NUCLEAR REGULATORY COMMISSION ISSUANCES

OPINIONS AND DECISIONS OF THE NUCLEAR REGULATORY COMMISSION WITH SELECTED ORDERS

July 1, 1991 – December 31, 1991

Volume 34
Pages 1 – 376

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

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PREFACE

This is the thirty-fourth volume of issuances (1 - 376) of the Nuclear Regulatory Commission and its Atomic Safety and Licensing Appeal Boards, Atomic Safety and Licensing Boards, and Administrative Law Judges. It covers the period from July 1, 1991 to December 31, 1991.

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.

On June 29, 1990, however, the Commission voted to abolish the Atomic Safety and Licensing Appeal Panel, and the Panel ceased to exist as of June 30, 1991. In the future, the Commission itself will review Licensing Board and other adjudicatory decisions, as a matter of discretion. *See* 56 Fed. Reg. 29, & 403 (1991).

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

The hardbound edition of the Nuclear Regulatory Commission Issuances is a final compilation of the monthly issuances. It includes all of the legal precedents for the agency within a six-month period. Any opinions, decisions, denials, memoranda and orders of the Commission inadvertently omitted from the monthly softbounds and any corrections submitted by the NRC legal staff to the printed softbound issuances are contained in the hardbound edition. Cross references in the text and indexes are to the NRCI page numbers which are the same as the page numbers in this publication.

Issuances are referred to as follows: Commission--CLI, Atomic Safety and Licensing Boards--LBP, Administrative Law Judges--ALJ, Directors' Decisions--DD, and Denial of Petitions for Rulemaking--DPRM.

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

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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Kenneth C. Rogers
James R. Curtiss
Forrest J. Remick

In the Matter of **Docket No. 50-322**

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **July 25, 1991**

The Commission considers two emergency motions to stay the effectiveness of the Shoreham "possession-only" license (POL). Petitioners ask the Commission to order the Licensee to maintain the *status quo* at Shoreham: (1) to preserve U.S. Supreme Court Justice Stevens' jurisdiction to hear their appeal; and (2) to ensure that the Licensee does not take actions that it could take under the POL that would render full-power operation at Shoreham moot, pending the outcome of the D.C. Circuit's decision on the POL, which, if vacated, would revert back to a full-power license. The Commission denies both motions.

ORDER

This matter is before us once more on two separate "Emergency Motion[s] for Stay" filed by the Shoreham–Wading River Central School District and the Scientists and Engineers for Secure Energy (collectively, "Petitioners"). Both motions ask us to stay the effectiveness of the Shoreham "possession-only" license ("POL") amendment, but on different grounds. For the reasons stated below, we deny both motions.

First, Petitioners inform us that although the U.S. Court of Appeals for the District of Columbia Circuit and Chief Justice Rehnquist of the U.S. Supreme Court have denied their requests to stay the POL, they now intend to seek a stay from Justice Stevens of the Supreme Court. Therefore, they argue that we should order LILCO to preserve the *status quo* in order to preserve Justice Stevens' jurisdiction to hear their appeal. *See generally* First Emergency Motion for Stay. We find no compelling reason to grant that request in view of their previous opportunity to present their arguments to Chief Justice Rehnquist.

Second, Petitioners argue that the Commission should order LILCO to maintain the *status quo* because the Commission represented to the D.C. Circuit that if that Court vacated the POL, the license would revert to a full-power license. *See* Second Emergency Motion for Stay at 2; *Shoreham-Wading River Central School District v. NRC*, No. 91-1301 (D.C. Cir.) ("No. 91-1301"), NRC Opposition to Petitioners' Emergency Motion for Stay ("NRC Opposition") at 19 n.11 (July 12, 1991).

However, this representation responded to Petitioners' argument that there was no "legal" precedent for restoring a POL to a full-power license. *See* No. 91-1301, Petitioners' Emergency Motion at 18. Both the NRC and the United States noted that LILCO could take actions under the POL that would render full-power operations at Shoreham moot. *See* No. 91-1301, NRC Opposition at 19; No. 91-1301, United States Memorandum in Support of Petitioners' Emergency Motion (July 11, 1991), at 9-11. Moreover, as Petitioners concede, they correctly pointed out this fact to the D.C. Circuit in their own filings. *See* Second Emergency Motion for Stay at 2, *citing* No. 91-1301, Petitioners' Reply to Oppositions to Emergency Motion at 7-8 (July 17, 1991). Therefore, we fail to see how the Court could have been unaware of the possibility that LILCO could take action under the POL that could render further litigation regarding this matter moot.

Both Emergency Motions for Stay are denied.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 25th day of July 1991.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Ivan Selin, Chairman
Kenneth C. Rogers
James R. Curtiss
Forrest J. Remick

In the Matter of **Docket No. 50-029**
(10 C.F.R. § 2.206)

YANKEE ATOMIC ELECTRIC COMPANY
(*Yankee Rowe Nuclear Power Station*) **July 31, 1991**

The Commission denies a Petition for Emergency Enforcement Action and Request for Public Hearing. It orders reports, plans, and tests to be shared openly among all the participants to resolve remaining uncertainties.

NRC: JURISDICTION

The Commission always retains the power to take jurisdiction to consider and make the final decision on the issues raised in any petition. This power is exercised sparingly; however, a petition may present an enforcement question of sufficient public importance that the Commission concludes that it should make the decision.

RULES OF PRACTICE: *EX PARTE* COMMUNICATIONS

The Commission's rules on *ex parte* communications do not formally attach until a notice of hearing or other comparable order is issued.

RULES OF PRACTICE: *EX PARTE* COMMUNICATIONS; JURISDICTION (10 C.F.R. § 2.206 PETITIONS)

The mere filing of a petition requesting the Commission to issue an order does not invoke the *ex parte* rule; moreover, 10 C.F.R. § 2.206(c) specifically provides that the Commission retains the power to consult with the Staff on a formal or informal basis regarding the institution of proceedings.

AEA: SAFETY FINDINGS

NRC: HEALTH AND SAFETY RESPONSIBILITIES

REGULATIONS: SAFETY STANDARDS

The final objective of a plant-specific PTS study is to justify continued operation of the facility by demonstrating that the likelihood of a through-wall crack during continued operation is acceptably low.

ENFORCEMENT ACTIONS: LEGAL BASIS

REGULATIONS: SAFETY STANDARDS

Commission involvement in this matter is appropriate because the unique circumstances of the Yankee Rowe case have presented a situation that was not directly contemplated when the PTS rule and the steps to be followed when concerns arose were developed.

REGULATIONS: SAFETY STANDARDS

The overall goal of the Commission at the time it adopted 10 C.F.R. § 50.61 was to limit the probability of core damage due to a PTS initiating event to one-tenth of the overall risk of core damage frequency, or approximately 1 in 100,000 per reactor year.

REGULATIONS: SAFETY STANDARDS

The Commission affirms that the probability of PTS failure should be kept below the order of 1 in 100,000 per year, using best estimates of risk parameters.

REGULATIONS: SAFETY STANDARDS

PTS probability is not the only criterion for determining the significance of PTS concerns. A balance between prevention (i.e., reducing the probability of

a PTS event) and mitigation (reducing the conditional probability of a failure, given the occurrence of a PTS event) is also important.

TECHNICAL ISSUES DISCUSSED

The following technical issues are discussed: 10 C.F.R. Part 50, Appendix G; 10 C.F.R. Part 50, Appendix H; Pressure vessel integrity; Pressurized thermal shock events; Safety standards; Unresolved safety questions.

MEMORANDUM AND ORDER

I. INTRODUCTION

On June 4, 1991, the Union of Concerned Scientists and the New England Coalition on Nuclear Pollution (hereinafter "Petitioners") filed a Petition for Emergency Enforcement Action and Request for Public Hearing with the Commission, seeking the immediate shutdown of the Yankee Rowe nuclear power plant. The Petitioners asserted that the Yankee Rowe reactor violates the Commission's requirements for pressure vessel integrity; therefore, the Commission cannot have reasonable assurance that the facility poses no undue risk to public health and safety. The Petitioners also asserted that the NRC Staff has acquiesced in the Licensee's noncompliance with Commission requirements by giving the Licensee until at least the spring of 1992 to begin to come into compliance with NRC pressure vessel requirements.[1]

Because of this perceived failure by the Staff to exercise its responsibility to ensure compliance with NRC regulations, the Petitioners asked that the Commission itself act on their Petition, notwithstanding the provisions of 10 C.F.R. § 2.206 which provide that petitions for remedial action from members of the public such as this one are to be filed with the Executive Director for Operations.

In view of the request for emergency action, the Commission referred the Petition to the Staff for an immediate response to the request. On June 25, 1991, the Director of the Office of Nuclear Reactor Regulation issued a letter to Petitioners denying the request for emergency relief. The Director concluded that the Petition presented no new information regarding the integrity of the Yankee Rowe pressure vessel that called into question the Safety Assessment prepared by the Staff in August 1990. In that assessment, the Staff had concluded that

[1] Letter from Thomas A. Murley, NRC, to Andrew A. Kadak, YAEC, dated August 31, 1990, re: Yankee Rowe Reactor Vessel.

the facility was safe to operate through Cycle 21 (now estimated to end approximately April 1992). In the Director's view, the vessel condition continues to provide adequate protection of the public health and safety. Although the request for emergency relief was denied, the Director indicated that the specific issues raised in the Petition would be addressed in a further response.

On July 11, 1991, the Petitioners renewed their request for the Commission itself to undertake consideration of their Petition.[2] They reiterated their concern that the Yankee Rowe nuclear plant is operating in violation of NRC requirements for pressure vessel integrity and asserted that the Director's June 25, 1991 letter did not address the arguments submitted in their petition, but merely relied on the same information used to support the Staff's decision in August 1990 to permit continued operation of the facility. The Petitioners also asked the Commission to refrain from further *ex parte* contacts with the Staff and the Yankee Atomic Electric Company (YAEC) and to order an adjudicatory hearing to determine whether the Yankee Rowe facility complies with Commission requirements before the facility is allowed to resume operation.

While section 2.206 of the Commission's Rules of Practice provides that petitions of the nature before us now are to be filed with the Executive Director for Operations (who in turn refers them to the Director of the Office responsible for the subject matter addressed in the petition), the Commission always retains the power to take jurisdiction to consider and make the final decision on the issues raised in any petition.[3] This power is exercised sparingly; however, a petition may present an enforcement question of sufficient public importance that the Commission concludes that it should make the decision. The question on the safety of operation of the Yankee Rowe nuclear plant is such a case. Therefore, the Commission has elected to rule directly on the UCS/NECNP Petition rather than leave the decision to the Director of NRR.[4]

With respect to Petitioners' additional procedural request that the Commission refrain from contacts with the NRC Staff, the request has been denied. The Commission's rules on *ex parte* communications do not formally attach until a notice of hearing or other comparable order is issued. *See* 10 C.F.R. § 2.780(e)(1)(i). The mere filing of a petition requesting the Commission to issue an order does not invoke the *ex parte* rule; moreover, 10 C.F.R.

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[2] "Renewed and Supplemental Petition for Emergency Enforcement Action and Request for Public Hearing," dated July 11, 1991. Petitioners submitted a further supplement to their Petition on July 26, 1991, "Petitioners' Reply to NRC Staff's Proposed Decision Under 10 CFR Section 2.206."

[3] The regulation itself states, in pertinent part, that "[this] review power does not limit in any way either the Commission's supervisory power over delegated staff actions or the Commission's power to consult with the staff on a formal or informal basis regarding institution of proceedings under this section." *See Petition for Emergency and Remedial Action*, CLI-78-6, 7 NRC 400, 409 (1978).

[4] The Commission is not disturbing the Director of NRR's June 25, 1991 denial of the request for immediate shutdown of the facility. In our view, the Staff's evaluation of the safety issues supports the conclusion that the issues were not so grave as to warrant immediate shutdown of the facility.

§ 2.206(c) specifically provides that the Commission retains the power to consult with the Staff on a formal or an informal basis regarding the institution of proceedings such as requested here. However, the Commission has endeavored to make available to Petitioners and the public the full record of the facts and scientific opinions that have gone into this decision. We believe that all interested parties and the public are much better served in cases such as this by more communication, not less, so long as no one is precluded from obtaining information relied on by other parties. That is the course we have attempted to follow in reaching our decision in this matter.

II. BACKGROUND

Regulatory Framework

The issues raised by the Petition concern the integrity of the pressure vessel in the Yankee Rowe facility. All power reactors licensed by the Commission must satisfy the Commission's regulations relating to the integrity and material toughness of the reactor coolant pressure boundary set forth in 10 C.F.R. §§ 50.60 and 50.61 and 10 C.F.R. Part 50, Appendices G and H. Appendices G and H are intended to implement Criterion 31 of the Commission's General Design Criteria set forth in Appendix A to 10 C.F.R. Part 50. General Design Criterion 31 provides that the reactor coolant pressure boundary, which includes the pressure vessel, shall be designed with sufficient margin to assure that when stressed during operational and postulated accident conditions, it will behave in a nonbrittle manner and the probability of rapidly propagating failure will be minimized.

The provisions of section 50.60 describe acceptance criteria for fracture prevention measures for light-water power reactors during normal operation. All such reactors must meet the requirements for a fracture toughness and material surveillance program for the reactor coolant pressure boundary, as set forth in Appendices G and H of Part 50. Appendix G, section IV, establishes specific fracture-toughness requirements that the pressure vessel[5] must meet during system hydrostatic tests and any condition of normal operation, including any overpressure condition that might occur during routine operation. The reactor vessel beltline materials must maintain a specified toughness throughout the life of the vessel unless the licensee demonstrates, in a manner approved by

[5] Appendices G and H apply to all pressure-retaining components of the reactor coolant pressure boundary, which include the reactor pressure vessel. Because the pressure vessel is the particular component that is of concern to us in evaluating the safety issues at the Yankee Rowe facility, we will hereafter discuss the requirements only in terms of the pressure vessel.

the Director, NRR, that lower values of toughness will provide safety margins equivalent to the ASME Code requirements.

Appendix H requires each licensee to have a surveillance program to monitor changes in the fracture toughness of pressure vessel materials. Test data are to be obtained from material specimens exposed in surveillance capsules and periodically withdrawn from the reactor vessel.

The requirements in section 50.61 are designed to assess the pressure vessel's ability to withstand what are known as pressurized thermal shock (PTS) events. During certain transients and accidents that can be postulated to occur in pressurized water reactors, rapid cooling of the reactor vessel's internal surface can cause a temperature distribution across the reactor vessel wall. This temperature distribution produces thermal stresses on the reactor vessel. The effects of these thermal stresses are compounded if the vessel undergoes pressure stresses at the same time.

The fracture resistance of reactor vessel material is initially very high, and thus PTS events are generally not expected to cause vessel failure. However, the fracture resistance of the vessel decreases over the life of the vessel as it is exposed to fast neutron radiation from the core of the reactor. The rate of decrease is dependent on the chemical composition of the vessel wall and weld materials. If the fracture resistance of the vessel is reduced sufficiently by neutron radiation, severe PTS events could cause small flaws that might exist near the inner surface of the vessel to propagate through the wall, thereby threatening the integrity of the vessel, and ultimately the capability of the core cooling systems to cool the fuel in the vessel.

At normal operating temperatures, vessel materials are quite tough and resistant to crack propagation. As the temperature decreases, the metal gradually loses toughness. A "reference temperature for nil ductility transition" (RT_{NDT}) is a measure of the temperature region within which this change in toughness occurs. The higher the value of RT_{NDT}, the more brittle the vessel. The value of RT_{NDT} at a given time in a vessel's life is used in fracture mechanics calculations to determine whether assumed preexisting flaws would propagate when the vessel is subjected to overcooling events.

In section 50.61, the Commission adopted a value of reference temperature, to be used as a screening criterion, such that if the value of the reference temperature for a particular vessel is below that criterion, the risk from PTS events is acceptable without the need for further analysis. Each licensee must calculate the value of the reference temperature for its pressure vessel by the method specified in the rule. The screening criterion is calculated as a function of the copper and nickel contents of vessel materials and the neutron fluence and is called RT_{PTS} to distinguish it from reference temperatures using other procedures for calculating RT_{NDT}. Because the prescribed procedure is expected to yield conservative results under most accident scenarios, the

screening criterion is not a safety limit. It is a "tripwire" which, if breached, triggers a plant-specific analysis. Section 50.61(b)(4) requires that a licensee whose plant will exceed the screening criterion before expiration of the operating license must submit safety analyses to determine what, if any, modifications to equipment, systems, and operation are necessary to prevent potential failure of the reactor vessel as a result of postulated PTS events if continued operation beyond the screening criterion is to be allowed. These analyses must include a quantitative assessment of the risk of a PTS event due to operation of the particular facility, as well as the conditional probability of vessel failure and subsequent core melt, given the occurrence of the PTS event. The final objective of such a plant-specific PTS study is to justify continued operation of the facility by demonstrating that the likelihood of a through-wall crack during continued operation is acceptably low.

Section 50.61(b)(5) provides for Commission review of these analyses and for Commission approval before the plant may operate at RT_{PTS} values above the screening criteria. The Commission will consider factors significantly affecting the potential for failure of the pressure vessel in reaching a decision. However, the regulation does not specify criteria to be used in determining the acceptability of the risk of continued operation.[6]

Subsection (b)(6) of section 50.61 addresses the actions required if the Commission concludes that the plant-specific analysis, including any plant modifications proposed, does not provide a basis for approval of operation at values of RT_{PTS} screening criteria for a given facility. In such an event the facility may not be operated beyond the criterion unless the licensee requests and receives Commission approval based on an evaluation of additional modifications or new factors. Such modifications or new facts would reduce the actual or calculated potential for failure of the pressure vessel due to PTS events.

NRC Staff's 1990 Safety Assessment

The Yankee Rowe Nuclear Power Station is the first power reactor licensed to operate in the United States. The initial full-power operating license was issued in 1960. During the course of its duties to monitor operating nuclear power reactors, the NRC Staff raised certain concerns regarding reactor pressure vessel integrity. On July 5, 1990, the Licensee submitted an analysis of pressure

[6] Regulatory Guide 1.154, "Format and Content of Plant-Specific Pressurized Thermal Shock Safety Analysis Reports for Pressurized Water Reactors," provides guidance for the preparation of these analyses and describes the acceptance criteria that the NRC Staff would normally use in evaluating the licensee's analyses. The Regulatory Guide states that "if the plant-specific PTS analyses submitted by licensees in accordance with 10 C.F.R. 50.61 using the methodology described in this guide (or acceptable equivalent methodology) predict that the PTS-related, through-wall crack penetration mean frequency will remain less than 5×10^{-6} per reactor year for the requested period of continued operation, such operation would be acceptable to the staff."

vessel integrity to respond to the Staff's concerns. After a full evaluation of the information presented, on August 31, 1990, the NRC Staff issued its "Safety Assessment of the Yankee Rowe Vessel" (Safety Assessment), which concluded that there were substantial uncertainties concerning certain chemical and metallurgical characteristics of the Yankee Rowe reactor pressure vessel. The Staff directed the Licensee to develop a plan to resolve these issues prior to startup for Cycle 22 but concluded that continued operation through the end of Cycle 21 (now estimated to end approximately April 1992) was acceptable.[7] The Petition challenges the adequacy of the Staff's Safety Assessment and alleges that operation of the Yankee Rowe facility violates the provisions of 10 C.F.R. § 50.61 and Part 50, Appendices G and H.

NRC Staff's Proposed Decision on the UCS Petition

As requested by the Commission, on July 24, 1991, in SECY-91-220, the Staff provided to the Commission and made available to the Petitioners and the public a Proposed Decision Under 10 C.F.R. § 2.206 (Proposed Decision). The Proposed Decision includes a complete description of the Yankee Rowe reactor vessel issue, the petition filed by UCS and NECNP, and the Commission's consideration of the matter to date. In the Proposed Decision, the Staff concluded that interim operation of Yankee Rowe should be permitted based on the Staff's conclusion that operation of Yankee Rowe through the end of the fuel cycle poses no undue risk to the public health and safety. The Staff stated that it has not concluded that operation of Yankee Rowe beyond Cycle 21 (approximately April 1992) would result in a lack of adequate protection of public health and safety. Rather, the NRC Staff has judged it prudent that operation beyond the present cycle requires submission of the information discussed above and a subsequent Director's Decision pursuant to sections 50.60 and 50.61.

The Proposed Decision contains a review of each of the allegations in the Petition to determine if there are significant issues that would warrant immediate shutdown of the plant. The principal safety issue addressed is the likelihood of a plant overcooling transient causing fracture of the Yankee Rowe reactor vessel, thereby releasing radioactivity into the reactor containment and possibly to the outside environment. The Proposed Decision discusses the background of the NRC Staff's assessment of this issue.

The Staff performed a deterministic assessment of Yankee Rowe design features important to PTS response. The Staff concluded that Yankee Rowe plant-specific features are such that severe overcooling transients are less likely at

[7] By letter dated September 12, 1990, from C. Michelson to K. Carr, the Advisory Committee on Reactor Safeguards agreed that operation through the end of Cycle 21 was acceptable.

Yankee Rowe than for a typical PWR of the type considered during development of section 50.61. With respect to the Licensee's assessment of compliance with PTS screening criteria, the NRC Staff found that important uncertainties remain relative to materials properties and that additional information is required to narrow these uncertainties. The NRC Staff also reviewed a probabilistic study provided by the Licensee. The Staff did its own calculations modifying the Licensee's assumptions to estimate conservatively the frequency of vessel failure due to PTS. These analyses are discussed in the Proposed Decision.

Using its assumptions, the NRC Staff estimated the frequency of vessel failure due to PTS challenges to be in the range of 10^{-4} to 10^{-5} per reactor year. The NRC Staff believes that core damage frequencies in the range of 10^{-4} to 10^{-5} per reactor year, considering the conservative nature of the analyses, provide an adequate basis for the conclusion that, for interim operation until early 1992, there is reasonable assurance of no undue risk to public health and safety. The NRC Staff also reiterated its conclusion, however, that the Licensee should undertake a specific program to narrow the range of uncertainties in materials properties and establish a vessel surveillance program. The NRC Staff again stated that such a program should be effected during the next scheduled outage. Interim operation of the plant until the end of Cycle 21 would, therefore, be approved by the Director, Office of Nuclear Reactor Regulation.

Also in the Proposed Decision, the Staff explained its conclusions regarding Yankee Rowe's compliance with Part 50, Appendices G and H. The Staff concluded that the Yankee Rowe facility complies with Appendix G and the safety issues have been, and continue to be, adequately addressed. Specifically, the Staff concluded that section IV.A.1 allows operation if it is demonstrated in a manner approved by the Director, NRR, that lower values of Upper Shelf Energy (less than 50 ft-lb) will provide margins of safety against fracture equivalent to those required by Appendix G of the ASME Code. The Staff concluded that the Licensee's analysis satisfies section IV.A.1 of Appendix G, and that, because the requirements of section IV are satisfied, the requirements of section V.C.1, 2, and 3 do not apply. In addition, the Staff concluded that the reporting requirements of section V.E of Appendix G do not apply because reports are required only when sections V.C and V.D need to be met.

The Staff's Proposed Decision also presents the Staff's conclusion that the safety issue considerations of Appendix H are satisfied. However, the Staff also concluded that on July 26, 1983, the provisions of section 50.60 became applicable to the Yankee Rowe facility and the Licensee was required to either have a surveillance program that met the requirements of 10 C.F.R. Part 50, Appendix H, or to request an exemption. The Licensee has not requested an exemption and believes that it is in compliance with Appendix H based upon the prior in-vessel surveillance program, the BR-3 Belgian surveillance program, and the accelerated testing program at the University of Michigan. The Staff

believes that the Licensee should have requested an exemption or documented how it intended to comply with Appendix H. The NRC Staff will continue to consider this matter. If a determination is made that a violation exists, the NRC Staff will consider appropriate enforcement action in accordance with the NRC Enforcement Policy.

III. DISCUSSION

The Commission has the ultimate responsibility to ensure the safe operation of the facilities that it licenses. The Commission has chosen to participate directly in this decision on Yankee Rowe, in part, because it concerns the embrittlement of the pressure vessel, one of the key components of a reactor. Indeed, while the Commission must ensure that such concerns are addressed in the near term in the context of Yankee Rowe, the satisfactory resolution of this matter has implications in terms of age-related degradation considerations in the context of the ongoing reactor operating license renewal rulemaking and subsequent renewal applications. But the Commission also believes that its involvement in this matter is appropriate because the unique circumstances of the Yankee Rowe case have presented a situation that was not directly contemplated when the PTS rule and the steps to be followed when concerns arose were developed. The regulation contemplated that a licensee's required calculations would identify the potential for exceeding the screening criterion sufficiently in advance of such an occurrence (i.e., 3 years) that the Staff and the licensee could adequately evaluate the situation, undertake flux reduction programs to mitigate the potential problem, and, if that were not possible, gather sufficient plant-specific data to more accurately assess the susceptibility of the pressure vessel to a PTS event. Yankee Rowe submitted its evaluation against the PTS rule in 1986, which was approved by the NRC Staff in 1987. The NRC Staff review concluded that the Yankee Rowe vessel would be within the screening criteria for a period beyond expiration of its operating license.

In 1988, the NRC Staff revised its guidance on Radiation Embrittlement of Reactor Vessel Materials: Regulatory Guide 1.99, Rev. 2; and in 1989 proposed a revision to the PTS rule to account for these revised considerations. The revised PTS rule was adopted in May 1991. Discovery of the potential problems at Yankee Rowe in early 1990, during the period that the Staff realized that the existing criteria could be nonconservative and was developing the revised regulation issued in 1991, has not allowed the Commission to proceed as contemplated. Nor did the Commission expect that, when calculations of the reference temperatures and of the expected frequency of a PTS-related, through-wall crack penetration were performed, such a divergence of values would be

found between the Staff's and the Licensee's conclusions.[8] Much of this stems from what is at the heart of the issue before us: the serious unknowns in basic chemical and metallurgical elements in the Yankee Rowe pressure vessel that contribute to embrittlement and that are sensitive to increases over the values that have been conservatively assumed.

Uncertainties in Important Parameters

The beltline materials of importance to the question of capability to withstand pressurized thermal shock events for the Yankee Rowe reactor pressure vessel consist of the upper plate, the lower plate, two axial welds, and one circumferential weld. Since the Yankee Rowe reactor pressure vessel was constructed during the late 1950s, before the Commission issued regulations establishing requirements for reactor pressure vessel material surveillance, there are only limited irradiation surveillance data available for the Yankee Rowe pressure vessel. There are some irradiation data available for specimens of the Yankee Rowe upper plate from a surveillance program carried out during the early years of operation.[9] The chemical composition and heat numbers are known for both the upper and lower plates. The lot numbers for the filler wire and flux used to produce the welds are not known, leading to a significant uncertainty in the chemical composition. The design of the Yankee Rowe reactor vessel is such that samples of weld materials cannot readily be obtained and may require the design of special tools.

Based on the limited Yankee Rowe data and on data from a Belgian reactor, the BR-3, the Licensee estimated the potential for embrittlement of the plates and welds. The BR-3 reactor vessel was manufactured by the same manufacturer, Babcock and Wilcox, at about the same time as the Yankee Rowe vessel. Furthermore, many welds have been produced using the same welding process and the same procedures (copper-plated filler wire and Linde 80 flux) as those used at Yankee Rowe. Using values obtained from analogous material, the Licensee's calculations indicated conformance with the screening criteria of section 50.61. In its review of this matter in its Safety Assessment dated August 31, 1990, the NRC Staff took a more conservative approach due to the lack of data specific to the Yankee Rowe vessel and to the fact that Yankee Rowe operates at a lower irradiation temperature than BR-3 and many other pressurized

[8] In the case of the expected frequency of a through-wall crack penetration, the Staff's and the Licensee's results differ by a factor of 10,000. The reference temperature calculations produce results that differ in some instances by over 100°.

[9] The program terminated in 1965 due to failure of specimen holders, but the NRC Staff reviewed the program in 1979 and concluded that the Licensee had met the purposes of 10 C.F.R. Part 50, Appendix H, relating to reactor pressure vessel material surveillance programs.

water reactors from which embrittlement surveillance data have been gathered. Specifically, the NRC Staff:

- used data available in the literature to estimate the effect of lower irradiation temperature in increasing embrittlement;
- took into account the fact that the Yankee Rowe lower plate has greater nickel content than the surveillance plate;
- assumed a copper content for the welds substantially greater than that estimated from BR-3 (0.183%), using a bounding value of 0.35% derived from the highest mean copper content found in the set of samples of welds made by Babcock and Wilcox, using materials similar to those used in the Yankee Rowe vessel;
- used a bounding value of 0.7% nickel content, similarly based on the highest mean value of nickel found in the set of weld samples made by Babcock and Wilcox, using materials similar to those used in the Yankee Rowe vessel.

The effect of these conservative assumptions was that Staff computations of reference temperatures exceeded the screening criteria of section 50.61, indicating a greater degree of embrittlement than the Licensee's computations.

Another area of uncertainty, which bears upon the fracture mechanics of embrittled material, is the existence and distribution of flaws in the pressure vessel plates and welds. The Yankee Rowe vessel was radiographed before operation began in 1961, but the vessel was not designed for in-service volumetric inspection, and in 1982, the Licensee requested an exemption from the requirement to carry out in-service inspection of the reactor vessel shell welds due to inaccessibility. After evaluation, the NRC Staff granted the requested exemption. However, the Licensee did radiograph accessible welds and found no unacceptable indications.

The Licensee carried out a fracture mechanics analysis using reference temperatures similar to those conservatively computed by the Staff (or temperatures whose difference should not significantly affect the analysis), using the "Marshall" distribution for flaw characteristics, the same method used by the NRC Staff in developing the PTS rule — a method that contains a number of conservative assumptions. The Licensee computed a conditional failure probability of 10^{-3} per year. Notwithstanding the Licensee's use of a conservative method of estimating flaw distribution, and in view of the uncertainties, the Staff calculated conservative conditional probability of vessel failure for the assumed PTS events to be in the range of 10^{-1} to 10^{-2} per year. This failure probability is dominated by the upper axial weld. Coupled with a calculated probability of occurrence of

PTS events of significance of 10^{-3}/year,[10] the Staff's overall estimate for reactor vessel failure from PTS is in the range of 10^{-4} to 10^{-5} per year.

The NRC has provided guidance to licensees concerning the nature of analyses needed to justify continued operation in the event that calculations indicate a reference temperature above the screening criteria when calculated in accordance with section 50.61. Regulatory Guide 1.154 provides extensive guidance on the nature of the calculations needed and sets forth a criterion of overall failure probability (considering the probability of the initiating thermal shock event and the probability of vessel failure in such event) of 5×10^{-6} per year, which in turn is based on a value of 10^{-5} per year for the core melt frequency ascribable to a PTS event. *See* Analysis of Potential Pressurized Thermal Shock Events, Proposed Rule, 49 Fed. Reg. 4498 (Feb. 7, 1984). While the Licensee's calculations would indicate that the criterion suggested in Regulatory Guide 1.154 is satisfied, the Licensee's July 5, 1990 submittal contains a number of assumptions that have not been well established and have not been accepted by the NRC Staff. *See* NRC Staff's August 31, 1990 Safety Assessment. The NRC Staff's conservative calculations indicated that the screening criterion may well be exceeded for various materials in the vessel, in some cases by a substantial amount, and indicate that overall failure probability, using conservative values, could be in excess of the goal set forth in Regulatory Guide 1.154 for a best-estimate calculation. Further, although it is not a requirement of the rule, neither the Licensee nor the Staff has yet completed the thorough sensitivity studies called for by Regulatory Guide 1.154 to identify the potential sensitivity of vessel integrity to the various parameters about which there may be some uncertainty. In the August 31, 1990 Safety Assessment, the NRC Staff directed the Licensee to provide such studies, along with other vital data, before Cycle 22 startup.

To summarize, there are significant unknowns about basic chemical and metallurgical data that lead to substantial uncertainty as to the integrity of the Yankee Rowe reactor pressure vessel. Specifically:

- The brittleness of the beltline welds is sensitive to copper and nickel content and the copper and nickel content of these vital welds is unknown.
- The brittleness of the lower plate is sensitive to its composition and its irradiation temperature, yet there were no irradiated specimens of this material.
- The fracture mechanics characteristics of the vessel are sensitive to the existence of flaws in the vessel, and to their size, orientation,

[10] The Licensee had computed a value of 5×10^{-4} per year for small-break LOCAs leading to pressurized thermal shock to the reactor pressure vessel.

and distribution, but the vessel has received no in-service volumetric examination of the vital beltline area in over 31 years of operation.

- Vessel fracture characteristics are sensitive to these unknowns but the degree of sensitivity has not been established through parametric sensitivity studies as called for by Regulatory Guide 1.154.

In view of these significant uncertainties in essential data, the NRC Staff, in its Safety Assessment dated August 31, 1990, carried out a conservative analysis of the safety of continued operation and directed the Licensee to resolve these uncertainties by:

- developing inspection methods for the beltline welds;
- performing tests on typical Yankee Rowe base metal to determine the effect of temperature, austenitizing temperature, and nickel composition on embrittlement;
- determining the composition of the circumferential beltline welds by removing samples from the weld.

Although the Staff concluded that these activities to resolve the uncertainties should be completed before resumption of operation for Cycle 22 (current Cycle 21 is now estimated to end approximately April 1992), the Staff concluded that there was still reasonable assurance of public health and safety to permit operation until that time. These conclusions are reaffirmed in the Staff's Proposed Decision submitted July 24, 1991.

IV. DECISION AND ORDER

The NRC Staff is to be complimented on its diligence last year in identifying these issues concerning the adequacy of the Licensee's data and its aggressive efforts in directing the Licensee to resolve expeditiously these important uncertainties. We also compliment the Petitioners for the constructive and professional quality of their participation and for their contributions. We agree with the Staff's decision to deny the petition for immediate shutdown in view of its conservative analysis of the risk posed by PTS events, and because the Licensee is in compliance with Part 50, Appendix G, and with the safety considerations of Appendix H.[11] We also agree with the Staff's conclusions that it is imprudent to permit continued operation beyond the end of Cycle 21 until the PTS

[11] Although there are uncertainties regarding the PTS calculations, no regulatory requirement has been violated that requires immediate plant shutdown on safety grounds. "In taking any remedial measures, the Commission must choose actions sufficient to deal with the risk involved. . . . [A] violation of a regulation does not of itself result in a requirement that a license be suspended." *Petition for Emergency and Remedial Action*, CLI-78-6, 7 NRC 400, 405 (1978). Rather, "the choice of remedy for regulatory violation is within the sound judgment of the Commission, and not foreordained." *Id.* at 406; *see also Petition for Shutdown of Certain Reactors*, CLI-73-31, 6 AEC 1069, 1071 (1973).

uncertainties are resolved. There remains the question whether operation should continue until the end of Cycle 21. We now turn to focus on that narrow issue.

The overall goal of the Commission at the time it adopted section 50.61 was to limit the probability of core damage due to a PTS initiating event to one-tenth of the overall risk of core damage frequency, or approximately 10^{-5} per reactor year. Regulatory Guide 1.154 translated this figure into 5×10^{-6} for a further margin of conservatism. The Staff has conservatively estimated the frequency of vessel failure at the Yankee Rowe facility to be in the range of 10^{-4} to 10^{-5} per reactor year, which is within the range of the goal of the PTS rule. Nevertheless, the fact remains that the Staff's calculations reflect, of necessity, a wide range of uncertainties. We may have achieved the desired long-term goal of the risk of a PTS event but, with the current uncertainty, the degree to which that goal may be met remains unclear. In addition, we believe that it would be desirable to obtain more balance in the calculated risk of the failure of a pressure vessel between the probability of the initiating event (10^{-3}) and the conditional failure probability of the vessel itself (10^{-1} to 10^{-2}). This is consistent with the Commission's attempts to achieve an appropriate balance of accident prevention and accident mitigation to provide adequate assurance of public health and safety.

All, as we understand the material presented to us, agree that the uncertainties are such that operation must be limited in the absence of additional data. The ultimate question is a judgmental one: For how long a period should operation in the face of these uncertainties be permitted from the standpoint of prudent regulatory policy?

We have reviewed the submissions of the Licensee and the Petitioners and considered the discussions at the Commission meetings of July 11 and July 26, 1991. The Director of NRR has summarized for us the deep concerns expressed at the public sessions held in the Commonwealth on July 22 and 23.

An analysis of the foregoing question should build on certain propositions that, in our judgment, find substantial support in the material before us. First, as we have noted previously, there is no safety or other regulatory requirement for an immediate plant shutdown. Second, the soundest interpretation of the PTS regulations is that uncertainties such as those identified here should be resolved as soon as possible to move in the direction of the overall risk goal from a PTS event contemplated by the Commission when it adopted section 50.61. Third, we cannot yet determine whether plant shutdown at any date much earlier than the end of Cycle 21 would permit commencement of the testing programs needed to resolve the uncertainties.

Plant shutdown in the near future would not contribute to a prompter resolution of the uncertainties. The only effect of that regulatory action would be an adverse one on the ratepayers served by the Licensee. Of course, that factor is not given weight if reasonable assurance of protection of the public

health and safety required otherwise. We agree with the Staff that it does not in the circumstances before us.

In response to inquiries by the Commissioners, the Licensee and the NRC Staff described for the Commission, at the public meeting on July 26, 1991, the possibility of mitigating steps, including modification of operating procedures to permit the continued operation of the reactor coolant pumps in the PTS events of concern for Yankee Rowe. The continued operation of these pumps during such event would have the effect of mixing the warmer circulating primary cooling water with the colder injection water, raising the temperature of the water impinging on the reactor vessel surface, thus reducing the thermal shock. The NRC Staff estimated that this would reduce overall risk of vessel failure due from PTS by a factor of 5 to 10; the Licensee estimates that such operation would reduce vessel failure risk by a factor of 10. Indeed, Petitioners' representative agreed that operation of the coolant pumps would significantly reduce the risk of such vessel failure.

