

2. The proposed super-compactor is installed, has been fully tested, and is operable. Radioactive releases resulting from its operation will comply with the requirements of the Act and the NRC regulations. B&W's administrative control procedures for the compactor are adequate to protect health and minimize danger to life and property.

3. The mobile volume reduction system (MVRS) has not been fully designed and developed, and it has not yet been demonstrated that it can perform to the standards to which B&W has committed. Therefore it is not yet known whether its operation may endanger health, life, and property. Additional tests are being conducted to determine this matter.

4. B&W has demonstrated its ability to comply with NRC requirements relating to the operation of the compactor and the MVRS, provided that the design of the MVRS enables it to perform to B&W's committed standards. Given that proviso, B&W has demonstrated that it is qualified by training and experience to process byproduct materials as requested in such a manner as to protect health and minimize danger to life and property.

5. Operation of the VRSF will have no significant impact on the environment.

6. Complaints 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, and 13 are resolved in favor of authorizing the amendments to allow operation of both the compactor and the incinerator. This conclusion, however, is based on the assumption that the MVRS can be made to perform to the release standard adopted by B&W. Complaints 8 and 14, which relate to the MVRS only, are resolved in favor of not authorizing the amendment to operate the incinerator at this time.

IV. ORDER

The Director of Nuclear Material Safety and Safeguards or his designee, upon making findings on all requisite matters not decided in this Decision, is *authorized* to issue B&W an amendment to NRC Materials License No. SNM-414 to authorize the operation of a Volume Reduction Services Facility utilizing the

super-compactor, only, at the Parks Township site. The amendment authorizing the operation of the incinerator shall not be issued until the testing of the Dresden unit has been completed. That amendment may then be issued provided that the following conditions have been met prior its issuance:

1. The tests on the Dresden MVRS have clearly shown that the overall system particulate DF meets or exceeds 4×10^5 , the standard to which B&W has committed.
2. The current environmental sampling contract between the NRC and the Commonwealth of Pennsylvania is expanded to include sampling and analysis for H-3, C-14, and I-125 in the environment surrounding the plant.
3. B&W has determined whether there is a law enforcement officer available in Parks Township 24 hours a day to serve in an emergency, and if not, has made appropriate arrangements to contact some other law enforcement agency such as the sheriff's department or highway patrol when the Parks Township police are not available.
4. B&W has determined whether the Armstrong County Civil Defense is available in an emergency.
5. B&W is required to call all the numbers on its emergency list and verify them every 100 days.

This Decision shall become effective immediately. Pursuant to the Commission's Order issued July 24, 1985, it will become final agency action thirty (30) days after date of issuance unless the Commission, on its own motion, undertakes a review of the Decision. No petition for review will be entertained by the Commission regarding this Decision.

PRESIDING OFFICER

Dr. Oscar H. Paris
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 23rd day of December 1986.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulles, Chairman
Gustave A. Linsenberger, Jr.
Dr. Oscar H. Paris

In the Matter of

Docket Nos. 50-424-OL
50-425-OL
(ASLBP No. 84-499-01-OL)

GEORGIA POWER COMPANY, *et al.*
(Vogtle Electric Generating Plant,
Units 1 and 2)

December 23, 1986

In this concluding partial initial decision finding that licenses authorizing operation of the Vogtle Electric Generating Plant should be issued, the Board finds that Applicants have provided assurance that certain models of solenoid valves that are used to perform safety-related functions are environmentally qualified.

APPEARANCES

Bruce W. Churchill, and David R. Lewis, Esqs., Shaw, Pittman, Potts & Trowbridge, Washington, D.C., and James E. Joiner, Charles W. Whitney, Kevin C. Greene, and Hugh M. Davenport, Esqs., Troutman, Sanders, Lockerman & Ashmore, Atlanta, Georgia, for the Applicants.

Douglas C. Teper, Raymond Tingle, and Daniel Feig, Atlanta, Georgia, for the Intervenor, Georgians Against Nuclear Power.

CONCLUDING PARTIAL INITIAL DECISION

I. INTRODUCTION

This is the second and concluding partial initial decision issued by the Board in this proceeding. In it the Board decides the remaining Intervenor contention in Applicants' favor. The Board concludes that licenses authorizing operation of the Vogtle Electric Generating Plant, Units 1 and 2 (VEGP), should be issued, subject to condition.

In our first partial initial decision issued August 27, 1986 (LBP-86-28, 24 NRC 263), we detailed the development of this contested application proceeding for operating licenses for VEGP. The application process resulted in an evidentiary hearing, from March 11 through March 14, 1986, at Waynesboro, Georgia, on Intervenor's (Georgians Against Nuclear Energy or GANE) three contentions, by which denial of Applicants' (Georgia Power Company, *et al.*) application is sought. Nuclear Regulatory Commission Staff (Staff) has been a party throughout the proceeding.

Of the three contentions the first two were disposed of in our partial initial decision in Applicants' favor. Contention 7 alleged that Applicants have failed to assure that the ground water below VEGP will not be contaminated by a spill of radioactive water, and Contention 10.1 alleged that Applicants have failed to assure that certain polymer materials, to be employed in components of VEGP that perform safety-related functions, are environmentally qualified.

The third and remaining contention, Contention 10.5 alleges that Applicants have failed to assure that certain models of solenoid valves that are used to perform safety-related functions in the VEGP are environmentally qualified. The Board deferred ruling on the contention in its August 27, 1986, decision because of the issuance on August 25, 1986, of Board Notification 86-18. Therein, the Staff stated that it had requested from Applicants additional information regarding Applicants' main steam-line break analysis; BN 86-18 further stated that the Staff questioned the methodology used for the qualification of ASCO valves that were the subject of the contention. Staff promised to inform the Board promptly of the final resolution of these matters. Owing to the then unanswered questions from the Staff, we withheld our decision on Contention 10.5. In issuing our partial initial decision on the other two contentions, we stated that we retained jurisdiction over Contention 10.5, the only contested issue yet to be decided in the proceeding.

Under date of September 15, 1986, Staff issued Board Notification 86-19, which stated that the Staff had been provided additional information by Applicants that answered Staff's concerns. Staff stated that based on such information it found the valves to be acceptably qualified.

On October 8, 1986, Dr. Howard M. Deutsch filed a GANE submittal titled "Supplemental Information" that addressed the two above-identified Board Notification issuances as well as other matters alleged to pertain to Contention 10.5. No reopening of the record was requested by the parties. The extra-record Board Notification issuances and the Deutsch submittal were reviewed by the Board. They did not provide any relevant, material information that contradicted the evidentiary record. The Board did not consider them to provide any reasons for inquiring further or to reopen the evidentiary record.¹

The Board in reviewing the evidentiary record on Contention 10.5, decided that certain matters were not dispositively dealt with on hearing. We wrote to the parties by letter of October 24, 1986, inquiring, as pertinent, whether certain cited temperatures provided meaningful margins that would provide confidence that the three subject model valves had been satisfactorily qualified.

This prompted a response by Applicants on October 28, 1986, which provided newly obtained information on computed post-accident temperature values that was site-specific to the Vogtle facility. Also, it provided probative information on the precision and uncertainty of the temperature margins that was formulated subsequent to the closing of the record on August 5, 1986. The Board viewed this information as having a significant bearing on the involved safety issue. By Memorandum and Order of November 6, 1986 (unpublished), the Board reopened the record for the limited purpose of considering Applicants' newly provided information along with any other to be furnished by affidavit by the other parties in support or opposition. Answers were appropriately filed by Staff and GANE and a response was submitted by Applicants.

Based on the responses to the Board, we concluded as to the matter it inquired of that there was no genuine issue of material fact as to the methodologies employed to establish the subject values and margins; that Applicants and Intervenor differed on the conclusion reached; that the Board had no reason to inquire further as to the position of the parties; and that no useful purpose would be served in holding an oral hearing on the matter. As a result of the foregoing, the Board, by Memorandum and Order of December 8, 1986 (unpublished), directed that the record be closed.

In our partial initial decision of August 27, 1986, we had found that it resolved a major segment of the case, making it appealable at that time. On September

¹Dr. Deutsch again submitted the same information along with additional comments after the evidentiary record was subsequently reopened on November 6, 1986. We reviewed all of the information submitted by Dr. Deutsch in his October 8, 1986 filing and discuss it under § II.56, *et seq.*

8, 1986, notices of appeal were filed by Intervenor GANE and by Campaign for a Prosperous Georgia, a former intervenor that had withdrawn from the proceeding.² On September 12, 1986, the Chairman of the Atomic Safety and Licensing Appeal Panel appointed an Appeal Board for the proceeding. By letter dated September 18, 1986, Applicants brought to the attention of the Appeal Board having jurisdiction over the matter and this Board information involving XLPO insulation containing vinyl acetate that was at variance with testimony they had provided at the evidentiary hearing on Contention 10.1. It was Applicants' opinion that the additional information should not change the conclusions reached by us. The matter is presently pending before the Appeal Board which has jurisdiction over the Contention 10.1 by virtue of the appeal.

We do not view these circumstances as precluding this Board from taking up the last unresolved issue before it and issuing a concluding partial initial decision. As a condition precedent to the issuance of any operating licenses, it would first have to be initially determined by appropriate authority that the changed information contained in Applicants' letter of September 18, 1986, pertaining to XLPO insulation that contains vinyl acetate, does not lead to a conclusion that is inconsistent with that of this Board on Contention 10.1. We had found that Applicants have provided adequate assurance that certain polymer materials to be employed in components to the VEGP that perform safety-related functions are environmentally qualified.

Attached (but not published herein) as an appendix is a list of persons providing testimony.

II. FINDINGS OF FACT

Environmental Qualification — Contention 10.5

1. Contention 10.5 challenges the adequacy of the environmental qualification testing performed upon those models of solenoid valves manufactured by the Automatic Switch Company (ASCO) that are to be used in the VEGP to perform safety-related functions. The contention is based upon a 1983 Board Notification (BN 83-128, discussed below) issued by the Staff and cited by Intervenor for the proposition that numerous ASCO valves had performed improperly during certain qualification tests. Intervenor states that the Staff cautioned against using ASCO valves in any application where conditions could be more severe than those reported in qualification reports. Further, Intervenor related

²The Appeal Board dismissed the appeal of Campaign for a Prosperous Georgia because of its prior withdrawal from the proceeding. ALAB-851, 24 NRC 529 (1986). The Commission has declined to review the matter. Memorandum for Board and Parties from Secretary of the Commission (December 2, 1986).

valve failure to exposure of the valves to temperatures in excess of 340°F. Applicants' motion for summary disposition presented the nature of and the results from all of the test programs to which ASCO valves were subjected. Intervenor did not respond to Applicants' motion. The motion addressed the contention issues and presented what Applicants reported as satisfactory test results from all of the test programs. The Board denied the motion, however, because it found that there were certain issues that had been inadequately addressed. The issues identified by the Board in denying Applicants' summary disposition motion are as follows:

- (1) Whether any type of failure of any of the tested valve models can result in an unsafe configuration of the valves and/or dampers they control.
- (2) Unspecified basis for knowing how long each type of tested valve must remain functional after the initiation of an accident, and for knowing at any time during plant lifetime whether each such valve is capable of its required post-accident performance.
- (3) Whether moisture leakage into the solenoid housing of any valve specimen can endanger VEGP operation.
- (4) Whether manufacturer's specifications regarding valve parameters have been properly considered in evaluating test program results, and the extent to which test duration can induce valve leakage.
- (5) The extent to which test results on specific model specimens might be invalidated because of as-manufactured differences between test specimens and production specimens to be used in VEGP.

2. The Discussion section below first deals with the evidentiary materials and factual findings for all of the test programs; next the results for each valve are reviewed against VEGP conditions; then each of the above individual issues is discussed. Applicants presented the prefiled testimony of the following witnesses who appeared as a panel: George J. Baenteli, George Bockhold, Jr., Stephen J. Cereghino, William V. Cesarski, and Harold J. Quasny (hereinafter Baenteli *et al.*, ff. Tr. 517). Staff's prefiled testimony was sponsored by its witness Armando Masciantonio (Masciantonio, ff. Tr. 550). GANE offered the prefiled testimony of Howard M. Deutsch, who appeared as a witness (Deutsch, ff. Tr. 371). The Board has reviewed the professional qualifications of Applicants' and Staff's witnesses and finds them to be appropriate to the subject matter covered. With respect to the GANE testimony presented by Deutsch, specific Board comments are given in later paragraphs.

Discussion

3. Paragraph II.B.2 of our Partial Initial Decision discusses the environmental qualification of nuclear power plant equipment. That treatment, being applicable to this contention as well, is repeated here for convenience.

4. The purpose of environmental qualification at a nuclear power plant is to demonstrate that equipment used to perform a necessary safety function is capable of maintaining functional operability under all service conditions postulated to occur during its installed life. The qualification program must also demonstrate that the equipment in question is capable of the specific length of operating time required following an accident. Environmental qualification is normally achieved by subjecting a representative piece of equipment to a test program that simulates the expected environmental and service conditions the equipment will see during its installed life, followed by exposure to a simulation of design-basis accident environment during or after which the equipment is required to operate. Exposure to the radiation generated by the normal operation of a nuclear plant represents an environmental condition that plant components and equipment must be qualified to endure. The higher radiation doses associated with a design-basis accident are not of concern with respect to dose rate effects, since accident radiation effects can be readily simulated. The regulatory requirements for environmental qualification are stated in General Design Criteria 1 and 4 of Appendix A and in §§ III, XI, and XVII of Appendix B to 10 C.F.R. Part 50. Specific requirements for environmental qualification of electric equipment important to safety are stated in 10 C.F.R. § 50.49. Masciantonio, ff. Tr. 550, at 5-7.

5. Contention 10.5 concerns the environmental qualification of ASCO solenoid valves used to perform safety functions at VEGP. Four models have been identified for such service; their ASCO designations are models NP-8316 (A-16), NP-8320 (A-20), NP-8321 (A-21), and 206-381-6RF (A-6RF). Baenteli *et al.*, ff. Tr. 517, at 5. These valves direct the operation of air-operated process valves and dampers in safety-related fluid and HVAC systems by controlling air flow to the air operators on these valves or dampers. By either venting or providing air to the air operator on the process valve or damper, the ASCO solenoid valve enables that valve or damper to close or open. Table 10.5-1 of the Applicants' testimony lists each of the safety-related air-operated valves or dampers at VEGP controlled by an ASCO solenoid valve and describes the function performed by that valve or damper. Baenteli *et al.*, ff. Tr. 517, at 7-10.

6. The safety function of each ASCO solenoid valve is to vent the operator of the air-operated valve or damper with which it is associated to allow that valve or damper to move to its safety-related position. All of the ASCO solenoid valves employed in safety-related functions at VEGP are of the normally closed design. This means that when de-energized, which is its safety-related position,

the solenoid valve blocks the supply of instrument air and vents the air operator of the process valve or damper. The process valves and dampers that are controlled by ASCO solenoid valves are arranged so that the process valve or damper will assume its safety-related position, either open or closed, when the air operator is vented. *Id.* at 8-9.

7. Environmental qualification testing has been performed upon ASCO solenoid valves in two separate generic qualification testing programs, most recently by ASCO and Westinghouse acting jointly and earlier by Isomedix, Inc., on behalf of ASCO. *Id.* at 19. In addition, Franklin Research Center (FRC) has conducted testing on ASCO solenoid valves in a qualification methodology research test sponsored by the Nuclear Regulatory Commission, Office of Nuclear Regulatory Research. Masciantonio, ff. Tr. 550, at 3, 11. Each of these test programs is now described.

Testing by Westinghouse/ASCO

8. In 1980 and 1981, Westinghouse and ASCO jointly conducted an environmental qualification testing program for various ASCO solenoid valves. Results of that effort are given in report number AQ8-67368/Rev. 1, August 19, 1983. The test program included two model A-16 valves with ethylene propylene elastomers, two model A-20 valves with ethylene propylene and viton elastomers, one model A-21 valve with a viton elastomer, and one model A-6RF valve with an ethylene propylene elastomer. All were representative of the ASCO solenoid valves used at VEGP. Baenteli *et al.*, ff. Tr. 517, at 19-20. This program was conducted in accordance with the Institute of Electrical and Electronics Engineers ("IEEE") Standard 323-1974, "IEEE Standard for Qualifying Class IE Equipment for Nuclear Power Generating Stations"; IEEE Standard 344-1975, "IEEE Recommended Practices for Seismic Qualification of Class IE Equipment for Nuclear Power Generating Stations"; and IEEE Standard 382-1972, "IEEE Trial-Use Guide for Type Test of Class 1 Electric Valve Operators for Nuclear Power Generating Stations." Additionally, the qualification program was performed in accordance with the methodology set forth in WCAP-8587, "Methodology for Qualifying Westinghouse WRD-Supplied NSSS Safety-Related Electrical Equipment," which has been accepted by the NRC Staff. *Id.* at 21-22.

9. The tests comprising the qualification program consisted of initial performance tests; thermal, mechanical, pressurization, and normal-environment radiation aging tests; vibration aging tests; operating basis earthquake simulation, and resonance search tests; safe shutdown earthquake simulation; design-basis-event environmental radiation exposure; and high-energy line break (HELB) environmental testing. During the course of the tests, valve performance was monitored. While certain anomalies in performance were observed, evaluation of those anomalies demonstrated that they do not affect the qualification of the

valves for use at VEGP. The model A-6RF valve and the model A-20 valve (both having ethylene propylene elastomers) successfully completed all phases of the qualification testing. *Id.* at 22-23.