However, both the Licensee and the Staff indicated a need to verify whether this or other mitigating changes would have adverse consequences with respect to other operational aspects or other accident scenarios, and to determine whether, for instance, events significant to PTS can be distinguished by operators from other events in which reactor coolant pumps should not continue to operate. The Licensee indicates that it expected to complete its evaluation of this and other proposals and to submit its evaluation to the NRC by August 26, 1991, and indicates that such modifications could be implemented in a short time after approval by the NRC. The Licensee gave an overall estimate that, if acceptable, such modified procedures could be in place within 4 to 6 weeks from now. Representatives of Petitioners indicated that if such modifications could be made without adversely affecting other aspects of facility safety, reactor vessel failure attributable to PTS events would not be a problem.

V. COMMISSION CONCLUSIONS

Our decision in this matter has been guided by the following principles:

1. The Commission affirms that the probability of PTS failure should be kept below the order of 10^{-5} per year, using best estimates of risk parameters. The Staff's conservative calculations of this probability, which result in estimates between 10^{-4} and 10^{-5} using conservative values, are equivalent to best-estimate calculations falling in this range. Therefore, we conclude that the risk objective of the PTS rule is satisfied here and that continued operation for an interim period will not pose an undue risk to the public health and safety.

2. A number of measures to further increase the margins against vessel failure in the near term were discussed at the Commission meetings. The Commission believes that any additional action that proves to be feasible to further increase the margins against vessel failure should be undertaken. Therefore the Licensee is instructed to investigate such additional measures to include, but not necessarily be limited to, continued running of two of the RCP pumps in case of a small-break LOCA, and report back to the Staff as ordered below.

   If such measures can be successfully implemented, the Licensee should take steps to do so at the earliest opportunity. If, however, such steps are not found feasible or the Staff is not able to confirm that the proposed measures will result in an additional margin against vessel failure in the range of a factor of 5 to 10, the Staff will report back to the Commission for further guidance.

3. Our philosophy of defense in depth and the examples used in support of the PTS rulemaking and Regulatory Guide 1.154, make it clear that, in the longer term, PTS probability is not the only criterion. A balance between prevention (i.e., reducing the probability of a PTS event) and mitigation (reducing the conditional probability of a failure, given the occurrence of a PTS event) is also important. The Commission is willing to rely on bounding estimates only until the earliest time at which the large uncertainties, illustrated during these proceedings, can begin to be resolved. The highest priority attaches to resolving these uncertainties as soon as possible. In particular, the resolution process is not to be delayed in order to permit plant operations to continue.

   Therefore, the Licensee will submit to the Staff as ordered below, its plan to resolve these uncertainties, and will keep the Staff apprised monthly of progress against this plan. As soon as the Staff determines that suspension of operation will contribute to accelerating the process of resolving these uncertainties, operation will be suspended.

4. In no event will plant operation beyond April 15, 1992, be permitted, until these uncertainties have been resolved and the estimates of core melt frequency and balance between the initiating event and vessel failure indicate satisfactory results.

VI. COMMISSION ORDER

Accordingly, in the light of these circumstances, as a matter of prudent regulatory judgment in carrying out our responsibility under the PTS regulation, we order the following actions be taken:

1. *MODIFICATION OF OPERATING CONDITIONS AS POSSIBLE MITIGATION MEASURES*

A. On or before August 26, 1991, the Licensee shall submit to the NRC its evaluation of and its plan of modifications to its operating conditions that would provide additional margin against reactor vessel failure (additional reduction in the probability of vessel failure) from a pressurized thermal shock (PTS) challenge. The Commission seeks a reduction in the probability of vessel failure of a factor of 5 to 10 and will accept a mix of hardware modifications, human resource allocations, and operating procedure modifications in the Licensee's plan to achieve that additional margin against vessel failure.

B. The NRC Staff shall promptly review the Licensee's evaluation when submitted and promptly report the results of its review to the Commission; if the Staff concludes that such modifications are acceptable, it shall prepare a confirmatory order, to be issued upon approval by the Commission, directing the Licensee to make such modifications in plant operating procedures, to be implemented not later than 2 weeks from the issuance of such order.

C. If the Licensee determines, on or before August 26, 1991, that such modifications in procedure would not be effective in reducing the risk of vessel failure from PTS events by a factor of 5 to 10, or would significantly and adversely affect other operational aspects or other accident scenarios; or if the NRC Staff, in reviewing the Licensee's submittals, concludes that the proposed modifications would not be effective in reducing the risk of vessel failure from PTS events by about a factor of 5 to 10, or that such modifications would significantly and adversely affect other operational aspects or other accident scenarios, the Staff shall return to the Commission for further guidance.

2. *INSPECTIONS AND TESTS TO RESOLVE UNCERTAINTIES*

A. The Licensee shall submit by August 26, 1991, its plan to resolve uncertainties in the chemical and metallurgical characteristics discussed above.

B. The Staff will closely monitor the Licensee's implementation of the test plan and advise the Commission of the earliest date that the special tools and devices needed to inspect and/or sample the vessel material are qualified for use and ready and qualified for deployment. Once the Staff determines this date, the Staff shall prepare an order, to be issued upon approval of the Commission, requiring the Licensee to initiate, within 10 days, the orderly shutdown of the reactor.

C. In no event will operation continue beyond April 15, 1992.

3. *MONTHLY REPORTS*

The Staff shall obtain progress reports from the Licensee on a monthly basis and shall keep the Commission and the Petitioners informed of the progress being made to resolve the uncertainties to a level commensurate with the goals of the PTS rule together with the Staff's assessment of whether maximum effort is being undertaken.

4. *OPENNESS OF THE PROCESS*

The Petitioners shall be informed of and may attend all meetings between the Staff and Licensee on this subject. The Staff shall ensure that all documents that are produced on this subject are provided to the Petitioners and are placed promptly in the Public Document Room. The Staff shall continue to ensure that the Governor of the Commonwealth of Massachusetts and other appropriate government officials are kept informed of developments.

5. *ACTION ON THE PETITION*

In all other respects the Petition, as supplemented, is denied.

It is so ordered.

For The Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 31st day of July 1991.

Cite as 34 NRC 23 (1991) LBP-91-30

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

John H Frye, III, Chairman
Dr. Richard F. Cole
Frederick J. Shon

In the Matter of **Docket No. 50-312-OLA**
(ASLBP No. 91-634-06-OLA)

SACRAMENTO MUNICIPAL UTILITY DISTRICT
(Rancho Seco Nuclear Generating Station) **July 1, 1991**

The Licensing Board rules on petition to intervene filed in opposition to an application for a possession-only license for the Rancho Seco power reactor filed in advance of a decommissioning application. The Licensing Board finds that petitioner lacks standing to cause a hearing to be held and has failed to advance an acceptable contention.

STANDING TO INTERVENE: INJURY-IN-FACT TEST

An allegation that a proposed license amendment might, if granted, permit a licensee to allow a plant to deteriorate to the point that future operation would be unsafe is too remote and speculative to support standing under the Atomic Energy Act.

DECOMMISSIONING: NEPA REQUIREMENTS

NEPA does not require that the Commission review a licensee decision to cease operations of and decommission a power reactor.

STANDING TO INTERVENE: INJURY-IN-FACT AND ZONE-OF-INTERESTS TESTS

By itself, an allegation that a proposed license amendment deprives one of the legally protected right to comment on an environmental impact statement (EIS) or to information essential to an organization's purposes contained in an EIS is not sufficient to state an injury in fact that falls within the zone of interests protected by NEPA. To support standing, such an allegation must be accompanied by an allegation of another injury.

MEMORANDUM AND ORDER

(Ruling on Petition to Intervene and Contentions)

The Sacramento Municipal Utility District (SMUD) has decided to permanently cease operations at its Rancho Seco Nuclear Generating Station. This decision followed a public referendum, held in June 1988, in which SMUD's ratepayers decided that SMUD should cease operating the plant. As a part of its implementation of this decision, SMUD filed an application for a license amendment with the Commission which would authorize it to possess both the reactor and the nuclear fuel, but would remove authority to operate the reactor, a so-called "possession-only" (POL) license.

In response, Staff published in the *Federal Register*[1] a notice that it was considering issuing the license amendment. In this notice, Staff noted that any interested person could file a petition to intervene and request a hearing with respect to the amendment application. On November 8, the Environmental and Resources Conservation Organization (ECO) filed a petition to intervene and request for a hearing with respect to the license amendment. This petition was opposed by SMUD and the Commission's Staff in filings dated November 30 and December 5, 1990, respectively, and in a letter of February 8, 1991, addressed to the Atomic Safety and Licensing Board by SMUD's counsel.

Pursuant to the Commission's Order of January 30, 1991 (unpublished), this Board was appointed to rule on the petition. We afforded ECO an opportunity to reply to the SMUD and Staff filings. *Houston Lighting and*

[1] 55 Fed. Reg. 41,280 (Oct. 10, 1990). This notice corrected errors in an earlier notice published at 55 Fed. Reg. 36,349 (Sept. 5, 1990).

Power Co. (Allens Creek Nuclear Generating Station, Unit 1), ALAB-565, 10 NRC 521 (1979). ECO filed its reply on March 4, and on April 15 it filed certain supporting affidavits and what it called a "Further Amendment to Environmental and Resource Conservation Organization Request for Hearing and Petition to Intervene."[2]

In a Memorandum and Order of May 1,[3] we concluded that ECO might be able to demonstrate standing to cause a hearing in this matter in two respects. The first of these concerned the assertion that the issuance of the POL would deny ECO and its members the opportunity to comment on an environmental impact statement (EIS) on the decommissioning of Rancho Seco. ECO's members stated that permitting steps that are clearly in furtherance of decommissioning, and which have no independent utility, to take place prior to NEPA review would have this effect. We recognized that, in general, an injury to such a legal interest may support standing, and that ECO's affiants might have alleged an injury that falls within the zone of interests protected by NEPA.

We viewed ECO's assertion of an organizational interest in the dissemination of information, an interest to which it claimed injury resulting from the failure to prepare an EIS, in the same light. We noted that ECO might be able to demonstrate that NRC's

> action withholds specific information related to the environmental interests that NEPA was intended to protect, that the information is essential to [ECO's] activities, and that the lack of information will render those activities infeasible.[4]

We withheld any final conclusion on these two matters to afford SMUD and Staff an opportunity to comment on them. In order to lend specificity to these issues and facilitate our deliberation on the question of whether a hearing is warranted, we directed ECO to file its contentions by June 3 and indicated that no further filings would be permitted absent specific leave of the Board.

In drafting its contentions, we admonished ECO to pay particular heed to the Commission's statement that

> A properly pled contention will at a minimum need to offer some plausible explanation why an EIS might be required for an NRC decision approving a [Rancho Seco] decommissioning plan *and* how these actions here could, by foreclosing alternative decommissioning methods

[2] The affidavits were filed with the consent of the parties. However, the "Further Amendment" was stricken on Staff's motion on the grounds that, rather than an amendment to the petition, it constituted a further reply to the responses to the petition filed by ECO and Staff which was not agreed to by the parties and not authorized by the rules.

[3] LBP-91-17, 33 NRC 379.

[4] *Competitive Enterprise Institute* v. *National Highway Traffic Safety Administration*, 901 F.2d 107 (D.C. Cir. 1990).

or some other NEPA-based considerations, constitute an illegal segmentation of the EIS process.[5]

Similarly, ECO was admonished to keep in mind that, in accord with the Commission's *Shoreham* rulings,[6] the scope of any EIS that might be ordered is limited to the proposed decommissioning and alternatives to it. We pointed out that the alternative of operating Rancho Seco is not within that scope. We discussed ECO's standing and contentions with the parties at a prehearing conference held on June 25, 1991, in Bethesda, Maryland.

ECO filed proposed contentions on June 3 and 10.[7] ECO did not follow the above guidance in formulating its June 3 contentions. Rather, the central theme of ECO's contentions raises the question whether Rancho Seco should be operated rather than decommissioned. At the prehearing conference, the Board enquired of ECO's counsel which of its contentions address the scope of the EIS that ECO maintains must be prepared. Counsel identified Contentions 4 through 12 and 14 through 25. A review of these contentions reveals that they are focussed almost exclusively on the option of preserving Rancho Seco as a source of electric power.[8] Thus the EIS that ECO advocates would be devoted to exploring a subject that the Commission has ruled out.

The remaining contentions do not raise litigable matters. Contentions 1 and 3 simply state facts: that a proposal to decommission Rancho Seco exists and that a POL would end the requirement that Rancho Seco be maintained in a nondegraded status. Contention 13 raises alleged inconsistencies between Regulatory Guide 1.86 and Staff practices, rather than a dispute with SMUD.

Contention 2 asserts a matter that is essential to ECO's position: an EIS is required and that this requirement is not satisfied by the Draft Generic Environmental Impact Statement on Nuclear Facilities, NUREG-0586 (GEIS). The latter document was prepared to examine the impacts of decommissioning on a generic basis and eliminate the need for a separate EIS for each plant.[9] ECO asserts that the GEIS was not intended to apply to facilities that had not

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[5] *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-91-4, 33 NRC 233, 237 (1991) (emphasis in original).

[6] *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-90-8, 32 NRC 201 (1990); CLI-91-1, 33 NRC 1 (1991); CLI-91-2, 33 NRC 61 (1991).

[7] The latter are tardy. Staff moved to strike them on that ground and on the ground that they do not relate to the license amendment that is the subject of this proceeding. Motion dated June 17. SMUD agreed with Staff that these contentions are untimely and might be stricken but suggested that the better course was to rule on them. In SMUD's view, all are either irrelevant to this proceeding or redundant of timely filed contentions or baseless. Licensee's Statement dated June 17.

[8] ECO's fear that grant of the POL will foreclose the possibility that Rancho Seco might be returned to service appears to be well founded. At the prehearing conference, SMUD's Chief Nuclear Officer indicated that it would be very expensive and impractical to restore the plant to service.

[9] Following its adoption, the Commission eliminated that requirement from 10 C.F.R. § 51.20(b)(5).

reached the end of their useful life by reason of age or accident.[10] SMUD takes issue with this proposition, pointing out that it is not justified by the terms of the GEIS, as ECO maintains, or by any other consideration.[11] SMUD is correct. ECO's attempt to distinguish the Rancho Seco situation from the GEIS is not persuasive. Clearly, the GEIS was meant to apply unless one could show that site-specific conditions warranted the conclusion that the impacts of a particular decommissioning fell outside its scope.[12] ECO's arguments fall far short of this showing.

SMUD and Staff point out that the contentions do not provide "[s]ufficient information . . . to show that a genuine dispute exists with the applicant on a material issue of law or fact." 10 C.F.R. § 2.714(b)(2)(iii).[13] The only dispute between ECO and SMUD revealed by the contentions concerns SMUD's decision to decommission, rather than mothball, store, or sell Rancho Seco. Given the Commission's *Shoreham* rulings, this is not a material dispute. Thus ECO has failed to satisfy the requirements of the Commission's regulations for contentions and its petition must be denied.

ECO's tardy contentions must also be rejected. ECO has made no attempt to make the showing required by 10 C.F.R. § 2.714(a)(1) in order to have these contentions considered. ECO relies on 10 C.F.R. § 2.714(a)(3) which permits filing up to 15 days prior to the prehearing conference. Its argument that the Board could only expand on this deadline, not contract it as we did in LBP-91-17, is incorrect.[14]

ECO's petition must be denied for the related reason that it has not established standing. Inasmuch as ECO's contentions do not raise litigable issues, they also reveal that it will not suffer a direct and palpable injury that is within the zone of interests protected by the Atomic Energy Act or the National Environmental Policy Act as a result of the grant of the POL. While the failure to state an acceptable contention does not necessarily mean that a petitioner lacks standing, in this case it confirms that any injuries suffered by ECO as a result of the POL do not lie within the zone of interests of NEPA or the Atomic Energy Act.

As noted above, in LBP-91-17, we recognized that ECO might be able to establish its standing in two respects: first, that the issuance of the POL might deny ECO and its members the opportunity to comment on an EIS; and second, that ECO's organizational interest in the dissemination of information would be

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[10] *See* ECO's June 3 Amendment and Supplement to Its Petition at 3-4; Tr. 70-71.

[11] *See* SMUD's June 17 Answer at 10; Tr. 32-34.

[12] *See* "Summary and Discussion of Comments on Proposed Rule," § E. "Environmental Review Requirements" of the Commission's final rule, *General Requirements for Decommissioning Nuclear Facilities*, 53 Fed. Reg. 24,018 (June 27, 1988): "if the impacts for a particular plant are significantly different from those studied generically because of site specific considerations, the environmental assessment would discover those and lay the foundation for the preparation of an EIS."

[13] *See* SMUD's June 17 Answer at 4-6; Tr. 47-48.

[14] Tr. 26.

injured by the failure to prepare an EIS. Staff points out that these two injuries are not sufficient to establish standing by themselves and must be accompanied by some other cognizable injury.[15] We think that Staff is correct. Clearly, an individual or group that possesses a general interest in a proceeding but lacks a specific injury may not cause a hearing to be held in order to advocate the preparation of an EIS on which to comment. Otherwise, ECO would have standing not only in regard to Rancho Seco, but in regard to any other power reactor that is scheduled to be decommissioned prior to the conclusion of its useful life, regardless of that plant's specific impacts on ECO and its members.

In consideration of the foregoing, it is hereby ORDERED:

1. ECO's petition to intervene in this proceeding is denied; and
2. Pursuant to 10 C.F.R. § 2.714a, within 10 days of service, ECO may appeal this Memorandum and Order to the Commission by filing a notice of appeal and accompanying brief.

THE ATOMIC SAFETY AND
LICENSING BOARD

Frederick J. Shon
ADMINISTRATIVE JUDGE

Richard F. Cole
ADMINISTRATIVE JUDGE

John H Frye, III, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland
July 1, 1991

[15] Tr. 55-64.

Cite as 34 NRC 29 (1991) LBP-91-31

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges:

Peter Bloch, Presiding Officer
Peter Lam, Technical Advisor

In the Matter of

Docket Nos. 70-00270
30-02278-MLA
(ASLBP No. 90-613-02-MLA)
(RE: TRUMP-S Project)
(Byproduct License No. 24-00513-32;
Special Nuclear Materials
License No. SNM-247)

CURATORS OF THE
UNIVERSITY OF MISSOURI

July 10, 1991

This case involved an application for a license to conduct experiments, including procedures involving 10 curies of unencapsulated americium and about 2 curies of plutonium. In this decision and a prior decision, the Presiding Officer ordered relief (including the installation of fire sprinklers and modification of Licensee's procedures) to reduce the risk of a serious fire that might disperse nuclear materials and to help to provide an adequate assurance of safety. The Presiding Officer then found that, in light of the imposed conditions, Licensee had demonstrated that licensed activities would provide an adequate assurance of safety. Licensee, which handles nuclear materials in unencapsulated form, was found to have demonstrated that there was no credible fire that would disperse the nuclear materials, injuring members of the general public.

PLUTONIUM PROCESSING FACILITY: 10 C.F.R. § 70.4

A special nuclear materials licensee conducting experiments with actinides in pure form, using 10 curies of americium and 2 curies of plutonium, is not a plutonium processing facility under 10 C.F.R. § 70.4.

RULES OF PRACTICE: 10 C.F.R. SUBPART L

The Presiding Officer discusses advantages and disadvantages of Subpart L in complex technical cases.

ADEQUATE ASSURANCE OF SAFETY: SPECIAL NUCLEAR MATERIALS AND BYPRODUCT LICENSES

The Presiding Officer ordered relief (including the installation of fire sprinklers and modification of Licensee's procedures) to reduce the risk of a fire that might disperse nuclear materials and to help to provide an adequate assurance of safety. The Presiding Officer then found that, in light of the imposed conditions, Licensee had demonstrated that licensed activities would provide an adequate assurance of safety. Licensee, which handles nuclear materials in unencapsulated form, was found to have demonstrated that there was no credible fire that would disperse the nuclear materials, injuring members of the general public.

RULES OF PRACTICE: ORAL ARGUMENT OR ADDITIONAL RESPONSES (10 C.F.R. SUBPART L)

Petitioners for oral argument or the submission of evidence other than as provided for in the written filings described in the rules must demonstrate that the argument or evidence is necessary for the adequacy of the record. 10 C.F.R. §§ 2.1233, 2.1235.

RULES OF PRACTICE: NEW INFORMATION (10 C.F.R. SUBPART L)

New information must fall within an admitted area of concern or meet criteria for late filing. Additionally, permission to file additional evidence will be denied even if it is within the scope of an admitted area of concern unless the evidence is necessary for the adequacy of the record.

BUFFER ZONE: SPECIAL NUCLEAR MATERIALS OR BYPRODUCT MATERIALS

Providing that Licensee can demonstrate an adequate assurance of safety, there is no NRC requirement of a buffer zone surrounding a laboratory in which experiments with unencapsulated plutonium and americium are being conducted.

FIRE EXITS: SPECIAL NUCLEAR MATERIALS OR BYPRODUCT MATERIALS

Providing that a licensee demonstrates an adequate assurance of safety with respect to its use of licensed materials, and their safety from fire, its compliance or noncompliance with local fire ordinances designed to protect people from ordinary fire hazards is not relevant to the appropriateness of issuing a license to it.

DECOMMISSIONING: SPECIAL NUCLEAR MATERIALS OR BYPRODUCT MATERIALS

A licensee that applies for a license amendment or renewal is an "applicant" and must comply with all regulations affecting applicants; they may not comply by filing a financial assurance for decommissioning pursuant to 10 C.F.R. §§ 30.35(c)(2) and 70.25(c)(2). *See* 10 C.F.R. §§ 30.35, 70.25.

RULES OF PRACTICE: MOTIONS FOR RECONSIDERATION; LAW OF THE CASE

Issues decided by a presiding officer become binding in the case unless raised in a timely motion for reconsideration or because there is reasonable cause for late filing.

TECHNICAL ISSUES DISCUSSED

The following technical issues are discussed:

Adequacy of Staff review (found irrelevant);

Adequacy of application standing by itself (found irrelevant);

Administrative controls (special nuclear materials and byproduct materials);

Special nuclear materials (fire sprinklers);

Americium (unencapsulated);

Basement laboratories (special nuclear materials and byproduct materials);

Buffer zone (special nuclear materials and byproduct materials);

Byproduct materials (fire protection, fire sprinklers);

Decommissioning (special nuclear materials and byproduct materials);

Disclosure of curie content (application for special nuclear materials license);

Dispersion of unencapsulated actinides by fire;

Emergency planning (special nuclear materials and byproduct materials, effective date of regulations);

Entrainment of plutonium, americium;

Experience to handle unencapsulated nuclear materials;

Fire department response (radioactive materials);

Fire exits (irrelevant to use of nuclear materials);

Handling special nuclear materials and byproduct materials;

HEPA filters (DOP testing in place);

Laboratory construction (special nuclear materials and byproduct materials);

Maximum credible fire (special nuclear materials and byproduct materials);

Models of risk of fire involving nuclear materials (limited usefulness of models);

Oral presentations (10 C.F.R. Subpart L);

Plutonium (unencapsulated);

Plutonium processing facility (10 C.F.R. § 70.4);

Procedures (special nuclear materials and byproduct materials);

Regulatory Guide 10.3, § 4.3;

Responsibility of licensee for safety (special nuclear materials and byproduct materials);

Role of other company in licensed project (special nuclear materials and byproduct materials);

Special nuclear materials (fire protection);

Staff order for submission of new application (effect of order on existing amendment proceeding);

10 C.F.R. Subpart L.

APPEARANCES

For Intervenors, the Missouri Coalition for the Environment, the Mid-Missouri Nuclear Weapons Freeze, Inc., the Physicians for Social Responsibility/ Mid-Missouri Chapter, **Lewis C. Green:** Green, Hennings & Henry, St. Louis, Missouri.

For Licensee, The Curators of the University of Missouri, **Maurice Axelrad and Kenneth C. Manne:** Newman & Holtzinger, P.C., Washington, D.C.

For Intervenors, Jeff Stack, Richard Smith, Amy Smith, Steve Jacobs, Marion Mace, Therese Folsom, Betty Aulabaugh, Diana Nomad, Clyde Wilson, Kathleen Morrison, **Betty K. Wilson:** Oliver, Walker, Carlton, Wilson, Columbia, Missouri.

For the Staff of the Nuclear Regulatory Commission (with respect to specific issues on which its participation was required), **Colleen P. Woodhead** (principal representative).

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MEMORANDUM AND ORDER
(Final Initial Decision)

Memorandum

I. SUMMARY OF PRINCIPAL POINTS

The central issue raised by the Intervenors[1] is whether the University of Missouri (Licensee) can provide an adequate assurance that its TRUMP-S[2] experiments are safe and will not credibly cause fatalities and illness to the general public as the result of an accident. These experiments are licensed to use 10 curies of americium and 2 curies of plutonium.

This is a Final Initial Decision, disposing of all remaining issues of the case. The "First Initial Decision," LBP-91-12, 33 NRC 253 (1991), CLI-91-7, 33 NRC 295 (1991), dealt primarily with the need for a sprinkler system in the Alpha Laboratory, where the experiments are conducted. It also addressed certain additional safety precautions to which Licensee had agreed, and it posed certain questions to witnesses in order to obtain an adequate record for this Decision.

The *specter* of damage from the highly toxic substances used in the TRUMP-S experiments is serious, particularly if they are handled carelessly. If all 10 grams of plutonium that may be used in TRUMP-S were disseminated (as if by black magic) so that they were ingested or inhaled, human beings would be exposed to millions of maximum permissible occupational body burdens and up to a million times the amount that can cause a significant likelihood of cancer if inhaled.[3]

Empirical studies have shown, however, that plutonium can be widely dispersed only under conditions of severe fire or explosion. I am satisfied that the conditions for dispersing plutonium or americium are extreme and that it is highly unlikely that these conditions will occur as the result of the licensed activities, with their many built-in safety precautions.

I have concluded that the safety of the TRUMP-S experiments should not be measured by the extreme scenarios that may be hypothesized. I have determined that there is no credible mechanism for these extreme scenarios to occur. Having reached that determination, I have examined how the University of Missouri is using these materials with respect to *credible* mishaps that may occur.

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[1] The Missouri Coalition for the Environment, the Mid-Missouri Nuclear Weapons Freeze, Inc., the Physicians for Social Responsibility/Mid-Missouri Chapter, and 10 individual Intervenors.

[2] TRUMP-S is an abbreviation of Transuranic Management by Pyropartitioning Separation.

[3] Intervenors' Exhibit 1, "Declaration of Trump-S Review Panel," October 14, 1990.

This Memorandum considers the evidence concerning the maximum credible fire or explosion that could occur in the Alpha Laboratory. Then, the Memorandum considers a safety-oriented model that examines the health effects of the largest amount of americium or plutonium that might credibly be dispersed. Because modeling is subject to many difficulties and is not very precise, I do not base my conclusion on the models. I have, however, examined the models closely enough to know that, when applied to the conditions of the TRUMP-S experiment, they do not raise serious questions concerning its safety.

In the First Initial Decision, I required the University of Missouri to install an automatic fire sprinkler system in the Alpha Laboratory, as it voluntarily offered to do.[4] After revisiting another earlier decision, I have also concluded that the University's license should be amended to reflect accurately the amount of ^{241}Pu and americium that it may possess. In addition, I have decided to order that there will be either procedures that ensure, on a continuing basis, that there is a low fire load outside the Alpha Laboratory or that an automatic fire-activated sprinkler system be installed in that area, to ensure that a fire will not spread into the Alpha Laboratory from outside.

Once these steps are taken, there will be an adequate assurance of safety, based primarily on careful consideration of the construction of the Alpha Laboratory and the adjoining basement and on the procedures that affect safety. The models advanced by the parties have important uncertainties that affect their usefulness. However, the worst credible fire or explosion, using a model that the Nuclear Regulatory Commission found acceptable for other purposes, would estimate that the exposure of individuals to radiation would be about the same as the threshold at which the Commission requires emergency planning for this class of license. This prediction does not cast doubt on the safety of the experiment.

It is useful to note that no licensed use of byproduct materials, special nuclear materials, or source materials has caused an offsite exposure of 0.01 rem or greater.[5]

This opinion addresses each of the areas of concern raised in this proceeding and concludes — with the exception of the conditions I am imposing — that they are without merit and that there is insufficient reason to hold an evidentiary hearing or for me to ask further questions of the parties.

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[4] I have decided that a gas-line leak detector is not necessary both because there is a low-pressure shutoff valve in the gas line as it enters the basement of MURR (Missouri University Research Reactor) and because of Licensee's testimony concerning the movement of natural gas in the basement should there be a leak. Licensee's Exh. 4, "Affidavit of Chester B. Edwards, Jr., Regarding the Adequacy of Alpha Laboratory Equipment, Fire-Related Features in the Alpha Laboratory and General Basement Area, and the Storage and Transfer of Actinide and Archived Materials," Nov. 13, 1990, ¶36; Licensee's Exh. 19, "Affidavit of Robert G. Purington Regarding Fire Protection at the Alpha Laboratory," January 28, 1991, ¶15.

[5] NUREG-1140, "A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees," Final Report (January 1988), at 6.

II. BACKGROUND

The contested license amendments authorize the use of increased quantities of unencapsulated special nuclear materials and byproduct materials. These amendments were requested in order to conduct a limited portion of the Transuranic Management by Pyropartitioning Separation (TRUMP-S) research project at the Missouri University Research Reactor (MURR) facility. The Licensee states that it is interested in the safe and efficient removal (partitioning) of long-lived radioactive materials from spent nuclear fuel. Such partitioning may improve the efficiency of disposing of high-level nuclear waste.[6] The Intervenors are concerned that the project also could yield information that would permit transuranic elements (such as plutonium, americium, and neptunium) to be separated inexpensively from spent fuel, possibly for recycling in breeder reactors.[7]

The ultimate objective of the overall TRUMP-S project, according to the license applications, is:

> [T]o make basic scientific measurements using small amounts (one gram or less) of depleted uranium or a transuranic (TRU) to obtain thermochemical properties data. The data are needed for design of a process to separate actinide and rare-earth metals in nearly pure form from PUREX wastes, which requires computing the separation efficiencies and the purity of the actinide and rare-earth metals that are recovered. *Utilizing such a process, uranium and transuranic materials can be recovered from spent reactor fuel material without generation of liquid wastes. The uranium and TRU can then be recycled for use as fuel or transformed to shorter-lived isotopes by use of "actinide burner" reactors or disposed of in much smaller monoliths.* As a result, the mass of extremely long-lived, high-level radioactive waste from fuel reprocessing that requires disposal is greatly reduced, thus reducing the time needed for isolation of this waste material by more than a factor of 10,000 — a major reduction in the potential environmental impact. [Emphasis added.][8]

The activities to be conducted by the Licensee are limited to experiments with pure elements (99% or better).[9] The objective of the Licensee's component of the TRUMP-S project is to conduct basic scientific research on the thermodynamic, nuclear, analytical, and health physics aspects that are associated with such a project. The Licensee will develop chemical and electrochemical data for rare earths and actinides in molten salt/cadmium systems.[10]

The Licensee expects to accomplish its research with minimal inventories of the elements of interest (less than 75 grams of depleted uranium, less

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[6] Licensee's Written Presentation, November 14, 1990, at 4.

[7] Written Presentation of Arguments of Intervenors and Individual Intervenors, October 15, 1990, at 4.

[8] Application for Amendment to 24-00513-32, March 9, 1990, at 1-2; Application for Amendment to SNM-247, February 20, 1990, at 1 (same language in both applications). Both applications were transmitted to the Presiding Officer by a letter from Staff, June 21, 1990.

[9] Licensee's Written Presentation, November 14, 1990, at 4.

[10] *Id.*

than 10 grams each of neptunium and plutonium, and less than 2.8 grams of americium[11]). These elements will only be examined in their pure form, and no spent nuclear fuel will be studied or used in the research.[12]

The University of Missouri is a large, public university consisting of four campuses at Columbia, Kansas City, Rolla, and Saint Louis. The Columbia campus is the largest. It has an enrollment (Fall 1989) of 18,186 undergraduates and 6,148 graduate and professional students.[13]

The University of Missouri Research Reactor, administered by the University's Office of Research, includes a 10-megawatt research reactor, which is the most powerful university research reactor and one of the five largest research reactors in the United States. It is located in the southwest portion of the Columbia campus in Research Park on a 550-acre tract of University-owned land.

The nearest residence to the facility is approximately ½ mile away. Within that half-mile radius can be found the Red Cross Mid-Missouri Blood Center, various athletic fields, a sports stadium, and university buildings. Within 1 mile, there is a University hospital and a veterans hospital. Downtown Columbia, a city of 65,000 people, is within 2 miles.

The Licensee currently holds five licenses from the Nuclear Regulatory Commission (NRC) related to MURR. Reactor License No. R-103 authorizes the Licensee to possess, operate, and use the 10-megawatt research reactor in accordance with the procedures and limitations set forth in the license. Licensee has been authorized to possess 20 kilograms of natural uranium and 50 kilograms of depleted uranium in any form, 45 kilograms of uranium-235 contained in fuel or other sources, and 100 grams of plutonium-239 and 40 grams of plutonium-240 in sealed sources.

Two of the other NRC licenses held by the Licensee are Broad-Scope Byproduct Material License No. 24-00513-32 (which covers receipt, possession, use, and transfer of byproduct materials), and the Special Nuclear Material and Source Material License No. SNM-247 (which covers receipt, possession, use, and transfer of special nuclear materials and source materials). These two licenses authorized, among other things, the possession and use of more than 293 grams of plutonium in sealed sources, 250 kilograms of natural uranium in any form, and 5 curies of americium-241 in sealed sources. The University's prior permission to possess nuclear materials in unsealed form was limited to 5 millicuries of neptunium and 40 millicuries of americium.

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[11] Licensee found that it only requires authorization to use 10 curies of americium-241. Licensee's Response to Intervenors' Rebuttal, January 28, 1991, at 75-76. I ordered the License amended to that effect in the First Initial Decision.

[12] *Id.* 4-5.

[13] LBP-90-18, 31 NRC 559, 562 (1990), stated the facts in this and subsequent paragraphs based on the Request for a Hearing, May 7, 1990, and on Licensee's Response, May 25, 1990.

There was no public notice of an application filed by Missouri University for these license amendments. The Staff of the Commission issued the amendments, indicating its determination that they complied with the Commission's rules and regulations, without any written safety evaluation or proposed finding of no significant hazards.

On March 19, 1990, the NRC issued Amendment No. 12 to License No. SNM-247, authorizing the possession and use in unsealed form of 10 grams of plutonium-239/240 (710 millicuries) and also permitting possession and use of 500 grams of depleted uranium (0.2 millicurie). On April 5, 1990, the NRC issued Amendment No. 74 to License No. 24-00513-32, increasing the University's possession limits in unsealed form to 14 grams (10 millicuries) of neptunium-237 and 7 grams of americium-241 (25 curies); the amendment has since been modified to limit possession to 10 curies of americium-241.

The first phase of the licensed project began by the end of June 1990 and has been completed.

III. THE FILINGS AND PRIOR ORDERS

A. Principal Filings

The principal filings in this proceeding are:

- Written Presentation of Arguments of Intervenors and Individual Intervenors, October 15, 1990;
- Licensee's Written Presentation, November 14, 1990;
- Intervenors' Response to Licensee's Written Presentation, December 24, 1990;
- Licensee's Response to Intervenors' Rebuttal, January 28, 1991;
- Intervenors' Motion for Leave to Respond to New Facts and Arguments in Licensee's Response to Intervenors' Rebuttal, February 12, 1991;
- Licensee's Response to Intervenors' Motion for Leave to Respond to New Facts and Arguments in Licensee's Response to Intervenors' Rebuttal, February 21, 1991;
- Intervenors' Response to Memorandum and Order (Questions) of February 26, 1991 (March 26, 1991);
- Licensee's Response to Presiding Officer's Questions, March 26, 1991;
- NRC Staff Response to Memorandum and Order, April 2, 1991.

B. Prior Orders

Prior orders issued in this proceeding include:

- Memorandum and Order (Authorizing Response by Petitioners), May 30, 1991 (unpublished).
- Memorandum and Order (Admitting Parties and "Areas of Concern"; Deferring Action on a Stay), LBP-90-18, 31 NRC 559 (1990);
- Memorandum and Order (Status of the Hearing File), June 27, 1990 (unpublished);
- Memorandum and Order (Additions to the File), LBP-90-22, 31 NRC 592 (1990);
- Memorandum and Order (Intervenors' Motion for Directed Certification), LBP-90-23, 32 NRC 7 (1990);
- Memorandum and Order (Completeness of the Hearing File), LBP-90-27, 32 NRC 40 (1990);
- Memorandum and Order (Preliminary Action on Temporary Stay Request), August 20, 1990 (unpublished);
- Memorandum and Order (Temporary Stay Request), LBP-90-30, 32 NRC 95 (1990);
- Memorandum and Order (Admitting Parties and Deferring Action on a Stay), August 28, 1990 (unpublished);
- Memorandum and Order (Completeness of the Hearing File), September 4, 1990 (unpublished);
- Memorandum and Order (Intervenors' Renewed Motion for Completion of Hearing File and Related Matters), LBP-90-33, 32 NRC 245 (1990);
- Memorandum and Order (Motion for Order Concerning Documents), LBP-90-34, 32 NRC 253 (1990);
- Memorandum and Order (Grant of Temporary Stay), LBP-90-35, 32 NRC 259 (1990);
- Memorandum and Order (Licensee's Partial Response Concerning Temporary Stay), LBP-90-38, 32 NRC 359 (1990);
- Memorandum and Order (Motion for Reconsideration), November 9, 1990 (unpublished);
- Memorandum and Order (Dissolution of Stay), LBP-90-41, 32 NRC 380 (1990);
- Memorandum and Order (Pending Motions, Including Those Related to Possession of ^{241}Pu), LBP-90-45, 32 NRC 449 (1990);
- Memorandum and Order (Motion to Strike Portions of Intervenors' Rebuttal), January 23, 1991 (unpublished);
- Memorandum and Order (Motion to Strike Langhorst Affidavit), January 24, 1991 (unpublished);

- Memorandum and Order (Questions), February 26, 1991 (unpublished);
- Memorandum and Order (First Initial Decision, LBP-91-12, 33 NRC 253 (1991); CLI-91-7, 33 NRC 295 (1991).