10. The solenoid core of the model A-20 valve with viton elastomers would not shift when first cycled following the design-basis-event environmental radiation testing until the operating voltage was increased from 102 V ac to 125 V ac. This occurred because of adherence of the viton dynamic seal to the brass seating surface as a result of viton degradation caused by radiation exposure. As a result, ASCO considers model A-20 valves with viton elastomers to be qualified to the test levels used in the joint Westinghouse/ASCO program only for those applications where the valves are not required to shift position following exposure to gamma doses in excess of 20 megarads. While VEGP does use A-20 valves with viton elastomers in safety-related applications, none of these applications would require the valve to shift position after exposure to radiation in excess of 20 megarads. *Id.* at 24.

11. One of the two model A-16 valves with ethylene propylene elastomers completed a sufficient portion of the HELB environmental testing to simulate operation for more than 1 year after a design-basis accident, which is the length of time that Westinghouse's generic specifications require the valves to be able to operate after such an accident. It then experienced performance problems prior to the completion of the full 30-day HELB test period. In the HELB environmental testing, a period of 3.65 days at 265°F following the second transient simulated 1 year of actual post-accident service. The model A-16 valve would not actuate at the minimum dc voltage (90 V dc) when energized 13 days into the test. When the voltage was increased to 125 V dc, the valve actuated and continued to require at least 100 V dc to actuate for the remainder of the 30-day test period. *Id.* at 24-25. Later inspection of the valve revealed that the increase in the voltage needed to actuate the valve had resulted from moisture and chemical spray entering the valve solenoid enclosure and over time reducing the coil insulation resistance. This moisture entered the solenoid housing through the conduit nipple opening through which the electrical leads provide electric power to the solenoid. In the test, that opening was not required to be leaktight and thus was not hermetically sealed. The seal for the conduit opening is not part of the valve; the conduit seal is supplied by Applicants rather than by ASCO, and Applicants are responsible for its leaktight integrity. Further, Applicants state that moisture entering the solenoid housing of any of the ASCO solenoid valves at VEGP cannot prevent that valve from performing its safety-related function. *Id.* at 25-28. We agree; for if moisture caused the solenoid of any valve to fail, such a failure would put that valve and the valve or damper it controls into a safe configuration.

12. The other model A-16 valve with an ethylene propylene elastomer performed successfully before, during, and after the HELB environmental

testing. Upon disassembly after the full 30-day HELB testing period and the final operational check, the diaphragm of the valve was found to be stuck to the valve body, which caused a tear in the diaphragm. This sticking of the diaphragm was stated as not representing a test failure because it occurred after successful completion of the HELB testing and final operational tests. Moreover, the 30-day testing period to which the valves were subjected in the HELB testing simulated approximately 8 years of service after a design-basis event, which provided a considerable margin over the 1-year period that Westinghouse generically specifies that the valves be operational following a design-basis event. *Id.* at 28.

13. In the HELB environmental testing, the model A-21 valve, which had resilient seats made of viton elastomers, would not shift to its de-energized position on the twelfth day of the test period. While the model A-21 valve did not successfully complete the full 30-day HELB environmental testing, the 12-day period that the valve continued to operate after exposure to accident conditions represented in excess of a year of post-accident operation at VEGP. Therefore, those test results do provide a basis for concluding that the A-21 valve is qualified for use at VEGP. However, ASCO restricts their qualification to applications where the valves will not be required to shift position following exposure to gamma doses in excess of 20 megarads. *Id.* at 28-30.

14. The joint Westinghouse/ASCO testing program qualified the ASCO model A-16, A-20, and A-6RF solenoid valves to the Westinghouse-specified generic HELB environmental extremes of (a) a peak temperature of 420°F, (b) pressure of 57 psig, and (c) a chemical spray of 2500 ppm boron buffered with sodium hydroxide to a pH of 10.5. *Id.* at 30. Based upon the NRC Staff's evaluation of the Franklin tests (discussed later), Westinghouse subsequently modified the temperature profile to which it considers the model A-16 valve to be qualified to reflect a peak temperature of 400°F. *Id.* at 48-49; also see ¶ II.29, *infra*.

Testing by Isomedix, Inc.

15. As reported in Isomedix Test Report AQS21678 Rev. A, July 1979, Isomedix, Inc., performed qualification testing for ASCO on several models of ASCO solenoid valves. The test valves included one model A-16, one model A-20, and one model A-21. ASCO also tested a model A-6F valve, which differs from the A-6RF valves used at VEGP only in that it has metallic rather than resilient seats. The models A-16, A-20, and A-21 had resilient seats of ethylene propylene. The testing program was based upon IEEE 323-1974, IEEE 382-1972, IEEE 344-1975, and IEEE 382-ANSI N278.2.1 (Draft 3, Rev. 1, June 1977) "Draft American National Standard for the Qualification of Safety-Related Valve Actuators." *Id.* at 31-32.

16. In this testing program, Isomedix thermally aged the test valves at a temperature of 268°F for 12 days to simulate a design life of 4 years. During that thermal aging, the valves were continuously energized except for 5 minutes once every 6 hours when they were cycled by being de-energized. The valves were then radiation aged and wear aged. Next, the valves underwent seismic simulation, vibration endurance testing, and design-basis-event environmental radiation exposure. Finally, Isomedix exposed the valves to simulated LOCA conditions. Those conditions included a peak temperature of 346°F and peak pressure of 110 psig that were imposed for approximately 3 hours. The performance of the valves was observed throughout the tests. As in the Westinghouse/ASCO testing program, certain anomalies occurred in valve performance. Evaluation of those anomalies has shown that they do not call into question the qualification of the valves tested for use at VEGP. The model A-16, A-20, and A-6F valves performed satisfactorily. The model A-21 valve initially utilized by Isomedix in the test program developed excessive seat leakage (50 standard cubic feet per hour) both in the energized and de-energized states after 7 days of the thermal aging portion of the test procedure. The cause of the excessive leakage was determined to be dirt in the valve that came from piping attached to the valve as part of the test setup. Because the source of the performance problems with the model A-21 valve was externally introduced contaminants resulting from a deficiency in the test apparatus, ASCO substituted another model A-21 valve in the test. *Id.* at 33-34.

17. This new model A-21 valve was thermally aged at 295°F for 100 hours and was cycled every 2 hours. Isomedix chose this higher temperature and lower thermal aging period to accelerate the test program. After approximately 60 hours of this thermal aging, the valve started leaking in the energized state, but it shifted properly and had no leakage in the de-energized state. Isomedix determined that the seat leakage resulted from the softening and resultant degradation of valve elastomer material caused by the higher temperature of 295°F used in the thermal aging. Normal 140°F ambient temperature would not cause noticeable softening of this material. As the valve performed its safety function, the thermal aging continued and the other tests were conducted on this valve in the same manner as on the other test valves. As a result of the seat leakage encountered during thermal aging, ASCO reduced the specified maximum operating pressure differential at which the model A-21 valve can operate from 200 psig to 150 psig. This change resulted in a 25% load reduction on the resilient seat. *Id.* at 34-35.

18. At the end of the LOCA simulation, the coil of the model A-21 valve had an insulation resistance of less than 1 megohm, as a result of spray solution in the solenoid enclosure having degraded the coil insulation. The spray solution entered the solenoid enclosure as a result of a breakdown of the plastic covering on the flexible electrical conduit through which the electrical leads to

the solenoid passed. That conduit was qualified for peak temperatures of only 120°F. Isomedix concluded that the coil would have been satisfactory except for the adverse effect of the spray solution, which condition resulted from the use of an unqualified conduit and not from any problem with the model A-21 valve itself. *Id.* at 35. As noted previously, moisture entering the solenoid housing of any of the ASCO solenoid valves used at VEGP cannot prevent that valve from performing its safety-related function. *Id.* at 26-28.

19. The environmental extremes to which the ASCO valves tested by Isomedix were qualified include (a) a peak temperature of 346°F, to which temperature the valves were exposed for approximately 3 hours; (b) peak pressure of 110 psig; and (c) a chemical spray consisting of 3000 ppm boron buffered with sodium hydroxide to a pH value of 10. *Id.* at 36.

Testing by Franklin Research Center (FRC)

20. As reported in NUREG/CR-3424, in 1981 FRC initiated a testing program on ASCO solenoid valves under a contract from the NRC. *Id.* That testing program was not intended to be an environmental qualification testing program but to be a research program to test qualification methodology. Masciantonio, ff. Tr. 550, at 3-4, 11. The valves tested by FRC included two model A-16 valves, one model A-20, and one model A-21, all with ethylene propylene elastomers. FRC also tested a model A-6F valve, which is the same as the model A-6RF valves used at VEGP except that it has metallic rather than resilient seats. Baenteli *et al.*, ff. Tr. 517, at 36.

21. Following functional tests, FRC artificially aged one of the model A-16 valves and the model A-20, A-21, and A-6F valves to simulate a 4-year life at 140°F. Those valves were irradiated to a total integrated dose of 50 megarads and then exposed to a temperature of 268°F for approximately 15 days. The valves were cycled 2000 times over the thermal aging period while at that elevated temperature. The other model A-16 valve had been naturally aged by ASCO at 140°F for 3 years, without any radiation exposure. That valve had been cycled 2000 times at room temperature. *Id.* at 36-37, 39. Following its artificial aging, the model A-21 valve was removed from the test program because of seat leakage. *Id.* at 38. Applicants concluded that the seat leakage encountered by FRC with the artificially aged model A-21 valve that it tested does not call into question the environmental qualification of that model valve for use at VEGP, as discussed in ¶ II.22.

22. The severity of the artificial aging process employed by Franklin was a primary cause of the A-21 valve seat performance in the FRC tests. The artificial thermal aging process employed by FRC imposed conditions on the elastomer parts of the valves that were far in excess of normal conditions or the standards for accelerated aging established by IEEE 323-1974. *Id.* at 37. Cycling

at high aging temperatures is not a normal condition for the valves and presents a very severe challenge to elastomer parts. *Id.* at 44. In its test report, FRC acknowledged that its artificial aging process was overly severe. NUREG/CR-3424 at 2-64. In a separate Appendix to NUREG/CR-3424 describing the thermal aging analysis, one of the report's authors concludes that "it was inappropriate to cycle a solenoid valve containing elastomeric seals at ambient temperatures in excess of normal rated ambient temperatures (140°F/60°C and 180°F/82°C for the valves discussed in this report)." *Id.* at C-1; Baenteli *et al.*, ff. Tr. 517, at 37-38. Because FRC's test conditions were not representative of conditions the A-21 valve might experience in a nuclear facility such as VEGP, the test results have no applicability to and cast no doubt upon the environmental qualification of the model A-21 valve for use at VEGP. *Id.* at 49-50.

23. All of the valves then underwent pressurization testing, vibration aging, resonance search, seismic testing, design-basis-event radiation exposure, and a simulated composite LOCA and MSLB exposure. *Id.* The ASCO model A-6F valve performed satisfactorily through all of the tests. The model A-20 valve functioned throughout the tests. In the functional testing following the completion of the LOCA/MSLB simulation, however, the model A-20 valve did experience seat leakage. No seat leakage had been observed prior to that point, including during the LOCA/MSLB simulation, and the seat leakage did not prevent the valve from being cycled. *Id.* at 40, 49. These results do not call into question the qualification of the model A-20 valve to the conditions to which it was tested in the Westinghouse/ASCO testing program because of the excessively severe artificial aging process used by FRC. *Id.* at 49.

24. The model A-16 valve that had been artificially aged could not be cycled properly between the first and second transients of the composite LOCA/MSLB simulation. Prior to the start of the second transient, FRC was again able to cycle the valve, which continued to function until 4 days elapsed time into the second LOCA/MSLB simulation. At that time, the test valve cycled to the open position (i.e., process cylinder pressurized) when energized but did not transfer back when de-energized. Further attempts to cycle the valve were unsuccessful. *Id.* at 41. As with the other test valves that FRC artificially aged, the differences in the performance of the artificially aged A-16 valve in the FRC tests and in the prior Westinghouse/ASCO tests can be attributed to differences in test procedures, particularly the overly severe artificial aging procedures used. *Id.* at 44.

25. The naturally aged model A-16 valve stopped cycling between the first and second LOCA/MSLB transients, began to function again, and continued to operate until 25.6 hours into the second transient. After that point no further cycling could be accomplished. *Id.* at 42. The Applicants attribute this failure to differences in the testing procedures used in the joint Westinghouse/ASCO testing program and in the FRC tests. The target peak temperature during the LOCA/MSLB simulations in both testing programs was 420°F. The actual tem-

perature peaks reached in the Westinghouse/ASCO tests for the two transients were 440°F and 450°F. For the two transients in the FRC LOCA/MSLB simulation, the temperatures peaked at 450°F and 466°F. Thermocouple data from the test chamber in the Franklin test indicate that the surface temperature of the naturally aged model A-16 valve, which would lag behind the test chamber temperature, reached 410°F, substantially higher than the 350°F to 360°F temperatures reached by any other valve in the test chamber that had a thermocouple either inside its coil enclosure or taped to its body, including the other model A-16 valve. The substantial difference in the temperatures reached by the two A-16 valves indicates that the mass flow rate and velocity of steam at each valve were different and that the valves in the test were not exposed to uniform conditions. When the valve reached a temperature of 410°F, the elastomer in the valve was well above its damage threshold and would degrade rapidly. *Id.* at 47-48.

26. With respect to the artificially aged valves in the FRC tests, the NRC Staff discounts their failure, concluding that those test results were inconclusive due to the severe preconditioning to which those valves were exposed. With respect to the naturally aged model A-16 valve, the NRC Staff decided that its failure in the FRC tests did call into question the results obtained with that valve during the joint Westinghouse/ASCO testing program. That model of valve, the NRC Staff concluded (IN 84-23, April 1984; IN 85-08, January 1985), was acceptable for use only under the environmental conditions to which it had been tested earlier by Isomedix. *Id.* at 42-43. Masciantonio, ff. Tr. 550, at 4, 13-14, 17.

27. In light of the NRC Staff's evaluation of the FRC test results, Westinghouse has modified the generic composite LOCA/MSLB temperature and pressure profile to which it considers the model A-16 valve to be qualified by reducing the peak temperature during each transient to 400°F. A thermal lag analysis performed by Westinghouse for the model A-16 valve, which analysis determines the temperature reached by the valve itself, has shown that upon exposure to the conditions shown in the modified Westinghouse LOCA/MSLB profile, the valve itself would reach maximum temperature of 346°F that was reached by the model A-16 valve in the qualification testing program performed by Isomedix. Baenteli *et al.*, ff. Tr. 517, at 48-49; *also see* ¶30, *infra*. The NRC Staff has reviewed the thermal lag analysis and concluded that the approach used to generate the derated Westinghouse generic LOCA/MSLB profile is reasonable and is acceptable as a means of establishing an environmental qualification level for the model A-16 valve. Masciantonio on 10.5, ff. Tr. 550, at 14-15. The Board has independently reviewed the Westinghouse analysis and finds it to be appropriate. We also observe that the only valve failures attributed to valve exposure to an unacceptably high temperature occurred in qualification

tests deemed to be unacceptable. Thus the high temperature (340°F) allegation of this contention (§ II.1, *supra*) is without merit.

Fitness of Valves for Use in VEGP

28. Having reviewed in the preceding paragraphs the preoperational environmental testing programs undertaken to qualify certain models of ASCO valves, we turn now to expected conditions and functional requirements for those valves to assess their fitness for duty in the VEGP, based upon the test program results.

29. Applicants describe three duty environments at VEGP pertinent to the performance of ASCO valves: inside of containment, outside of containment and away from main steam isolation valves (MSIV), and outside of containment and near MSIVs. The maximum environmental extremes to which the ASCO valves located inside of the VEGP containment might be subjected under accident conditions at VEGP are (a) a peak temperature of 400°F, (b) pressure of 50 psig, (c) radiation of 200 megarads total integrated dose, and (d) a chemical spray of 2000 ppm boron buffered with sodium hydroxide to a short-term pH (less than 100 minutes) of 10.5 and a long-term pH (more than 100 minutes from the beginning of the LOCA) of 8.5. Baenteli *et al.*, ff. Tr. 517, at 50. Most of the equipment rooms outside of the containment are subject to mild environmental conditions even following postulated design-basis accidents. The harshest environment that would be experienced under accident conditions by ASCO valves outside of the containment, except in the MSIV areas, is a peak temperature of 250°F, a peak pressure of 3.5 psig, and radiation of 100 megarads total integrated dose. *Id.* at 51. The most severe temperature and pressure conditions to which safety-related ASCO valves located outside of the containment might be exposed would occur in the MSIV areas. The conditions to which the Applicants have required safety-related equipment located in the MSIV areas outside of the containment to be qualified are a peak temperature of 320°F, a peak pressure of 15 psig, and radiation of 50 megarads total integrated dose. The Applicants have recently determined, however, that the peak temperature in the MSIV areas outside of the containment could exceed 320°F in the event of a steam-line break outside of containment that resulted in a steam generator tube bundle being uncovered, causing superheated steam to be released. *Id.* at 51-52.