IV. THE LEGAL SETTING

This proceeding arises under Subpart L of the Commission's procedural regulations, Title 10, sections 2.1201-2.1263 of the *Code of Federal Regulations* (C.F.R.).[14] The Intervenors are the Missouri Coalition for the Environment, the Mid-Missouri Nuclear Weapons Freeze, Inc., the Physicians for Social Responsibility/Mid-Missouri Chapter, Jeff Stack, Richard Smith, Amy Smith, Steve Jacobs, Marion Mace, Therese Folsom, Betty Aulabaugh, Diana Nomad, Clyde Wilson, and Kathleen Morrison.

During the pendency of this case, with the exception of a few weeks during which a temporary stay that I issued was in effect, the Curators of the University of Missouri have been authorized to conduct the activities covered by the license amendments that are contested in this proceeding.[15] The Licensee's amendments were granted by the Staff of the Nuclear Regulatory Commission on March 19, 1990, and April 5, 1990.

The principal legal standard governing the grant of both requested license amendments is that

> The applicant's proposed equipment and facilities are adequate to protect health and minimize danger to life or property;[16]
>
> The applicant is qualified by training and experience to use the material for the purpose requested in such manner as to protect health and minimize danger to life or property [and to comply with the regulations in 10 C.F.R. Part 70].[17]

The Intervenors have argued that the MURR facility is subject to requirements governing "plutonium processing and fuel fabrication plants," as defined in 10 C.F.R. §70.4. I find that this argument is incorrect. I accept[18] the Licensee's

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[14] Memorandum from Samuel J. Chilk, Secretary of the Nuclear Regulatory Commission, to B. Paul Cotter, Jr., "Request for Hearing on a Change in the University of Missouri's Material License," May 23, 1990.

[15] 10 C.F.R. §2.1205(l).

[16] This standard is repeated in Regulatory Guide 10.3, Rev. 1 (April 1977) at 10.3-3, ¶4.5.

[17] 10 C.F.R. §§30.33, 70.23.

[18] In weighing evidence, I may reach findings in favor of the Licensee if I am persuaded by a preponderance of the evidence in the record. I may find for the Intervenors if there is no preponderance in favor of the Licensee because the evidence either is in complete balance or favors the Intervenors. At times, I "adopt," "favor," or "accept" particular evidence, or "find" that particular evidence is persuasive. I use these words (and similar ones) to indicate that, based on the entire record and a weighing of the preponderance of the evidence, the indicated

(Continued)

factually uncontroverted assertion that its experiments utilize pure materials[19] and that they do not entail "scrap recovery" as defined in section 70.4. Nor do they meet any of the other criteria in the paragraph that defines plutonium processing and fuel fabrication plants.

MURR could still be treated as a plutonium and fuel fabrication plant because it conducts "research and development" as defined in section 70.4 and is an effort to extend investigative findings for the purpose of developing practical applications. However, if a research and development activity uses "unsubstantial amounts" of plutonium, it does not meet the criterion in section 70.4 for a plutonium and fuel fabrication plant.

What are unsubstantial amounts? Enough plutonium is being used in TRUMP-S to create serious potential risks and, under current regulations, to lead to a possible requirement that the Licensee have an emergency plan or show that releases would be within acceptable limits. 10 C.F.R. § 70.22(i)(1).[20] However, as is explained in the Statement of Considerations to the cited regulation:

> The additional requirements [emergency planning and decommissioning) would be applicable to plants for the manufacture of plutonium reactor fuel and plants for the conduct of *plutonium fuel research and development activities*. These plants typically process *kilogram* quantities of plutonium.[21] [Emphasis added.]

I have concluded that, within the context of the regulations governing the definition of the phrase "plutonium processing facility," the quantities of plutonium and americium and of other actinides being used by the Licensee are "unsubstantial quantities." Therefore, I conclude that the Licensee is not operating a plutonium and fuel fabrication plant.

V. THE WITNESSES

Having reviewed the qualifications of the expert witnesses offered by both sides, I find that each was qualified for the submitted testimony. Indeed, although

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finding is correct. Often, the facts are unopposed on the record. "Adopting" a fact does not mean it as scientifically correct or "true" but that it represents my weighing of the evidence before me.

[19] Licensee's Written Presentation, November 14, 1990, at 4-5; Affidavit of J. Steven Morris (May 24, 1990), ¶6.

[20] The emergency planning regulations took effect April 7, 1990, and are not automatically applicable (without further Staff action) to this case, since the application was filed and approved by the Staff before that date. LBP-90-45, 32 NRC 449, 455 (1990).

[21] Plutonium Processing and Fuel Fabrication Plants, 36 Fed. Reg. 9786 (May 28, 1971) (emphasis added). *See also* 10 C.F.R. § 140.3(h), which excludes research activities using less than 1 kilogram of plutonium in unsealed form from the definition of a plutonium processing and fuel fabrication plant. (I am not persuaded by Intervenors' argument that the specificity in section 140.3(h) suggests to them that the Commission knows how to speak specifically and that the standard of "unsubstantial amounts of plutonium" must refer to some lesser amount of plutonium; Letter from Lewis C. Green to Presiding Officer, April 10, 1991.)

the witnesses enjoy differing perspectives, I conclude that each has reviewed the evidence that was available and has rendered an honest, expert opinion.

A condensed version of the credentials of the expert witnesses, listed alphabetically, includes:

William J. Adam (B.A., Botany, Univ. of Wisconsin; M.S., Bionucleonics, Purdue Univ.; Ph.D., Bionucleonics, Purdue Univ.). Materials Licensing Reviewer for the Staff of the U.S. Nuclear Regulatory Commission. Eleven years experience dealing with public health, environmental protection, and government relations. Knowledge of program planning, analysis, and development. Solid research, communication, and organizational skills. Letter from Colleen Woodhead, Staff of the Nuclear Regulatory Commission, November 2, 1990.

Chester B. Edwards, Jr. (B.S., Education (Industrial Arts), Univ. of Missouri–Columbia, 1975; Associate Degree in Applied Science in Electronic Technology, 1962). 1968 to present, MURR, including: facilities manager, reactor maintenance engineer, senior reactor operator (License SOP-1123, issued by USNRC). Licensee's Written Presentation, November 14, 1990, Exh. 4, Attach. 1, at 1.

Veryl G. Eschen (M.S., Metallurgical Engineering, Univ. of Idaho, 1966; B.S., Metallurgical Engineering, South Dakota School of Mines and Technology, 1959). 1989 to present, Los Angeles Technical Association (LATA); 1973-89, Stearns-Roger; 1970-73 and 1959-62, General Electric Co.; 1962-70, Argonne National Laboratory. Areas of specialization: radioactive/hazardous waste management; materials engineering; process engineering; and project management. Registered Professional Engineer, Idaho and Colorado. Currently working on two LATA projects at the Rocky Flats Plant. One project is to evaluate the compliance of current Rocky Flats Plant standards to DOE Order 6430.1A. The second project involves field evaluations of existing glove box ventilation systems and performing several studies to recommend ways to improve filter sealing systems, inspect ducts for plutonium buildup, evaluate modifications to the ducts, and establish ventilation parameters to prevent particulate carry-over from process systems. Licensee's Written Presentation, November 14, 1990, Exh. 7, Attach. 1, at 1.

Daniel Hirsch. 1984-89, Director of the Adlai E. Stevenson Program on Nuclear Policy at the University of California, Santa Cruz. During the previous decade taught at UCLA about issues associated with nuclear and alternative energy sources. Has presented testimony on nuclear matters to numerous congressional committees, the NRC's Advisory Committee on Reactor Safeguards, the Commission itself, and other official agencies. In 1986 was appointed by the NRC to an advisory committee on Containment Performance Design Objectives. After the Chernobyl

accident, was asked to chair the Subcommittee on General Oversight and Northwest Power of the Interior Committee of the U.S. House of Representatives and to assemble a panel of experts to inspect and review the safety of the Hanford N-reactor. Spent part of 1989 on a fellowship at the Federation of American Scientists in Washington, D.C., as the Federation's Bernard L. Schwartz Fellow on Energy and Environment. Has recently been appointed by the U.S. Environmental Protection Agency to an interagency task force overseeing the cleanup of Rockwell International's nuclear facility in Santa Susana, California. Intervenors' Exhs. 1-18 Accompanying Intervenors' Written Presentation, October 15, 1990.

C. Leon Krueger (B.S., Northeast Missouri State Teachers College, 1964; Ph.D., Chemistry, Univ. of Missouri, 1969). 1990 to present, Research Scientist, MURR; 1981-90, Research Associate, Chemistry, MU; 1979-81, Visiting Assistant Professor, Chemistry, MU. Presently engaged in the TRUMP-S experiment. Licensee's Written Presentation, November 14, 1990, Exh. 5, Attach. 1, at 1.

Susan M. Langhorst (B.S., Nuclear Engineering, *Summa Cum Laude*, Univ. of Missouri–Rolla, 1976; M.S., Nuclear Engineering, Health Physics option, Univ. of Missouri–Columbia, 1979; Ph.D., Nuclear Engineering, Health Physics option, Univ. of Missouri–Columbia, 1982). 1987 to present: Manager, Reactor Health Physics, MURR, University of Missouri. Certified Health Physicist since September 1985; member of the American Board of Health Physics' Panel of Examiners. Responsible for radiation safety program at 10-MW research reactor and for all work performed under material licenses at the reactor. Has been employed full time at the MURR since 1980 in the positions of Manager, Reactor Health Physics; assistant professor; and research scientist. Licensee's Written Presentation, November 14, 1990, Exh. 2, Attach. 1, at 1-2.

Joseph K. Lyou (Ph.D., social psychology, Univ. of California at Santa Cruz, with training in statistics). Associate Director, Committee to Bridge the Gap, Los Angeles–based research organization focusing on nuclear matters. Was closely associated with the Adlai Stevenson Program on Nuclear Policy at Univ. of Southern California. Statistical consultant. Intervenors' Exh. 20, Declaration of TRUMP-S Review Panel, December 24, 1990.

William Markgraf, Director of Fire and Rescue Services for the City of Columbia Missouri. Licensee's Exh. 22, January 28, 1991, at 1, ¶ 1.

J. Charles McKibben (B.S., Chemical Engineering, Univ. of Missouri–Columbia, 1971; M.S., Nuclear Engineering, Univ. of Missouri–Columbia, 1984; 1971-72, U.S. Navy Nuclear Power Training Program).

March 1976 to present: MURR. Progressive responsibilities in directing the engineering and operation of highest power research reactor at any university. The reactor operates 24 hours/day, 7 days/week. Previously associate director, reactor manager, upgrade director, reactor operations engineer. Licensee's Written Presentation, November 14, 1990, Exh. 10, Attach. 1, at 1.

Walter A. Meyer, Jr. (B.S., Electrical Engineering, *magna cum laude*, University of Missouri–Columbia, 1980; MBA, University of Missouri–Columbia, 1984). MURR Reactor Manager, 1988 to present; MURR Acting Reactor Manager, 1985-87; MURR Reactor Operations Engineer, 1982-89. Attachment to Application for Amendment to SNM-247, February 20, 1990.

J. Steven Morris (B.S., Chemistry, Univ. of Missouri, 1966; Ph.D., Inorganic Chemistry, Univ. of Missouri, 1973), interim director of the MURR since 1989, and employed at the MURR since 1973. Has worked as a quality control chemist for Standard Oil, a graduate teaching assistant, an instructor, a radiochemist, a research scientist, a senior research scientist, and an adjunct associate professor of chemistry. Licensee's Written Presentation, November 14, 1990, Exh. 3, Attach. 1, at 1-2.

Daniel J. Osetek (M.S., Nuclear Engineering, Univ. of New Mexico, 1978; B.S., Physics, New Mexico Institute of Mining and Technology, 1969). 1989 to present, LATA; 1978-89, EG&G Idaho; 1974-78, Los Alamos National Laboratory; 1971-74, Lovelace Inhalation Toxicology Research Institute. Areas of specialization include: nuclear facility safety, nuclear reactor safety, severe-accident phenomena evaluation, source-term analysis, in-reactor experiment design, and plutonium and fission-product aerosol characterization. Licensee's Written Presentation, November 14, 1990, Exh. 1, Attach. 1, at 1.

Sheldon C. Plotkin (B.S.E.E., University of Colorado, 1946; B.S., Aeronautical Engineering, Univ. of Colorado, 1949; Ph.D., Electrical Engineering, Univ. of California, 1956). Expertise includes: accident analysis, safety design, dynamic human factors, systems engineering, and fundamental technical analyses. Background: Over 35 years experience in analysis and design of electronic, electromechanical, human factor, chemical and computer systems, specialized experimentation, modeling, and demonstrations. Previous employers include Los Alamos Scientific Laboratory, U.S. Naval Air Missile Test Center, Univ. of California (Berkeley), Energy Systems, Univ. of Southern California, Hoffman Electronics, Hughes Aircraft, TRW Systems, and the RAND Corporation. Intervenors' Exhs. 1-18 Accompanying Intervenors' Written Presentation, October 15, 1990.

Miguel Pulido (B.S., Mechanical Engineering with emphasis on Energy Engineering, California State University (Fullerton), 1980). Professional background as a consulting engineer in energy and air-flow matters, focusing on design and analysis of ventilation systems, estimating leak rates from buildings and other structures, air-flow matters generally, and other related aspects of mechanical engineering. Member of the Executive Board of the Southern California Federation of Scientists. Intervenors' Exhs. 1-18 Accompanying Intervenors' Written Presentation, October 15, 1990.

Robert G. Purington (B.S., Mechanical Engineering, University of California–Berkeley). 1960-82, Fire Chief and Fire Protection Engineer (Emergency Preparedness), Lawrence Livermore National Laboratory; 1983 to present, Board of Directors (Past President–Chairman of the Board), Risk Technical Services (an engineering firm specializing in litigation), Mountain View, Calif.; 1949-60, Captain in Oakland Fire Department; 1970 to present, private consultant: fire investigation, expert witness, codes and standards, fire protection engineering; 1950 to present, fire protection instructor: Oakland Junior College, Merritt College, Peralta College, Chabot College, Cogswell College. Registered Fire Protection Engineer. Attach. 1 to Licensee's "Letter to Judge Bloch from Maurice Axelrad, dated January 28, 1991," Exh. 19, at 1-2.

William F. Reilly (B.S., General Engineering, U.S. Military Academy, 1952; M.S., Nuclear Engineering, MIT, 1958; M.S., Management Science-Operations Research, George Washington Univ., 1972; Industrial College of the Armed Forces, 1973). 1988 to present, MURR: Assistant Director, Fiscal/Reactor Services, responsible for identifying, directing the development, managing, and terminating service functions; 1987-88, Manager, Reactor Upgrade. 1976-87, Nuclear Projects, Inc.: in residence at the Callaway Nuclear Power Plant site in Missouri from beginning of construction through 2 years of operation. Licensee's Written Presentation, November 14, 1990, Exh. 12, Attach. 1, at 1-2.

Steven C. Sholly (B.S., Education, Shippensburg State College, 1975). 1985 to present, Senior Consultant, MHB Technical Associates (risk assessment, risk management, emergency planning, nuclear power plant operational performance, evaluation of regulatory compliance); 1981-85, Technical Research Associate and Risk Analyst, Union of Concerned Scientists. Frequently invited as a speaker and task force member, including: Member, USNRC Panel on Regulatory Uses of Probabilistic Risk Assessment (Peer Review of NUREG-1050), 1984; Member, Independent Advisory Committee on Nuclear Risk for the Nuclear Risk Task Force, National Association of Insurance Commissioners, 1984 (report

issued December 11, 1984). Attachment to Intervenors' Response to Reply of NRC Staff Affiant Amarendranath Datta . . . , June 11, 1991.

Theodore B. Taylor (B.S., Physics, California Institute of Technology, 1945; Ph.D., Theoretical Physics, Cornell University, 1954). 1946-49, Theoretical Physicist at the University of California Radiation Laboratory in Berkeley; 1949-56, staff of the Los Alamos Scientific Laboratory working on the design of nuclear explosives. Joined General Dynamics Corporation where, along with Edward Teller and others, helped design the TRIGA research reactor. Was also Technical Director of the Nuclear Space Propulsion Project. 1964-66, Deputy Director (scientific) of the Defense Atomic Support Agency. 1967-68, independent consultant to the U.S. Atomic Energy Commission working on international safeguards for nuclear materials, Vienna, Austria. 1967, founded the International Research and Technology Corporation, a company primarily concerned with studies of the impact of technology on society; Chairman of the Board of IRTC until 1976. 1976-80, visiting lecturer with the rank of Professor, Mechanical and Aerospace Engineering Department of Princeton University. Commissioner on the Kemeny Commission (the President's Commission on the Three Mile Island accident). Intervenors' Exh. 15, Accompanying Intervenors' Written Presentation, October 15, 1990.

Donald W. Wallace, Captain II of an NFPA-rated Class I Fire Station of the Los Angeles Fire Department. Twenty-five years experience in the fire prevention and fire response field. Past Chairman of the Los Angeles Fire and Police Protection League (1972-1974-1976); 1967-69, Director and Secretary of Professional Fire Fighters, Inc.; 1971-72, Field Representative, International Association of Fire Fighters. 1971-76, President of United Fire Fighters of Los Angeles City, Local 112. Life Member (one of two), United Fire Fighters of Los Angeles City. As a private citizen, Chairs the Rocketdyne Cleanup Coalition, an organization of community groups and individuals concerned with allegations of accidents and radioactive and chemical contamination at Rockwell's Santa Susana site. Intervenors' Exh. 21, Declaration of Donald W. Wallace, December 24, 1991.

James C. Warf, Professor Emeritus of Chemistry, Univ. of Southern California; faculty member since 1948. Professional specialty for nearly five decades has been the chemistry of nuclear materials. Prior to joining the faculty of USC, spent 5 years with the Manhattan Project, mostly at Ames, Iowa, the University of Chicago, and Oak Ridge, Tennessee. Specialized in the chemistry of nuclear materials and was Group Leader of the Analytical Section and, part of the time, the Inorganic Section. The work concerned the chemistry of uranium, thorium, neptunium,

plutonium, and fission products, crystallography, thermodynamics, and development of many analytical procedures. Intervenors' Exhs. 1-18 Accompanying Intervenors' Written Presentation, October 15, 1990.

Lowell Wayne (B.S., Chemistry, Univ. of Calif. (Berkeley), 1937; Ph.D., Chemistry, California Institute of Technology, 1949; Certificate of Industrial Hygiene, Harvard University, 1942). 1972 to present, Vice President and Director of Scientific Activities, Pacific Environmental Services (a company providing environmental services to governmental agencies and industry); 1962-72, University of Southern California, sector head of the Air Pollution Control Institute and research analyst for the Allan Hancock Foundation. Previous employers: Los Angeles County Air Pollution Control District, UCLA, Stanford Research Institute, Mellon Institute of Industrial Research, University of Colorado, U.S. Navy, Shell Development Company. Chemist and environmental scientist associated with the Southern California Federation of Scientists. Professional specialties are atmospheric chemistry, industrial hygiene, air quality modeling, statistical analysis of air quality data, computer simulation of photochemical smog, and atmospheric transport of pollutants. Intervenors' Exhs. 1-18 Accompanying Intervenors' Written Presentation, October 15, 1990.

Myron Wollin (B.S., physics, City College of New York, 1961; M.S., radiation physics, College of Physicians and Surgeons of Columbia University, New York, 1963). Certified in Therapy Physics, June 1981. 1977 to present, lecturer, Radiation Oncology–Physics, University of California at Los Angeles; 1972 to present, Southern California Permanente Medical Group, Los Angeles (radiation therapy, including treatment planning, computer systems development, conducting radiation safety surveys, and teaching and training residents); 1964-65, Sloan-Kettering Institute, New York, Research Assistant. 1974-75, President, Southern California Chapter of the American Association of Physicists in Medicine. Intervenors' Exh. 20, Declaration of TRUMP-S Review Panel, December 24, 1990.

VI. THE RISK OF FIRE OR EXPLOSION

The Intervenors and the Licensee differ in their assessment of the safety of the licensed activities. They disagree about whether a sprinkler system is needed in the basement of the Missouri University Research Reactor and whether it is appropriate to perform the research in a basement facility. The Intervenors rely on National Fire Protection Association publications to support their positions and they also present testimony of expert witnesses. In addition, the Intervenors

rely on published articles written by the Licensee's fire prevention expert, Robert G. Purington.

The Licensee did not acknowledge that a sprinkler system in the Alpha Laboratory was required for safety, but it offered voluntarily to install one for the additional assurance that one would provide.[22] The remainder of the basement of MURR is without sprinklers and the Licensee has not offered to install sprinklers in that location.

A. National Fire Protection Association Recommendations

1. Use of Sprinklers

The National Fire Protection Association (NFPA) recommends automatic sprinkler systems in former section 2-2.2 of NFPA 801 and in Appendix B, § B-2.2, of the 1991 version. The former section stated:

> The use of fire resistive building components and equipment is highly desirable in those areas where radioactive materials are to be stored or used. Some form of automatic protection, such as automatic sprinklers, would be highly advantageous wherever combustibles are encountered. The installation of automatic extinguishing systems will make it less necessary for personnel to expose themselves to possible danger, will start the fire fighting process automatically, will sound an alarm and will make efficient use of the water supply.

Additionally, as the Intervenors point out, Licensee's witness, Mr. Purington, wrote:

> In most cases, *water — especially from automatic sprinklers — is the best way to control fire, including fires involving radioactive materials.* Nevertheless, the use of sprinkler systems in radioactive areas is often debated, even though experience has shown that one of the best fire protection techniques for these facilities is automatic sprinklers. The arguments against sprinklers are usually unfounded, even when fissile materials are present. . . . Opponents of sprinkler systems cite the possibility of the spread of contamination by means of the water used to control the fire. Even if this is possible, the threat of airborne contamination resulting from uncontrolled fire is greater. Consequently, some contaminated water is a small price for quick and effective fire suppression by means of automatic sprinklers. If the threat of the spread of contaminated water is serious, sumps, drains, berms, and other means of water containment should be provided. . . . [Emphasis added.][23]

Furthermore, in his affidavit filed in this case, Mr. Purington wrote:

> Sprinklers are like motherhood to us fire protection people. We'd like to see the whole world equipped with sprinklers, including all dwellings. Consequently, even though in view of the

[22] Licensee's Response to Presiding Officer's Questions, March 26, 1991, at 8; Licensee's Exh. 20, ¶ 45.

[23] Intervenors' Exh. 6, March 26, 1991 filing, "Radioactive Materials," Robert G. Purington, in *Industrial Fire Hazards Handbook* (1st ed. 1979) at 689-90.

limited fire loading discussed above, sprinklers are not mandated[24] in the Alpha Laboratory, I would recommend to the University the installation of sprinklers in the Alpha Laboratory. I have been informed that it plans to do so.[25]

I have decided to adopt Mr. Purington's preference for the installation of sprinklers in a laboratory handling highly toxic and radioactive materials in unencapsulated form. Given the risks of possible dissemination of these materials should a fire get out of hand, I have concluded that a sprinkler system is necessary to adequately ensure safety. I have required both the installation of a sprinkler system in the Alpha Laboratory[26] and a report to the Staff concerning whether any supplemental water collection systems may be required to prevent spreading contaminated water.[27] Prior to my imposing this requirement, the Licensee had volunteered to install the sprinkler.[28]

2. *Laboratories in Basements*

I have carefully considered Intervenors' arguments concerning the special dangers of basement fires, as well as the recommendation that the NFPA once made against using radioactive materials in below-grade areas. Nevertheless, I have decided that it is permissible for the Alpha Laboratory to continue to be operated in its present location.

I fully appreciate the validity of the Intervenors' argument, based on the previous NFPA recommendation and the writing of Mr. Purington, that basement

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[24] In light of the risks involved in the TRUMP-S experiments and the need to be assured that a major fire will not occur, I find that it is necessary for such a system to be installed in the Alpha Laboratory for there to be an adequate assurance of safety. This is consistent with Mr. Purington's previous views, as published in the *Industrial Fire Hazard Handbook*, cited above. Hence, I find that such a system is mandated under the standard of an adequate assurance of safety.

(This explanation, in the context of this entire opinion, which discusses the process and risks of TRUMP-S, is intended to satisfy the Commission's Memorandum and Order, CLI-91-7, 33 NRC 295 (1991), asking for a fuller explanation of the reason for granting relief.

Concerning the requirement to notify parties of their appeal rights, *see Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-917, 29 NRC 465 (1989). That case holds that only final decisions of major segments of cases may be appealed. In light of that decision, my previous order might have been labeled as a Memorandum and Order rather than as an Initial Decision.)

[25] Licensee's Exh. 19, Affidavit of Robert G. Purington, January 28, 1991, at 19.

[26] *See also* BOCA National Building Code, 1987, §1002.15, which is in effect in the City of Columbia but appears not to be directly applicable to the University. That code prohibits even a nonhazardous use in a basement unless it is fully protected by sprinklers. Intervenors' Exh. 2 (filing of March 26, 1991).

[27] LBP-91-12, 33 NRC 253, 255-56, 258 (1991). Note that the MURR basement already has a drain collecting system. Licensee's Exh. 19 at 22, ¶11.

[28] LBP-91-12, 33 NRC at 254.

fires are a special hazard.[29] In particular, I accept the following proposed findings of the Intervenors:[30]

> The problem of basement fires, and the limited value of sprinklers, are explained in the declaration of Donald Wallace (Exhibit 1). The principal problem is the lack of access. There are usually only two stairways to a basement. (Here, there seems to be only one stairway. See Licensee's Exhibit 4, ¶ 32.) As compared with a fire above ground level, this is very limited access. When a fire is above ground, if one approach is blocked by heat or flames or some other obstacle, fire fighters can gain access by breaking down windows or doors, or even breaching walls, but that cannot be done in a basement.
>
> Further, the smoke is much worse in a basement fire, because the lack of oxygen causes incomplete combustion and increased smoke. The heat is much worse, because the concrete walls of the basement radiate the heat back into the room, and it cannot escape. The smoke and heat compound the problem of fire fighter access, because they both concentrate at the top of the stairs, where the fire fighter will have to try to approach the fire, if possible.
>
> Being at the top of the stairs in a cellar fire often has been described as similar to being at the top of a chimney with a fire in its hearth.
>
> Smith, "Tackling Cellar Fires," *Firehouse*, April 1989 at 16 (Exhibit 12, page A53).
>
> As long ago as 1945 a writer quoted the NBFU Bulletin #67, "Basement fires will continue to be the bane of a fireman's work, and to be a possible source of great loss until proper legislation is enacted." *Wood, Fire Protection through Modern Building Codes* (American Iron & Steel Institute 1945) at page 59, footnote.

On balance, after considering the entire record, including Licensee's detailed evidence of the construction of the Alpha Laboratory and the adjoining area and its evidence of its procedures (discussed below), I am persuaded that the Licensee has demonstrated that there is an adequate assurance of safety for locating the Alpha Laboratory in a basement.

NFPA once provided that "[b]uildings in which radioactive materials are to be used *should preferably* be of a single-story height without basements or other below-grade spaces." (Emphasis added.) However, as is demonstrated by Licensee's Exhibit 23, the 1991 version of NFPA 801 has deleted the quoted language, so that there is not even a preference left in the current version of the code.

I am not persuaded by the Licensee's arguments that the NFPA recommendations are not applicable to the Alpha Laboratory either because: (1) the Licensee is the authority having jurisdiction over the MURR facility and it has

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[29] I do disagree with the significance attributed by the Intervenors to *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-85-49, 22 NRC 899, 921, 922 (twice), 923 (1985). That case stands for the proposition that compliance with NFPA recommendations is probative of having provided an adequate assurance of safety. This is analogous to compliance with Staff guidance, which also is probative of an adequate assurance of safety. Such compliance is not *required*, however, since safety can always be ensured through means shown to be equivalent to those recommended by the Staff.

[30] Intervenors' Response to Memorandum and Order (Questions) of February 26, 1991 (March 26, 1991), at 3-4.

not decided to apply the recommendation, or (2) the NRC has not imposed a regulatory requirement.

The question before me is whether there is an adequate assurance of safety. The absence of an NRC regulation concerning the use of basements is neutral and nonsignificant.[31] The regulatory scheme is comprised mainly of requirements that equipment and procedures be carefully described so that the Staff — or the Presiding Officer, when there is one — may determine whether there is an adequate assurance of safety.[32]

My principal reason for accepting the basement location of the Alpha Laboratory is that, after careful study of the extensive documentation that has been provided about this location and after imposing some additional precautions, I am persuaded that it provides an adequate assurance of safety. The additional precautions I have ordered include sprinklers installed in the Alpha Laboratory, wiring voluntarily added by the Licensee to the window in the wall between the Alpha Laboratory and the remainder of the basement, and the conditions I am imposing in this Order with respect to the basement space immediately adjacent to the laboratory. With these additional precautions, I am convinced that the design of the Laboratory, its personnel, its procedures, its monitors and alarms, and other fire-related procedures combine to provide an adequate assurance of safety. Consequently, I accept the basement location as consistent with the Commission's insistence on safety.

I also accept the testimony of Robert G. Purington that:

> the scarcity of ignition sources make the chances of a fire in the Alpha Laboratory slim. Also, even if a fire should start in the Alpha Laboratory it is unlikely that it would spread beyond the initial fuel. This is because of the low fuel loading, the lack of fuel continuity, and small heat release rate of the fuel in the Alpha Laboratory. For the same reasons the fire would never reach flashover. In addition, the fire would not spread beyond the confines of the Alpha Laboratory.[33]

This testimony was submitted by the University of Missouri even though its consultant's recommendation might require an additional expenditure of funds.

I am further persuaded by the testimony of Amarendranath Datta, a member of the NRC Staff. That testimony persuades me that a maximum credible fire

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[31] *See* the statement of Amarendranath Datta of the NRC Staff (NRC Staff Response to Memorandum and Order, April 2, 1991) at 6:

> Apart from the general requirement in 10 CFR §30.33 and 10 CFR §70.23 that: "[t]he applicant's proposed equipment and facilities [be] adequate to protect health and minimize danger to life or property," there exists at this time no detailed staff guidance for the materials licensee on fire safety measures. There is no precedent known to me of any prior staff decision on an issue related to the fire safety of a similar materials facility.

[32] *See, e.g.*, 10 C.F.R. §§70.22, 70.23, 70.31; *see also* my ruling, above, that a sprinkler system is needed in the Alpha Laboratory to provide an adequate assurance of safety.

[33] Licensee's Exh. 19, Affidavit of Robert G. Purington, January 28, 1991, at 3.

in the Alpha Laboratory would be extinguished within 30 minutes and would reach a maximum temperature of 375°F.[34] The testimony of Captain Donald W. Wallace corroborates my finding that the addition of a sprinkler system in the Alpha Laboratory prevents a credible fire from enveloping the wooden frame of the laboratory.[35]

I am influenced, in my decision to approve a basement laboratory, by positive factors associated with having the Alpha Laboratory within the MURR facility. These include 24-hour control room and security operations and the availability of a previously approved emergency plan that adds some factor of safety to the Laboratory. I note also, as a matter of general information, that a basement laboratory is comparatively safe from tornadoes, which could create a hazard for an aboveground laboratory.

B. Maximum Credible Fire

I consider the principal difference between the Licensee and the Intervenors to revolve around the ferocity of fire that might occur in the Alpha Laboratory and contribute to the dissemination of radioactivity into the vicinity. Consequently, I think it important to review the arguments of the parties in detail, although I have just completed a brief discussion of the maximum credible fire that might be expected in the Alpha Laboratory.

At the outset, let me acknowledge that fire is a chaotic event. Everyone would like to avoid the property damage and loss of life attendant to fires. Yet fires do occur.[36]

Prior to installation of a sprinkler system, Donald W. Wallace, a Captain II of the Los Angeles Fire Department from 1983 to 1990 and past-chairman of the Los Angeles Fire and Police Protective League, testified that "a fire [in the Alpha Laboratory] could be very severe." He stated:

> [T]he Alpha Laboratory is of wood construction, employing a large amount of lumber, with the interior finished with drywall. I have done a *preliminary estimate* of the amount of lumber utilized, and it is a substantial fire load. [Emphasis added.]
>
> In addition, the MURR basement where the Alpha Laboratory is located houses flammable hydraulic oil, barrels of combustible radioactive wastes awaiting transfer, and numerous other fire loadings.

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[34] The many physical and procedural precautions in the Alpha Laboratory and the addition of a sprinkler system persuade me that a maximum credible fire that begins in the Alpha Laboratory would not involve the wooden frame of the Alpha Laboratory before MURR personnel or Columbia Fire Department (CFD) personnel would respond effectively and extinguish the fire. *See* Affidavit of Amarendranath Datta, May 9, 1991 (attached to NRC Staff Response of May 17), at 4, ¶5 (scenario of fire beginning in lab penetrating fire barrier would not be credible).

[35] Response of Donald W. Wallace to Questions of Presiding Officer, May 28, 1991 (attached to Intervenors' Response), at 3, ¶2 (a major fire originating in the Alpha Laboratory is not probable).

[36] *See* Declaration of TRUMP-S Review Panel, December 24, 1990, ¶70.

Additionally, a natural gas line runs through the basement, approaching to within 15 feet of the Alpha Laboratory.

There is nothing in this situation that would make a fire fighter feel confident that a major fire was unlikely. A gas leak leading to a gas explosion, breaking the Alpha Lab and glove box windows and igniting all the flammable and combustible materials in the basement is just one such scenario. Smoldering cigarettes dumped into a waste canister is another. A mistake with an acetylene or similar torch is another. Arson is another. Any of the multitude of traditional causes of fire could cause a fire that could involve the Alpha Lab.

Fire requires oxygen, heat, and fuel. The MURR basement has plenty of sources of all three. And if a fire started anywhere within the basement, it could readily spread and engulf all combustible and flammable materials throughout the facility. The wood of the Alpha Lab would be readily ignited, and everything inside it and near it placed at risk. The transuranics in the storage drawer would also readily be placed at risk, given the intense temperatures such basement fires can produce.

Mr. Meyer [Licensee's witness] says that, "In effect, the Alpha Laboratory is entombed inside a concrete vault isolated from the rest of the facility." In reality, the Alpha Lab is itself composed of a large quantity of highly combustible material, enclosed in a concrete oven that would substantially increase the temperatures in a fire and make fire fighting extremely difficult. The Alpha Lab is essentially a small wood-frame house in a concrete oven — a significant fire hazard. The presence of radioactive materials makes the hazard extraordinary.[37]

In a subsequent affidavit, in response to a question I asked concerning what a maximum credible fire might be, Chief Wallace testified:

First, it should be clear that the fire in the Alpha Laboratory may be one which originates in the laboratory, or originates elsewhere and migrates to the laboratory. In either event, it becomes a fire in the laboratory. Further, one cannot ignore the fact that the radioactive materials are not confined to the laboratory. The transuranics are apparently stored elsewhere prior to use, are archived elsewhere after use, and are transported to and from the laboratory, and the waste is stored elsewhere. Thus the radioactive materials are vulnerable to fire outside the lab.[38]

The maximum credible fire is a high temperature, basement-wide fire of long duration. The maximum credible fire is a fire which involves all the combustibles that are in the basement, or could potentially be there at some time when an accident occurs, without derating some and ignoring others. Without more information concerning the construction of the entire facility, it is not possible for me to quantify it in terms of total BTUs, but it would be a very intense fire of long duration.

In determining the maximum credible fire, one cannot ignore or "derate" the combustible nature of the wood used in construction of the Alpha Lab, or the combustible finishes, or the plywood roofing over the lab, or the combustible hydraulic fluids in the basement, or the natural gas, or the stored wastes, or any of the other combustibles present, or other combustible materials that might be brought into the basement during the life of this project even though good housekeeping practices may be violated. Everything that can burn has to

[37] Intervenors' Exh. 21, Declaration of Donald W. Wallace, December 24, 1990, at 8-9.

[38] I have carefully considered the possibility of accident when the materials are stored, subdivided, or archived after use. *See* below, pp. 69-73, 75-76 (§ VI.C.2.a), where I conclude that there is an adequate assurance of safety during these stages of the TRUMP-S operations.

be considered in the maximum credible fire. In considering what is the maximum credible fire, you cannot simply ignore the fact that drywall, when it is heated, loses some of its structural value. You cannot ignore the fact that fire that would occur in the ceiling joists might cause the ceiling to collapse and therefore rip out the drywall. Once you lose the integrity of the ceiling you risk exposing the wooden studs inside the walls. While it is safer to have fire resistive drywall than not to have it, that does not eliminate the fire load of the latent heat in those wooden studs. You cannot control the mechanical damage that can occur in a fire. As long as the wooden studs and wooden joists are there, in a serious fire no reasonable fire fighter would say, "oh, well, we can't count that."

Further, a fire-protective covering such as drywall cannot be counted on to keep a fire from reaching the wooden studs. As all experienced firemen know, people constantly breach the fire-protective covering to wire, or rewire, or run new plumbing or gas lines, or do any kind of mechanical work. They practically never close up the fire protective cover, whether in the ceiling or in the wall. Everything that burns has to be counted in the maximum credible fire.[39]

The single most important reason that I favor the Licensee's analysis of the maximum credible fire is that it relies on a fire loading analysis done pursuant to the NFPA *Fire Protection Engineering Handbook.* This analysis was made available to Intervenors but was not specifically rebutted by them, although they could have done so in response to my question about fire loading inside the Alpha Laboratory. Compared to the Intervenors' analysis, the Licensee's analysis was very specific, including calculations for each of the combustibles that might be involved in a fire. The crucial portion of the Licensee's analysis, taken from Licensee's Exh. 20, Affidavit of Walter A. Meyer, Jr., Responding to Portions of the Intervenors' Rebuttal, January 28, 1991, ¶¶33-36, follows:

33. Attachment A to this Affidavit is a calculation developed by the MURR staff which contains a detailed fire loading analysis for the Alpha Laboratory and the general basement to the MURR facility. This calculation was performed in accordance with the guidance and direction of Mr. Purington. A fire loading is the measure of the maximum heat that would be released if all the combustibles in a given area were burned. It is expressed in equivalent weight of combustibles (lb/ft^2) or in BTU/ft^2.[40] This analysis was conducted in accordance with the techniques provided in the NFPA Handbook Section 7/Chapter 9 (16th ed., 1986) (Attachment B). In accordance with Mr. Purington's instructions, fire loadings were calculated separately for the Alpha Laboratory and then for the remainder of the MURR basement. *See* Licensee's Exhibit 19, ¶6, p. 13. The results are as follows:

[39] Intervenors' Exh. 1, Declaration of Donald W. Wallace, attached to Intervenors' Response to Memorandum and Order (Questions) of February 26, 1991 (March 26, 1991), at 4-5.

[40] [Footnote in original.] The fire load is commonly expressed as the equivalent weight of the combustibles divided by the fire area in square feet (lb/ft^2). The equivalent combustible weight is defined as the weight of "ordinary combustibles" (having a heat of combustion of 8000 BTU/lb) that would release the same amount of heat in a particular space as the existing combustibles. This "equivalent combustible weight" allows for comparison between products with varying heats of combustion (i.e., that would release different amounts of energy in a fire, e.g., wood, paper products, plastics, and oil). The fire loading may also be expressed as the average amount of energy released over the fire area (BTU/ft^2). NFPA *Fire Protection Handbook*, p. 7-111 (Attachment B).

Table 1

	Combustible Area	Content[41]
Alpha Laboratory	500 ft^2	1.39 lb/ft^2 or 11,131 BTU/ft^2
MURR Basement (derated) see ¶35	3424 ft^2	0.50 lb/ft^2 or 3,977 BTU/ft^2

As indicated in the NFPA *Fire Protection Handbook* (p. 7-113, Attachment B) and contrary to Chief Wallace's claims of "substantial" (¶27, p. 8) and "considerable" (p. 9, Conclusions) fire load, these are considered extremely low fire loads.[42]

34. The analysis of the fire loading considered the contents of the Alpha Laboratory and the MURR basement area. *See* Affidavit of Chester B. Edwards, Jr., Regarding the Adequacy of the Alpha Laboratory Equipment, Fire Related Features in the Alpha Laboratory, and the Storage and Transfer of Actinides and Archived Materials, ¶¶20-22, 34-38 (November 13, 1990) (Licensee's Exhibit 4); Affidavit of Dr. Leon C. Krueger Regarding the Potential for a Fire from Actinides Being Performed in the Alpha Laboratory, ¶¶11-20 (November 13, 1990) (Licensee's Exhibit 5). In accordance with Mr. Purington's instructions the Licensee did not include the wooden structural members protected by the type X (fire rated) gypsum wallboard or the plywood roofing above the Alpha Laboratory which is protected by fire retardant paint. *See* Licensee's Exhibit 19, ¶6, p. 13.

35. The vast majority of combustibles in the MURR basement are contained in metal cabinets or containers (e.g., the combustible low-level radioactive wastes are stored in metal barrels). *See* Licensee's Exhibit 4, ¶38. Since such materials will not burn completely and do not contribute fully to the fire loading (and in accordance with Mr. Purington's directions), these materials were considered to be "derated." *See* Licensee's Exhibit 19, ¶6, p. 14; NFPA Handbook, Section 7/Chapter 9, p. 7-111 (Attachment B). The derated fire load is . . . the sum of the equivalent weight of free combustibles plus the product of the derating factor (K) times the equivalent weight of the enclosed combustibles. *Id.* at p. 7-113. The derating factor for fully enclosed combustibles such as those found in the basement area are 0.1. *Id.* Thus, the derated fire loading for the general basement area is 0.50 lb/ft^2 or 3,977 BTU/ft^2.[43] *See* Attachment A.

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[41] (New footnote.) There is a very small numerical discrepancy between the BTU/ft^2 figures in the table and those obtained by multiplying the lb/ft^2 figures shown by 8000 BTU/lb, as suggested in the previous footnote. The discrepancy is small enough that it does not affect my confidence in the accuracy of the totals shown.

[42] [Footnote in original.] The fire load of an occupancy is described as low if it does not exceed an average of 100,000 BTU per sq. ft. of net floor area of any compartment. . . ." NFPA Handbook, p. 7-113 (Attachment B).

[43] [Footnote in original.] Chief Wallace argues that the MURR basement houses "numerous" and "substantial" fire loadings, including: (1) flammable hydraulic oil, (2) barrels of combustible radioactive wastes, and (3) a natural gas line. Wallace Declaration, ¶27. As is indicated by Chester Edwards' Affidavit (Licensee's Exhibit 4) the hydraulic oil in the basement is contained inside the freight elevator (located primarily in the freight elevator's self-contained hydraulic oil reservoir (*id.*, ¶35)) and two hydraulic presses and their self-contained hydraulic oil reservoirs (*id.*, ¶37). This oil is completely contained inside metal machinery. Similarly, the low-level radioactive wastes in the basement are compressed and encased in metal barrels. *Id.*, ¶38.

Finally, there is a low-pressure natural gas distribution piping system in the basement area. This natural gas system is a one (1) inch steel pipe located in the ceiling of the MURR basement *with a safety valve and an isolation shut-off valve at its entry point into the MURR Building.* [Emphasis added.] *Id.*, ¶36. In the event of a fire at the MURR Facility, a licensed control room operator can be dispatched to turn off the natural gas distribution system within a matter of minutes. This safety valve would automatically shut off natural gas flow in the event of a line break. Furthermore, the likelihood of rupturing this gas line is remote. Thus, the natural gas

(Continued)

36. The walls and ceiling of the Alpha Laboratory are covered by 5/8 gypsum wallboard fire rated type X. *See* Licensee's Exhibit 4, ¶ 20. This wallboard has a 40-minute resistance rating (i.e., it would protect the studs and joists in the Alpha Laboratory for 40 minutes in a fully developed fire). NFPA *Fire Protection Engineering Handbook* (1990). Table 3-8.1, p. 3-131 (1990) ("Engineering Handbook"), Attachment D. As indicated in Mr. Purington's Affidavit (Licensee's Exhibit 19, ¶ 6, p. 13), this wallboard is adequate to protect the wooden support members in the walls of the Alpha Laboratory from a fire of the type which could reasonably be expected to occur in the laboratory or the MURR basement.

I have reviewed Attachment A to Licensee's Exh. 24 and find correct citations to authority with respect to the 40-minute time rating assigned to a 5/8-inch Gold Bond fire code Type X gypsum wallboard, which is the material used in the wall of the Alpha Laboratory.[44] Table 3-8.1, § 3/Chapter 8, Robert H. White, "Analytical Methods for Determining Fire Resistance of Timber Members," at 3-131.[45]

I would note that paragraph 15, page 6, of the Declaration of Donald W. Wallace, Intervenors' Exh. 1 to Intervenors' Response to Memorandum and Order (Questions) of February 26, 1991 (March 26, 1991), forcefully disputes the exclusions made in the Licensee's calculations. However, the Licensee has stated (as I quoted above) that its

analysis was conducted in accordance with the techniques provided in the NFPA Handbook Section 7/Chapter 9 (16th ed., 1986) (Attachment B).

Chief Wallace never disputes this statement or shows how the analysis deviates from the method used by that section. Nor does he present his own calculation to show the extent of the "errors" made by the Licensee. I therefore have decided to accept the Licensee's detailed analysis rather than the general statements of Chief Wallace.

My judgment is confirmed by the independently reached conclusions of Amarendranath Datta, of the Staff, who stated, at pages 3-5 of his affidavit:

4.3 I estimate the fire load in the laboratory space slightly higher than that presented by Mr. Walter A. Meyer, Jr. (Affidavit dated January 28, 1991), at 1.8 lb/sq. ft. (equivalent weight

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distribution system was not considered in the fire loading analysis. Moreover, as demonstrated by Mr. Purington (Licensee's Exhibit 19, ¶ 15, at 24), in the event of a leak in the gas lines the natural gas would accumulate at the ceiling (it is lighter than air) and be removed by the building ventilation system making the explosion postulated by Chief Wallace unlikely.

[44] Licensee's Exh. 24, Affidavit of Dr. J. Steven Morris Responding to Question II, filed March 26, 1991, at 7, ¶ 20. Note that this paragraph claims a 1-hour fire rating, which appears to be supported by Attachment A at hand-numbered page 9. However, Attachment A at page 4 shows that the wallboard has a 40-minute rating. The difference appears to come from including the time it takes for the wood joists (outside the wallboard) to burn. *See* "Example," Attach. A at hand-numbered page 8. This does not appear to be appropriate, as the purpose of my inquiries is to determine the time it takes before the wood frame is subjected to fire. The time it takes to burn the frame is not properly included.

[45] Licensee's Exh. 24, Attach. A, at hand-numbered page 7.

of wood) to include the vinyl floor and some insulated cables. Considering this an "A"-type occupancy,[46] characterized by slight amounts of combustibles and noncombustible walls, this fire load may produce an approximately 35-minute fire with a maximum room-air temperature of 375°F. The fire would not be hot enough to ignite the wood frame attached to and behind the 30-minute [*sic*] barrier provided by the wallboards. However, if not extinguished before it runs its course, it may still propagate past the barrier through ventilation duct openings and openings created by warping the wallboards and [it may] involve the wood frame behind it.

4.4 The quantity of wood in the Alpha Laboratory structure, outside the 30-minute [*sic*] barrier, is estimated at 4200 lbs. The fire load in that corner of the MURR basement — the contents of the laboratory and the structure — is approximately 10.4 lb/sq. ft. In view of the fact that the fire load is approximately 90 percent enclosed by the concrete walls, floor, and ceiling of the basement and that it is fairly isolated, it should be considered separately from the remainder of the basement for the purpose of estimating fire severity. Such an estimate would be slightly conservative and would err on the side of safety. Classifying the laboratory with its combustible structure this time as a "D"-type occupancy,[47] characterized by congested combustible content and noncombustible boundary walls, an unmitigated fire is likely to last approximately 75 minutes and develop a temperature of 1750°F. Figure 7-19B[48] illustrates possible fire severity and duration for various types of occupancies. Table 7-9E[49] classifies occupancies by expected fire severity in a broad manner. The numerical data presented in the reference are the result of a number of surveys of fires. They provide relative measures of fire severity and should not be considered very precise.

4.5 Addressing the question of the probable frequency of fire in similar occupancies, the National Fire Incident Reporting System,[50] administered by the U.S. Fire Administration, and the NFPA Annual Survey[51] of fires reported to fire departments in the United States both show an average frequency of one fire annually in the five-year period 1984-88 in the specific category of "Educational Complex Fires Originating in Radioactive Materials Laboratories." The annual average of direct property damage was $2500. The data bases do not contain the total number of such laboratories in the United States. The NRC has at this writing 568 licenses issued to educational and research institutions to possess and use radioactive materials. While the exact number of licenses issued by the Agreement States to such institutions is not known, it may run into hundreds. These institutions typically have multiple laboratories, up to about 500 in some of the larger institutions.[52] On the other hand, there is the possibility that for each reported fire, some are not reported. Thus, my "educated guess" is that the probability of fires in laboratories similar to the Alpha Laboratory is of the order of 10^{-5}/facility-year. This may be translated in ordinary language to a probability

[46] *Fire Protection Handbook*, 16th Edition, National Fire Protection Association, Batterymarch Park, Quincy, Mass. 02269 [page reference not supplied].

[47] *Id.*

[48] *Id.* Also, attached to Mr. Datta's statement.

[49] *Id.*

[50] National Fire Incident Reporting System, U.S. Fire Administration, Federal Emergency Management Agency, Emmitsburg, Maryland. [No page reference.]

[51] NFPA Annual Survey of Fires Reported to U.S. Fire Departments, National Fire Protection Association, Batterymarch Park, Quincy, Mass. 02269. [No page citation.]

[52] S. A. McGuire, A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees, NUREG-1140, U.S. Nuclear Regulatory Commission, at 92. [Page reference supplied by Presiding Officer.]

of 1 to 10 fires in 100,000 years in a given facility. The average direct property damage of $2500 indicates that the average fire was probably contained within its enclosure of origin.

I have decided to accept Dr. Datta's estimate of fire loading, which exceeds that of the Licensee's experts but to reject his "educated guess" concerning the probability of fire. There is no documentation accurately stating how many laboratories exist that handle byproduct or special nuclear materials.[53] Furthermore, the actual exposure (the time during which the laboratories would report fires because special nuclear materials are stored there or are in use) of the laboratories is not known.[54] The number of unreported fires also is not known.[55] And the error bounds surrounding the estimate are substantial.[56]

I do find assurance concerning probabilities of serious fire from another source, however. The chance of a serious accident releasing radioactive material from the laboratory is very small since NUREG-1140, "A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees," Final Report (January 1988), at page 6,

> found no evidence that any accidental release of radioactive material from facilities of these types [nonreactor licensees] has ever caused an effective dose equivalent to any individual offsite exceeding even 1% of the EPA's 1-rem protective action guide.

Under all the circumstances, as discussed below, I am unwilling to require the University of Missouri to consider the consequences of a fire that would last longer than 30 minutes (or cross the 40-minute fire barrier through localized fire intensity) and that would consume wood outside the fire-resistant boundary, as was considered by Dr. Datta's Affidavit in ¶4.4.

Although such a fire is *possible* — indeed any event imaginable is possible — it is not credible because its likelihood is minuscule. Additionally, there are many advantages of the location in the MURR building — including 24-hour monitoring of both security and fire detection from the reactor control room. Consequently, I will not consider to be credible this remotely possible fire (made less possible by the installation of a sprinkler system and by other conditions

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[53] Affidavit of Amarendranath Datta, June 5, 1991 (filed June 5), at 2, ¶3.

[54] *Id.* at 3, ¶3, *citing* 10 C.F.R. §20.403, which requires reports to the NRC of "events *involving* byproduct, source, or special nuclear material possessed by the licensee . . . ." I interpret this to mean that the fire that must be reported must *involve* materials because they were in some way threatened by the fire.

Some licensees might choose to report fires in laboratories where materials were not present at the time of a fire. However, the regulation is sufficiently ambiguous (or even contradictory to this point of view), that it is farfetched to expect consistent reporting of fires when nuclear materials are not present or threatened by a fire.

[55] *Id.* at 5, ¶7.

[56] *Id.* at 3-5, ¶5. *See also* the highly persuasive affidavit of Steven C. Sholly, Exh. 2 to Intervenors' Response to Reply of NRC Staff Affiant Amarendranath Datta to Questions Posed in Memorandum and Order of May 22, 1991, June 11, 1991. Also relevant is Licensee's Response to "NRC Staff Response to Questions from Presiding Officer," June 11, 1991.

that are being imposed), in determining whether to uphold the issuance of the contested licenses.

In reaching this determination, I am aware that any probabilistic analysis is subject to serious disagreement with respect to the assumptions necessary to make such an analysis. I therefore consider the probabilistic evidence as suggestive, helping to put the deterministic evidence (discussed below) into a broader framework. That broader framework of probabilistic evidence could have called the deterministic analysis into question; but I find that the probabilistic analysis casts no such serious doubt.

C. Built-in Safety Features and Procedures

After reviewing the entire record in light of the conditions I am imposing, I have concluded that the planning and construction of the Alpha Laboratory and the procedures being used to handle special nuclear materials, including plutonium and americium, provide an adequate assurance of safety.

In reaching this conclusion, I am reassured by the detailed, well-supported, and well-reasoned opinions of the Licensee's expert witnesses. Although I also have considered quantitative estimates of risk, which I discuss below, my principal reason for my decision is a careful consideration of the specific evidence about safety precautions being taken for this particular project.

1. Adoption of Licensee's Experts' Testimony

As a result of my evaluation of their testimony, I have decided to adopt as my own findings the following expert testimony (with minor modification), assembled as a rather lengthy portion of the Affidavit of Dr. J. Steven Morris Responding to Question II, Licensee's Exh. 24, at 5-30:

> Siting the Alpha Laboratory in the basement of the MURR [Missouri University Research Reactor] Laboratory Building was a decision which, along with the construction of the laboratory and the nature of the experiments, assures that the maximum credible accident — including fire — will not result in injury to any member of the general public or damage to their property. The MURR Laboratory Building basement site for the Alpha Laboratory has been discussed by Walter A. Meyer, Jr., MURR Reactor Manager, in his October 29, 1990, affidavit "Regarding Emergency Planning" (*see* entry 1 and note b of Table 1), and by Chester B. Edwards, Jr., in Licensee's Exhibit 4 (*see* entry 4 and note d of Table 1).
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> * * *
>
> The following is taken from Licensee's Exhibit 4, ¶¶31-33:
>
> 31. As previously described, the Alpha Laboratory was constructed to minimize the possibility of a fire spreading from within the Alpha Laboratory to the basement area. Even if this were to occur, the construction of the basement area is such that it would prevent the spread of a fire any further. The Alpha Laboratory is housed in the basement

area outside containment. The reinforced poured concrete vault in which the Alpha Laboratory is housed has a 12-in.-thick concrete floor, 8-in.-thick concrete ceiling, and 16-in.-thick concrete walls on the north, east, south and west. In effect, the Alpha Laboratory is entombed inside a concrete vault isolated from the rest of the facility.

32. The basement has no windows and two exit points. One is to the reactor mechanical equipment room 114 area, deeper in the basement and cooling tower tunnel. The cooling tower tunnel is secured by a metal door that is kept closed and locked at all times. The cooling tower tunnel door alarms locally and remotely in the reactor control room 302. Unauthorized access is responded to immediately by licensed Reactor Operators. The control room operator has video camera monitoring of this door. The second exit is up the stairs to grade level landing. The stairs landing is isolated from the grade level by two fire doors, one going in each direction leading to the inner and outer corridor.

33. The freight elevator from the basement to grade level is accessed via steel roll-up doors on either side of the cargo box, one on the north side and one on the south side at basement level and one on the north side and one on the south side at grade level, for a total of four (4) doors. Both doors at one level or the other, depending on which level the cargo box is, are closed, isolating the basement from grade level. The operation of the elevator cargo box movements is both electrically and mechanically interlocked so at least one set of roll-up doors are always in the closed condition.

The Alpha Laboratory: Construction

The construction of the Alpha Laboratory has been addressed in the Walter A. Meyer, Jr., Affidavit, "Regarding Emergency Planning," October 29, 1990; Licensee's Exhibit 4, C. Leon Krueger, "Regarding the Adequacy of Alpha Laboratory Equipment, Fire Related Features in the Alpha Laboratory and General Basement Area, and the Storage and Transfer of Actinide and Archived Materials," November 13, 1990; and Licensee's Exhibit 20, Walter A. Meyer Jr., "Licensee's Exhibit 20, "Responding to Portions of Intervenors' Rebuttal," January 28, 1991. Careful consideration was given to fire loading and fire prevention.

* * *

The following was taken from Licensee's Exhibit 4:

20. The Alpha Laboratory has been constructed so as to control the combustibility of floor, walls, and ceilings. The Alpha Laboratory has approximately 450 sq. ft. of floor area, 8-ft. ceiling, constructed with 2-in. × 4-in. walls and 2-in. × 12-in. ceiling joists. The walls and ceiling are fiberglass-insulated for sound proofing, with 5/8-in. Gold Bond fire code Type X drywall, which has a sixty minute [*sic*][57] fire rating and meets ASTM C-36-85 and FED. STD SS-L-Type-30D codes. The walls and ceiling are completely covered with one coat of primer and two coats of epoxy two-part paint.

21. The floor covering is a seamless 80-mil-thick Armstrong Medinteck vinyl which meets National Fire Protection Association (NFPA) Life Safety Code 101. The flooring has a smooth finish, is chemical resistant, and extends up 4 inches on the wall.

22. The Alpha Laboratory has three access solid core doors (each with a fire rating of 20 minutes). One is designated as an emergency exit which also may be used to pass large equipment through. By design, the Laboratory cannot be accessed through the emergency exit door. The emergency exit door may only be opened from inside the

[57] *Compare* my findings at p. 58, above.

laboratory. The other two doors are part of an airlock passthrough for normal personnel entry and exit. All three doors are equipped with surface mount rubber gasket seals which are mechanically activated when placed in the closed condition. Each of the airlock doors has a view window to observe who is in the area. A sealed plate glass window is installed in the south wall to allow observation of activities inside the Alpha Laboratory for safety purposes.

(The Licensee then presented a discussion of the fire loading of the Alpha Laboratory basement. I have relied on that discussion which may be found above, at pp. 51-54. Consequently, I am not reproducing that section here. The text picks up immediately after the section I quoted above.)

Intervenors apparently believe that the wall separating the Alpha Laboratory from the basement is covered by the 5/8-inch Gold Bond Fire Code Type X drywall only on the inside of the Alpha Laboratory. They are mistaken. Such drywall also covers the side of the Alpha Laboratory wall facing the basement.

* * *[58]

The Alpha Laboratory: Detection of Fires and Other Abnormal Events

The maximum credible fire will be limited by those features that allow for the early detection of fires and detection of other abnormal events (i.e., oxygen concentration ≥10 ppm in the argon glove box) that would generate a response well in advance of losing the inert argon atmosphere.

The following was taken from the Meyer Affidavit "Regarding Emergency Planning":

28. The Alpha Laboratory is also equipped with smoke detectors within the Laboratory and a heat sensor within the argon glove box. Alarms for these sensors are displayed locally at the Alpha Laboratory on a 4-zone fire alarm panel and sounded remotely in the reactor control room (which is staffed 24 hours a day, every day of the year by NRC licensed reactor operators).

29. The Alpha Laboratory glove box has alarms that signal low argon system pressure and high oxygen content. These alarms sound both locally in the Alpha Laboratory and in the reactor control room. These alarms allow response by Alpha Laboratory personnel and reactor operators well in advance of an oxygen level in the argon glove box that would support a fire.

In addition the Alpha Laboratory is included on the routine patrol of the Reactor Operators every four hours. University Security personnel also patrol to a basement checkpoint located at the mid-stair landing. Consequently, even during those times when the laboratory and the basement might not be occupied, i.e., evenings, weekends and holidays, the Alpha Laboratory and basement surroundings are visually inspected by knowledgeable individuals.

The Alpha Laboratory Ventilation System

The consequences of any credible fire in the Alpha Laboratory would be mitigated by the redundant HEPA [High Efficiency Particulate Air]-filtered ventilation system exhausting

[58] The paragraph I have omitted here calculated a fire loading that includes the wooden joists and also claimed that the wallboard was a 40-minute fire barrier. Because these two statements are inaccurate, I am omitting them. I find that the frequency of inaccuracies does not affect the overall credibility of the testimony.

the laboratory. In addition, all air exhaust for the MURR Containment Building and MURR Laboratory Building, including the basement, is separately filtered from the Alpha Laboratory. The ventilation system is described in several affidavits filed by the Licensee. All of these descriptions are not repeated here. For example, a comprehensive description is given in the attachment entitled "Ventilation Systems" filed with the June 14, 1990, Morris Affidavit entitled "Regarding Errors in Petitioners' Analyses."

The following is taken from Licensee's Exhibit 4:

24. The Alpha Laboratory ventilation and exhaust systems are designed so that, in the event of a fire, the air supply exhaust fans can be turned off, and the supply and exhaust dampers closed.

25. The Alpha Laboratory ventilation is designed to control the air supply and exhaust volumes and the negative laboratory room pressure. The ventilation system for the basement/Alpha Laboratory has one supply line and three exhaust lines. The facility exhaust system discharges all the exhaust air from the three basement/Alpha Laboratory lines, grade level HEPA filtered trunk lines (from another laboratory) and the containment building.

26. The ventilation for the Alpha Laboratory is supplied from the HVAC [heating, ventilation, and air conditioning] double-duct system on grade level. Supply from Supply Fan-1 (SF-1) provides treated air (site steam heated and chill water cooled) to the basement via mixing boxes that are controlled for comfort by the room thermostat. The Alpha Laboratory has its own mixing box and booster supply fan to supply treated DOP [dioctyl phthalate]-tested-HEPA (filter meets UL 586 high-efficiency particulate air filter units standard) filtered air. A damper is installed between the mixing box and HEPA filter that may be used to balance air flows or may be placed in the closed position to isolate the Alpha Laboratory. Either or both of the supply fans (SF-1 and the Alpha Laboratory fan) may be turned off in the event of a fire.

27. The Alpha Laboratory exhaust air system has installed two pre-filters in parallel followed by two parallel DOP-tested HEPA filters which is followed by two more DOP-tested HEPA filters in parallel. The laboratory exhaust in-line fan booster discharges into the existing MURR facility exhaust system prior to the facility exhaust exiting the building. The exhaust system installed damper may be used to balance the air flow or may be placed in the closed position to isolate the Alpha Laboratory. The exhaust fan may be turned off in the event of a fire.

28. The Hot Cell, located in the basement area, is exhausted via two HEPA filters in series, followed by an in-line booster fan system located in the inner corridor on grade level. The hot cell booster exhaust fan discharges into the facility exhaust system. The hot cell exhaust may be isolated by a quick-closing, air-to-open, spring-to-close butterfly valve. This valve may be placed in the closed position during a fire.

29. Mechanical equipment room 114 exhaust air passes through two HEPA filters in parallel followed by two charcoal filters in parallel, all of which are located in the room 278 area on grade level. The room 114 filter housing is connected to the facility exhaust system.

30. The Alpha Laboratory, Hot Cell and room 114 exhaust air from the four (4) laboratory quadrants and the containment building and is exhausted via the facility exhaust fan at least 55 ft. (R-103 license specification) above grade level (actual height is 68 ft). The facility exhaust system has one fan in operation with a second in autostart standby.

Both fans have emergency electrical generator back-up. Both exhaust fans may be turned off during a fire incident.

(Amendment No. 78 to NRC License No. 24-00513-32, served on the Presiding Officer on May 3, 1991, provides that the Licensee shall install an additional HEPA filter, DOP-tested in place, as required by LBP-91-12, 33 NRC 253 (1991).)

The Alpha Laboratory: The Glove Box Experimental Theatre

The TRUMP-S research at the MURR is conducted in an argon-inerted glove box, further limiting the maximum credible fire. The "Minimization of Fire Hazard" was described by Dr. C. Leon Krueger in Licensee's Exhibit 5.

The following is taken from Licensee's Exhibit 5:

10. Both the equipment in the Alpha Laboratory and the procedures for the TRUMP-S experiments were designed to reduce the possibility of a fire. The methods for minimizing fire hazards are based on avoiding the presence of (1) a fuel source, (2) an oxidizer, or (3) the minimal energy/ignition temperature that must be supplied to create a fire.

11. The TRUMP-S experiments are conducted inside a stainless steel argon glove box designed to minimize the potential for fire. This box has been tested for leaks and is known to be leak-tight to a degree satisfying the regulatory requirements. The glove box is filled with argon and the oxygen content is reduced by a purifier system to a level that is typically less than 0.1 parts per million (ppm). The oxygen level is monitored continuously and an alarm is issued if the level exceeds 7.0 ppm (the license amendment application specifies 10 ppm or less). No work is conducted in the alarm condition. This atmosphere will not support combustion of ordinary materials — at oxygen concentrations below about 15% (150,000 ppm) flames are extinguished and smoldering will not occur below about 8% (80,000 ppm). Without supplying heat, plutonium will not continue to burn at concentrations below 1% (10,000 ppm). Thus even at over 1,000 times the alarm level, the glove box atmosphere will function as a fire extinguishing agent, not as an oxidizing agent.

12. Most of the items in the argon glove box *cannot* serve as fuel. With a few exceptions that I will deal with separately below, the items in the glove box would be considered ordinary (fire-safe) equipment in any office, laboratory, shop (or home). Items that I am referring to typically include

- metal tools such as visegrip pliers, files, diagonal cutters, end cutters, screw drivers, a bolt cutter, tweezers, tongs, and surgical and hobbyist type clamps and pliers;
- ordinary laboratory equipment and supplies such as an electric stirrer motor, an electronic balance, stainless steel scoops and spatulas, 500-ml polystyrene bottles (typically one, sometimes two), 25-ml polyethylene vials (fewer than ten), a 250-ml polyethylene bottle, a 250-ml brown glass bottle, 25-ml glass vials, one or two paper wipes (Kaydry, 15 × 17 inch), swipes (4.25-cm circles of filter paper, 12.5-cm circles of Whatman No. 42, fewer than 10), and plastic bags (Ziploc, fewer than 5);
- ordinary laboratory reagents including the dry salts (silver chloride, lithium chloride, potassium chloride eutectic salt, cerium chloride, and cadmium chloride), and metals (aluminum, cadmium, silver, and tantalum);

- ordinary writing materials, a very limited supply including one pencil, one ball point pen, one 8.5" × 11" sheet of writing paper, and fewer than two dozen 0.5"× 1"adhesive labels.

None of these materials are hazardous as fuels,[59] or as oxidizers, or as sources of ignition. These items are not an important fire hazard.

13. The less ordinary materials and equipment used in the TRUMP-S experiments can be examined in more detail. There are various sizes and lengths of alumina tubing, and alumina crucibles. Alumina is aluminum oxide, Al_2O_3, a stable refractory ceramic material commonly used in high-temperature applications. It is stable to 1950°C (white hot) even in the presence of air. Tantalum crucibles, tubes, sheets, and wire are also present. Tantalum is chosen because it has a very high melting point (2996°C) and is chemically quite inert to the conditions of the tests. None of these items contributes to a fire hazard in any way.

14. There are two sources of heat used in the argon glove box for the TRUMP-S experiments. First, a "pot furnace" (used in material preparation) is a small electric oven having an interior cylindrical capacity of about 3 inches in diameter and 3 inches deep. It is constructed of noncombustible, inert, refractory materials including alumina-silica ceramic, Chromel (or Nichrome) wire, rock wool, Transite, and fiberglass fabric. This furnace is designed to operate at the temperatures used in the TRUMP-S experiments, and in other applications could safely be so used in an ordinary laboratory on a heat-resistant benchtop. Common sense and good laboratory practice require that this pot furnace be turned off except when it is being used and closely monitored. The Standard Operating Procedure TAM[60]-15 specifies that the pot furnace is off and unplugged when not in use. The second heat source serves as the heater for the thermal well in which the electrochemical tests are conducted. It is a commercially available tube furnace (Lindberg Hevi-Duty) of standard design and construction. It is rated for service to 1850°C and 2575 watts at 230 volts. It is being used at far below these limits — it is powered with 115 volts (cutting the available power by a factor of 4) as needed to maintain the temperature at a constant value (never exceeding 650°C). The thermal well is thermally isolated from the floor of the glove box by a water-cooled heat exchanger. A temperature-sensing power controller maintains the thermal well at the set-point (400-500°C). Protection from overheating is provided by a thermal cut-out that is activated at 650°C. For comparison, an ordinary self-cleaning oven (household appliance) operates at 400-500°C.

15. Neither the pot furnace nor the thermal well heater is combustible, neither can serve as an oxidizing agent, and both can contribute to risk of fire only as a heat source.

16. There are two other glove boxes in the Alpha Laboratory, the air glove box, and the inductively coupled plasma (ICP) glove box. Neither of these two glove boxes contain appreciable amounts of combustible materials. They contain (in the order named) progressively less actinide than the argon glove box. The air glove box is used for preparation of aqueous analytical standards and samples. Typically, standards are prepared using less than 30 mg of actinide and diluted to a concentration about 10

[59] Some of these materials, the paper for instance, are combustible, but they are not considered hazardous in a typical laboratory (or home) and are required to be kept in very limited supply, keeping the fuel loading at a minimum.

[60] A "TAM" is a standard operating procedure for TRUMP-S Actinide Measurements.

ppm. Samples prepared from experimental materials are of comparable concentrations. Small (10 ml) quantities of the dilute sample and standards are pumped through the ICP spectrometer (by a small peristaltic pump) for analysis. When the analytical solutions are no longer needed, they are reduced in volume by gentle heating (electric stirrer/hot plate at about 50°C) in the air glove box.

17. Thus, the air glove box contains only small amounts of actinides and the ICP box contains even less. The quantities of actinides present in these glove boxes are not a significant source of fuel. The actinides are present in the air glove box as dilute (10 ppm) aqueous solutions except for the brief period of time as the solutions are prepared. There are no high-temperature heat sources in the air glove box. As part of the TRUMP-S experiments, small quantities of (already oxidized) actinide are delivered as dilute aqueous solutions to the excitation source (plasma) in the ICP glove box for spectrometric analysis.

18. There are no explosives, gasoline, diesel fuel, kerosene, fuel oils, motor oils, alcohol, acetone, or other flammable solvents or cleaning agents or natural gas piping systems housed or used inside the Alpha Laboratory.

19. Thus, the only combustibles within the Alpha Laboratory are the rubber gloves in each glove box, the contents of the glove boxes discussed above, the paper for the computers and a small amount of stored items (limited in type and volume) required to perform the research. All storage of latex gloves, rubber gloves, books, manuals, etc., are stored in work areas away from the glove boxes and sources of heat. Wipes and other incidental wastes are stored in a closed-top metal trash receptacle. Good housekeeping practices prevent the accumulation of debris and combustibles in the Alpha Laboratory.

The Alpha Laboratory: Other Equipment and Furnishings

Consideration of the maximum credible fire must take into account all potential fuels and ignition sources. This must include the equipment and other furnishings in the Alpha Laboratory. These matters were discussed by Chester B. Edwards, Jr., MURR Facilities Manager, in Licensee's Exhibit 4, "Regarding the Adequacy of Alpha Laboratory Equipment, Fire Related Features in the Alpha Laboratory and General Basement Area, and the Storage and Transfer of Actinide and Archived Materials," November 13, 1990.

The following is taken from Licensee's Exhibit 4:

12. The contents of the Alpha Laboratory are primarily limited to noncombustible research equipment systems, other research equipment, and miscellaneous items, as described below.

13. The research equipment systems for conducting the TRUMP-S experiments consist of

a. Ni Train System
b. Dri Train System
c. ICP System
d. ICP Plasma Source
e. ICP Power Supply
f. ICP Computer
g. thermal well heater and controller
h. data acquisition system and printer
i. computer terminal, CPU printer

j. drying oven
k. Alpha 3 radiation air monitor

Each of these stand-alone systems is housed in its respective metal cabinet (except f and i which have molded plastic cabinets) and contain a specialized array of electrical, electronic, and mechanical components to accomplish their intended purpose. Each cabinet has at least one electrical fuse or electrical breaker, and each of the laboratory electrical services is equipped with safety trip protection that meets the National Electrical Code for service.

14. The other research equipment consists of

a. Argon glove box and associated equipment and systems. The argon glove box includes a stainless steel box with antechamber, a view window on each side, four glove port holes with rubber gloves, and port covers. One of the argon glove box windows is made of polycarbonate polymer (Tuffak Plastic manufactured by Rohm and Haas Co.) with an NFPA flammability rating of 1. The other windows are made of a self-extinguishing acrylic resin (SE-3 manufactured by Rohm and Haas Co.).
b. Air glove box and associated equipment and systems. The air glove box includes an aluminum box with an antechamber connecting the air glove box to the argon box, view windows with four rubber glove ports, one bag out port, and port covers. The windows for the air glove box are made of polycarbonate resin (Lexan Resin manufactured by General Electric) and has an NFPA flammability rating of 1.
c. ICP glove box and associated equipment and systems. The ICP glove box includes an aluminum frame box with view windows with three rubber glove ports, one bag out port, and port covers. The ICP glove box windows are made of a polycarbonate polymer (Tuffak Plastic manufactured by Rohm and Haas Co.) with a flammability rating of 1.

As indicated above, none of the glove boxes is constructed of materials that could serve as fuel for a fire. All three glove boxes are of metal construction. The windows are made of polycarbonate polymer, acrylic resin or polycarbonate resin. In the event of a fire, one type is rated self-extinguishing and the other two are rated NFPA as 1 (slight), none of which is likely to burn. Each has installed Butyl rubber gloves that are designed especially for glove box service and are universally used in the chemical and nuclear industries. The Butyl rubber gloves have a flash point of 482°F. The argon glove box has installed a heat sensor fuse link as part of the fire protection alarm system. The fuse link is Underwriters Laboratory (UL) approved to melt at 136°F and activate the fire alarm system. Meyer Affidavit, October 29, 1990, ¶28. At all times, except when researchers are working in the glove boxes, the port covers are bolted in place over the glove port opening. The glove port covers for the argon glove box are made of molded phenolic resin, an insulator commonly used in the electrical/electronic industry that does not burn. The port covers for the air glove box and the ICP glove box are made of aluminum plate.

15. The major miscellaneous items within the Alpha Laboratory consist of

a. metal desk,
b. office chair and lab stools,
c. one vacuum pump,
d. one radiological air filtering system with roots blower

e. health physics hand-held survey instruments and cart,
f. fire extinguishers,
g. two telephones,
h. necessary laboratory and office supplies.