30. The model A-16 ASCO solenoid valve is used in safety-related applications at VEGP both inside and outside of the containment. One A-16 valve is located in the MSIV area outside containment. It, however, performs no safety-related function that could be compromised by a steam-line or feed-line break in the MSIV area. The A-16 valve has been shown to be environmentally qualified for use at VEGP either inside or outside of the containment by

both the Westinghouse/ASCO and the Isomedix qualification testing programs as supplemented by a thermal lag analysis performed by Westinghouse and reported in WCAP-8687, Supp. 2 — HO2A/HO5A Addendum 2, Rev. O, January 1985. That thermal lag analysis demonstrated that, for the modified Westinghouse LOCA/MSLB profile with a peak temperature of 400°F, the maximum temperature that would be reached by the model A-16 valve under LOCA/MSLB conditions would be below the maximum temperature of 346°F that was reached by the model A-16 valve under the Isomedix testing program. The temperature conditions to which the model A-16 ASCO valves located inside and outside of the containment at VEGP must be environmentally qualified are enveloped by the conditions profiled in Westinghouse's modified generic LOCA/MSLB profile, which envelops the Staff's accepted accident profile for VEGP. *Id.* at 54-56; Masciantonio, ff. Tr. 550, at 15.

31. The model A-21 ASCO solenoid valve is used in safety-related applications at VEGP only in areas outside of the containment, including the MSIV areas. Baenteli *et al.*, ff. Tr. 517, at 56. For all safety-related applications of the A-21 valve, the most extreme pressure and radiation conditions to which that valve might be subjected are enveloped by the conditions to which it was tested in the Isomedix testing program. The most extreme temperatures to which the A-21 valves might be exposed at VEGP would occur in the MSIV areas as a result of superheat conditions following a main steam-line break. For those model A-21 valves located in the MSIV areas at VEGP, Westinghouse has performed a thermal lag analysis using temperature profiles generated by Bechtel and based upon generic mass and energy release data developed by the Westinghouse Owners Group addressing the superheat issue. That analysis demonstrates that under the worst-case conditions, the temperature of the model A-21 valves located in the MSIV areas would not exceed 332°F, which is significantly below the 346°F temperature to which those valves were qualified in the Isomedix tests. *Id.* at 56-57. Further evidence of the environmental qualification of the A-21 valve for use at VEGP was provided by the joint Westinghouse/ASCO testing program. Although the test valve representative of the model A-21 valve failed during the HELB environmental testing in the joint ASCO/Westinghouse qualification program, that failure did not occur until 12 days into the test sequence, a period that simulated in excess of a year of post-accident operation at VEGP. *Id.*

32. The model A-20 ASCO solenoid valve is used to perform safety-related functions both inside and outside of the VEGP containment, including the MSIV areas. This model of valve has been shown to be qualified for use in the environmental conditions to which it might be exposed at VEGP by the joint Westinghouse/ASCO testing program and the Isomedix testing program. The conditions to which the valve was tested in the Westinghouse/ASCO program exceeded the most severe conditions to which that valve might be subjected at VEGP inside

or outside of the containment in areas other than the MSIV areas. For those model A-20 valves located in the MSIV areas outside containment, the thermal lag analysis performed by Westinghouse for model A-21 valves located in the MSIV areas establishes that the temperature of the ASCO solenoid valves in that area will not exceed 332°F, which is significantly less than the temperature of 346°F reached by those valves in the Isomedix tests. The model A-20 valve is similar in weight and has less surface area than the model A-21 valve. Therefore, it would not reach a peak temperature greater than the peak temperature of 332°F that the thermal lag analysis demonstrated might be reached by the model A-21 valve in the MSIV areas. *Id.* at 57-58.

33. The environmental qualification of the model A-6RF ASCO solenoid valve has been demonstrated by the joint Westinghouse/ASCO qualification testing program. No model A-6RF solenoid valves are used inside the containment or in the MSIV areas at VEGP. All of these valves are located inside the auxiliary building and are subject to a peak temperature of less than 250°F. Therefore, ASCO solenoid valve model A-6RF is qualified for use in its safety-related applications at VEGP. *Id.* at 58-59.

34. The five specific issues identified by the Board in its denial of Applicants' summary disposition motion (listed at ¶ II.1, *supra*) are now addressed.

Issue (1)

35. The Applicants testified that the possibility of a failure of an ASCO solenoid valve at VEGP that might result in its associated air-operated valve or damper not assuming a safe position cannot be eliminated completely. One example of such a failure would be a gross leak of instrument air across the solenoid valve seat that exceeded the exhaust capacity of the valve's exhaust port. This could prevent the associated air-operated valve or damper from attaining its safety-related position. The testimony of the Applicants demonstrated, however, that VEGP systems are designed so that no single failure of an ASCO solenoid valve would jeopardize safe plant operation, and the environmental qualification testing performed on the ASCO solenoid valves provides assurance that common-mode failures of those valves will not occur. Baenteli *et al.*, ff. Tr. 517, at 60-65. The Staff stated that these tests were properly conducted in accordance with accepted standards, and all anomalies in valve performance were adequately addressed. The Staff further stated that a site audit will be conducted prior to licensing to verify that a record of environmental qualification in accordance with 10 C.F.R. § 50.49(j) exists and is maintained. Masciantonio, ff. Tr. 550, at 12, 17. We find that the foregoing adequately addresses valve failures, that no unsafe configuration will occur, and that Issue (1) is resolved in favor of Applicants.

Issue (2)

36. The testimony presented at the hearing demonstrated that for all safety-related equipment, including the ASCO solenoid valves, the Applicants have specified in their equipment qualification program that equipment operability for a period of 1 year following a design-basis event must be demonstrated. That 1-year period of post-accident operability, however, greatly exceeds the interval for which safety-related ASCO solenoid valves at VEGP would actually have to remain operable following the initiation of a design-basis accident. The safety function performed by all of the ASCO solenoid valves used at VEGP is to de-energize, thereby venting the air operator of the associated process valve or damper. Once de-energized, the ASCO solenoid valves are not required to shift position again in response to any accident conditions. Those ASCO solenoid valves that are de-energized due to automatic safety signals will complete their safety-related function within seconds. The other ASCO solenoid valves would be de-energized by remote manual plant operator action, which would occur within about 30 minutes after sufficient alarm or other indication of the occurrence of the initiating event or in response to plant emergency operating procedures. The de-energization of the ASCO solenoid valves would thus be complete within a few seconds (or at most within several minutes) after the initiation of the design-basis event. Baenteli *et al.*, ff. Tr. 517, at 18-19.

37. The environmental qualification testing performed on the ASCO solenoid valves by Westinghouse/ASCO and Isomedix has established the capability of those valves to withstand accident conditions and continue to operate properly for the period in which they would have to perform their safety-related function. In those testing programs the valves were aged to their end-of-lifetime condition for normal environments and then exposed to accident conditions. Following exposure to accident conditions, the valves were required to continue functioning properly for a period that simulated several years of post-accident operation. *Id.* at 31, 33. This testing established that the valves would remain operable following an accident for a period greatly in excess of the time during which they might be required to perform their safety-related function at VEGP. *Id.* at 18-19. In addition, as discussed in ¶ 44, *infra*, Applicants' maintenance and surveillance program will verify that in-service valve performance will be satisfactory. We find that Issue (2) is resolved in Applicants' favor because the bases for post-accident operability and in-service availability at any arbitrarily specified time have been satisfactorily explained.

Issue (3)

38. The Applicants testified that moisture entered the solenoid housing of one of the model A-16 valves tested by Westinghouse/ASCO through the conduit

nipple opening as a result of the test setup. ASCO does not supply a seal for the conduit nipple opening with its valves. Since the moisture problem originated from a test setup deficiency rather than from the valve itself, that problem does not evidence a potential quality control deficiency with ASCO solenoid valves. *Id.* at 26. Also, if a similar moisture problem were to occur with any ASCO solenoid valve used at VEGP, it could not affect that valve's ability to perform its safety-related function, which is to vent the air operator of the associated air-operated process valve or damper. The design of the solenoid housing is such that the intrusion of moisture into the housing does not affect the ability of the solenoid core to shift into its de-energized position. Because the ASCO solenoid valves utilized at VEGP perform their safety-related function when the coil is de-energized, a valve's inability to shift position when energized to the minimum dc voltage specified, as occurred with the model A-16 valve in the joint Westinghouse/ASCO testing program, does not compromise the valve's ability to perform its safety-related function. *Id.* at 26-28. We conclude that moisture within solenoid housings at VEGP does not compromise ASCO valve safety performance and find that Issue (3) has been properly disposed of in Applicants' favor.

Issue (4)

39. The Applicants testified that for its solenoid valves operating on direct current, ASCO specifies a nominal applied voltage of 125 volts (125 V dc), with an acceptable operating voltage range of 90 to 140 volts. For valves operating on alternating current, ASCO specifies a nominal voltage of 120 volts of 60-cycle alternating current (120 V ac), with an acceptable operating range of 102 to 132 volts. At VEGP, the power supplied to ASCO solenoid valves is designed to be either 124 V dc or 120 V ac, and the extreme voltage values expected on the VEGP electrical distribution system are within the acceptable operating voltage ranges specified by ASCO. *Id.* at 10-11.