16. The equipment in the Alpha Laboratory (each glove box, support equipment and plumbing/ventilation system components) has been selected, installed and tested to produce high-quality data with minimal experimental artifacts.

17. All the major research equipment in the Alpha Laboratory (argon glove box, with Ni and Dri train units, air glove box, ICP system, data acquisition instruments, oven) and their instrument tech manuals were transferred to the Licensee by Rockwell International. Upon receipt of this equipment and their instrument tech manuals, the Licensee completed an inventory check of all items. Each piece of research equipment was inspected and approved for use by the Licensee's staff prior to installation. Each piece of equipment was verified operable by the Licensee's staff in accordance with general standard operating practices, manufacturer's technical and operational specifications, system performance criteria developed for conducting the research and the Facility and Maintenance TRUMP-S procedures (TAMs[61] 80 through 91).

18. All of the operational controls, electrical, electronic, and mechanical components for each piece of research equipment in the Alpha Laboratory (including the argon glove box and support equipment) have been inspected, installed, calibrated, and operationally tested to perform within the TAMs and good research practices. All safety actuated trips and associated response equipment have been operationally tested to perform within the TAMs and standard operational practices.

19. In the Alpha Laboratory, functional tests and operational limits are recorded by operation and research equipment. Prior to the first authorization of the TRUMP-S research, all research equipment and laboratory readiness tasks were completed and certified by a member of the TRUMP-S oversight committee. The final review, acceptance and approval of these tasks was performed by the principal investigator and the Associate Facility Director.

Storage and Transport of Actinides

Since the actinide materials will be stored in MURR locations other than the Alpha Laboratory, the analysis of the maximum credible fire must take those storage locations, and the transport to and from those locations, into consideration. Licensee has considered the storage and transport requirements associated with the project. Many of these details were discussed by Chester B. Edwards Jr., MURR Facilities Manager, in Licensee's Exhibit 4, "Regarding the Adequacy of Alpha Laboratory Equipment, Fire Related Features in the Alpha Laboratory and General Basement Area, and the Storage and Transfer of Actinide and Archived Materials," November 13, 1990.

The following is taken from Licensee's Exhibit 4:

The Actinides Are Stored Inside Special Transport and Storage Containers.

39. The actinides were shipped from the supplier (Rockwell International for the uranium, plutonium, and neptunium, and the Department of Energy's (DOE's) Oak Ridge Laboratory for the americium) in approved Department of Transportation (DOT) shipping

[61] A "TAM" is a standard operating procedure for TRUMP-S Actinide Measurements.

containers. After receipt, the actinide materials were promptly stored in these containers in the Reactor Fuel Vault. The receipt of the material was controlled by the Special Nuclear Material (SNM) Custodian, who was guided by TAM-20, "Receipt of Actinides," and Health Physics Standard Operating Procedure HP-SOP-3, "Receiving and Opening Packages of Radioactive Material."

40. The actinides were subsequently moved to the argon glove box in the Alpha Laboratory in the original shipping containers by the SNM Custodian under the direction of procedure TAM-21, "Transfer of Actinides." (Only one actinide material was transferred to the Alpha Laboratory at a time.) The actinide shipping container was placed in the argon glove box in accordance with TAM-12, "Glove Box Transfers." In the glove box the materials were removed from the original shipping containers. The material is then separated for use in experiments and the bulk inventory is placed in a series of four specialized containers in accordance with TAM-22, "Actinide Sample Subdivision and Storage" (each housed inside the other). As is described below, the actinides are stored in the Reactor Fuel Vault and transferred between the Alpha Laboratory and the fuel vault inside the series of four specialized containers.

41. After the actinides are used in the TRUMP-S experiments, the material is placed in two specialized containers (one housed inside the other) and placed in the "lead storage box." The transfer and storage of these archived materials are also discussed below. The actinides are stored and transferred in a controlled configuration that minimizes the risk of fire.

The Storage of Actinides in the Reactor Fuel Vault

42. All actinide materials are stored inside the Reactor Fuel Vault. The fuel vault is housed inside the Reactor Containment Building. The fuel vault is a specially constructed (combination of thick concrete walls and heavy steel plates) room with a single door and is secured by an appropriate lock.

43. The entry into the fuel vault is controlled in accordance with NRC-approved security procedures.

44. The accountability of special nuclear materials (SNM) is the responsibility of the SNM Custodian. The SNM Custodian receives and accepts TRUMP-S radioactive materials in accordance with TAM-20. The SNM Custodian completes a monthly physical inventory of SNM materials as required by TAM-23, "Inventory Control of Actinides." All transfers into and out of the fuel vault are recorded by the SNM Custodian in the TRUMP-S Radioactive Materials log as required by TAM-21, "Transfer of Actinides."

Description of the Storage Containers

45. A series of four (4) specialized containers (each housed inside the other) are used to encapsulate the actinide materials, while stored in the reactor fuel vault and while being transferred between the argon glove box in the Alpha Laboratory and the fuel vault.

46. The inner storage transfer container is a 20-ml scintillation vial, with a threaded cap. The vial is made of glass and the cap of hard molded plastic with a soft seal liner.

47. The second container is a $1\frac{1}{2}$-in.-O.D. × $1\frac{3}{8}$-in. × $2\frac{1}{2}$-in.-long stainless steel tube with a $\frac{1}{16}$-in. stainless steel bottom welded on one end and an "O" ring modified male "Swagelok" compression fitting at the other. The female compression fitting cap is

threaded over the "O" ring section and securely tightened. Each container was tested to 50 psig with no leaks.

48. The third container is a 4.500-in.-O.D. × 4.026-in.-I.D. × 10-in.-long aluminum container. A 1/4-in.-thick aluminum bottom is welded on one end and a double "O" ring flange is inserted and bolted in place at the other end. A 30-in. Hg vacuum to 30-psig pressure gauge is mounted on the flange as is an argon fill valve. Each aluminum container is pressure tested to 50 psig with no leakage. The aluminum container will hold up to four of the stainless steel containers.

49. The transport container used for movement and storage of the materials outside the glove box is a five (5) gallon Department of Transportation (DOT) approved container with a lid that is filled with packing material to tightly secure the aluminum container.

50. Each of the different materials used in the TRUMP-S experiments (uranium, plutonium, neptunium, and americium) is contained in a separate aluminum container with a pressure gauge. Each of the types of materials is transported to and from the Alpha Laboratory separately. Only one type of actinide material is transferred to and from the Alpha Laboratory at a time. There may be one or more stainless steel containers (container 2 above) with scintillation vials (the first container) subdividing particular materials inside the aluminum and DOT transfer containers.

Transportation of the Materials to the Argon Glove Box in the Alpha Laboratory

51. For transport from the Alpha Laboratory or the fuel vault, or vice versa, the material is encapsulated — within the DOT-approved container — into the four successive devices (¶¶ 46-48, above, modified by ¶ 50, explaining the possibility of more than one scintillation container), each inside the other. The following steps outline the flow path to encapsulate the material in the argon glove box as per TAM-22 before transfer to the vault as per TAM-21. This series of steps is reversed to transfer material from the fuel vault and is governed by the same series of procedures. All handling of each actinide material itself is only performed in the argon glove box.

52. Each piece of actinide material is either placed in total (or subdivided into parts) into one or more 20-ml scintillation vials with screw-top lid and securely tightened. The material is now inside a purified, high-quality argon atmosphere.

53. The 20-ml vial is then placed into the stainless "O" ring sealed container and securely tightened. It too contains a purified, high-quality argon atmosphere.

54. Up to four (4) stainless steel containers may be placed in the 3rd "O" ring flanged aluminum container. The lid is bolted and tightened in place. A hand pump is connected to the argon valve on the container, and the container is pressurized to greater than 25 psig. The valve is closed and pump removed. The double encapsulated actinide material is now housed in a third pressurized container of high-purity argon. The overpressure is monitored until the pressure is verified stable.

55. The aluminum container with the actinide material is then transferred from the argon glove box to the air glove box as per TAM-12.

56. The aluminum container with the actinide material is then transferred out of the air glove box by the "bag out" procedure TAM-14 "Bagging Material In and Out of a Glove Box." Bag out (in) is a procedure for transferring items between the air glove box and

the Alpha Laboratory. This procedure allows items to be transferred without opening the glove box.

57. The bagged-out container is wrapped in a second piece of plastic and then placed with sufficient packing in the 5-gallon DOT transport container and the lid is secured by a clamp compression seal ring.

58. The DOT transport container is then moved to the fuel vault as required by TAM-21. While the materials are in transit and during their storage in the reactor fuel vault, the materials are contained in three separate containers each with its own high-purity argon blanket. These containers (which are stacked inside of each other) remain in the DOT transport container.

59. The SNM custodian completes the TRUMP-S material transfer forms, and logs all material movement in the TRUMP-S radioactive material log book. The SNM custodian conducts at least monthly an inventory of all actinide materials as per TAM-23. The SNM custodian reads and records the pressure readings on each storage container. The Reactor Manager and the Principle Investigator and/or his staff are verbally notified of any discrepancies. A written report, including any discrepancies, is submitted to the Reactor Manager.

60. Removal of the materials to the argon glove box merely reverses these steps. A DOT transfer container is placed in the Alpha Laboratory. The outer plastic bag is removed from the aluminum container. Then, the container, inside one plastic bag, is placed into the air glove box by the bag-in technique described in TAM-14. The plastic wrapping and bagging material are removed inside the air glove box. The aluminum container is then passed into the connecting antechamber and to the argon glove box as per TAM-12. The succession of the aluminum container, stainless steel containers, and then scintillation vial(s) are opened when they are under the high-purity argon blanket inside the argon glove box. The experimenters may then gain access to the materials.

Storage of Archived Materials

61. Once the actinide materials have been utilized in the TRUMP-S experiments, they are considered "archived material." These materials and other laboratory equipment which come in contact with the materials during the TRUMP-S experiments (such as the tantalum tubes) are stored in two successive "archived storage containers" inside the "archived storage vault."

62. The archived storage vault consists of a lead-shielded drawer that is housed in a carbon steel, lined and reinforced, 12-in.-thick concrete cavity recessed in the east wall of area 111, adjacent to the Alpha Laboratory, Room 111A. The cavity is 55 in. deep and extends approximately 5 in. beyond the face of the archived storage vault when the drawer is fully inserted. There are alignment rollers that guide the movement of the drawer and built-in mechanical stops that prevent the drawer from being inadvertently withdrawn out of the recessed cavity.

63. The recessed storage cavity is surrounded by earth on all sides except the west face. A minimum of 14 ft of earth is between the top of the storage cavity and the 8-in. grade level concrete floor.

64. The drawer is a carbon steel welded box mounted on casters with a storage capacity of 10 in. × 10 in. × 47 in. for a total volume of 4700 in.^{3} (2.72 ft^3). The moveable archived storage vault outer face is covered with lead shielding 2 in. thick on the exterior surfaces

of the box. The drawer box is centered on the lead face which extends approximately 4 in. beyond all sides. Additional lead can be added inside the drawer as needed.

65. The archived storage vault is secured in position with an anchored padlocked chain with the keys under the control of the Manager of Health Physics. The SNM Custodian places a security seal on the locked drawer for material controls.

The Archived Storage Container

66. The archive sample storage container consists of two separate containers one housed inside of the other.

* * *[62]

Transportation of the Archived Containers and the Actinide Salts and Materials Contained Therein

69. For transport from the Alpha Laboratory and the archived storage vault or vice versa, the archived samples are encapsulated into two successive devices, one inside the other. The following steps outline the flow path to transfer material from the argon glove box to the archived storage vault. This series of steps is a reverse to transfer archived samples from the archived storage vault to the argon glove box.

(Paragraphs 70-78 contains a detailed discussion of procedures for the purposes mentioned in ¶ 69, including procedures for securing and inventorying archived samples. These paragraphs are omitted.)

In light of all the features discussed above, I find that there are no credible accidents that place the actinide materials in transit or in storage at risk of fire or explosion.

Emergency Response

The maximum credible fire will in part be determined by the effectiveness of the emergency response. This includes the actions taken immediately by the scientific staff working in the Alpha Laboratory, Reactor Operations personnel who routinely inspect the Alpha Laboratory, and the Columbia Fire Department that provides coordinated emergency response and fire-fighting services at the MURR. Emergency response has been thoroughly discussed in the Meyer Affidavit, "Regarding Emergency Planning," October 29, 1990.

The following is taken from the Meyer Affidavit:

27. The Alpha Laboratory is also equipped with a number of features to fight a small fire and to report the existence of a fire to the control room and thus initiate the MURR Facility Emergency Response Plan. The Alpha Laboratory has installed two (2) five-pound halon fire extinguishers (for use on electrical equipment fires), one just inside the Laboratory entry door and one on the north wall. There is also one dry chemical extinguisher inside the Alpha Laboratory and one just outside the Laboratory.

* * *

30. Four (4) five-pound CO_2 fire extinguishers and one (1) dry chemical extinguisher are located in the basement area where the Alpha Laboratory is housed. The University Fire Inspector tours the facility at least once every six months and weighs and checks the

[62] Paragraphs 67 and 68, which describe the dimensions and pressure specifications of the archive sample storage containers, are omitted.

status of every fire extinguisher, including those in the Alpha Laboratory, and applies an inspection date tag. Every five years, all fire extinguishers undergo hydro and operation *tests by an independent testing laboratory. Tests of all fire extinguishers were completed* in October 1990. Reports are received by the Facilities Manager if any discrepancies are found with the fire extinguishers. The MURR safety inspector conducts monthly tours of the facility to identify safety-related items. Fire extinguishers are checked for proper location and to verify when the last fire inspection checks were made.

31. A dry (floodable) fire main system with fire hose connection box/valve fittings is located throughout the MURR facility. The dry fire main system is connected to three (3) separate Siamese fire truck pumper hose connections located on the outside of the Facility, one on each of the north, south, and west sides of the MURR building. Fire fighters attach hoses to the pumper hose connections to supply the water needed to fight an incident within the Facility. All of the valves and Siamese connection points have been checked and verified to be compatible with the equipment carried by the CFD [Columbia Fire Department]. Two (2) dry fire hose box connection valves are located in the basement area within 65 and 80 feet of the Alpha Laboratory. This system allows fire fighters to fight a fire within the facility, and specifically in the Alpha Laboratory area without having to string hoses through fire doors. As a result of recent discussions with CFD, MURR staff is considering enhancing the system by placing hoses in each box and installing an additional dry fire box at the grade level landing.

32. The CFD was contacted about the installation of the Alpha Laboratory. The Fire Marshal and associated CFD officials toured the Alpha Laboratory and concluded that the safeguards and precautions incorporated into the design of the lab seemed to be adequate from a fire safety point of view.

Planning for an Emergency

The following is taken from Meyer Affidavit, "Regarding Emergency Planning":

44. As discussed above (¶¶28-29 in my Affidavit . . .), abnormal smoke conditions in the Alpha Laboratory or abnormal heat, argon, or oxygen conditions in its argon glove box would result in alarms in the reactor control room at MURR (which is staffed 24 hours/day, every day of the year by NRC-licensed reactor operators). Thus, if a condition that might be a precursor to an emergency situation were to occur, the licensed operators in the Reactor Control Room would be immediately alerted.

45. The emergency situation for this scenario is assumed to be a fire in the Alpha Laboratory occurring at night or a weekend when only Control Room staff are present; at any other time, the full emergency response team is available at the Facility. The fire alarm would sound in the Reactor Control Room and a licensed operator would be dispatched to the vicinity of the Alpha Laboratory to determine the extent and specific location of the fire, to ascertain if any persons in the area are injured or require evacuation, and to verify that the fire doors to the basement are closed. At the same time, the Control Room operator would determine if any radioactive releases were occurring via the facility stack exhaust. Another operator would contact the CFD, which would arrive in less than 10 minutes (based on three emergency drills with the CFD where the trucks were dispatched without sirens for reasons of traffic safety and arrived in approximately 10 minutes each time).

46. The shift supervisor (the most experienced NRC-licensed senior reactor operator on shift) would assume Emergency Director responsibilities, which include identifying

and classifying the emergency. Additional MURR response members would be called in: health physicists and technicians, engineering staff, University Police to secure the research park area from access by the public, MU health physicists alerted as backup to MURR's health physicist, MU News Bureau to assist with public information releases and others as the Emergency Director deems necessary.

47. Depending on the severity of the fire and related circumstances, the Emergency Director may require the reactor to be shut down in order to concentrate the emergency response efforts on the Alpha Laboratory emergency. Electrical power to the Alpha Laboratory equipment may also be secured. Similarly, the ventilation system could be secured to reduce air flow to the fire.

48. When sufficient assessment information becomes available, the Emergency Director would classify the emergency, and notifications would be made to the NRC, State Emergency Management Agency, and American Nuclear Insurers.

49. When the CFD arrived, they would be met by the Emergency Director or one of the licensed control room operators who would be in contact with the Emergency Director by portable radio. This contact person would provide the CFD Incident Commander with facility layout drawings and provide him with specific location of fire, particular hazards (chemical and/or radiological), and determinations of any known injuries or unaccountable persons.

50. The CFD Incident Commander with advice from the MURR Emergency Director would dispatch fire fighters to the location of the fire. The fire fighters would be escorted by MURR staff personnel (health physics or reactor operator) to determine radiological risk as the fire area is approached. Each fire fighter and MURR personnel would be equipped with emergency self-contained breathing apparatus (SCBA) and fire gear for protection from fire and smoke. The fire fighters would charge water to the dry fire main and utilize facility fire fighting systems, if needed, in order to keep fire doors to the basement area closed, except for access.

2. *Acceptance of Evaluations of the Evidence by the Licensee's Experts*

I have found to be persuasive consultant evaluations submitted by Daniel J. Osetek and Robert G. Purington, as well as the conclusions of J. Stephen Morris.

a. *Osetek: Storage, Transport, and Experimentation*

Mr. Osetek reviewed in detail the materials and procedures used to handle the actinides during storage, transport, and experimentation. He concluded that the risk of fire during storage is "far below that of other routine hazards accepted by the general public in their daily activities."[63] He concluded that the risk of serious accident during transfer is "also very low" and less than the risk of handling the materials in the Alpha Laboratory.[64]

[63] Affidavit of J. Steven Morris Responding to Question II, March 25, 1991 (Morris Affidavit) at 32, ¶ 10.
[64] *Id.* at 32, 33, ¶¶ 11, 13.

Mr. Osetek divides the risk of fire while handling the materials into two phases: (1) separating the bulk materials into smaller experimental quantities (separation), and (2) conducting experiments (experimentation).[65] In his view, the risk of accident during separation is less than during experimentation, because the physical form of the materials is more benign and the operations are primarily done with hand tools and are low energy (not requiring mechanical or electrical assistance or high temperature).[66]

The material that has been separated and will not be used in an experiment will be stored in a sealed steel container in the Alpha Laboratory. Very little combustible material is permitted to be in the vicinity of the stored actinide material.[67]

During experimentation, a maximum of 0.3 gram of actinide would be used in the high-temperature process conducted in the argon glove box.[68] Mr. Osetek reaches the following key findings, which I find persuasive:

> 19. I have reviewed the experimental design and personally inspected the Alpha Laboratory, the glove boxes, and the ventilation system used to control effluents from the TRUMP-S experiments. It is my opinion that the apparatus is well designed and constructed and includes all the features expected for a system of this type and purpose and some added features beyond the minimal requirements (e.g., four banks of HEPA filters, three[69] in-place tested, in the glove box exhaust lines). I have reviewed the procedures used to conduct the experiments and I find these suitable and I find no cause for concern over the safety of the project.
>
> 20. Therefore, it is my judgment that the TRUMP-S project has not only complied with the safety requirements appropriate to an operation of this type, but it has exceeded the usual requirements by adding safety features and controlled procedures usually reserved for much more hazardous operations.[70]

b. Purington: Fire Loading

Mr. Robert G. Purington's testimony on the fire loading of the Alpha Laboratory and its surroundings is highly persuasive and is discussed extensively above, at pp. 51-53.

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[65] *Id.* at 33, ¶ 13.
[66] *Id.* at 33.
[67] *Id.*, ¶ 16.
[68] *Id.*
[69] Since Mr. Osetek's initial testimony, Licensee has offered to install an additional DOP tested-in-place HEPA filter. Pursuant to this offer, I ordered that the installation take place, as it has. Letter of July 3, 1991, from Licensee to NRC Region III. Note that this represents an additional margin of safety beyond that which Mr. Osetek would have accepted.
[70] Morris Affidavit at 34. Mr. Osetek also discusses the probability and consequences of an accident. His opinion on this subject is helpful and supportive of my conclusions in this area, but I find the testimony of others on this subject to be more compelling.

To test the correctness of Mr. Purington's conclusions concerning the fire loading of the Alpha Laboratory, I asked for the comments of Staff and Intervenors' witnesses (Mr. Amarendranath Datta and Mr. Donald W. Wallace). Although they do not completely agree with Mr. Purington concerning the risk of fire *without* a sprinkler system, they do agree that the risk of a serious fire *with* a sprinkler system, which has been installed, is not probable; and I conclude that such a serious fire is not credible.[71]

c. *Conclusions*

For all the reasons I have discussed, and after careful consideration of the entire record, I conclude that the many physical and procedural precautions in the Alpha Laboratory and the addition of a sprinkler system prevent a maximum credible fire that could begin in the Alpha Laboratory from involving the wooden frame of the Alpha Laboratory before MURR personnel or CFD personnel would respond effectively and extinguish the fire.

D. Dispersion of Materials (Release Fractions)

1. High Entrainment Rates Are Physically Possible

The question of how much plutonium or americium could be released from the Alpha Laboratory involves determining the maximum credible fire event and then determining, from scientific literature, how much powdered plutonium or americium may be expected to be (1) entrained, and (2) released. It is important that the maximum fire event that may reasonably be anticipated be established thoughtfully and carefully and with an eye to the protection of human life and safety and the environment. I have called this maximum fire event, which I have discussed above, a maximum credible fire.

The experimental literature has established that, in precisely the right configuration of fire, over 40% of the experimental powdered material may become entrained (and available for air transport to some location where a human being might be affected). This is a reason for conservatively estimating the maximum credible fire.

At the suggestion of the parties, I have reviewed L.C. Schwendiman, J. Mishima, and C.A. Radash, "The Amount and Characteristics of Plutonium Made Airborne Under Thermal Stress," BNWL-SA-1735, Pacific Northwest Laboratory, Battelle Memorial Institute, Richland, Washington, 1968. Based on

[71] *See* Affidavit of Amarendranath Datta, May 9, 1991 (attached to NRC Staff Response of May 17), at 4, ¶5 (scenario of fire beginning in lab penetrating fire barrier would not be credible); see also Response of Donald W. Wallace to Questions of Presiding Officer, May 28, 1991 (attached to Intervenors' Response), at 3, ¶2 (a major fire originating in the Alpha Laboratory is not probable).

that review, I have decided to adopt the following findings,[72] suggested by the Intervenors, modified as indicated:

> *Mishima and Schwendiman, in a paper entitled "The Amount and Characteristics of* Plutonium Made Airborne Under Thermal Stress" (cited in the Intervenors' October submission), placed small quantities of uranium dioxide (used as a less dangerous simulant for plutonium) on small quantities of ordinary combustible materials such as Kleenex, cheesecloth, and cardboard, and ignited them. [Entrainments] . . . of up to 55% were observed in flames lasting from one to a few minutes. For example, in a 3.7-minute flame involving 10 grams of Kleenex and a fraction of a gram of uranium oxide, 40% of the uranium was entrained; in a 6-minute flame involving 0.24 gram of uranium oxide on the same amount of tissue paper produced a 55% entrainment. The figures for 10 grams of cheesecloth and varying amounts from 0.12 to 3.6 grams of uranium oxide are similar: [Entrainments] . . . of 35%, 44%, 37% and 10% from the oxide. When uranium oxide was placed on 10 grams of corrugated cardboard, [entrainments] . . . of the oxide ranged from 2.4% to 12% to 8.3% to 20%. When wastes were combined (5 grams cheesecloth + 3 grams tissue paper in a polyethylene bag sealed in a small corrugated cardboard box with masking tape), the [entrainment] ~~release~~ of the oxide was 12.5% and 17.6% in flames of duration of 4 and 6 minutes respectively.
>
> Mishima and Schwendiman concluded that releases under such circumstances are such "that to a first approximation half of the active material may be considered to be entrained. A conservative position would be to assume that all such material would be airborne."
>
> (It should be remembered that when transuranic metals are burned, they produce fine particulate oxide. In a major building fire, releases would occur from both the oxide driven off as the metal burns and the subsequent entrainment by the building fire of the oxide that remains behind.)
>
> It is clear from the literature that for a situation in which the plutonium or americium is not merely being overheated without any external fire under relatively quiescent circumstances, but rather is involved in a fire involving combustible or flammable materials burning, not for 4 minutes, but for an hour or several hours, as would be the situation in the real world in a normal building fire involving the MURR basement where the Alpha Laboratory and archived actinide storage are located, releases of many tens of percent must be assumed.

One way of summarizing this view of the literature was suggested by James C. Warf, Attachment A to the "Declaration of the TRUMP-S Review Panel," Intervenors' Exhibit 20, December 24, 1990. I adopt that view, somewhat modified, as follows:

> No one really knows what actual entrainment or release fractions would be experienced in a fire. The discordant data available indicate that entrainment would be of the order of 10^{-4} to 25 or 40%, depending strongly on circumstances such as presence or absence of combustibles, nature of combustibles, air velocity, and other factors.

In addition to adopting these findings, suggested by the Intervenors, I am adopting as my findings the following summary of empirical research found in

[72] Declaration of Trump-S Review Panel, Intervenors' Exh. 20, December 24, 1990, at 17.

Mishima and Schwendiman, at 4-6, which displays a variety of possible rates of entrainment that depend on the particular geometry of a fire:

Type of Release	Air Flow (cm/sec)	Fraction Released (%)
Oxidation of small rods	up to 50	5×10^{-5}
Air through cooled oxide mass, with rapping		0.03
Large ignited ingots	525	0.05
Plutonium oxalate powder	100	0.9
Nitrate solutions & dioxide powder (burning mass positioned on a grate)	50 and 100	1.0 to 8.0
Fine uranium dioxide powder (mixed with flammable materials)	100	10.0 to 40.0

2. *The Intervenors' Dispersion Model (Licensee's Comments)*

The Intervenors' proposed model relating to the potential dispersion of actinide in an accident is presented in its most sophisticated form in Intervenors' Exhibit 20, Declaration of TRUMP-S Review Panel, December 24, 1990. Both the Intervenors and the Licensee agree that the limiting case occurs with the handling of americium.[73]

a. *The Intervenors' Model*

The Intervenors used two models, one for 100 meters and beyond and one for within 100 meters. For beyond 100 meters, the Intervenors used Regulatory Guide 1.145 checked against ANSI/ANS-15.7, the American National Standards Institute/American Nuclear Society standard for site evaluation for research reactor facilities.[74] They used standard NRC meteorology, including 1-m/sec windspeed.[75] They used the "standard" NRC *X/Q* (the *dilution factor*[76]) of 8.65×10^{-3} sec/m^3 at 100 meters, taken from Regulatory Guide 1.145.[77] They argue that this is conservative, particularly compared to Regulatory Guide 1.4.[78]

[73] Intervenors' Exh. 20, Declaration of TRUMP-S Review Panel, December 24, 1990, at 24, ¶92; Licensee's Exh. 16, Affidavit of Dr. Susan M. Langhorst Responding to Portions of Intervenors' Rebuttal, January 28, 1991, at 16-17, ¶24.a.

[74] Intervenors' Exh. 20, Declaration of TRUMP-S Review Panel, December 24, 1990, at 20, ¶74.

[75] *Id.*

[76] *See* John R. LaMarsh, *Introduction to Nuclear Engineering*, Addison-Wesley Publishing Co. (1975) at 511, for the commonly accepted definition of this basic term.

[77] Intervenors' Exh. 20, Declaration of TRUMP-S Review Panel, December 24, 1990, at 20, ¶76.

[78] *Id.* at 20-21, ¶77.

They claim to have corrected their model for building wake effects and plume meander, as required by Regulatory Guide 1.145. Since one of the inputs for the model is the volume of the basement of MURR, they estimated 1500 m^3, which understates releases (because it reduces the concentration of entrained actinides), compared to the relevant volume of 1400 m^3.

For distances of less than 100 meters, the Intervenors say they used the Halitsky model (Halitsky, J., "Gas Diffusion Near Buildings," *ASHRAE Trans.* 69(1855):464-85 (1963).

The Intervenors state that the *X/Q* values and windspeed factors are comparable to those used by the Licensee, but they did not describe their initial presentation of their model clearly enough for this to become apparent. They corrected this by presenting new figures that model the concentration of curies per cubic meter of air at various distances, with different release fractions modeled as separate, parallel lines. On these figures, higher release fractions result in higher concentrations for the same distance. I present Figure 2 from Intervenors' Exhibit 20 for the purpose of providing a characteristic example of the Intervenors' model. It is labeled as Figure 1 in this Memorandum.

The Intervenors claim that their model demonstrates that "for most of the variations considered, concentrations of americium or plutonium in unrestricted areas would exceed permissible levels by a substantial amount. This is true in all cases examined for americium."[79] The Intervenors also claim that their model demonstrates the unsuitability of the site, using as a standard the ANSI/ANS standard for research reactor site evaluation.[80]

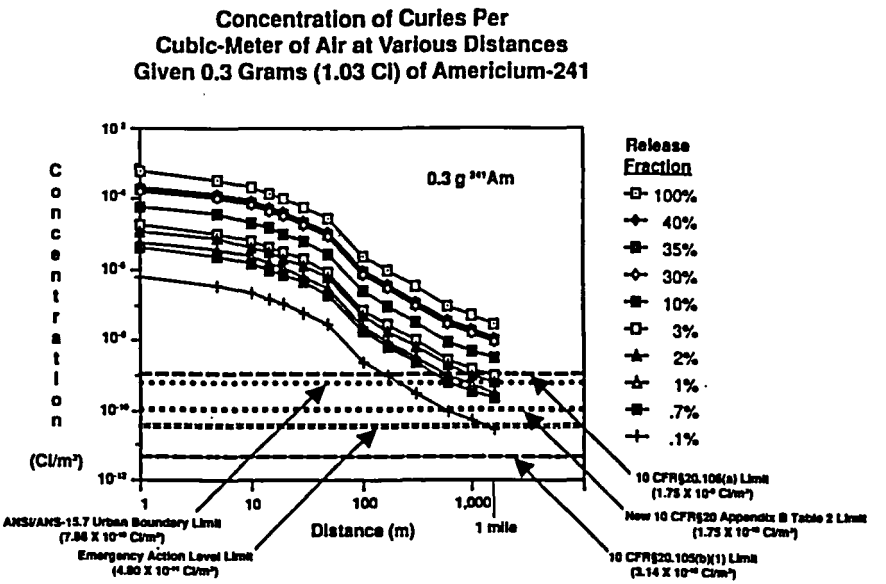
The Intervenors make the following general statement about safety analyses:

> Safety analyses are supposed to be conservative—i.e., they are to provide high confidence that one has bounded the potential accident impacts, given the fact that much about accidents is by definition unpredictable. NUREG-1140[81] . . . repeatedly stated its mandate was to perform a "realistic" analysis, as opposed to conservative [footnote omitted], citing a Commission policy directive to that effect for preparing emergency planning regulations. . . . In this regard, NUREG-1140 strove to be "realistic by using some conservative assumptions and some non-conservative ones" . . . . It used "representative" release fractions, as we have seen, i.e., the *average* of low figures from mild thermal stresses and higher figures from experiments more indicative of severe fires. . . . [F]or inhalation, NUREG-1140 merely *assumed* a maximum intercept fraction of 10^{-6} rather than calculating dispersion. The CRAC-2 code was used to calculate external doses, but internal exposures were done by this rule of thumb, rather than standard dispersion models. The source cited for this rule of thumb is a somewhat tongue-in-cheek article by Brodsky asking whether "10^{-6} is a 'Magic Number' in Health Physics?" . . . . To the extent one can extrapolate from Brodsky's

[79] *Id.* at 23, ¶ 89.
[80] *Id.* at 24, ¶ 91.
[81] U.S. Nuclear Regulatory Commission, NUREG-1140, "A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees: Final Report" (1988).

tables and figures, the intercept fraction he proposes at 100 meters is about 5×10^{-6}, five times higher than that assumed in NUREG-1140.[82]

Figure 1[83]



[82] Declaration of TRUMP-S Review Panel, December 24, 1990, at 24-25, ¶94.

[83] This is a reproduction of Figure 2 of Intervenors' Exh. 20, Declaration of the TRUMP-S Review Panel, December 24, 1990. Note that the computer data run for this figure can be found in Table 2 of the same document.

b. The Licensee's Comments

The Licensee responded in detail to the Intervenors' model.[84] The Licensee argues that the Intervenors used: (1) incredible release fractions, and (2) incorrectly determined "limits" in support of their claims.[85] The Licensee also separately defines "release fraction" and "entrainment fraction," a purely semantic but useful distinction. A release fraction is "that portion of materials in inventory likely to be dispersed in a severe accident." NUREG-0767, "Criteria for Selection of Fuel Cycle and Major Materials Licenses Needing Radiological Contingency Plans" (March 1981) at 5. By contrast, an entrainment fraction is that portion of the inventory that is *initially separated from the source*, some of which does not travel far enough to affect the public because of fallout, plating, and filtration.[86]

(1) MODELING INACCURACIES

Dr. Langhorst states that the Regulatory Guide 1.145 model used by the Intervenors was used to assess nuclear power plant accidents in 1982. She states further that the NUREG-1140 model used by NRC for NUREG-1140 is more sophisticated and credible to assess postulated accidents for materials licenses.[87] She cites a portion of Regulatory Guide 1.145 that demonstrates that its model is intended for evaluating the potential radiological consequences of a loss-of-coolant accident in a nuclear power reactor.[88] She also states that the NUREG-1140 model is different from its predecessors because it accounts for particulate releases, rather than limiting itself mostly to the gases that comprise the greatest component in loss of coolant accidents. Particulate releases, unlike gas releases, are subject to plume depletion for particulates, especially through gravitational settling.[89]

The Licensee claims that the Intervenors' model inappropriately fails to account for transferring the radioactive material from the basement to outside the building, causing further dilution, filtration, or plateout as the material leaves.[90] Furthermore, the Licensee states that the Intervenors are inconsistent in

[84] Licensee's Exh. 16, Affidavit of Dr. Susan M. Langhorst Responding to Portions of Intervenors' Rebuttal, January 28, 1991.
[85] *Id.* at 2, ¶4.
[86] Licensee's Exh. 17, Affidavit of Dr. J. Steven Morris Responding to Portions of Intervenors' Rebuttal (Morris 17), January 28, 1991, at 2, ¶5.
[87] Langhorst 16 at 5, ¶5.
[88] *Id.* at 2-3, ¶6.
[89] Langhorst 16, at 4-5, ¶¶9, 10.
[90] *Id.* at 13, ¶21.d.

considering a fire that reaches 2000°F but not providing for any plume buoyancy factor from such a hot fire.[91]

Dr. Langhorst also claims that the use of the Halitsky model for evaluating releases within 100 meters is highly suspect because Halitsky himself questioned the feasibility of making such calculations and the Intervenors did not state or substantiate their assumptions.[92]

(2) IMPROPER USE OF SAFETY STANDARDS

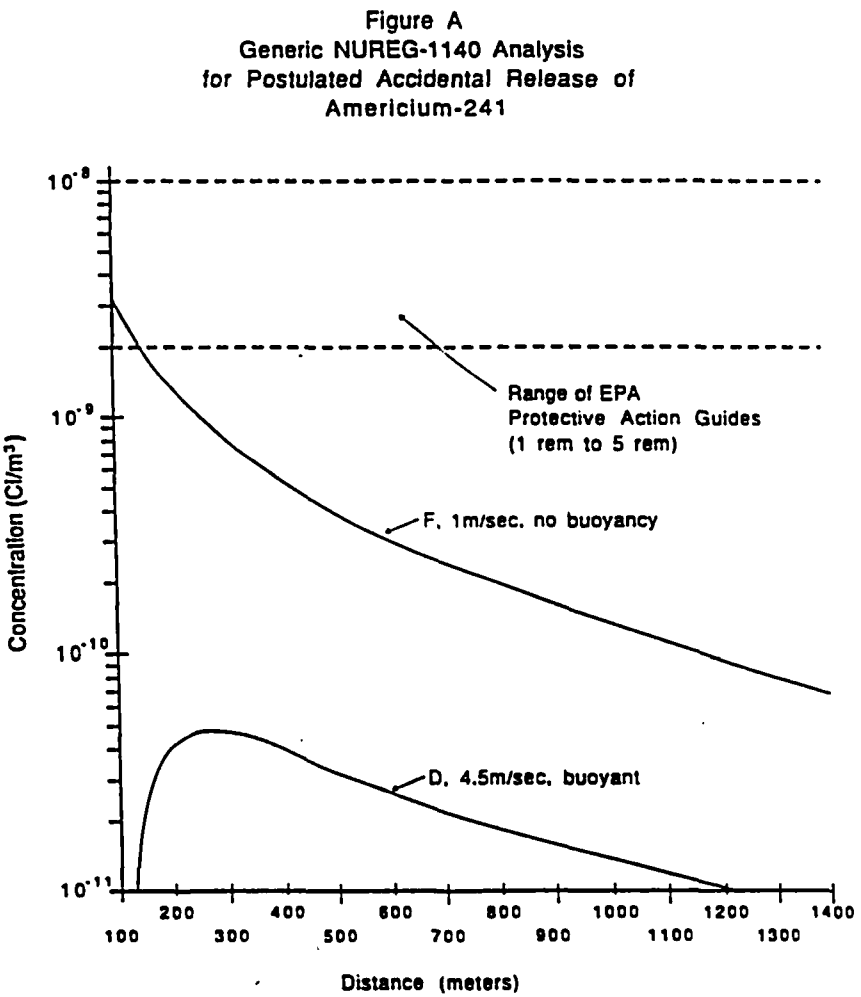
The Licensee states that the horizontal lines drawn by the Intervenors on their figures (see Figure 1 of this Memorandum for an example) do not represent the proper application of any standard used in assessing postulated accidental releases of plutonium and americium. The Licensee offers instead the figure reproduced as Figure 2 in this Memorandum.