40. ASCO's specifications require that the air supply to the solenoid valves be instrument-quality air. The VEGP instrument air system provides a continuous supply of filtered, dry, oil-free compressed air that is of the quality recommended in the Instrument Society of America's Quality Standard for Instrument Air, ISA-S7.3. *Id.* at 11. [The Board notes that elastomer integrity can be degraded if the quality of instrument air is not maintained and if other than manufacturer's recommended solvents and lubricants are used in the cleaning and servicing of valves.] The operating pressure differential for the air supply must range between (a) the maximum differential pressure between the inlet and outlet sides of the valve against which the solenoid can safely operate and (b) the minimum operating pressure differential required for dependable operation. The range of acceptable operating pressure differentials specified by ASCO differs

for each model of valve. The operating pressures for the ASCO solenoid valves at VEGP are within the acceptable operating pressure differential range specified by ASCO for each of the models of ASCO solenoid valves used at VEGP. *Id.* at 11-12.

41. After manufacture and assembly, ASCO subjects each valve to a factory acceptance test that verifies the valve's operability and seat integrity. To pass this test, valves with resilient seats must have no detectable seat leakage. The manufacturing tolerances set by ASCO, however, are not related to leakage rates that would affect valve performance. *Id.* at 12-13. The amount of seat leakage that would affect an ASCO solenoid valve's ability to perform its safety-related function at VEGP, which is to vent the air operator of the associated process valve or damper, would depend upon several factors, including the size of the vent port in the solenoid valve, the resistance to air flow in the instrument piping between the vent port and the actuator pressure chamber in the air operator of the process valve, and the residual pressure in the actuator pressure chamber. Using a conservative analysis, the Applicants have determined the maximum tolerable leakage rates for the ASCO solenoid valves used to perform safety-related functions in the containment and MSIV areas at VEGP to be 3000 SCFH for the model A-16 valve, 75 SCFH for the A-20 valve, and 555 SCFH for the A-21 valve. *Id.* at 14-17.

42. ASCO's installation and maintenance instructions for the four types of ASCO solenoid valves used in safety-related applications at VEGP state that excessive leakage warrants inspection of the valve. At VEGP, excessive leakage in the ASCO solenoid valves would be monitored through operation of and periodic testing of the associated process valve or damper. If, during normal operation or in-service testing, the process valve or damper fails to cycle or cycles sluggishly, then the ASCO valve would be checked. *Id.* at 13, 67.

43. The Applicants testified that while the seat leakage exhibited by the A-21 valve tested by FRC could have increased had it been subjected to the remaining aspects of the testing program, any additional test results would have had little meaning in light of the overly severe artificial aging temperature to which the model A-21 valve was subjected by FRC. The excessive severity of that artificial aging process was a primary cause of the breakdown of the valve's elastomer material that produced the gross seat leakage found by FRC. *Id.* at 39. We find that ASCO's specifications are being met for ASCO valves at VEGP and that test duration during preoperational qualification is not a cause for concern. Thus, Issue (4) has been addressed to our satisfaction.

Issue (5)

44. In their testimony, the Applicants described the manner in which the valve specimens used in the qualification testing were obtained. Those valves

were procured from ASCO in the same manner as any valves supplied to a nuclear plant such as VEGP. The valves tested were built using the same production procedures and using the same materials as valves that would be supplied to the field. ASCO's quality assurance program, which has been audited by Westinghouse and other vendors, ensures that materials are not changed in the valves, that material suppliers remain the same, that identical production procedures are followed for every valve, that drawing changes are not made, and that design changes are not made. Everything that can be done to ensure that the valve tested is identical in design, materials, construction, and testing to the valves supplied to a nuclear facility such as VEGP is done. Cesarski, Tr. 537-38.

45. The Applicants also discussed the margins present in the qualification testing. The test conditions to which the test valves were exposed in the joint Westinghouse/ASCO testing program included margins in accordance with requirements of IEEE 323-1974 and 10 C.F.R. § 50.49(e)(8). The activation energy employed in establishing the length of the thermal aging portion of the environmental qualification program was the lowest activation energy for any of the materials in the valves. The test conditions selected for the remaining aging portions of the program were appropriate for a service life of 40 years even though the qualified life of the valves tested was 8 years or less. The LOCA/MSLB transients were applied twice in the design-basis-event portion of the testing program to provide margin as suggested by IEEE 323-1974. The actual peak temperatures reached during the LOCA/MSLB transients were 440°F and 448°F. The Westinghouse-specified generic qualification requirement was only 420°F. The actual test pressure during the LOCA/MSLB transients reached a peak of 68 psig, while the Westinghouse-specified generic qualification requirement was 57 psig. The valves were exposed to a total radiation dose of 2.05×10^8 rads, whereas the Westinghouse-specified generic qualification requirement is 1.82×10^8 rads total integrated dose. Westinghouse specified that the valves be able to operate for 1 year under post-LOCA conditions. Under the conditions used in the Westinghouse/ASCO testing, 3.65 days simulated that 1 year of post-accident operation, whereas the test valves were kept under those conditions for 30 days, which simulated approximately 8 years of post-accident operation. Baenteli *et al.*, ff. Tr. 517, at 30-31; Tr. 544-45.

46. The Applicants' testimony also demonstrates that additional margin exists between the most extreme conditions to which the ASCO solenoid valves might be exposed at VEGP and the conditions to which they are qualified. The most extreme conditions to which the Applicants require safety-related equipment located inside the containment to be qualified are enveloped by the conditions to which those model solenoid valves located inside the containment, the model A-16 and A-20 valves, have been exposed in qualification testing. Included in those extreme conditions to which the Applicants require equipment

to be qualified are margins of in excess of 40°F for peak temperature, in excess of 15% for peak pressure, and in excess of 20% for radiation. Baenteli *et al.*, ff. Tr. 517, at 51. Similarly, for those valves potentially exposed to the most extreme environmental conditions outside of the containment, the model A-20 and A-21 valves located in the MSIV areas outside the containment, the maximum conditions to which those valves might be exposed are well below the extreme conditions to which those valves were tested and analyzed. *Id.* at 54. Thus margin exists both in the qualification testing itself and in the difference between the conditions for which the valves are environmentally qualified and the conditions to which they might be exposed at VEGP. Accordingly, we find that Issue (5) with respect to possible performance differences between tested valves and those to be installed at VEGP is resolved in Applicants' favor, since qualification test results are not invalidated by this consideration.

47. At the hearing, the Intervenor presented testimony on Contention 10.5 from Dr. Howard Deutsch, employed by the Georgia Institute of Technology as a Senior Research Chemist. While the record shows no reason to question the qualifications of Dr. Deutsch as a chemist, his testimony reflected nothing in his educational background, training, or work experience that related to the nuclear industry or the environmental qualification of equipment for use in a nuclear facility. Deutsch, ff. Tr. 371, at 1; Deutsch, Tr. 360-62. His lack of involvement with subject matters relating to the contention under consideration leads us to give little weight to Dr. Deutsch's testimony in this proceeding. He repeated some of the anomalous valve behavioral results from the tests conducted on ASCO valves that are discussed earlier in this opinion, but he added no additional information; nor did he contradict information provided by Applicants and Staff. He did, however, raise two questions that, while outside the scope of the issues designated for hearing by the Board, were addressed by the Applicants.

48. The first question posed by Dr. Deutsch concerned the adequacy of testing of the ASCO solenoid valves at VEGP as part of the Applicants' maintenance and surveillance program, and whether continued operability of the valves would be adequately ensured. The Applicants described generally the procedure by which the maintenance and surveillance program for safety-related equipment has been developed at VEGP and discussed the preoperational and in-service testing that will be performed on ASCO solenoid valves and the associated process valves. This testing will verify the functionality of the ASCO solenoid valves and detect any significant degradation in valve performance. Baenteli *et al.*, ff. Tr. 517, at 65-68; Bockhold, Cesarski, Tr. 540-44. Our own review of the Applicants' proposed maintenance and surveillance program finds it to be satisfactory. (Also see ¶¶ II.B.12 and II.B.13, of our partial initial decision.)

49. The second question raised by Dr. Deutsch related to the orientation of the ASCO solenoid valves when installed at VEGP. Dr. Deutsch stated that the

orientation of the valves was important and expressed concern that it had not been adequately considered by the Applicants. Deutsch, ff. Tr. 371, at 5. The Applicants testified that the orientation of the valves had been considered, and the only limitation placed by ASCO upon the physical orientation of the models of solenoid valves used at VEGP was that the model A-6RF valves must be mounted vertically. Those valves are in fact mounted vertically. Cereghino, Tr. 530.