Dr. Langhorst states that:[93]

> 23. The reasons that Warf's, et al., five "limits" are not appropriate for the stated purpose or are incorrectly applied are the following:
>
> a. 10 CFR § 20.106(a) defines the limits of airborne concentrations from effluent releases to which the public may be continuously exposed in unrestricted areas during normal operations. [Footnote omitted.] As explained in Section F.1.g of the Licensee's Response, it does not apply to evaluation of releases during a hypothetical severe accident.
>
> b. Similarly, 10 CFR § 20.105(b)(1) defines permissible radiation levels in an unrestricted area during normal operations, and does not apply to evaluation of radiation levels during a hypothetical severe accident. Moreover, although Warf, et al., try to use it for internal dose calculations, it is really an external radiation level limit. External dose due to airborne plutonium or americium is insignificant in comparison to the associated internal dose. (NUREG/CR-3657, p. 61.)
>
> c. Presumably, Warf's, et al., reference to the "New 10 CFR § 20 Appendix B Table 2 Limit" is intended to refer to the revised version of such Table that was proposed by the NRC in 1986 (51 Fed. Reg. 1092, January 9, 1986) and adopted by the NRC in December 1990. [Footnote omitted.] Since such revisions were not effective in April 1990 and licensees may defer implementation until January 1, 1993, they have no relevance to this proceeding. In any event, just like §§ 20.105 and 20.106, Appendix B, Table 2 pertains to concentration in unrestricted areas during normal operations, not to evaluation of releases from a hypothetical severe accident.
>
> d. Warf's, et al., "Emergency Action Level Limit" is apparently based on an emergency action level from the Licensee's existing Emergency Plan which is used to indicate an unusual event and is only applicable at the site boundary. . . . Using the calculational method described in Attachment 1 to this affidavit and assumptions from ¶ 24, below,

[91] *Id.*, ¶ 21.e.
[92] *Id.* at 9-10, ¶ 16.
[93] *Id.* at 14, ¶ 23.

Figure 2[94]



[94]This was Figure A, "Generic NUREG-1140 Analysis for Postulated Release of Americium-241," from Langhorst 16.

the associated dose due to an exposure at this concentration "limit" would be 24 mrem, [footnote deleted] or 40 times less than the 1 rem where protective actions taken by the public may be warranted. Warf, et al., misapply this action level by showing it as a concentration "limit" applicable at all distances.

e. The "ANSI/ANS-15.7 Urban Boundary Limit" is extracted from a document which, as indicated by its title ("American National Standards Research Reactor Site Evaluation"), addresses standards for a research reactor, not a materials license. Thus it has no relevance to this proceeding. Moreover, it is also misapplied by Warf, et al. ANSI/ANS-15.7 defines "urban boundary" (p. 1) as follows:

> (4) urban boundary. The urban boundary of a densely populated area or neighborhood containing population of such number or in such a location that a complete rapid evacuation is difficult or cannot be accomplished within 2 hours using available resources.

The nearest residence to MURR is well beyond the nearest site boundary of 400 meters. ANSI/ANS-15.7 goes on to define dose commitment limits (p. 3) in the case of research reactors as follows:

> 3.1.2 Dose Commitments, Persons Within the Site Boundary. In the event of a DBA[95] the dose commitment for people within the site boundary shall not exceed 5 rems to the "whole body" . . . .
>
> 3.1.4 Dose Commitments, Persons at or Beyond the Urban Boundary. The dose commitment associated with the DBA for persons at or beyond the urban boundary shall not exceed 0.5 rem to the "whole body" . . . .

Again, Warf, et al., imply that this "limit" applies for all distances, when in fact the reference they cite specifies a limit ten times higher for distances within the site boundary. And again, they give no explanation as to how they calculated a concentration from this "limit."

3. *The Licensee's Dispersion Model (Intervenors' Comments)*

The Licensee's proposed model, drawn from NUREG-1140, is presented as Figure 2, above. The figure presents two concentration curves. The first is calculated from an NRC worst-case dispersion model assuming no plume buoyancy, and the second is calculated from a DOT generic dispersion model assuming plume buoyancy, as given in NUREG-1140, Figure 1 (at 13).[96]

a. The Licensee's Model

The Licensee's assumptions, as set forth in Langhorst 16 at 16-17, ¶24, are:

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[95] DBA is a "design-basis accident" or an accident that must be included within the design for a reactor.
[96] Langhorst 16 at 13, ¶21.

a. One gram of americium-241 is assumed to be the amount of actinide material involved. (Licensee's Exhibit 2, ¶ 19.) Americium-241 was used rather than plutonium because it is the limiting case. [Footnote deleted.]

b. The specific activity of Am-241 is 3.43 Ci/g. (Licensee's Exhibit 3, ¶ 51.)

c. The material is assumed to be uniformly released over one hour. (Licensee's Exhibit 2, Attachment 3, ¶ 5.)

d. Release fraction is 0.001. (*Id.*, ¶ 2.)

e. Two cases for the dispersion model at 100 meters and beyond are presented: stability class F, 1-meter/sec windspeed, and no plume buoyancy (*id.*, ¶ 4); and stability class D, 4.5-meter/sec windspeed, and plume buoyancy (Licensee's Exhibit 1, ¶ 22).

f. Individual exposed is assumed to breathe the maximum concentration released for the one hour release time. (Licensee's Exhibit 2, Attachment 3, ¶ 5.)

g. Breathing rate is 2.66×10^{-4} m^3/sec. (*Id.*, ¶ 5.)

The Licensee states that the class F, 1-m/sec model, is what NRC considers to be the generic worst case, while class D, 4.5 m/sec, is the generic case considered by DOT to be adequate to assess protection of public health and safety for transportation accidents involving a plume buoyancy factor.[97] The Licensee concludes that:

> Even under these generic analyses which do not take into account site-specific factors, the F, 1-m/sec curve shows that concentrations are expected to be below the PAG [Protective Action Guidelines] concentrations well within a site boundary of 400 meters.[98]

b. The Intervenors' Comments

Although the Intervenors had no opportunity to comment on the Licensee's rebuttal filing, they did comment extensively on the modeling practices on which the Licensee relies. Their principal objection is that the Licensee's model assumes a 0.001 release fraction, while the TRUMP-S Review Panel believes that releases of "many tens of percent" must be assumed.[99] Consequently, they presented a variety of release-fraction assumptions in their models. (*See* Figure 1, above, for an example.)

The Intervenors also object to assuming that anything less than *all* the licensed materials could be involved in a fire, since "the actinides are stored in a lead-lined drawer inside aluminum vials."[100] They insist that there is currently no place in the country that can take the archived materials, so that they may be

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[97] *Id.* at 17, ¶ 24.
[98] *Id.*
[99] Statement of TRUMP-S Review Panel, December 24, 1990, at 15-17, ¶¶ 50-59 (quote from ¶ 59).
[100] *Id.* at 17, ¶ 60.

stored "for a long time at the University awaiting final disposition, long after TRUMP-S is over."[101]

The Intervenors argue that a model should calculate releases in an accident based on ground-level releases with no filtration. They argue that the lack of filtration is ensured by the Licensee's procedure to shut the ventilation system down and close its dampers in the event of a fire.[102] In any event, they argue, the filters would soon be clogged by a fire.[103]

The Intervenors also argue that the methodology of NUREG-1140 is flawed because it is a "realistic" rather than a "conservative" analysis.[104] They state that NUREG-1140 merely assumed that, for inhalation, there would be a maximum intercept fraction of 10^{-6}.[105]

4. *Conclusions About a Maximum Credible Event*

The Licensee and the Intervenors have actively contested the appropriate mathematical model to apply to the plutonium and americium that would be released in a maximum credible fire. Despite this active controversy, there is no model that is sufficiently reliable to bind me in my determination of whether the Licensee has demonstrated, by a preponderance of the evidence, that the licensed activities will be conducted with an adequate assurance of safety.[106]

In this instance, the regulatory context suggests that the Commission has confidence in the model used by the Staff in NUREG-1140, "A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees." Based on that model, the NRC adopted the requirements established in 10 C.F.R. §§ 30.32(i) and 70.22(i). Licensee's Exh. 2, Affidavit of Dr. Susan M. Langhorst Regarding NUREG-1140 and Intervenors' Dispersion Concentrations, November 13, 1990 (Langhorst 2) at 6, ¶ 13. Also, in response to a comment by a member of the public that methods of calculating doses from releases should be published, the Commission stated, in the Statement of Considerations for those sections, that:

> The methods [that should be used to calculate doses] have been published in *A Regulatory Analysis of Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licenses*, NUREG-1140.[107]

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[101] *Id.* at 18, ¶ 61.
[102] *Id.* at 18-19, ¶¶ 63-64.
[103] *Id.* at 19, ¶ 65.
[104] *Id.* at 24-25, ¶ 94.
[105] *Id.*
[106] *See, e.g.*, 10 C.F.R. §§ 70.22, 70.23, 70.31.
[107] 54 Fed. Reg. 14,058 (Apr. 7, 1989).

Let us be clear from the outset, however. The model suggested by the Commission is intended for use in setting a threshold related to emergency planning. That a licensee might need to have an emergency plan does not, of course, mean that it has exceeded regulatory requirements by creating the risk that requires planning.

I infer from NUREG-1140 that the Commission does not consider the amounts of plutonium and americium involved in this license to be inherently unsafe. Indeed, the NUREG strongly hints that the public would be safe without emergency planning but that it prefers to reassure the public of its safety under the circumstances. NUREG-1140 states, at 111-12:

> The conclusion of this Regulatory Analysis is that accidents at fuel cycle and other radioactive material licensees pose a very small risk to the public. Serious accidents are infrequent and would generally involve relatively small radiation doses to few people located in small areas.
>
> This is not to say that radiation doses large enough to exceed guides for taking protective action cannot occur. It may be possible to have an accident at some licensed facilities which would cause offsite doses exceeding protective action guides. However, offsite radiation doses large enough to cause an acute fatality or even early injury from an airborne release are not considered plausible.
>
> For a licensee possessing 5 times the amount of material in Table 13, we conclude that protective actions in an urban area might save up to 0.00000002 lives per facility. Perhaps about 20 to 30 licensees have a possibility of such an accident or worse. For these facilities we recommend there should be notification of local authorities. However, no special facilities, equipment, or other resources for responding are considered necessary.
>
> For a licensee with 50 times as much releasable material as in Table 13, we conclude that protective actions in a built-up area might save up to 0.0000004 lives per year per facility. There may be 2 or 3 licensees with a capability of an accident this severe.

Given the Commission's use of this model, I would expect the Intervenors to have identified one or more serious flaws in the way the Licensee is handling its special nuclear materials in order to demonstrate substantial risks from its experiments. Despite their efforts in this direction, nothing the Intervenors have shown or said has led me to that conclusion.

The Licensee has, for the most part, relied on the model used by the Staff in NUREG-1140, which became the basis for the emergency planning rule that became applicable to special nuclear materials applications after April 7, 1990. The Intervenors have attacked the use of the model, particularly with respect to the appropriate release fraction to use.[108]

However, my decision about the maximum credible fire affects the predictions derived from the model. If, for example, the entire Alpha Laboratory could be

[108] The Intervenors' citations to standards governing radioactivity are intended to apply to routine releases during operations. They have failed to persuade me that any of the authorities they cited as limitations on releases apply to such rare releases as might occur from a major accident involving this experiment.

involved in a conflagration, with the laboratory reaching the flashover point so that everything in the room would catch fire, then it could be argued that a very high entrainment and release rate could be achieved. In that case, the americium or plutonium would be in the middle of a field of burning materials, much as if they were placed on tissue paper which was then burned.

It also would be of concern if there were defective procedures for dividing the plutonium or americium prior to experimentation, or inadequate attention to how it is stored either before experimentation or afterward when it is archived. However, I am persuaded that the procedures are appropriate and that the materials are being stored in a vault in which fire is not a credible risk.

After careful consideration of all the barriers in the laboratory, including physical barriers, procedures, and the capabilities of responding to a fire quickly, I have concluded that a major conflagration beginning within the Alpha Laboratory is not credible. I am joined in this judgment by experts who testified for *all* the parties, including Mr. Purington (Licensee), Dr. Datta (Staff), and Chief Wallace (Intervenors). The presence of a sprinkler system in the laboratory was important to both Dr. Datta and Chief Wallace.

In the absence of a credible major fire, the Intervenors have not raised a serious question about the adequacy of the NUREG-1140 assumption that the *release fraction* from plutonium and americium (to be used in TRUMP-S) would not credibly be expected to exceed 0.001 percent.

Additionally, the many physical and procedural precautions in the Alpha Laboratory and the addition of a sprinkler system persuade me that a maximum credible fire that begins in the Alpha Laboratory would not involve the wooden frame of the Alpha Laboratory before MURR personnel or CFD personnel would respond effectively and extinguish the fire.[109] I therefore conclude that fire would not seriously threaten to destroy the barriers built into the laboratory, including the glove box and the HEPA filtration system.

With respect to a fire that might begin outside the laboratory and spread until it engulfed the laboratory, one concern raised by the Intervenors is not resolved. That concern relates to the dependability of the fire-loading data submitted by Mr. Purington, who testified to very low fire loadings *outside* the Alpha Laboratory. Mr. Purington's testimony does not seem to specify the extent to which the conditions he observed would be preserved by effective procedures. In particular, the housekeeping procedures relied on by the Licensee to keep the

[109] Affidavit of Amarendranath Datta, May 9, 1991 (attached to NRC Staff Response of May 17) at 4, ¶ 5 (scenario of fire beginning in lab penetrating fire barrier would not be credible); *see also* Response of Donald W. Wallace to Questions of Presiding Officer, May 28, 1991 (attached to Intervenors' Response) at 3, ¶ 2 (a major fire originating in the Alpha Laboratory is not probable).

fire loading low do not have any quantitative limits that give me confidence that the loading would remain as low as when observed by Mr. Purington.[110]

This concern falls within the admitted area of concern on fire procedures (and relates to the adequacy of the record before me). Consequently, I have decided to require the Licensee to take one of the following actions:

- Disclose procedures (or adopt new procedures) that ensure a fire loading and continuity of burnable materials (in the basement outside the Alpha Laboratory) that will assure conditions equivalent to those observed by Mr. Purington;[111]
- Propose procedures ensuring a new maximum loading (and continuity), higher than observed by Mr. Purington, and demonstrate by analysis or expert testimony that the new maximum loading (and continuity) will prevent a credible fire from spreading into the Alpha Laboratory from outside; or
- Install an automatic fire sprinkler system in the rectangular area outside the Alpha Laboratory.[112]

In fulfilling these conditions, the Licensee should adopt effective procedures to exclude motor vehicles using combustible fuel (such as a forklift used for storing materials) from the basement while actinides are in use in the laboratory. I am convinced that, once this set of conditions is fulfilled, any full-scale conflagration affecting the Alpha Laboratory is not credible. I note that the Licensee's generic model, which I find acceptable, does not make any assumptions about HEPA filtration or stack releases, both assumptions questioned by Intervenors. Hence, the actual site safety will be greater than the estimate, since it is highly likely that the maximum credible fire will leave at least one HEPA filter working.

E. Role of the Fire Department

1. The Intervenors' Allegations

The Intervenors' first allegation with an impact on the nature of the response to be expected by the fire department is that the Licensee has failed to provide the appropriate certification under 10 C.F.R. §§ 70.22(i)(3)(xiii) and 30.32(i)(3)(xiii). The Intervenors allege that the Licensee has, therefore, failed to meet its

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[110] Licensee's Response to Intervenors' Motion for Reconsideration, May 13, 1991, at 16-17, attempts to cite housekeeping procedures and "fire watch" tours that "are directed to detect and eliminate any potential fire hazards." (*See* Licensee's Exh. 20, Affidavit of Walter A. Meyer, Jr., at 21, ¶54.) But there is no apparent connection between these general fire-prevention operations and the goal of keeping the fire loading so low that no credible fire will spread to within the Alpha Laboratory.

[111] Vehicles that rely on combustible fuels must, of course, be effectively excluded from the basement during any time actinides are in use in the laboratory.

[112] If this is done, further changes in procedures are unnecessary *except* for the effective exclusion of vehicles with combustible fuel from the basement while actinides are in use in the laboratory. For a map of the area of the basement, *see* Intervenors' Motion for Leave to Submit Evidence Respecting Critical Safety Failures Identified in Site Inspection of May 18, 1991, May 22, 1991, Exh. 5.

obligations under the Emergency Planning and Community Right to Know Act of 1986 (Title III, Pub. L. 99-499). The Intervenors then allege that, in the absence of the proper certification, the fire department "will likely be very reluctant to engage a fire which may involve unspecified hazardous materials."[113]

More specific allegations that a fire would not be fought were made in Intervenors' Renewed Request for Stay Pending Hearing, October 15, 1990, in which they stated:

> [T]here is no plan for dealing with a fire if one should occur. Fires involving these highly toxic transuranics are different from ordinary fires with which the local fire department is familiar. They require special treatment. Bringing a hose in through the door can permit great quantities of radioactive airborne particles to escape. Applying water to a fire may even cause an explosion. *See* Declaration of the Review Panel.[114]
>
> In Columbia, the Local Emergency Planning Commission ("LEPC") has not even met for over a year. The responsible fire official has never been notified that these materials will be located in Columbia, or will be the subject of experiments with induced heat. . . . *The local fire department's plan for a fire involving any of these radioactive elements is simple: we won't fight the fire!* [Emphasis added.] *See* Declaration of Henry Ottinger, Exhibit 2. . . .

These allegations of unwillingness to fight a fire were reiterated in a somewhat stronger form in the Declaration of Donald W. Wallace, December 24, 1990, at 3:

> 15. FEP-3, [MURR Fire Procedure,] items 8 and 9, are not specific as to the potential for fires which involve radioactive materials. This important omission in both the "Emergency Plan" and the FEPs is the subject of the disagreement between Henry Ottinger and Battalion Chief Erman Call. I believe that Mr. Ottinger understood clearly [in a telephone conversation he reported having with Mr. Call] the essence of his discussions with B.C. Call. *I know of no fire officer who would knowingly lead or send his crew into a fire where radioactive materials were burning or being directly exposed to fire conditions.* [Emphasis added.]
>
> 16. The policy of the Los Angeles City Fire Department, as explained to me by two of our Hazardous Materials Squad Commanders, is to *NOT* fight fire in these conditions. The proper job for the Fire Department under those conditions is to evacuate people downwind from the fire. . . . No fire fighters in Los Angeles are issued protective clothing or breathing apparatus which protects them from the radiation hazards which can be expected from fires in or directly exposing radioactive materials. *To the best of my knowledge* [emphasis added] no such protective clothing is issued to members of the Columbia Fire Department. The National Fire Protection Association Manual states explicitly:
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> > Fire fighters and other emergency personnel operating in areas where radiation exposure is a danger *must be fully trained and provided with suitable protective clothing.*
> > — NFPA Manual, 16th edition, p. F-9, attached, emphasis added [by Wallace].

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[113] Intervenors' Exh. 1, Declaration of TRUMP-S Review Panel, accompanying Intervenors' Written Presentation, October 15, 1990, at 14, ¶50.

[114] The specific language of the Review Panel does not appear to promise an explosion. It says, "improper techniques can make matters much worse." Declaration of TRUMP-S Review Panel, October 15, 1990, at 14-15, ¶51.

2. *The Licensee's Allegations*

The Licensee introduced unequivocal testimony, as early as October 15, 1990, that:

> Intervenors have mistakenly alleged that the CFD [Columbia Fire Department] will not fight fires involving radioactive materials at the Alpha Laboratory. Moreover, the arrangements with the CFD provide assurance of an adequate response to a fire relating to the TRUMP-S experiments.[115]

In addition, Mr. Meyer, who is the MURR manager, testified extensively about the relationship between CFD and MURR since 1966 — a relationship updated most recently by a letter of commitment of February 19, 1990.[116] The Licensee also submitted the Affidavit of Erman L. Call, October 24, 1990, Exh. A, stating that:

> [T]he Columbia Fire Department would perform fire duties in response to an alarm at the MURR. These duties would include fighting a fire which could involve radioactive materials at the MURR facility, including the Alpha Laboratory. . . . Such fire fighting would continue until such time as the crews encountered radiation levels that the Incident Commander determined might subject the crew to unacceptable radiation doses.

Subsequent to the Intervenors' submission of the Declaration of Donald W. Wallace, December 24, 1990 (Intervenors' Exh. 21), the Licensee arranged to have his declaration reviewed by William Markgraf, the Director of Fire and Rescue Services ("Fire Chief") of the City of Columbia. Chief Markgraf commented:

> Chief Erman Call (whose title is now Division Chief, not Battalion Chief) commands but one (1) of three (3) operational platoons of the Fire Department. Chief Call is not the policy "voice of the Columbia Fire Department; that responsibility rests with the Fire Chief. . . .
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> * * *
>
> Captain Wallace worries about Mr. Meyer's affidavit where Mr. Meyer states the local fire department would fight a fire in which radioactive materials are involved (page 2, ¶ 9). Mr. Meyer is correct. Captain Wallace's problem in addressing this issue is his continuing failure to identify the specific circumstances and/or conditions faced by a fire department at the time of a fire. . . .
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> * * *
>
> Captain Wallace [states]: "To the best of my knowledge, no such protective clothing is issued to members of the Columbia Fire Department," and, "[t]he material presented to date do not demonstrate that the Columbia Fire Department has the equipment and training specified in the NFPA manual as necessary for response to fires at facilities handling radioactive materials." Wallace at 13, ¶ 15. . . . For the record, the Columbia Fire

[115] Affidavit of Walter A. Meyer, Jr., Regarding Emergency Planning, October 29, 1990, at 4.
[116] *Id.* at 6, ¶ 18.

Department provides equipment that exceeds nearly every NFPA manual referred to in this document. In addition, training is an ongoing process just as is the acquisition of knowledge. The Columbia Fire Department continues to improve its knowledge about many subjects. One of which is fighting fires in radioactive materials. . . . Essentially, it is not necessarily the type or kind of available protective clothing and equipment that decides a fire department's course of action in emergency circumstances. The fire condition and the situation encountered by the first-arriving fire companies decide the adequacy or inadequacy of the protective clothing and/or equipment. The fire service term for this structure evaluation is "size-up."[117]

The Licensee's position is further amplified by the testimony of Robert G. Purington, fire chief of Lawrence Livermore National Laboratory for 23 years. Mr. Purington states:

[Contrary to Chief Wallace's testimony,] I know of no fire officer, with proper knowledge, experience and equipment, who would *not* fight a fire involving radioactive materials. Chief Wallace is the first fire fighter I have heard make such a statement in my 42 years in the Fire Service. . . .

Fires involving radioactive materials are no different than fighting fires involving hazardous materials. The key is understanding the potential threat and consequences and then taking necessary actions to alleviate the threat. . . . The external radiation threat from a fire in the Alpha Laboratory is limited because of the small amounts of gamma emitting radioactive materials in the Laboratory. . . . Considering the maximum recommended dosage for fire fighters of 25 rems,[118] fire fighters would need to remain at the doorway for 250 hours (about 10½ days) before absorbing the maximum [permitted] dosage. In any event, the important point is that, knowing that a gamma emitter is present, appropriate monitoring would be performed to assure that exposures are maintained at acceptable levels.[119]

* * *

. . . [T]he Columbia Fire Department is equipped with adequate protective clothing and self-contained breathing apparatus (SCBA) for fighting fires involving radioactive materials. . . .[120]

In addition to evidence that the Columbia Fire Department will respond to a fire in the Alpha Laboratory, the Licensee has introduced uncontroverted evidence that *a response time of approximately 10 minutes* has occurred on three separate emergency drills with the CFD when the trucks were dispatched without sirens for reasons of traffic safety.[121]

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[117] Markgraf Affidavit at 1, 3, 4, 5, 5-6, *passim.*

[118] [Footnote in original, modified only as to style.] *Fire Protection Handbook,* National Fire Protection Association, Attach. 2 to Purington Affidavit, Licensee's Exh. 19.

[119] [New footnote.] I find that the inhalation risk from alpha and beta emitters is a greater risk than that from gamma radiation. Hence, I interpret this passage from the Purington testimony as having been based on the assumption that the SCBA equipment (*see* the next cited paragraph in the text of the memorandum) would prevent an inhalation dose.

[120] Affidavit of Robert G. Purington Regarding Fire Protection at the Alpha Laboratory, January 28, 1991, Licensee's Exh. 19 at 5 (¶4), 6-7 (¶4), 9-10 (¶5); *see also* the entire exhibit.

[121] Meyer Affidavit, October 29, 1990, at 14, ¶45.

3. *Conclusion*

After weighing all the evidence on this question, I conclude that the Columbia Fire Department would respond to a fire at the Alpha Laboratory, properly equipped to do whatever is appropriate and prudent to fight a fire there. Given the maximum credible fire that could occur, and the likelihood that the CFD would respond in under 10 minutes, it is highly unlikely that any fire in the Alpha Laboratory would imperil the firefighters, exceed their capabilities, or reach the point where the health of people outside the MURR facility would be seriously threatened. The availability of the CFD lends additional margin to the adequate assurance of safety that a fire in the Alpha Laboratory would not reach the flashover point or involve the wood frame of the Alpha Laboratory.

VII. DISCUSSION OF OTHER ADMITTED AREAS OF CONCERN

A. Area of Concern Number One: Fire Procedures[122]

Most of the preceding discussion in this Memorandum relates to Intervenors' area of concern about the adequacy of fire procedures. In addition to the general question raised concerning the risk of dispersion of actinides, the Intervenors also question the wording of TAM-62,[123] which states:

> Actinides are rare earth compounds used in the TRUMP-S experiments and are very sensitive to corrosion by oxygen present in the argon glove box. The small amounts of materials used in the TRUMP-S experiments eliminate fire as a concern, but valuable materials can be corroded by high oxygen levels.

The Intervenors' concern is that this appears to represent an insensitivity on the part of the Licensee toward the risk of fire.

The Licensee claims that the Intervenors "took out of context a single sentence in one procedure that was intended to alert the experimenter to the fact that the inert atmosphere is important to retain the chemical purity of the actinide materials."[124] It also claims that TAM-62 is part of a set of procedures that state that maintaining an inert argon atmosphere is the principal safety feature of the glove box.[125]

The Intervenors are correct in their concern that this procedure should not say — directly or indirectly — that "the small amount of materials . . . eliminate fire as a concern." Fire is a very important concern and nothing in a procedure

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[122] *See* Written Presentation of Arguments of Intervenors and Individual Intervenors, October 15, 1990, at 31-47 and *passim*.
[123] A "TAM" is a standard operating procedure for TRUMP-S Actinide Measurements.
[124] Licensee's Written Presentation at 29.
[125] *Id.* at 29-30.

should be capable of conveying any other understanding. Although this wording problem is minor in the context of the entire fire control program, the Intervenors' point is well taken. I shall therefore order that TAM-62 be amended to eliminate any suggestion that fire in the glove box is not a concern.[126]

An *additional* concern Licensee expresses in TAM-62 is that materials to be used in the glove box should not be permitted to corrode because of the presence of excess oxygen. Licensee may state that concern in its procedures in any way it desires, providing it does not imply that fire is not also a concern.

An additional problem raised by the Intervenors relates to the adequacy of the HEPA filter exhaust system. However, this concern is now moot since the Licensee offered to install a DOP-tested HEPA filter in fulfillment of the Intervenors' request. (In my First Initial Decision, I ordered that one be installed.)

The Intervenors' concern about the seriousness of the consequences of an accident or fire,[127] are fully covered above. Their concerns about the reliability of the testimony of Dr. Morris are based on his use in a public meeting of a document entitled, "Summary of the TRUMP-S Accident Analysis at the University of Missouri Research Reactor (MURR)," and certain alleged deficiencies in details of his testimony. These concerns do not persuade me of the need for remedial action.

The Intervenors also have pointed to some instances in which they claim that Dr. Morris has used words in a somewhat careless manner. They identify one instance, relating to the acceptability of DOP-testing a HEPA filter before it is installed, in which his testimony was somewhat misleading.[128] However, after reading and considering all his testimony, I am impressed by his competence. I conclude that his testimony merits respect, just as does the testimony of the

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[126] I have considered the Intervenors' general statements, such as that they find there is "so little documentation" for the TRUMP-S project, as too vague to permit me to make any specific findings because they do not provide a basis for the claim. When specific claims are made, such as a claim of a risk of a fire starting in the basement outside the Alpha Laboratory and spreading to the laboratory, then I take the claim seriously and examine it — in this instance granting relief.

[127] Written Presentation of Arguments of Intervenors and Individual Intervenors, October 15, 1990, at 38-43.

[128] Affidavit of J. Steven Morris Regarding Temporary Stay Application, August 23, 1990, ¶ 7.a, asserts that DOP testing of HEPA-1 is valid even though it was not tested in place. Given the very high efficiencies expected of HEPA filters, testing them before they are installed does not give a high degree of assurance for the efficiency that is expected. Thus, the Licensee's witness, Mr. Eschen, does not appear to rely on this first-advanced explanation. Licensee's Exh. 7, Affidavit of Veryl G. Eschen Regarding Argon Glovebox Exhaust System at 5, ¶ 12. ("All HEPA filters do not have to be DOP tested. Only those for which credit is taken for a safety analysis.")

I agree with the Intervenors' written presentation, at 37, 44-45, that the Morris affidavit is misleading with respect to whether or not Mr. Steppen knew about DOE regulations or written standards pertaining to HEPA filtration. The question asked and the answer that is reported in the affidavit are ambiguous as to their meaning. If the Licensee had wanted to discover what Mr. Steppen knew about DOE regulations, rather than to ask questions that create an ambiguity, I am convinced that it could have done so.

Intervenors' witnesses, even though the Licensee has identified mistakes that they have made.[129]

B. Area of Concern Number Two: Need for a Buffer Zone

The Intervenors' allegation that a buffer zone or exclusion zone is needed around the Alpha Laboratory relates to their concern about the adequacy of fire procedures. If the procedures were inadequate to protect the public, then an exclusion zone might be required for public protection. However, having failed to demonstrate the inadequacy of fire procedures, the Intervenors have likewise failed to demonstrate the need for a buffer zone.[130]

With respect to the concern about inadequate equipment, the Intervenors make no claim other than with respect to the HEPA filter. However, the Licensee notes:

> that the Edwards Affidavit identifies all of the research equipment systems and other research equipment at the Alpha Laboratory. Licensee's Exhibit 4 at ¶¶ 13-15. Such equipment has been selected, installed and tested to reduce undesired experimental interference with data collection. *Id.* at ¶ 16. Each piece of equipment was inspected and approved prior to installation and verified operable in accordance with applicable requirements. *Id.* at ¶ 17. The controls and components have been inspected, installed, calibrated and operationally tested. *Id.* at ¶ 18. Calibrations, functional tests and operating limits are recorded; all research equipment is certified; and final review, acceptance and approval of readiness tasks were performed by the principal investigator and the Associate Facility Director. *Id.* at ¶ 19.[131]

C. Area of Concern Number Three: Inadequate Administrative Controls

1. General

The Intervenors assert that it is improper to use students to handle plutonium and americium in non-encapsulated form. They also assert that the improper use of the MURR reactor to profit from the manufacture of white topaz (the "TOPAZ incident") indicates that administrative controls are not adequate to ensure the safety of the TRUMP-S work.

With respect to the use of students, the Licensee made a detailed response to which the Intervenors' witnesses did not reply.[132] I accept the Licensee's

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[129] I do not think it relevant to this decision to discuss all the allegations of mistakes that have been made by both sides in this case.

[130] The HEPA issue also mentioned by the Intervenors under this concern is moot because an in-place testable HEPA filter is being installed.

[131] Licensee's Written Presentation, November 14, 1990, at 66, ¶ F.2.

[132] Intervenors' Response to Licensee's Written Presentation, December 24, 1990, at 39, reasserts the charge of laxity without further factual support.

response, in Licensee's Written Presentation, November 14, 1990, at 60-71, as follows:

> The Intervenors voice concern with the involvement of students in the TRUMP-S experiments. Int. Pres. at 47. A major role of a University is to educate and train students. Licensee's Exhibit 9 at ¶ 41. The University believes that the TRUMP-S project has outstanding potential to provide graduate research opportunities having national significance and involving a unique, one of a kind research facility. *Id.* and Licensee's Exhibit 14 at ¶ 4. Furthermore, there is an identified national need to train students in nuclear chemistry, radiochemistry, and related areas. Licensee's Exhibit 14, Attachment 2. Students working on the TRUMP-S experiments are closely supervised by experienced, authorized users, and are provided "hands-on" training by both the experienced authorized users and the MURR Health Physics Group specific to the TRUMP-S experiments. Licensee's Exhibit 9 at ¶ 41. In this way, students (i.e., this country's next generation of scientists and engineers) gain the appreciation for the safety requirements and management control needed to work with the actinide materials. *Id.*; Licensee's Exhibit 14 at ¶ 4.

I am convinced by the entirety of Licensee's Exh. 12, Affidavit of William F. Reilly Regarding Adequacy of Administrative Controls of the Topaz Program, November 13, 1990, that the Topaz incident did not represent a serious lack of administrative controls. I am further convinced that management and accounting changes made in response to the incident were an appropriate way to correct the errors that apparently did occur.

I conclude that it is appropriate to use students in the manner in which the University is using them and that the Intervenors have not shown any serious lack of administrative controls.

2. *Failure to Properly Describe the Curie Content of Materials in Application*

After reviewing the entire record concerning the curie content of nuclear materials, I am convinced that I made an error in my last determination on this matter (in the context of lifting a temporary stay). This error is not relevant to the merits of my decision to lift the stay; however, I think it is important to have Licensee's Special Nuclear Materials License SNM-247 corrected to state accurately the curie content of the materials that it is authorized to use. In this manner, the license will state the correct amount of materials being used, creating an appropriate record so that administrative procedures will consider the entire radioactive inventory, including amounts not now disclosed.

In LBP-90-45, 32 NRC 449, 458-59 (1990), in the course of "correcting" an earlier ruling that after extensive reflection I now believe to have been correct,[133] I said:

> In LBP-90-38, 32 NRC [359 (1990)] at 363, I stated the following conclusion, which still appears to be correct:
>
> - The biological effectiveness of 1.21 curies of ^{241}Pu [that is included in the plutonium material that is covered by Licensee's license] is the same as 0.0242 curies, or 24.25 millicuries, of an equivalently effective alpha-emitter.[134]
>
> I also made the following conclusion, which now appears to be incorrect [footnote omitted]:
>
> - Although it would have been preferable to disclose this quantity of material as a significant contaminant under the regulations, since it is equivalent to a millicurie quantity of an alpha emitter, this omission is not fatal to the application.
>
> After considering all the arguments on this issue, I conclude that I was incorrect because I believed, at the time of the ruling, that the 2-curie emergency planning regulations affected Licensee. Under that circumstance, it was clear to me that 1.21 curies of ^{241}Pu was a "significant contaminant" as specified in Regulatory Guide 10.3. Although it is not a major dose-contributing contaminant — in relationship to the dose coming from the remainder of the material — and is therefore not "of particular interest" for that reason, it was still: (1) a substantial amount of plutonium, and (2) an apparently significant amount because it placed the Licensee at the threshold of the regulatory requirement that it, at least, evaluate the maximum dose to a member of the public off site.
>
> The effective language is "significant contaminant." Necessarily, the decision as to what is significant requires judgment. It is similar to the normative judgment in the law concerning whether behavior is unreasonable and therefore negligent. There is no bright line, and judgment must be used. It is my conclusion that both the 1.21 curies of ^{241}Pu and — for similar reasons — the 70 millicuries of ^{241}americium are not significant contaminants and need not be disclosed.[135] In reaching this conclusion, I am greatly influenced by the inapplicability of the 2-curie emergency planning threshold to this Licensee.

I have now determined that I was too heavily influenced by my fresh finding, at that time, that the 2-curie emergency planning threshold was not applicable to the Licensee. The undisclosed amount of ^{241}Pu and ^{241}Am more than doubles the number of curies in the material that is being used and it increases the dose by more than 10%. These are not "trace amounts."

In addition, testimony by the Licensee's experts convinced me that the Intervenors were correct in pointing to the special need to disclose the americium

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[133] All footnotes were in the cited material, but they are now numbered consecutively within this opinion.

[134] Morris Affidavit, Finding 29, at 12 (citing 10 C.F.R. Part 71, Table A-2). The derivation of millicurie is my own.

[135] "The NRC Staff Response to Intervenors' Motion for Reconsideration, Affidavit of John Glenn," ¶ 12, at 7, stated that the ^{241}Pu in Licensee's material is 1.23 curies, producing a total count — including the curie activity of ^{241}americium — in excess of 2 curies. For reasons stated in the body of this Memorandum and Order, it seems to be immaterial or legally irrelevant whether the total curie activity is slightly greater than 2 curies.

content because americium is a gamma-emitter. For example, in testifying about the risk to firefighters from entering the Alpha Laboratory, Mr. Purington testified that americium, a gamma-emitting material, posed a special threat to firefighters. He concluded:

> In any event, the important point is that, knowing that a gamma emitter is present, appropriate monitoring would be performed to assure that exposures are maintained at acceptable levels.[136]

I also am persuaded by the entire context in which Regulatory Guide 10.3, § 4.3, suggests that the principal isotope and significant contaminants should be disclosed. This requirement occurs as part of a Regulatory Guide that requires that measuring instruments should have as a minimum an accuracy of ± 5% of the stated value[137] and that:

> Evaluation (alpha and/or gamma levels) of gloves or other protective . . . equipment . . . should be described.[138]

This, together with the fact that the Licensee described its plutonium as having 0.71 curie, suggests to me that greater care is called for in describing plutonium materials than was shown in this application.

I conclude that:

- It would have been preferable to disclose this quantity of material as a significant contaminant under the regulations, since it is equivalent to a millicurie quantity of an alpha-emitter. However, this omission is not fatal to the application.[139] I shall authorize the Staff of the Nuclear Regulatory Commission to amend Special Nuclear Materials License SNM-247 to permit the possession of this material.
- The failure of the Licensee to disclose the presence of 1.21 curies of ^{241}Pu — the equivalent in biological effectiveness of alpha radiation

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[136] Licensee's Exh. 19, Affidavit of Robert G. Purington at 7, ¶ 4.

[137] Regulatory Guide 10.3 at 10.3-4, § 4.5.

[138] *Id.* at 10.3-5, § 4.6.3.3.c.

[139] Regulatory Guide 10.3, "Guide for the Preparation of Applications for Special Nuclear Material Licenses of Less Than Critical Mass Quantities," § 4.3, provides:

> [t]he special nuclear material requested should be identified by isotope; chemical or physical form; activity in curies, *millicuries, or microcuries;* and mass in grams. Specification of isotopes should include principal isotope and significant contaminants. Major *dose-contributing* contaminants present or expected to build up are of particular interest." [Emphasis added.]

Note that the Nuclear Material Transaction Report through which Licensee received the special nuclear material from Rockwell International Corp. disclosed that it contained trace amounts of Pu-241 and Pu-240. Morris Affidavit, Attach. 3.

Note also that the Intervenors have stated on several occasions that Licensee has permission to possess 0.7 curie of plutonium. That does not appear to be the case. The licensee may possess 10 grams of "Plutonium-239/Plutonium-240" in accordance with its application and three specified letters. SNM-247, Amendment No. 12, Docket 070-00270 (March 19, 1990). I find that they can also possess the associated ^{241}Pu.

equal to 0.0242 curie — in the licensed amount of plutonium does not cast serious doubt on its competence or on the competence of its personnel.

D. Area of Concern Number Four: Adequacy of Emergency Plans

The Intervenors allege that the Licensee should have filed an emergency plan with its application. However, I have ruled that the emergency planning regulations, which became effective April 7, 1990, are not applicable to the University's applications for amendments.[140] I continue to adhere to my ruling, for reasons discussed below at pp. 123-25.

The Intervenors also have questioned the adequacy of response of the Columbia Fire Department. Based on the discussion at pp. 90-94, above, I conclude that plans for an emergency response by the Columbia Fire Department provide an adequate assurance of safety.

Another claim of the Intervenors is that the Licensee has not presented a sufficient contingency plan. They claim that prefire plans must be made for what will be done if plutonium, americium, or neptunium is burning, and that the plans must include special materials that will be brought with the firefighters.[141] With respect to this claim, I am persuaded by the following portions of the Affidavit of Walter A. Meyer, Jr. (Licensee's Exh. 20), January 28, 1991:

> 14. The fire procedures (FEP-3, step 2 and FEP-3(a), step 1) [footnote deleted] require the Shift Supervisor or the Senior Operator in the Control Room to contact the CFD in the event of any fire. . . .
>
> * * *
>
> 15. Chief Wallace claims that the MURR Facility Emergency Plan and fire protection procedures (FEP-3 and FEP-3(a)) do not provide "necessary prefire planning" for handling fires involving radioactivity. Wallace Declaration, ¶¶ 11, 13. I explained in my earlier affidavit why a prescriptive procedure directing the CFD on how to fight a fire would *not* be helpful. As I stated there:
>
> > The key to appropriately fighting a fire involving radioactive materials is to have present (1) capable fire fighting personnel, (2) facility personnel who are knowledgeable of the existing Facility and of radioactive and chemical contents of the fire location, (3) *appropriate protective breathing apparatus and fire gear, and (4) suitable fire fighting* equipment and resources, including the MURR Facility's (floodable) dry fire mains. When all of these are provided for, as they are under the MURR Facility Emergency Plan, the CFD Incident Commander, with the advice of the MURR Emergency Director, can then make the appropriate decision as to how to fight that particular fire, taking into account the actual circumstances involved, rather than the specifics that would have to be written in any prescriptive procedure. It is the type of decision that fire fighters

[140] LBP-90-45, 32 NRC at 455-56.

[141] Intervenors' Response to Licensee's Written Presentation, December 24, 1990, at 42; Declaration of Donald W. Wallace, at 3-4, ¶¶ 17-20.

traditionally have to make in situations involving any hazardous substances; and the fire fighters will be better equipped to make such decisions at MURR than at many other locations because of the knowledge and assistance they will obtain from the MURR staff. Oct. 29 Meyer Affidavit, ¶ 53.

On the one hand, the Intervenors have not raised any specific question about the adequacy of the existing emergency plans for the MURR facility, other than the general statement that the plans were not devised for the unencapsulated materials being used for TRUMP-S.[142] On the other hand, the Licensee submitted the Affidavit of Walter A. Meyer, Jr., Regarding Emergency Planning, docketed October 31, 1990, which states:

> 12. The MURR Facility Emergency Plan contains the elements of advance planning to cope with a broad range of emergency situations and focuses primarily on how to handle situations that may have the potential to cause radiological hazards affecting the health and safety of the MURR staff or the general public. The Plan outlines the objectives to be met by the emergency procedures and defines the authority and responsibilities to achieve these objectives. MURR Facility Emergency Plan at 1. The Plan applies to all activities within the MURR Facility, which includes both the reactor containment and the laboratories within the MURR building. *Id.* at 23, § 9.14. Thus, it is applicable to the TRUMP-S experiments being conducted in the Alpha Laboratory in the basement of the MURR Facility.

After having reviewed the Meyer Affidavit, I conclude that the MURR Facility Emergency Plan (which is not required by the regulations) helps to provide an adequate assurance of safety for the TRUMP-S project.

I also conclude that the Intervenors' claim that the Licensee has failed to comply with the Emergency Planning and Community Right to Know Act (Act) is legally incorrect. As stated by the Licensee, the Act's requirement for notification is not applicable because (as I have previously ruled) the emergency planning regulations containing the requirement are not applicable to this case.[143] Even if the notification requirement were applicable, the research will be conducted only under the direct supervision of technically qualified individuals.[144] Thus, the materials used at the Alpha Laboratory are excluded from the definition of "hazardous chemical" under 42 U.S.C. § 11021(e)(4) as substances "used in a research laboratory . . . under the direct supervision of a

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[142] Intervenors' Response to Licensee's Written Presentation, December 24, 1990, at 39-40, offers proof of deficiencies in fulfilling regulatory requirements that I have ruled are not applicable — 10 C.F.R. §§ 30.32(i) and 70.22(i). However, the Intervenors have always had the opportunity to show how deficiencies in the MURR emergency plan have resulted in problems that would prevent a finding of an adequate assurance of safety. They attempted to do this with respect to allegations of the laboratory's basement location, its lack of a sprinkler system, the noncooperation of the Columbia Fire Department, and a few other allegations. Each of the arguments they has made through testimony has been discussed. Arguments not substantiated by testimony are not entitled to be discussed.

[143] LBP-90-45, 32 NRC at 455-56.

[144] Langhorst 9 at 12, ¶ 34.

technically qualified individual." In addition, for reasons discussed above, at p. 74 (¶ 32) and pp. 74-75, I am satisfied that Licensee's communication with the Columbia Fire Department has been sufficient and will contribute to an adequate assurance of safety for this project.

E. Area of Concern Number Five: Environmental Assessment and Environmental Impact Statement

This area of concern relates entirely to the proper interpretation of the rules of the Nuclear Regulatory Commission. Those rules require neither an environmental appraisal nor an environmental impact statement for a "[u]se of radioactive materials for research and development and for educational purposes." 10 C.F.R. § 51.22(c)(14); *see also* Affidavit of William J. Adam, July 26, 1990, at 2.

The Intervenors' principal argument is that the MURR should be considered a "plutonium processing and fuel fabrication plant" because it is conducting the TRUMP-S experiments. However, I have rejected this argument at pp. 42-43, above.

F. Area of Concern Number Seven[145] : Responsibilities of Personnel and Role of Rockwell International Corporation

The Intervenors have a very broad concern that Rockwell International Corporation (Rockwell) is controlling "every major aspect" of the TRUMP-S project. However, I have determined that they incorrectly rely on the few pieces of evidence that are discussed below.

1. June 7 Gabler Memorandum

A memorandum from Rockwell International's M.J. Gabler to five named MURR personnel, dated June 7, 1990,[146] is alleged to have contributed to a decision to conduct experiments without correcting a "major design flaw" in the TRUMP-S project. For the reasons that follow, I conclude that the memorandum did not represent improper pressure and that there was no major design flaw in the project.

[145] Area of Concern Number Six, having to do with the effect of the knowledge being developed from TRUMP-S on nuclear proliferation, was not considered germane to the application and was not admitted.
[146] Intervenors' Written Presentation, October 15, 1990, Exh. 19 at 217-18.

a. No Improper Pressure

The key portions of the June 7 Gabler memorandum state:[147]

> It will be very difficult for RI [Rockwell International] to get them to accept extension of Stage 1 tests or the draft Stage 1 report beyond September 30, 1990. Our failure to complete these milestones could very well jeopardize Stage 2 of the project, for which RI has recently received a four-year contract.
>
> * * *
>
> . . . We need to complete the preparations, and move on to the test activities as quickly as possible, consistent with health and safety considerations, which as always, remain paramount. . . .

Clearly, this does place some pressure on the University of Missouri to proceed apace, even if some additional planned safety precautions were to be foregone. Indeed, the installation of an in-place DOP-tested HEPA filter was foregone.[148]

My conclusion is that there is no fixed rule forbidding a licensee from entering into contracts that place a time pressure on it to perform. Licensees often have contracts or face business realities that place economic pressure on them — for example, nuclear power plant licensees may sell power to others and may not be able to deliver (or may be able to deliver only at a higher price) if their plant has an outage for safety reasons. Similarly, licensed operators may be called on to take safety actions that might have severe economic consequences for their employers. Nevertheless, licensees and licensed operators are expected to fulfill their license commitments in good faith, despite the economic pressure. The parties have not brought to my attention any authority or any special circumstances that would invalidate such arrangements. I conclude that Licensee's arrangement is valid and that it is consistent with an adequate assurance of safety.

b. No Major Design Flaw

Although the Intervenors have alleged that omission of an in-place DOP-tested HEPA filter is a "major design flaw," I am not persuaded. There was no license condition requiring installation of the in-place tested filter. In addition, based on the following passage from the testimony of Mr. Veryl G. Eschen,[149] I

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[147] Exh. 19 at 218.

[148] At a meeting of the University of Missouri's TRUMP-S Group, held July 19, 1990, the following minute was recorded:

> We expect bids for the HEPA filter housings for the exhaust air systems on July 30. With four week delivery, one week installation and testing, the laboratory should be ready for neptunium experiments on September 4. This change was recommended [by] Mr. Steppen, Alpha consultant (see memo from Ernst to McKibben dated June 19, 1990)[.]

[149] Licensee's Exh. 7 to Licensee's Written Presentation, November 14, 1990, at 3, ¶ 8.

have decided that there was an adequate assurance of safety without the contested HEPA filter (which the University subsequently agreed to install anyway):

> Since it was the recommendation of Mr. Gerald Steppen, a MURR consultant, to install an additional HEPA filter in the Alpha Laboratory exhaust duct in the event of backflow, I contacted Mr. Steppen by telephone to determine why he felt such a filter was necessary. His reply was as follows, "to prevent particles trapped on the two-stage HEPA filter from becoming dislodged during a backflow event and entering the Alpha Laboratory."
>
> I contacted Mr. Steppen in person and showed him a copy of the above paragraph and asked him if that was a complete and accurate account of the telephone conversation. He said it was. I then asked if there were any other reasons for his recommendation regarding the filter and after some thought he said that he was also concerned about backflow through the interconnection between the glove box and laboratory exhaust.
>
> This latter event would involve the failure of one or both of the emergency exhaust valves. If both paths of the dual-path, two-stage HEPA filter were to somehow become plugged, then the glove box exhaust system could possibly overpressure and back-up into the Alpha Laboratory after being filtered by a single-stage HEPA filter. Again, this would require at least three simultaneous failures (the emergency exhaust valves and both parallel sets of HEPA filters) and then would admit argon that had passed through a single-stage, tested in-place HEPA filter (HEPA-2). Standard practice for air atmosphere glove boxes is to provide a single-stage HEPA filter on the inlet. If overpressurization occurs, the glove box atmosphere is vented onto the work area through a single-stage HEPA. So, in this scenario even if two (or three) simultaneous failures occur, the resulting condition would still provide single-stage, tested in-place HEPA filtration into the work area which is standard industrial practice in the case of over-pressurization of air atmosphere glove boxes.
>
> For particulate to be dislodged from the filter and be transported into the Alpha Laboratory as hypothesized by Mr. Steppen, at least three failures are required. One scenario would be the simultaneous failure of both fans on the building exhaust plenum (only one fan is normally required, and both automatically shift to emergency power if normal power supply fails) plus failure of the booster fan (also on emergency power) downstream of the two-stage HEPA filter plenum. This scenario is highly unlikely. The supply fan to the Alpha Laboratory would cause an over-pressurization in the laboratory and alarm before any possibility of backflow into the laboratory would occur. Failure of any of the fans would alarm in the Alpha Laboratory and reactor control room and initiate corrective action. Additionally, the driving force for such an event is only a pressure differential of <-1.5 inches of water, which would have to overcome the pressure drop across one or more of the fans, two HEPA filters, and a roughing filter. Only very small flow rates, if any, would result. Hardly enough to transport particulates in the duct, let alone dislodge them from a filter.

None of the testimony offered by the Intervenors persuades me that this careful description and analysis by Mr. Eschen is subject to serious doubt.

c. *Conclusion*

The June 7 Gabler memorandum does not provide any evidence of improper conduct by Rockwell International or by the University of Missouri.

2. *Marcus Price Memorandum*

This memorandum reports what the Intervenors characterize as a "demand" by Rockwell International that the University forego all publicity rights for its research.[150] I have read the memorandum and related materials, and I see nothing improper about these discussions, which were intended by Rockwell International to develop a contract term that would protect its proprietary rights. The University did not accede to the initial request for complete restriction on publications and obtained a contract clause that protected Rockwell's rights to proprietary information while simultaneously protecting the interest of the University in publications.[151]

3. *Gabler Memorandum*

The Intervenors interpret a July 23 Memorandum from "Gabler to MURR"[152] as authorizing MU to begin actinide tests with uranium and as showing that Rockwell was "calling the shots" and "running the show." I am satisfied, however, that this memorandum does not show that Rockwell was "in charge." I accept the veracity of the following passage from Licensee's Exh. 11, Affidavit of J. Charles McKibben, at 6, ¶ 16:

> [T]he memorandum is just communicating that DOE has given permission to use the DOE supplied actinide materials in the project experiments. This clearly states that DOE controls whether its materials can be used. Since Rockwell contracted with DOE to obtain the materials, DOE authorizes Rockwell to use the actinides in the experiments it has contracted to be performed. Instead of suggesting that Rockwell is calling all the shots, the memorandum indicates that Rockwell understands that the work with the various actinides is controlled by Licensee's Isotope Use Subcommittee, which approves the use of the materials in the Alpha Laboratory.

4. *Alleged Reliance on Rockwell Safety Analysis*

The Intervenors charge that the Licensee relied on Rockwell for a safety analysis of the TRUMP-S project, "without independent assessment of whether the analysis is correct."[153] The Licensee does not respond directly to this

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[150] Exh. 19 at 206. *See also id.* at 207-11; Written Presentation of Intervenors at 52.

[151] Licensee's Exh. 11, Affidavit of J. Charles McKibben at 5, ¶ 15.

[152] Written Presentation of Arguments of Intervenors at 53. (The Intervenors did not cite a source document, but I was able to find the document after searching. It is Plaintiff's Exh. 11 to Intervenors' Application for Temporary Stay to Preserve the Status Quo, August 20, 1990; *see also* Intervenors' Exh. 19 at 300, "Summary of Trump S. Group Meeting Thursday, July 19, 1990," forecasting that "[w]e must wait for a letter from Rockwell with approval from DOE that DOE will accept residue materials from the experiment before we can use their depleted uranium metal in our experiments.")

[153] Written Presentation of Arguments of Intervenors at 53.

allegation.[154] The only response is citation to Licensee's Exh. 11, the Affidavit of J. Charles McKibben at 4, ¶ 11, where Mr. McKibben says, "Licensee remains in charge and *must satisfy* itself that the work is in compliance with all requirements of NRC license and MURR's health physics practices." What the Licensee does not say directly is that it *did* satisfy itself of the safety of its project before applying for a license and commencing work under it.

The Licensee does present an extended argument that it is not required to complete a safety analysis report, despite the Intervenors' statements in their written filing that such a report is required. With respect to that question, I endorse the correctness of the following passage from Licensee's Written Presentation, at 17:

> Regulatory Guide 10.3 prescribes the type of information needed by the NRC [about equipment, facilities, and radiation protection programs] under § 4.5, Description of Equipment, Facilities and Instrumentation, and under § 4.6, Proposed Procedures to Protect Health and Minimize Danger. As discussed elsewhere in this Licensee's Written Presentation, the Licensee has provided such information in its applications. Nowhere in those sections, or any other section, does Regulatory Guide 10.3 require a "safety analysis report or accident analysis," let alone a "worst-case analysis." [Footnote deleted.]

Indeed, as I read Regulatory Guide 10.3, there is not only no requirement for a safety analysis, there also is no requirement that the applicant certify that it believes that there is an adequate assurance of safety for the licensed activity. All that is required is that

> all items should be completed in sufficient detail for the NRC to determine that the applicant's equipment, facilities and radiation protection program are adequate to protect health and minimize danger to life and property.[155]

In this instance, it appears that the Staff was satisfied that the University met this requirement adequately, since a license was issued to it. How the Staff reached that conclusion is not known since the Staff also is not required to issue a safety evaluation or to explain the basis for the issuance of a license.

Furthermore, the Intervenors have pointed to no persuasive reason why any Staff analysis is necessary. Although the Intervenors have shown the need for some safety improvements with respect to the TRUMP-S project, the Licensee appears to have taken a responsible approach to ensuring the safety of its project. Further, the Licensee was not controlled by Rockwell with respect to its safety responsibilities. After reviewing the credentials of MURR's top personnel[156]

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[154] Licensee's Written Presentation at 80-82.

[155] Regulatory Guide 10.3-2, § 3; *see* Intervenors' Written Presentation at 10.

[156] *See* the abstracts of the credentials of some MURR personnel among the credentials of witnesses, at pp. 43-49, above.

and having studied their technical testimony at length (with the assistance of my technical advisor), I find that they are skilled professionals who write (and think) carefully and professionally. Furthermore, they are using a management system that is appropriately organized. For example, they have a Central Radiation Safety Committee and local subcommittees at different locations around the University.[157] Almost all the members of the local Isotope Use Subcommittee (IUS) have handled curie amounts of radioactive material and one member has had responsibilities as a graduate student in handling unsealed alpha-emitters.[158] Furthermore, I find that the IUS has been actively managing this project,[159] along with the MURR Reactor Advisory Committee[160] and the TRUMP-S Group (the people involved in the project).[161]

In finding that the University of Missouri is managing this project, I do not minimize the role of Rockwell International (Rockwell) in initiating it. Rockwell designed the draft experimental protocols, drafted procedures, and trained the initial investigators at the University of Missouri.[162] The creators of TRUMP-S are Rockwell employees.

However, I also find that the University of Missouri has a valid, independent role in ensuring the safety of the project for which it is licensed. This is not a sham or dummy project, which might be a breach of the licensing regulations because it would not truly disclose the responsibility for licensed activities. The Licensee is a valid manager of this project, making extensive, appropriate use of Rockwell International's expertise in order to facilitate the success of the experiment and to protect the public safety.

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[157] Langhorst 9 at 8, ¶ 26.

[158] *Id.* at 9, ¶ 27.

[159] IUS minutes can be found in Intervenors' Exh. 19 at 343-50.

[160] Exh. 19, at 351, 352.

[161] *Id.* at, *inter alia*, 219-20, 224-25, 298-306.

[162] *See*, for example:

- The Intervenors' Exh. 19 at 35, Letter from Marjorie Cochran to Research Reactor Facility, December 18, 1989, accepting MURR's proposal to perform TRUMP-S by stating, "Rocketdyne . . . requests that you support *our* activities related to measurement of thermodynamic dynamic properties of uranium, plutonium, and neptunium . . . ." (Emphasis added.)
- *Id.* at 37, where Rocketdyne agrees to make available specific equipment.
- *Id.* at 227-71, in which Rockwell requests the support of the University in performing Stage 2 activities and lays those activities out in some detail.
- Licensee's Exh. 11, Affidavit of J. Charles McKibben Regarding Rockwell Participation in TRUMP-S Experiments, the Alpha Laboratory, at 2-4, ¶¶ 4-8, stating that nine Rockwell personnel (including Mr. Jeff Roy) have attended TRUMP-S meetings or served as consultants, with the most active three spending a total of 180 working days at the University.
- Licensee's Exh. 9, Affidavit of Dr. Susan M. Langhorst, at 11-12, ¶ 32, stating that Rockwell employee Jeff Roy trained the initial authorized users in the techniques and set-up of the TRUMP-S experiments because he was "an experimenter who had helped to develop the experiment and had actually performed the experimental measurements on rare-earth materials." (I note that Dr. Langhorst's affidavit does not appear to directly disclose that Mr. Roy was still a Rockwell employee.)

5. *Pressure to Run "Night and Day"*

The Intervenors also make the following charge, unsupported by citation to the record:

> [T]he most worrisome aspect from a safety standpoint is the Rockwell pressure to run night and day, every day, trying to make a deadline, pushing safety to the back burner, causing corners to be cut, and ending up with necessary safety modifications like the HEPA filter matter not taking place. It is precisely under such time pressures that accidents happen.[163]

In response, the Licensee states that the experiments themselves require being run continuously once they begin. Licensee's Exh. 11, Affidavit of J. Charles McKibben at 6, ¶ 17 states:

> It is not pressure from Rockwell that requires these experiments to "run night and day," but the type of experiment that is being conducted. Once an experiment is started on free energy or activity coefficient determinations, it needs to go to completion. The time required depends on the materials and the type of test. For the actinides of interest, the time can vary from ten hours to a few days, and the experimental equipment is set up to handle this. Additionally, the facility staffing, operating schedule (24 hours/day, 7 days/week), and the infrastructure at MURR are set up for and routinely provide the oversight and safety to support these types of nuclear related experiments that operate night and day.

I conclude from the record that there is no improper pressure being placed on the University to operate around the clock.

6. *Overall Conclusion*

I find that there is nothing improper about the Licensee's relationship to Rockwell International Corporation, which has substantial commercial and professional impact on TRUMP-S but does not control the day-to-day operations that affect safety. Whether looked at separately or in combination, the Intervenors' arguments and supporting evidence on this subject are insufficient. The Licensee has carried its burden of proof on this subject.

VIII. MISCELLANEOUS ARGUMENTS OF THE INTERVENORS

A. Adequacy of the Staff's Review

The Intervenors have repeatedly alleged that the license amendments should be invalidated because the Staff's review of the applications was inadequate.

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[163] Written Presentation of Arguments of Intervenors and Individual Intervenors, October 15, 1990, at 53.

They argue that there was no safety evaluation report, no explanation of any kind, and certain specific errors should have been caught and corrected.

I conclude that these arguments are simply irrelevant to the issues before me, which are the admitted areas of concern, and whether the Licensee has sustained its burden of proof on those issues. I agree entirely with the following statement from Licensee's Written Presentation, at 13-14:

> NRC precedents hold that the adequacy of the NRC Staff's review is not the subject of a licensing proceeding. As recently stated in a reactor operating license amendment proceeding in which, just like the instant case, the amendment had been granted by the NRC Staff prior to the hearing:
>
> > With minor exceptions not relevant here, it is the applicant that bears the ultimate burden of proof in NRC operating license amendment proceedings and not the staff. Thus, contrary to the intervenor's apparent belief, the adequacy of the staff's review is not the proper focus for such proceedings.
>
> *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Unit 1) ALAB-921, 30 NRC 177, 186 (1989). *See also Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-812, 22 NRC 5, 55-56 (1985); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-728, 17 NRC 777, 807, *review denied,* CLI-83-32, 18 NRC 1309 (1983). The NRC Staff is not on trial in a licensing proceeding. . . .

B. Adequacy of the Applications

The Intervenors also have alleged that the applications filed by the Licensee are deficient and that relief should be granted based on the applications alone, without permitting the Licensee an opportunity to amplify the application materials. This conclusion is said to follow from 10 C.F.R. § 2.1233(c), which provides that the Intervenors'

> written presentation . . . must describe in detail any deficiency or omission in the license application, with references to any particular section or portion of the application considered deficient, give a detailed statement of reasons why any particular section or portion is deficient or why an omission is material, and describe in detail what relief is sought with respect to each deficiency or omission.

The written presentation is intended to increase the threshold for stating claims. I agree with the Licensee that it is a *non sequitur* to jump from this requirement concerning the written presentation to the conclusion that the only thing to be litigated is the sufficiency of the application *at the time it was first submitted.* The Intervenors also would conclude, although I do not, that the Licensee is limited in its case to supporting the sufficiency of its application, and that it cannot submit new technical responses to technical materials submitted by the Intervenors.

If the Intervenors were correct, this would place a massive and impossible task on all applicants for licenses because they would have to anticipate all possible questions at the time of filing. In fact, this requirement does not exist. First, the Staff may ask questions that may result in supplemental materials being filed by an applicant. Second, when the Intervenors raise new issues, responsive materials also may be filed.

As I have previously stated in this case:

> It is general practice at the NRC to permit applicant to amend its application papers to remedy defects that may be disclosed during the pendency of a proceeding, thus creating a dynamic licensing environment.[164]

This dynamic environment also is a corollary of the regulatory requirement that an intervenor must show what relief is sought. 10 C.F.R. § 2.1233(c). If, for example, an intervenor were to show that an application contains inadequate explanation of something, appropriate relief might well be to require an explanation (or a modification of the activity) rather than denying the application altogether. It would make little sense to make deficiencies that can be explained be fatal to an application.

C. Inadequate Right to Respond

At several points in the record, the Intervenors have complained that they ought to have the right to respond. However, the regulations are clear. My determination will be made on the basis of a written record. 10 C.F.R. § 2.1233. Oral presentations will be made only upon a determination that they are necessary to create an adequate record for decision. 10 C.F.R. § 2.1235. Any claim that goes beyond the directive of the regulations is a challenge to them and is not allowable in this proceeding. Hence, I conclude that the Intervenors have had an adequate opportunity to respond.

In addition, it is my experience as Presiding Officer in this case that there have been many opportunities to respond concerning any issue of importance before me. Where I have felt that there is an important issue on which a further response has been needed, I have asked for such a response.

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[164] Memorandum and Order (Licensee's Partial Response Concerning Temporary Stay), LBP-90-38, 32 NRC 359, 364 (1990). *See* 52 Fed. Reg. 20,089, 20,091 (May 29, 1987): The purpose of section 2.1233(c) was to ensure that "Intervenors challenging an application for licensing action must describe in detail any deficiency or omission in the application." In light of previous difficulties in defining specific contentions in adjudicatory proceedings, it is apparent that in informal proceedings under Subpart L the Commission wished to avoid having the Intervenors litigate vague, generalized concerns that have no nexus to any specific regulatory problems, i.e., deficiencies or omissions in the application. However, that regulation expresses no limit on the type of information that can be provided by intervenors to demonstrate that the alleged deficiencies or omissions exist and are legally significant or by the applicant/licensee to demonstrate that the deficiencies or omissions do not exist or are not legally significant or to remedy any such deficiencies or omissions.

D. Request for Oral Presentations or a Hearing

1. Areas of Information

The Intervenors were invited to specify in their written presentation questions that the Presiding Officer might pursue pursuant to 10 C.F.R. § 2.1235. They did so at pages 55-59 of their Written Presentation, setting forth six different areas in which questions were suggested. I have examined each area and have determined that there are no more questions I need to pursue, beyond the several questions I have already asked, in order to ensure an adequate record. For the most part, the answers to the questions were either voluntarily provided by the Licensee or were not relevant. In the remainder of this section of the Memorandum, I will discuss each of the proposed areas separately.

a. Area No. 1: Isotopic and Curie Content of Plutonium

In this area of information, the Licensee submitted extensive evidence to which the Intervenors were permitted to reply. There have been several decisions with respect to this question, including a part of this decision. The principal issue was not factual but legal: the interpretation of the meaning of the applicable regulatory guide with respect to the applications for licenses. I find that there are no necessary questions to raise with respect to this area.

b. Area No. 2: Testing in Place

The question of testing HEPA filters in place has been extensively addressed by the Licensee and discussed at length in this decision, even though the Licensee has voluntarily agreed to install the in-place tested filter advocated by the Intervenors. There are no questions necessary for me to raise with respect to this area.

c. Area No. 3: Experience and Training of Staff

The experience and training of the MURR Staff are discussed extensively in this decision, including an extensive discussion of their relationship to Rockwell International personnel. The discussion was based on extensive evidence submitted by the Licensee. There are no questions necessary for me to raise with respect to this area.

d. Area No. 4: Safety Analysis

These questions relate to a safety analysis used by the University of Missouri at a public meeting and subsequently filed in this case. The analyses on which this proceeding relies go far beyond this initial analysis and are far more important than it. The significance of the use of this allegedly incomplete analysis by the University of Missouri is discussed in this decision. There are no questions necessary for me to raise with respect to this area.

e. Area No. 5: Decommissioning

The questions discussed in this decision concerning decommissioning (*see* "I. Effect of Staff Order," below, pp. 123-25) are largely legal questions with respect to which the factual questions suggested by the Intervenors are irrelevant. There are no questions necessary for me to raise with respect to this area.

f. Area No. 6: Steppen Recommendations

I have not considered in this opinion whether or not each of Mr. Steppen's recommendations was implemented. With respect to in-place testing of HEPA filters, which the Intervenors raised and supported with evidence of their own, I have carefully considered the issues that remained after the Licensee installed the requested filter. With respect to the other recommendations, not supported by evidence with respect to their importance, I have not considered it sufficiently relevant that recommendations might not have been followed to pursue this question further by analyzing each recommendation and the Licensee's explanation. I do discuss at length the independent decision process of the University, which satisfies me. I see no further questions to ask that are necessary to have an adequate record.

g. Conclusion

Each of the informational requests of the Intervenors has been satisfactorily answered or has been found by me to be of insufficient relevance for me to pursue it. There is no need for oral presentations to have a complete record.

2. *Request for Right to Reply*

The Intervenors have requested leave to respond to Licensee's Response to Intervenors' Rebuttal, and the Licensee has responded.[165] The motion is premised on the belief that the Intervenors are entitled to an opportunity to respond to all new matters. However, this premise is flawed because the right to reply depends on my determination concerning the need for an adequate record. In reaching a conclusion on this question, I find it relevant to consider whether the new information relates to a subject about which the Intervenors already have had ample opportunity to file their expert opinions so that there has been a fair opportunity to influence the outcome of the case.

I have decided to discuss each of the requests, beginning at page 2 of the filing. The next portion of this Memorandum deals with each request, using bulleted passage to respond to each request or family of requests:

- The Intervenors generally request an opportunity to respond to all exhibits, without suggesting the nature of the testimony they would adduce. This general statement does not persuade me that a response is necessary for an adequate record.
- With respect to the request to respond concerning the appropriateness of models coming from Regulatory Guide 1.145 or NUREG-1140, I find that the question of an appropriate model has been around a long time in this case. There has been more than ample opportunity for the Intervenors to produce arguments and information in support of their model or in opposition to models based on NUREG-1140. The portion of this decision dealing with the models reviews many of the arguments made by both parties on this issue.
- The Intervenors' request concerning *X/Q* values is denied. It is irrelevant whether there are other *X/Q* values that suggest a greater hazard than the ones in Regulatory Guide 1.145.
- The Intervenors want still another chance to comment on what is "conservative" and "realistic." This request is denied because they already have had ample opportunity to argue this point, which is irrelevant to the grounds for this decision.
- The Intervenors' request to comment on "new" arguments about release fractions is denied. They previously questioned the methodology of NUREG-1140 in Intervenors' Exh. 20, ¶ 94, and could have set forth their reasons more fully at that time. In addition, all that Dr. Langhorst has done is to cite a passage of the NUREG itself.

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[165] Intervenors' Motion for Leave to Respond to New Facts and Arguments in Licensee's Response to Intervenors' Rebuttal, February 12, 1991; Licensee's Response to Intervenors' Motion for Leave to Respond to New Facts and Arguments in Licensee's Response to Intervenors' Rebuttal, February 21, 1991. *See* LBP-91-14, 32 NRC 265 (1991), for a discussion of a similar issue arising earlier in this case.

- The Intervenors' request to comment about the Halitsky model is denied. This opinion does not rely on the Licensee's comments concerning that model, hence commenting would be irrelevant.
- The Intervenors' request concerning models of research reactors is denied. Whether such models are pertinent is irrelevant because I am not relying on such models and because the TRUMP-S panel already had an opportunity to explain why they are relevant if it had chosen to do so.
- The Intervenors allege that "Dr. Langhorst [has made] . . . new arguments attempting to wriggle out of the close agreement between the Panel's dispersion estimates and hers." They request to show how Dr. Langhorst's estimates are therefore incorrect. However, I am looking to the quantitative estimates only to see whether they provide convincing evidence that my qualitative judgments about safety are incorrect.

  I am not relying directly on the quantitative models, primarily because there are so many ways of selecting assumptions, such large error bounds when multiple terms are multiplied, and so little confidence that can be placed in the results. To the extent that I am relying on a model, it is because the assumptions of that model have been relied on by the Commission for a regulatory purpose.

  Consequently, given the limited effect of models on my decision, I find that the parties had ample opportunity to argue their case for models, each party having had two principal opportunities to make their case. No further filings (or questions on my part) are necessary for the adequacy of the record.
- Intervenors argue that they should respond concerning the implications of a match in concentrations inside and outside the building after a release. This is another modeling detail about which no further information is needed for an adequate record.
- For similar reasons to those already given above, I deny the request to respond concerning: (1) the claim that the TRUMP-S Panel's dispersion analysis is mistaken or irrelevant, (2) that none of the radiation protection standards the Panel cited are applicable (a claim the Intervenors might have supported through timely legal argumentation in expectation of a refutation by the Licensee), and (3) the argument about the use of the 1-rem standard in 10 C.F.R. § 30.32(i), which I had previously ruled to be irrelevant as a threshold for emergency planning, without commenting on its implications for acceptance criteria.
- I deny the request to respond further about Dr. Morris's verbal distinction between release fractions and entrainment fractions. While

parties may choose different words, I understand the meaning conveyed as well as the difference in preference as to appropriate words to use. Since the Intervenors have mixed their response in with their motion, I already know their position anyway.