50. We find nothing in the testimony of Dr. Deutsch that contradicts any of the findings on Contention 10.5.

51. The entire hearing testimony of Applicants and Staff on Contention 10.5 is uncontroverted by Intervenor's testimony. We find Applicants' and Staff's testimony to be credible and persuasive. Their evidence addressed to the Board's satisfaction the original contention's challenge as well as each of the litigable issues identified in ¶ II.1, *supra*. Thus we find that those models of ASCO valves proposed for safety-related applications in the VEGP have been acceptably qualified environmentally and that all valves will be used in VEGP in a manner compatible with the parameters of testing. Additional assurance of the adequacy of these valves will derive from an operational maintenance and surveillance program to be implemented by the Applicants. Accordingly, the Board finds that Contention 10.5 is without merit and that Applicants have prevailed.

Reopened Record

52. During its deliberations about this contention, the Board decided that certain matters seemed not to have been dispositively dealt with in the evidence of record. For this reason, by letter of October 24, 1986, we apprised Applicants of our perceived need for additional information in affidavit form. In pertinent part, our letter stated as follows:

For each valve, the testimony gives the following results:

Valve	Test Temperature	Thermal Lag Analysis	Testimony Comment
NP-8316	346° F	345° F	"Accepted by Staff" <i>Id.</i> at 55
NP-8320	346° F	332° F	"Significantly Less" <i>Id.</i> at 58
NP-8321	346° F	332° F	"Significantly Below" <i>Id.</i> at 57

The Board is seeking to determine whether the cited temperatures provide meaningful margins that would provide confidence that these three valves have been satisfactorily qualified. Additionally, ASCO specification sheets provided as Exhibit F to the cited testimony give "working fluid" and "ambient" temperature values against which we are unable to judge the appropriateness of test conditions. If, during sustained periods of

normal operation, the valves are subjected to temperatures significantly in excess of ASCO's recommendations, would this compromise their ability to function as required? More information is needed before the Board can complete its evaluation of Contention 10.5. For example, with respect to temperature margins, the precision or uncertainty of all cited temperatures is needed. With respect to the ASCO specification sheets, an explanation of why the specification temperatures are considered to be compatible with VEGP temperature conditions is also required.

(Citations above are to Applicants' testimony of record, Baenteli *et al.*, ff. Tr. 517, at 55-58.)

The Applicants responded on October 30, 1986, with the affidavit of S.J. Cereghino and W.V. Cesarski, both of whom appeared before us during the hearing. The nature of that response caused the Board, on November 6, 1986, to issue an order reopening the record for the limited purpose of allowing us to consider information contained in Applicants' reply, together with any other information provided by the other parties in regard to Applicants' information. Subsequently, reply affidavits were received from Dr. Howard Deutsch, representing GANE, dated November 24, 1986; and from the Staff (A. Masciantonio), dated November 28, 1986. Applicants responded to the Deutsch submittal with affidavits by S.J. Cereghino and W.V. Cesarski and by Cereghino, Cesarski and George Bockhold, Jr. (a former witness) on December 5, 1986. After reviewing these materials, the Board on December 8, 1986, issued an order closing the record. We admit each of the referenced affidavits into the evidentiary record. For reasons discussed below, we decided that none of the information received into the reopened record merits altering our findings heretofore set forth regarding Contention 10.5.

53. The Board's inquiry of October 24, 1986 (excerpted above) addresses two areas of concern: the accuracy and adequacy of temperature margins (differences between qualification test temperatures and anticipated post-accident temperatures at VEGP) for the three models of ASCO valves; and the matter of whether the manufacturer's specifications regarding ambient and working fluid temperatures for these valves will be met at VEGP. In our order of November 6, 1986, reopening the record we stated that the second of these two areas does not involve a significant safety issue and it is not considered further.

54. Regarding the concern about temperature margins, in Applicants' response of October 30, 1986, the affiants stated that qualification test temperatures were measured by thermocouples capable of one degree accuracy and that temperature profiles and the temperature computed by thermal lag analysis were not assigned uncertainty values because they are conservative upper-bound values. October 28, 1986 Affidavit of Cereghino and Cesarski, at 4, 5, 3. Affiants further stated that subsequent to the hearing a Vogtle-specific post-accident temperature profile was derived using the methodology of Appendix 3 to NUREG-0588. *Id.* at 3. This, they explain, yields a lower containment

temperature profile than was cited in the hearing testimony wherein that temperature profile was based upon a generic Westinghouse analysis. From this, Applicants concluded that all three valve types will operate, under worst conditions, at temperatures at least 20°F lower than the qualification test temperatures to which they were subjected, in comparison with the margin affiants state is recommended by IEEE Standard 323-1974, namely, 15°F. *Id.*, *passim*.

55. In its November 28, 1986 submittal, Staff's affiant A. Masciantonio (also a hearing witness) stated that adequate temperature margins in excess of the IEEE recommendation (accepted by Staff) exist for all valves and detailed the situation for each of the three valves. With respect to valve model NP-8316, Staff stated that the 1°F margin in the Board's October 24, 1986 letter represented an incorrect interpretation of the hearing record. Staff explained why, when properly determined from hearing testimony, the margin (inside the containment) for that valve would be 48°F. As noted earlier (§ II.30, *supra*) no model NP-8316 located near a main steam-line isolation valve (MSIV) outside of the containment is called upon to perform a safety-related function. Regarding valve model NP-8320, the Staff explained its conclusion that the temperature margin is 21°F for its outside-containment, MSIV area location. This is based upon a post-hearing assessment by Applicants (approved by Staff) that the temperature to be encountered will be 399°F versus the qualification temperature of 420°F. Staff's review and approval of the analysis leading to this expected 399°F temperature will be reported in a subsequent SER Supplement. For the model NP-8321 valve, located outside containment in an MSIV area, Staff relied upon its acceptance, noted in BN 86-19, of Applicants' thermal lag analysis showing a worst-case maximum valve surface temperature of 326°F. When compared with the qualification test temperature of 346°F the margin was shown to be 20°F. All of these margins are greater than the Staff-accepted margin of 15°F recommended in IEEE Standard 323-1974. Having not yet reviewed the Vogtle-specific downward-revised containment temperature profile provided by Applicants' submittal (noted above), Staff neither accepted nor rejected it but held it to be unnecessary to its conclusion that the valves in question have been properly qualified. Staff advised that this revised profile will be reviewed but the results will not be available prior to license issuance. November 25, 1986 affidavit of A. Masciantonio, *passim*.

56. The November 24, 1986 affidavit of Dr. Deutsch, a hearing witness, addressed several matters:

- (a) Board Notification BN 86-18 and BN 86-19;
- (b) Several IE Information Notices;
- (c) Safety-related versus important-to-safety considerations;
- (d) A report "Impacts of Budget Cuts on NRC's Ability to Assure Safety," Victor Stello, Jr., Executive Director of Operations, dated April 30, 1986 (subsequently designated EDO report); and,

(e) Precision and uncertainty of temperatures.

These are summarized *seriatim*.

- (a) Dr. Deutsch's observations regarding the two Board Notifications expressed concern about Staff's acceptance of Applicants' resolution of the matters raised by Staff in BN 86-18. Deutsch then reviewed the anomalous behavior of certain of these valves during testing. He stated that based on these results (we assume this to include the two Board Notifications as well as the test behavior anomalies) he "would not conclude with great certainty that the valves were fully qualified to 346°F." November 24, 1986 Affidavit of Howard Deutsch, at 1-4.
- (b) Several IE Information Notices relating to problems with ASCO valve field use were identified and related to specific conditions of usage. The Board was requested to find these valves to be unsuitable for use under either normal or accident conditions. *Id.* at 4-5.
- (c) Dr. Deutsch expressed concern that Applicants have not given appropriate consideration to the applicable standard of "important to safety," presumably with respect to where and how the ASCO valves are to be deployed in the VEGP. *Id.* at 5-6.
- (d) The EDO report was cited for two propositions: that anticipated budget cuts leave the future performance of equipment in a TMI-2 type of event significantly more uncertain and increases the risk to the public; and that such budget cuts place in question the analytical approach used to compute the in-containment post-accident temperature profile specific to Vogtle. Deutsch stated that the EDO report represents important information, new in the sense that it was not distributed to the parties and to the Board. *Id.* at 6-7.
- (e) Finally, Dr. Deutsch characterized Applicants' response to the Board's question about temperature precision and uncertainty as inadequate and stated that the Staff found the methodology used to compute temperature profiles to be inadequate. He requested that the Board defer the granting of an operating license until such inadequacies are resolved. *Id.* at 7-8.

57. In one of its affidavits of December 5, 1986, responding to the Deutsch affidavit, Applicants' affiants Cereghino and Cesarski addressed only the Deutsch discussion of the EDO report. From their examination of the EDO report and the Deutsch affidavit, affiants explained the reasons why they found no basis to change their conclusion that the valves have been properly qualified. Applicants submitted a separate affidavit of Cereghino, Cesarski, and Bockhold in case the Board construed Dr. Deutsch's affidavit as a motion to reopen the record further. Applicants stated that this affidavit demonstrates Deutsch's comments to be untimely and lacking in significant safety issues that would affect

the outcome of the proceeding. Applicants' Response to Affidavit of Howard M. Deutsch, December 5, 1986, at 4-5.

58. The Board now addresses each of the above filings. Applicants' response to our inquiry about temperature uncertainties established that qualification test temperatures were measured using thermocouples that are expected to be accurate to 1°F. The temperatures derived from thermal lag and temperature profile analyses represent conservative upper-bound values to which Applicants did not assign errors. This information satisfies the Board's uncertainty about the credibility of the temperature margins stated in Applicants' hearing testimony. The post-hearing analysis of a Vogtle-specific post-accident containment temperature profile leads Applicants to conclude that ASCO valves within the Vogtle containment will experience lower temperatures and hence higher margins than were reported during the hearing, where the expected post-accident containment temperature was based upon a Westinghouse generic analysis. From this we may take increased confidence that satisfactory margins will exist, even though (as noted below) the Staff has not yet had the opportunity to review the Vogtle-specific containment temperature analysis. For those valves performing safety-related functions outside of containment and near MSIVs, Applicants' post-hearing analysis for Vogtle shows an expected temperature of 399°F compared with a qualification test temperature of 420°F. Thus the Board is satisfied that all margins will exceed the IEEE recommendation of 15°F.

59. Having reviewed the hearing record and the Staff's response to the Board's inquiry, we now are satisfied that we indeed erred in that inquiry where with respect to valve model NP-8316 we compared a test temperature of 346°F with a thermal lag temperature of 345°F (§ II.51, *supra*). Staff explained that the appropriate margin for this valve is 48°F, based upon Applicants' hearing testimony that showed an expected Vogtle peak temperature of 352°F and a test exposure temperature of 400°F. We are convinced of its correctness. Similarly, we concur in Staff's acceptance of Applicants' analysis of a 399°F temperature value in the MSIV area outside of the Vogtle containment leading to a 21°F margin assigned to valve model NP-8320 for which the environmental qualification test temperature was 420°F. Although not yet having reviewed Applicants' Vogtle-specific containment post-accident temperature profile, Staff pointed to the hearing record to show that without taking credit for the lowered Vogtle-specific containment temperature profile, the model NP-8321 valve will have a margin of 20°F versus the IEEE-recommended margin of 15°F. For these reasons we are convinced by Staff that our concerns about the size of temperature margins for the three valves identified in our inquiry are without foundation.

60. Items (a) through (e) of the Deutsch affidavit (identified at § II.55, *supra*) are now discussed. In his treatment of (a) involving Board Notifications BN 86-18 and BN 86-19, we find no probative evidence as to why the Staff should not have accepted as it did Applicants' response to the Staff's inquiry contained in

BN 86-18.³ (See our discussion of these extra-record notifications in our Introduction, pp. 902-04.) Deutsch's review of the anomalous behavior of certain of the valves adds nothing because each instance of an anomalous behavior has been explicitly disposed of in previous findings dealing with the hearing record. Hence we do not accept Deutsch's indefinite negative conclusion about valve qualification, further noting that, contrary to his statement, qualifications at temperatures other than 346°F also appear in the hearing testimony. Regarding prior IE Information Notices — item (b) — all such notices cited by Deutsch relate to conditions of usage and maintenance at other nuclear facilities. They comprise matters outside of the scope of Contention 10.5, since they do not relate to environmental qualification testing. Item (c) relates to whether Applicants have taken proper cognizance of items that are important to safety but not necessarily safety-related. The contention as filed and litigated has been concerned with qualification of the valves to perform safety-related functions. Now Intervenor seeks to introduce a new matter not previously identified as part of the litigated contention. We deem it to be outside of the scope of Contention 10.5 and it cannot be given further consideration in litigating this matter. Item (d) involves the EDO report on the anticipated impacts of budget cuts, which report we have reviewed, it having been submitted as an exhibit to one of the affidavits of December 5, 1986. The two excerpts from the EDO report quoted by Deutsch do not deal with existing regulation but with future research that would provide the basis for revisions to the rules and regulatory guides. They do not pertain to anything that would specifically question environmental qualification of the ASCO solenoid valves at VEGP. They are generic and conclusional in nature and we perceive in them no basis to challenge the adequacy of the qualification test program results. Finally, regarding item (e) — precision and uncertainty of temperatures — Deutsch faults Applicants' response as not being dispositive of the Board's concern. He stated that it is not sufficient to say the thermocouples used to measure test temperatures are capable of an accuracy of 1°F. This is a mere assertion without support and we give no credence to Deutsch's challenge. In addition, Deutsch stated that the Staff has found the methodology used to compute temperature profiles to be inadequate. We have looked for and found no such assessment by the Staff. Again we give no credence to this statement by Deutsch. Nothing in the Deutsch affidavit led the Board to construe it as a motion to reopen the record. If it were Intervenor's intention to do so, Intervenor would have had to comply with the requirements of 10 C.F.R. § 2.734, and, if

³ Applicants, to Staff's satisfaction, provided main steam-line break temperature profiles calculated for the locations in the MSIV area and performed a thermal lag analysis to demonstrate that the surface temperature of ASCO valve model NP-8321 exposed to the calculated conditions was within the surface temperature enveloped by the Staff-accepted qualification temperature for the valve. The Staff reviewed the methodology used in calculating the Vogtle-specific environmental conditions resulting from a main steam-line break in the MSIV area and found it to answer the questions Staff raised.

the affidavit were intended to justify any late-filed contentions, Intervenor would have had to comply with additional applicable regulations. No such action was taken. We found it unnecessary to review the Cereghino, Cesarski, and Bockhold affidavit. No basis was provided for the Board to inquire further.

61. Having reviewed all of the foregoing materials occasioned by our reopening the record, the Board finds as follows:

- The affidavits of Applicants and Staff convince us that temperature margins and uncertainties are acceptable and appropriate;
- The Deutsch affidavit is devoid of probative evidence that contravenes the information supplied by Applicants and Staff in response to our inquiry.

The Board concludes that none of the information supplied as the result of reopening the record merits altering any of our previous findings regarding Contention 10.5.

Conclusion

62. Applicants have assured that those models of ASCO valves to be employed at VEGP in safety-related functions are environmentally qualified. Contention 10.5 is without merit.

III. CONCLUSIONS OF LAW

Based upon review of the entire record in this proceeding including the Findings of Fact and Conclusions of Law contained in the partial initial decision of August 27, 1986, the Board concludes that

1. As to the contentions addressed in the proceeding, that there is reasonable assurance that, if operating licenses are granted to Applicants, that the activities authorized thereby can be conducted without endangering the health or safety of the public, will not be inimical to the common defense and security, and will be conducted in compliance with applicable NRC regulations;

2. As a condition precedent to the issuance of any operating licenses to the Applicants, it first must be determined by appropriate authority that the changed information contained in Applicants' letter of September 18, 1986, to the Appeal and Licensing Boards, pertaining to XLPO insulation that contains vinyl acetate, does not lead to a conclusion inconsistent with that of this Board on Contention 10.1. That conclusion is that Applicants have provided adequate assurance that certain polymer materials to be employed in components of the VEGP that perform safety-related functions are environmentally qualified.

3. As authorized by 10 C.F.R. §§ 2.760(a) and 50.57 and consistent with the condition in ¶ 2, above, the Director of Nuclear Reactor Regulation is authorized

to issue to the Applicants, upon making requisite findings with respect to matters not embraced in the initial decisions, licenses authorizing operation of VEGP.

IV. ORDER

WHEREFORE, IT IS ORDERED, as permitted by 10 C.F.R. §§ 2.760(a) and 50.57, and subject to the condition contained in ¶ 2 of the Conclusions of Law, that the Director of Nuclear Reactor Regulation is authorized to issue to the Applicants, upon making requisite findings with respect to matters not embraced in the initial decisions, the licenses authorizing operation of VEGP.

Pursuant to § 2.760(a), this Initial Decision will constitute the final decision of the Commission forty-five (45) days from the date of issuance, unless an appeal is taken in accordance with 10 C.F.R. § 2.762 or the Commission directs otherwise. (*See also* 10 C.F.R. §§ 2.764, 2.785, and 2.786.)

Any party may take an appeal from this Decision by filing a Notice of Appeal within ten (10) days after service of this Decision. 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 appellants' briefs filed (*see* 10 C.F.R. § 2.762(c)).

THE ATOMIC SAFETY AND
LICENSING BOARD

Morton B. Margulies, Chairman
ADMINISTRATIVE LAW
JUDGE

Gustave A. Linenberger, Jr.
ADMINISTRATIVE JUDGE

Dr. Oscar H. Paris
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 23rd day of December 1986.

[The Appendix has been omitted from this publication but can be found in the NRC Public Document Room, 1717 H St., NW, Washington, D.C. 20555.]

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