- I find that there is no further need for a response concerning the following long list of requests, which I describe in a cursory fashion, solely for the purpose of demonstrating that I have read and characterized them:

  release fraction experiments, Morris testimony about one particular TRUMP-S experiment, an allegation that Dr. Morris poses conditions in which an accident cannot happen, an allegation concerning how Dr. Morris has said the Panel "invoked large quantities of plutonium" and misled the Presiding Officer about the quantities of combustibles that are available, limitations of experiments to no more than milligram quantities (evidence on which I place no reliance), claims about what the Intervenors have said about Chernobyl, an allegation that Dr. Morris is rewriting history about his own use of 10^{-6},

  Morris testimony about conservatisms and nonconservatisms (already beaten to death by both parties), new arguments about 0.001 as a maximum release figure (a question already briefed by both parties extensively), assertions about the Seehars and Hochrainer studies and Dr. Morris's use of them (a side issue of credibility that is not persuasive regardless of its truth), Dr. Morris's assertions about a maximum credible fire, differences of opinion about Dr. Morris's use of the term "release fraction," claims about whether Morris and Krueger did or did not cite Hilliard and the meaning of the citation, claims about misinterpretations of the Vixen experiments (which are irrelevant to my decision), Dr. Morris's claims about the Panel's reference to Dr. Batzel (which is irrelevant),

  Dr. Morris's use of the Hilliard data, Dr. Morris's arguments about the Schwendiman and Mishima study, Dr. Morris's alleged rewrite of Mishima and Schwendiman, Dr. Morris's new claims about Rocky Flats release fractions (since neither side presented any persuasive data or analysis that would permit me to draw independent conclusions concerning this incident), Dr. Morris's accusation of "fraudulent" behavior (part of a heated exchange between Dr. Morris and the Intervenors, who make many accusations against Dr. Morris), Dr. Morris's assertions about whether it is appropriate to assume an explosion in the Alpha Laboratory, Dr. Morris's allegedly "disingenuous" argument about the Inter-

venors' believing that fission products are present in the Alpha Laboratory, Dr. Morris's other new claims about Rocky Flats,

Dr. Morris's HEPA filter arguments, claims about HEPA filters and about ground releases, claims about a 15% dose contribution being de minimis, claims related to a TRUMP-S Review Panel request allegedly made for all TAMS and relevant to a very general statement by TRUMP-S that all TAMS *in toto* are severely inadequate (but without specifying the basis for the belief), Dr. Morris's assertions about the relevance of a National Cancer Institute study (on which I do not rely), Dr. Morris's statements about a maximum credible accident and plume rise, Dr. Morris's statements that the Intervenors were not limited in access to information and particularly that the University did not improperly withhold a letter from the fire marshal (because there has been ample opportunity to raise issues related to the use of sprinklers, particularly within the Alpha Laboratory, and because additional precautions will be ordered to ensure the safety of the area outside the Alpha Laboratory),

Mr. Eschen's statements about HEPA filters, portions of Mr. Purington's statement dealing with fire spreading from within the Alpha Laboratory (because the Intervenors were given a chance to respond to my questions about this area of interest), Mr. Purington's statements about preplanning (because far too much time was spent on this subject and Captain Wallace could have more fully described the reasons for his statement about preplanning when he made the charge), Mr. Purington's general comparisons of the Livermore National Laboratory fire department and community fire departments (because I do not rely on these), Mr. Purington's reference to insignificant gamma doses from americium (because I do not rely on it),

Mr. Purington's comments that a municipal fire department properly trained will fight a radioactive fire (this is general testimony on which I do not rely), Mr. Purington's claims about using SCBA equipment for fighting *fires involving radioactivity* (because I have found that the maximum credible fire is far smaller than the Intervenors imagine and because there is no need for further testimony to determine that Mr. Purington's testimony with regard to small fires is credible), because Mr. Purington's discussion of fire loading is incorrect (the Intervenors' point about wood construction of the Alpha Laboratory is not well taken given the size of fire I find credible, and the Intervenors have had ample opportunity to address the credibility of either a simultaneous

event in which there is a large leak of hydraulic fluids followed by ignition in an elevator that is distant from the Alpha Laboratory, or of a natural gas fire resulting from a leak in a solid pipe that is protected by a shutoff valve),[166]

Mr. Purington's statement that HEPAs would not be clogged in a maximum credible fire, an offer of proof related to Mr. Purington's statement that one should not ventilate a fire involving radioactive materials (the Intervenors have had ample opportunity to make this argument regardless of Mr. Purington's testimony, and the size of the maximum credible fire that I have accepted makes the proffered testimony of very little value), all of Mr. Purington's testimony concerning the importance of NFPA standards (since I asked the parties a question on this subject), Mr. Purington's testimony questioning the need for sprinklers (which I used, with slight modification, to support the use of sprinklers and which also has led me to seek either further clarification of basement fire-loading or the installation of more sprinklers),

Mr. Purington's statement about pressures (on which I have not relied), Mr. Purington's statement about hydraulic oils and natural gas fires (which were risks known before his testimony[167] and could have been subject to the Intervenors' earlier challenge), Mr. Purington's conclusions on page 25 of his testimony (because I can judge the relationship of his conclusions to his testimony and do not find that evidence on this subject from the Intervenors is necessary to an adequate record), the relationship between Mr. Purington's testimony and his exhibits (because I do not need assistance to check the testimony against the exhibits),

Mr. Meyer's citation of a Regulatory Guide (because it is not necessary to an adequate record that the Intervenors interpret the Guide for me), Mr. Meyer's assertion that the MURR emergency plan covers more severe accidents than could come from TRUMP-S (because I do not rely on that assertion), Mr. Meyer's testimony concerning FEP 3 and 3A (because the Intervenors have had ample chance to brief this subject), Mr. Meyer's claim that the Licensee has always recognized that preplanning is essential (because I can evaluate this claim against the description given and do not need further evidence for an adequate record), Mr. Meyer's evidence that firefighters would fight a fire (the In-

[166] This natural gas system is a one (1)-inch steel pipe located in the ceiling of the MURR basement *with a safety valve and an isolation shutoff valve at its entry point into the MURR Building. See* p. 57-58, note 43, above.
[167] *See* Licensee's Exh. 4, Affidavit of Charles B. Edwards, Jr., November 13, 1990, at 8-9, ¶¶34-38.

tervenors have had *many* chances to demonstrate that they would not),

Mr. Meyer's calculation of fire loadings (the Intervenors have responded to questions concerning in-laboratory fire loadings and the procedure I have set up in this decision ensures low loadings outside the lab — other than for the hydraulic fluid in the elevator and the natural gas pipe, which the Intervenors have known about since Licensee's Written Statement), Mr. Meyer's arguments about smoke movement (a subject about which the Intervenors have had many opportunities to comment and on which I do not rely), Mr. Meyer's assertions about NFPA practices in the NRC context (because the Intervenors have had a chance to address this question, which I asked the parties),

Mr. Meyer's attempted justification of "violations" of NFPA standards (because the Intervenors had a chance to answer my question on this subject), Mr. Meyer's claims about the adequacy of SCBA equipment (because I have found that the maximum credible fire is far smaller than the Intervenors imagine and because there is no need for further testimony to determine that Mr. Purington's testimony with regard to small fires is credible), Mr. Meyer's "new" arguments about fire protection methods (because the Intervenors have had ample chance to make the argument they ask to be able to make), Mr. Meyer's use of documentation (because there is no need for the Intervenors' comments to have an adequate record),

Mr. Osetek's arguments about the 4.5-m/sec assumptions (because I do not rely on those arguments), Mr. Osetek's claims about *X/Q* (because the Intervenors have had every chance to present their arguments about *X/Q*), Mr. Osetek's "new" claims about probability (because the Intervenors' have had numerous opportunities to address what is credible), Mr. Osetek's statements about PNL-599 (because I do not rely on them), Mr. Osetek's claims concerning the relevance of test fires where gasoline is involved (because the Intervenors have had many opportunities to argue the relevant standard for analysis of releases),

Chief Wallace's statements discounting the value of Mr. Call's testimony (because I can weigh the value of this assertion without further comment by the Intervenors),

Chief Markgraf's testimony about handling emergencies routinely (because his meaning is clear from the context and does not need further testimony from the Intervenors for clarification), Chief Markgraf's testimony that his department can fight nuclear

fires of the sort likely to occur at the Alpha Laboratory (because there have been ample opportunities to address this subject), Chief Markgraf's testimony about CFD equipment exceeding "nearly" every NFPA standard (because exact compliance is not sufficiently relevant to require an addition to the record), Chief Markgraf's statement about NFPA being a commercial business (insufficient relevance), Chief Markgraf's disdain for Captain Wallace's allegedly unrealistic worst-case scenarios (the Intervenors have had a chance to present evidence on credible scenarios), Chief Markgraf's testimony about the knowledge of firefighters concerning gamma exposure (because of insufficient relevance to whether a fire would be fought — since firefighters' welfare is not part of the admitted area of concern),

Chief Markgraf's testimony about the role of the Incident Commander (because this is not new testimony, having been one of the questions I reflected on in dissolving a temporary stay[168]), Chief Markgraf's conclusions about the simple policy of the CFD (because there is no need for further testimony to permit me to test the conclusion against its basis), Chief Markgraf's testimony concerning the continuing learning process of CFD (because the proffered testimony is not related to this statement at all but to an unstated premise that appears in the remainder of the Markgraf testimony), testimony about CFD's readiness compared to other departments (because there has been ample opportunity for the Intervenors to address CFD's readiness), and *generally* questions about the Licensee's response (because the Licensee has the burden of proof and is permitted to make the last response and because legal argumentation is not rebuttable through further evidence).

Generally, after having reviewed the specific requests, I have the overall impression that the record is complete and that no further rebuttal is necessary for the adequacy of the record. Furthermore, the Intervenors have asked to respond where they already had an opportunity to respond, without disclosing their previous opportunity. After careful review, I find no requests to grant.

The request to reply shall be denied in its entirety.

[168] LBP-90-38, 32 NRC 359, 365 (1990).

E. Motions to Strike

On February 12, 1991, the Intervenors' filed their Motion to Strike Portions of Licensee's Response to Intervenors' Rebuttal, and Accompanying Affidavits.[169]

The first paragraph of their motion, requesting that I strike matters that are not new facts or arguments is denied for insufficient specificity; it is not my job to comb Licensee's Response for Intervenors. Additionally, repetition is not particularly harmful in this written proceeding, where repetitious testimony does not consume valuable time during a public proceeding. Where there is some harm, such as a need to respond to repetitious material, there would be a reason to consider striking it. But the Intervenors have no need to respond to this material.

The second paragraph of the Intervenors' motion is denied because the 1-rem standard of 10 C.F.R. §§ 30.32(i) and 70.22(i) for emergency planning, while not directly applicable to this case, has some suggestive value as to what accidental releases may be permissible for licensees. The Commission has made provision for Licensees whose accidental release might exceed 1 rem to have an emergency plan (or further analysis). Further, the Commission has not erected a prohibition against such accidental releases.

The third paragraph of the Intervenors' motion is denied because, even if the Intervenors should be correct (which the Licensee denies), there is no particular harm to Mr. Eschen repeating himself in this written proceeding — as Intervenors have freely done. The fourth paragraph of their motion is moot since I did not choose to use the cited study for any purpose at all.

The Intervenors filed another Motion to Strike on June 13, 1991. That motion challenged a portion of a filing by the Licensee that I find to be relevant. Even if I were to reach the contrary finding, I would not encourage motions to strike when there is no need to reply to the challenged portion and I would leave the matter in the record, trusting that I would use it only if I found it to be appropriate to do so.

F. Motion for Reconsideration

On May 1, 1991, the Intervenors filed a Motion for Reconsideration of Determination Apparently Contained in Memorandum and Order (First Initial Decision) of April 15, 1991, LBP-91-12.[170] The motion challenged three determinations that I made in my First Initial Decision, at least one of which was

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[169] *See also* Licensee's Response to Intervenors' Motion to Strike Portions of Licensee's Response to Intervenors' Rebuttal, and Accompanying Affidavits, February 21, 1990.

[170] *See also* Licensee's Response to "Intervenors' Motion for Reconsideration . . . ," May 13, 1991; Intervenors' Motion for Leave to Reply to Licensee's Response to "Intervenors' Motion for Reconsideration . . ." (May 13, 1991), May 21, 1991; and Licensee's Response to "Intervenors' Motion for Leave to Reply . . . ," June 3, 1991.

clearly labeled as "a tentative conclusion." The motion is denied because none of the decisions was premature, being related to the matters being decided and helpful to an understanding of the questions being asked. The decisions also were made on an evidentiary record that included four major filings of the parties (two more than required by the rules). Furthermore, the tentative conclusions have been fully reexamined in this decision in the context of the entire case.

G. New Information: Fire Exits

The Intervenors' Motion for Leave to Submit Evidence Respecting Critical Safety Failures Identified in Site Inspection of May 18, 1991 (May 22, 1991), requested leave to submit new evidence concerning allegedly inadequate fire exits from the basement level of the MURR facility, in which the Alpha Laboratory is located.[171]

I conclude that the Intervenors have failed to demonstrate either that their allegation falls within an admitted area of concern or that they meet criteria for the late-filing of a concern.[172] With respect to timeliness, I note that the Intervenors were invited to specify in their written filing those areas of information concerning which the Presiding Officer was requested to inquire further. The purpose of the requirement was twofold: to solicit suggestions that I could pursue in the interest of a fair hearing, and to ensure that missing information was identified early so as not to slow matters up later. The areas in which the Intervenors requested more information were: isotopic and curie content of plutonium, testing in place, experience and training of staff, safety analysis, decommissioning, and Steppen recommendations.[173] At the time they made these requests, members of the Intervenors' group had visited the Alpha Laboratory.[174] There is nothing in the record that indicates that the Intervenors made an attempt to gain access for Chief Wallace or another fire expert.

The material that the Intervenors seek to file does not fall within the first area of concern, to which it is closest in content. That concern stated:

> We are concerned about the potential for an accident such as a fire involving the nuclear materials to be used in the TRUMP-S project. Such an accident could release those very toxic

[171] *See* Licensee's Response to Intervenors' Motion for Leave to Submit Evidence, June 3, 1991.

[172] The criteria for late-filing of a concern might be inferred from the criteria for the late-filing of a petition. 10 C.F.R. § 2.1205. *See Nuclear Metals Inc.*, LBP-91-27, 33 NRC 548 (1991). They might also be inferred from the criteria found in Subpart G, 10 C.F.R. § 2.714(a)(1). Another source of regulatory authority is 10 C.F.R. § 2.1209, which references 10 C.F.R. § 2.734(a), dealing with reopening a closed record.

[173] Written Presentation of Arguments of Intervenors and Individual Intervenors, October 15, 1990, at 55-59.

[174] June 8, 1990 Declaration of Diana Normand (Intervenors Exh. 17 to Written Presentation of Arguments of Intervenors and Individual Intervenors, October 17, 1990).

materials and cause significant damage to public health and safety and to the environment, and specifically to many members of the petitioning organization.[175]

The Intervenors have not shown how the adequacy of exits (or entrances) from the basement is directly related to a release that will cause *significant* damage to public safety.[176] The risk to occupants of the basement, if there is one, appears to be one of a fire that does not involve nuclear materials (given my determination concerning a maximum credible fire involving nuclear materials). Because a maximum credible fire will be quite limited in scope, there also does not appear to be a credible risk that firefighters will be hindered in gaining access.

Hence, the Intervenors' remedy, if any, appears to be with the local fire marshall. They may, however, prefer to petition the Staff of the Nuclear Regulatory Commission to address their allegation.

I conclude that this motion for leave to submit evidence shall be denied.[177]

H. Motion to Submit Evidence Regarding Critical Safety Failures

On June 10, 1991, the Intervenors filed a Motion for Leave to File Report on Visit to Site on May 18, 1991, with Explanation of Major Life-Threatening Risks Observed (Intervenors' Report Motion).[178] Some of the grounds cited in this motion overlap those of the motion I just ruled on, in subsection G, above. That motion was found to be both inexcusably late and inadequate, for the reasons just stated above.[179] The non-overlapping matters covered in Intervenors' Report Motion are:

- combustibles present in the facility outside the lab,
- the "enclosed space" or "storage area" over the lab (which could contain combustibles),
- the possibility of an accident with a forklift servicing the storage area, and

[175] Request for Hearing and Stay Pending Hearing, May 10, 1990, at 4.

[176] I do not accept the Intervenors' argument that it intended "significant damage to public safety" to include the possibility of injury to voluntary visitors to the Alpha Laboratory. Nor do I think it at all likely that visitors will be taken to that Laboratory when actinides are in use within it.

[177] I also find that the motion is untimely. Section 2.1233(d) requires a participant in a Subpart L proceeding to include in its initial written presentation, "all documentary data, informational material or other written evidence upon which it relies. . . ." To submit untimely evidence, cause must be shown. Yet, individuals associated with the Intervenors toured the Alpha Laboratory more than a year ago. *See, e.g.*, June 8, 1990, Declaration of Diana Normand (Intervenors' Exh. 17 to Written Presentation of Arguments of Intervenors and Individual Intervenors, October 17, 1990). Furthermore, the Intervenors did not make a timely request of Licensee for the admission of a fire expert to the Laboratory. They did not even mention such a need in their Written Presentation, in which they were invited to include needs for information.

[178] *See* Licensee's Response to "Intervenors' Motion for Leave to File Report . . . ," June 19, 1991.

[179] *See id.*

- the alleged inadequacy of the Licensee's procedures respecting storage of combustibles and flammables.[180]

In addition to being raised in an untimely fashion, without adequate explanation of what the Intervenors knew earlier and why they did not inquire further, I conclude that the matters just mentioned are moot because of the provisions of the Order I am issuing.

Based on the record before me, which does not include the proffered information, I had already concluded that there was no assurance that the fire loading found by Mr. Purington and relied on by him for his testimony would continue to be the fire loading in the area outside of the laboratory (Licensee's Exh. 19 at 3, 12-15, 18). Hence, I have granted relief regarding changes in procedures or the installation of an additional sprinkler system. I had not considered that a vehicle could use combustible fuel near the Laboratory. However, the change in procedures that I have decided to require must cover reasonably foreseeable contingencies, including the use of such a vehicle outside the Laboratory while actinides are in use within it.

I. Effect of Staff Order

The Intervenors have suggested that this proceeding is affected by a letter to the Licensee from John D. Jones, Materials Licensing Section of the U.S. Nuclear Regulatory Commission, dated March 13, 1991.[181] That letter states:

> We have reviewed your application for renewal of Type A Broad Scope Material License No. 24-00513-32 dated April 28, 1988. *Due to changes in regulations, licensing policy, and volume of material submitted over many years we are requesting that you resubmit your application in its entirety.* . . . Enclosed find Draft Regulatory Guide 10.5 (Rev. 2) which further describes the information you need to provide in your application. [Emphasis added.]

The Staff's letter appears to put in motion a process of requiring compliance with regulatory revisions concerning decommissioning[182] and emergency response plans.[183] I had formerly ruled that the provisions of the Commission's regulations governing the need for decommissioning and emergency response plans were inapplicable to the license amendments at issue in this case.[184] Although that

[180] Intervenors' Report Motion at 6-7.

[181] The letter was transmitted to me on March 27, 1991, by Licensee, apparently pursuant to its continuing obligation to keep me informed of arguably relevant events. Subsequently, I received "Intervenors' Motion for Reconsideration of Memorandum and Order LBP-90-45, December 19, 1990 . . . ," April 1, 1991, and "Licensee's Response to 'Intervenors' Motion for Reconsideration . . .' Filed on April 1, 1991," April 8, 1991.

[182] 10 C.F.R. §§ 30.35(c) and 70.25(c).

[183] 10 C.F.R. §§ 30.32(i) and 70.22(i).

[184] Memorandum and Order (Admitting Parties and Deferring Action on a Stay) (August 28, 1990).

ruling removed these areas of concern as matters pending in this case, I requested comments from the parties to determine whether the Staff's action was a subsequent event that had the effect of imposing these regulations in this proceeding.

Upon review of my past decisions and the parties' filings, and for the reasons set forth in detail below, I do not find that the Staff's intention to apply the provisions regarding decommissioning and emergency plans to the Licensee's license renewal application has any effect on this immediate proceeding. If the Intervenors desire to litigate these issues, they may petition the Staff or they may file a new petition for a hearing (as a way of determining whether hearing rights are available).

However, in the course of reviewing the papers before me, I have ascertained that the Licensee may not be fully in compliance with 10 C.F.R. §§ 30.35 and 70.25, requiring the submission of a decommissioning plan. Because of conflicting language in the regulations upon which both the Licensee and the Intervenors rely, I am referring the matter to the Staff for review and appropriate action.

1. 10 C.F.R. §§ 30.32(i) and 70.22(i)

My holding in LBP-90-45 with regard to the inapplicability of 10 C.F.R. §§ 30.32(i) and 70.22(i) to the amendments at hand was correct. The Staff issued the byproduct materials license amendments on April 5, 1990, 2 days before the effective date of the emergency planning requirements. The Statement of Consideration for the revisions to Part 30 shows that the Commission had identified existing byproduct materials license holders that would be required to file emergency response plans at the time the provision went into effect.[185] There is nothing before me to indicate that the Licensee was one of those identified. The language of 10 C.F.R. § 30.32 demonstrates that the provision would be applicable to all *applications* for materials licenses seeking to use amounts of actinides as specified in the Commission's regulations.

It appears that the Licensee "slipped through the cracks" with respect to the amendment applications being litigated in this case. However, the Licensee's earlier renewal application for its broad-scope materials license was still pending before the Staff at the time the regulations became effective; hence, the new regulations appear to require compliance with the emergency planning provisions.

The Intervenors' argument that those amendments, or the applications for those amendments, are still "pending" during litigation is without merit. When

[185] 53 Fed. Reg. 14,501 (Apr. 7, 1989).

the Staff grants a license amendment, the Licensee may immediately operate under the conditions of that license amendment unless it is stayed. If the license amendment is challenged, after hearing, a presiding officer may reverse the Staff's decision. In other words, the Staff's decision to issue the amendment amounts to a final action on the application unless a determination is made to reverse that action and stay the effectiveness of the amendment. The applications are simply not "pending" for the purposes of this proceeding.

The Intervenors have cited case law in support of their argument that the applications are still pending. However, all the cited cases involve regulations whose language made them effective with respect to the pending operating license applications. This is simply not the case here.

2. *10 C.F.R. §§ 30.35 and 70.25*

Over the course of this proceeding, the Intervenors have, on at least three occasions, sought the admission of an area of concern regarding the applicability of 10 C.F.R. § 30.35 to the license amendments at hand. In the Intervenors' Petitions for Leave to Intervene: Requests for Stay, August 6, 1990, the Intervenors stated:

> We understand that the new quantities of nuclear material authorized place the University over the threshold requiring proof that the Licensee is committed to fully decontaminating and decommissioning the affected areas sufficient to be safely released for unrestricted use. . . . [or] that the University will set aside sufficient funds to adequately and sufficiently clean up the contaminated facilities.

Id. at 4. However, the pleading did not state what regulatory provision had been violated. Licensee's Reply met this assertion by claiming that the Licensee had already filed a financial assurance document with the NRC under the provisions of 10 C.F.R. § 30.35(c), that the document had been "reviewed and accepted" by the NRC, and therefore the issue was moot and should not be admitted as a valid area of concern.[186] In light of this specific information from the Licensee, I found that the Petitioners had failed to raise any question germane to the license application. I therefore ruled that the Intervenors had failed in their attempts to make the issue part of this case.[187] The lack of specificity concerning the particular regulatory provision Intervenors' relied on kept me from appreciating the potential significance of this issue further at that time.

The issue was again raised in two succeeding filings more clearly defined in terms of legal substance,[188] but those filings were not timely motions for

[186] Response of Licensee to "Petitions for Leave to Intervene: Requests for Stay" (August 20, 1990) at 14-15.
[187] Memorandum and Order (Admitting Parties and Deferring Action on a Stay) (August 28, 1990).
[188] Written Presentation of Arguments of Intervenors and Individual Intervenors (October 15, 1990) at 25-26 and

(Continued)

reconsideration of my former ruling rejecting the decommissioning issue as within the scope of the proceeding.[189] Hence, my ruling excluding the issue should stand as final.

The Intervenors now plead admission of this area of concern in their reply to my question regarding the Staff's intention to apply the decommissioning rule to the Licensee's license renewal application. Now they argue that the provisions of 10 C.F.R. § 30.35(a), and not those provisions of § 30.35(c), should apply to the amendments at hand. While I find the issue to be precluded by my prior decision,[190] I find that the Intervenors' arguments are sufficiently meritorious for consideration by the Staff (which appears, however, to be proceeding — without my request — to ensure that the Licensee complies with the decommissioning regulations with respect to its entire broad-scope byproduct materials license).[191]

To begin, sections 30.35(c)(2) and 70.25(c)(2) apply to each "holder" of a specific license that is: (1) issued before July 27, 1990, and (2) allows the possession and use of certain threshold quantities of radioactive materials of the type described in section (a) of that provision. These sections require the holder to file a decommissioning funding plan *or* certification of financial assurance for decommissioning on or before July 27, 1990.[192] If the "holder" chooses to submit the latter, the decommissioning funding plan must be submitted with the Licensee's license renewal application. Under this scenario, the Licensee appears to be in compliance with the Commission's regulations. It has filed its certification of financial assurance and it will be required to file its decommissioning plan with its license renewal application.

However, the Intervenors argue that section 30.35(c)(2) is the controlling provision *only* for the preexisting license. At the time of the new applications for amendments that are the subject of this proceeding, the Licensee was making a fresh application for use of amounts and types of actinides that exceeded the

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Intervenors' Motion for Order Admitting Area of Concern Respecting Financial Assurance of Decommissioning (November 26, 1990).

[189] *See Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Units 1 and 2), LBP-82-6, 15 NRC 281, 283 (1982) ("[T]here was no timely motion for reconsideration. Hence, that decision of the Board should stand as final.")

[190] I have reflected on the difference between refusing to reconsider this point and my voluntary reconsideration of the need to specify the isotopes in use under the special materials license. I conclude that adding the decommissioning issue to the case at this time would produce substantial delay, necessary only because of Intervenors' carelessness in raising the issue properly in a timely fashion. By contrast, my decision to ask for clear specification of the special nuclear materials license based on the existing record causes no delay.

[191] This argument also was made in Intervenors' Written Presentation, October 15, 1990, at 25, but it was not related to any admitted concern and does not create an area of concern merely by being included in this filing.

[192] 10 C.F.R. § 30.35(c)(2) reads:

> (2) Each holder of a specific license issued before July 27, 1990, and of a type described in paragraph (a) of this section shall submit, on or before July 27, 1990, a decommissioning funding plan or a certification of financial assurance for decommissioning in an amount at least equal to $750,000 in accordance with the criteria set forth in this section. If the licensee submits the certification of financial assurance rather than a decommissioning funding plan at this time, the licensee shall include a decommissioning funding plan in any application for license renewal.

threshold amounts of the types of actinides described in paragraph (a) of the provision. Thus, with respect to these new materials, Licensee was an *applicant* under the terms of the regulations and not just a *holder*.

Therefore, it appears from the language of the provisions that section 30.35(a) (and 70.25(a)) would have been the controlling regulations at the time the Licensee applied for the license amendments. Moreover, under the provisions of section 30.35(a), "applicants" for a specific license authorizing the possession and use of unsealed special nuclear material in quantities exceeding a certain threshold amount must file *decommissioning funding plans* — not just certifications of funding assurance.[193]

In view of the conflicting interpretations of the provisions of 10 C.F.R. § 30.35 with regard to license amendments at hand, I have considered referring this matter to the Staff for its review and appropriate disposition. However, the Staff's letter to the Licensee sets the wheels turning toward requiring full compliance with the decommissioning regulations. Hence, a referral is not appropriate.

IX. CONCLUSIONS REGARDING ORAL PRESENTATIONS OR HEARINGS

At numerous places in the record, the Intervenors have argued that they have the unqualified right to make an oral presentation or to conduct cross-examination as part of a full hearing. After consideration of these requests in the context of the voluminous record in this case, and the many opportunities to present evidence, I have decided that no oral presentations are necessary to compile an adequate decisional record.[194]

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[193] Sections 30.35 and 70.25 became effective June 27, 1988, and were in effect when Licensee filed its March 1990 amendment application. Section 30.35(a) reads:

> (a) Each applicant for a specific license authorizing the possession and use of unsealed byproduct material . . . . shall submit a decommissioning funding plan as described in paragraph (e) of this section.

Section 30.35(e) reads:

> (e) Each decommissioning funding plan must contain a cost estimate for decommissioning and a description of the method of assuring funds for decommissioning from paragraph (f) of this section, including means of adjusting cost estimates and associated funding levels periodically over the life of the facility.

[194] *See, e.g.*, Intervenors' Renewed Motion for Order Recommending Formal Hearing . . . (PART I), June 20, 1991; Intervenors' Renewed Motion for Order Recommending Formal Hearing . . . (PART II), June 27, 1991; Licensee's Response to "Intervenors' Renewed Motion for Order . . . ," July 1, 1991.

I find these motions to be untimely since they relate to matters that have been in the record for months and since the Intervenors have not provided any good cause for their late filing. In addition, arguments with respect to Dr. Datta's testimony would not persuade me to permit cross-examination because I have not accepted his testimony with respect to the matters the Intervenors seek to raise. Arguments with respect to Mr. Purington's testimony seek to raise collateral matters that I do not believe would substantially reflect on the admissability or credibility of his testimony. Nor am I prepared to consider, at this late date, the significance of a Branch Technical Position that is not directly applicable to the license in question.

Enough is enough. There has been plenty of opportunity for the Intervenors to submit their proof in writing and there is, in my opinion, insufficient reason to have oral argument or a hearing.

X. REFLECTIONS ON SUBPART L

In the course of this proceeding, the Intervenors have made numerous comments expressing their dissatisfaction with being part of one of the first cases tried pursuant to Subpart L, which denies them their "right" to cross-examination. The Licensee also has expressed some dissatisfaction at the enormous burden it has suffered because of the numerous rounds of pleadings that have occurred in this case.

I came into this case as a friend of informal proceedings, having been the Executive Director of the American Bar Association Commission on Law and the Economy, which recommended their use.[195] In the *Comanche Peak* case, which I handled prior to this case, I solicited the agreement of the parties to the use of a "written filings" procedure that made it possible to determine certain issues without a hearing.[196] Now that I have had the experience of trying this case under Subpart L, I am chastened because of my difficulty in wrapping my arms around the contents of this case in such a way as to lead to an expeditious decision.

In trying new procedures such as this, the experience of one judge or one proceeding has limited value. Nevertheless, because of my commitment to the hearing process, I am offering my opinions and encourage the parties also to communicate their opinions to the Chief Administrative Judge of the Atomic Safety and Licensing Board Panel. Such suggestions may guide judges and improve the use of Subpart L, based on experience.

I have reflected on my own actions in order to learn from them. With hindsight, I would make one change: I would require the Intervenors to organize their written filings entirely according to their areas of concern. This would have made it easier to determine subsequently whether each argument made was indeed directed to a particular area of concern.

This case was technically very complex and was fought by qualified experts for both sides. Under such circumstances, I now feel that an evidentiary hearing, following a period of discovery, may be faster and more satisfactory.

I also note that the Commission on Law and the Economy of the American Bar Association required that its modified procedure be used only after "the evidentiary basis for the proposed agency action" was disclosed.[197] In this instance, there was no Staff explanation of its action and many of the Intervenors' concerns were incompletely addressed until after the concerns were raised.

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[195] Commission on Law and the Economy, *Final Report 1979 with Recommendations: Federal Regulation: Roads to Reform*, American Bar Association, at 3 (Recommendation 6) and pp. 95ff.

[196] *Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Units 1 and 2), LBP-84-25, 19 NRC 1589, 1591 (1984).

[197] Commission on Law and the Economy, *Final Report 1979 with Recommendations: Federal Regulation: Roads to Reform*, American Bar Association, at 95, ¶ (b).

Consequently, as the case proceeded, the Intervenors gradually learned the substance of the Licensee positions. (In addition, the Staff's decision not to participate meant that there was no input on important questions unless I specifically requested it.) Thus, the filings in the case necessarily bore the dual functions of presentations of positions (legal and factual) and of discovery. This could be obviated, in the future, if the regulations ensured a full record at an early stage of the case. Then, standards could be developed to narrow the issues by requiring increased specificity and bases for contentions based on the full record.

Despite the difficulties, Subpart L also had advantages. It gave the Presiding Officer an extended opportunity to study extensive written filings before deciding what questions to ask. This contrasts with hearings, where oral cross-examination generally occurs shortly after testimony is filed; under those circumstances, a presiding officer may feel a need to react promptly at the hearing in order to clarify issues then, rather than at some subsequent time after the evidentiary record of the hearing has been closed. The additional time to carefully compare testimony is welcome.

Not having seen and heard the witnesses also is advantageous. It imposes on the presiding officer the discipline of having to decide technical questions without the easy method of relying on "demeanor" or general impressions of witnesses. This may result in technically more correct opinions because it is necessary to comprehend the underlying technical arguments before choosing which side is correct.

I am convinced, after this Subpart L proceeding, that the parties had an adequate opportunity to present their positions and evidence. Given the strong views of both parties, this is an important accomplishment. My concern is that ways be found to reduce the burden of filings and to render a decision more rapidly. Perhaps the experience of having tried this case will permit me to find new ways to expedite cases in the future. My current notions of how to expedite these cases are presented above for the consideration of the parties and the Commission.

Order

For all the foregoing reasons and upon consideration of the entire record in this matter, it is, this 10th day of July 1991, ORDERED, that:

[Until 10 a.m. July 10, 1991, the preissuance courtesy copies provided to the parties shall not be released by them to any person that is not a party, a principal of a party, or a key employee of a party. The lawyers for the parties

shall ensure that each person who receives a courtesy copy has agreed not to share it with any other person.][198]

1. The Licensee shall, within 30 days, take one of the following actions:
   - Disclose procedures (or adopt new procedures) that ensure a fire loading and continuity of burnable materials (in the basement outside the Alpha Laboratory) that will ensure conditions equivalent to those observed by Mr. Purington; or[199]
   - Propose procedures ensuring a new maximum loading (and continuity), higher than observed by Mr. Purington, and demonstrate by analysis or expert testimony that the new maximum loading (and continuity) will prevent a credible fire from spreading into the Alpha Laboratory from outside; or
   - Install an automatic fire sprinkler system in the rectangular area of the basement immediately adjacent to the Alpha Laboratory and extending from the Laboratory to the Hot Cell.[200]

The Licensee's response to this ordering ¶ 1 shall be promptly communicated to the Staff of the Nuclear Regulatory Commission, which shall verify the adequacy of the response.

2. The Licensee shall, within 30 days, amend TAM-62 to eliminate any suggestion that fire in the glove box is not a safety concern. The amended TAM-62 shall be promptly served on the Staff of the Nuclear Regulatory Commission, which shall verify the adequacy of the amendment.

3. The Licensee shall, within 15 days, accurately disclose to the Staff of the Nuclear Regulatory Commission the amounts of ^{241}Pu and ^{241}Am that it possesses under SNM-247 for the purpose of conducting the TRUMP-S experiments. The Staff shall promptly review the submitted material and amend the license to reflect accurately the amounts of ^{241}Pu and ^{241}Am authorized for use by SNM-247.

4. This decision covers all matters in controversy.

5. Motions for reconsideration may be filed within 10 days, only to raise *fresh* (not previously argued) allegations of specific errors made in considering the questions and evidence before me. Such motions will be considered only if:

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[198] This provision effectuates an agreement of the parties reached in a telephone conversation on July 2, 1991. The purpose of the provision is to permit the parties to have access to this document while it is being copied and bound for distribution to the entire service list and to the public relations offices of the Nuclear Regulatory Commission.

[199] Vehicles that rely on combustible fuels must, of course, be effectively excluded from the basement during any time actinides are in use in the laboratory.

[200] If this is done, further changes in procedures are unnecessary *except* for the effective exclusion of vehicles with combustible fuel from the basement while actinides are in use in the laboratory. For a map of the area of the basement, *see* Intervenors' Motion for Leave to Submit Evidence Respecting Critical Safety Failures Identified in Site Inspection of May 18, 1991, May 22, 1991, Exh. 5.

(1) if feasible, they cite verbatim all relevant materials in the record, including materials adverse to the position being advocated,
(2) if not feasible to cite all materials verbatim, they accurately summarize all relevant materials in the record, including materials and arguments adverse to the position being advocated,
(3) they state succinctly omissions from or specific portions of the Memorandum and Order that are in error and the reasons for believing them to be error, and
(4) they state succinctly the relief proposed to be granted.

No new evidence may be submitted, other than offers of proof with respect to materials excluded from the record. Noncomplying motions will be summarily dismissed. Motions may be dismissed on the ground that they rely on allegations already argued prior to this decision and considered by me in the course of reaching the decision.

6. Pursuant to 10 C.F.R. § 2.1251 of the Commission's Rules of Practice, this initial decision will constitute the final decision of the Commission thirty (30) days from the date of its issuance, unless an appeal is filed in accordance with 10 C.F.R. § 2.1253.

7. Any party may appeal this decision with the Commission by filing a Notice of Appeal within ten (10) days after service of the [partial] initial decision. *See* 10 C.F.R. § 2.785, as amended October 18, 1990 (55 Fed. Reg. 42,944 (Oct. 24, 1990)).

8. Each appellant must file a brief supporting its position on appeal within thirty (30) days after filing its Notice of Appeal (forty (40) if the Staff is the appellant). An intervenor's-appellant's brief must be confined to issues that the intervenors-appellant placed in controversy or sought to place in controversy.

9. Within thirty (30) days after the period has expired for the filing and service of the briefs of all appellants, (forty (40) days in the case of the Staff), a party who is not an appellant may file a brief in support of or in opposition to the appeal of any other party. A responding party shall file *only* a single, responsive brief regardless of the number of appellants' briefs filed. Briefs shall conform to the length and format specified in 10 C.F.R. § 2.762.

Respectfully ORDERED,[201]

Peter B. Bloch, Presiding Officer
ADMINISTRATIVE JUDGE

Bethesda, Maryland

[201] Signed July 5, 1991, for issuance July 10, 1991.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulies, Chairman
Dr. George A. Ferguson
Dr. Jerry R. Kline

In the Matter of **Docket No. 50-322-OLA-2**
(ASLBP No. 91-631-03-OLA-2)
(Possession-Only License)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **July 18, 1991**

RULES OF PRACTICE: STANDING

Claims of injury to an organization's ability to disseminate information, resulting from the agency's failure to prepare an environmental review, may satisfy standing requirements, where the information is essential to the organization's activities and the lack of the information nullifies its mission.

MEMORANDUM AND ORDER
(Ruling on Staff Motion for Reconsideration)

I. INTRODUCTION

On June 25, 1991, NRC Staff (Staff) filed a motion that requests reconsideration of the Licensing Board's finding in LBP-91-26, 33 NRC 537 (1991) that Scientists and Engineers for Secure Energy, Inc. (SE2), has organizational

standing to intervene concerning the issuance of a possession-only license (POL) amendment for the Shoreham facility and may file contentions on National Environmental Policy Act (NEPA) issues. Staff asks that the Licensing Board determine that SE2 does not have standing to intervene in the proceeding.

Long Island Lighting Company (LILCO), on July 10, 1991, filed a response in support of Staff's motion requesting that the motion be granted and that SE2's petition to intervene in the POL amendment proceeding be denied.

No response to the motion for reconsideration was received from SE2. This lack of a response cannot be considered as a default that determines the validity of the Licensing Board's decision that SE2 has established standing on the NEPA issue in the proceeding. In this administrative proceeding the correctness of the Licensing Board's determination must be evaluated on its merits.

II. BACKGROUND

In our Memorandum and Order of June 13, 1991, this Licensing Board found Scientists and Engineers for Secure Energy ("SE2") to have organizational standing to intervene concerning the issuance of a POL amendment for the Shoreham facility and to file contentions on National Environmental Policy Act ("NEPA") issues. The NRC Staff argues, contrary to our finding in LBP-91-26, that SE2 fails to meet either the Constitutional tests or the "prudential" tests for standing. According to the Staff, SE2 has not shown (1) that the harms complained of are traceable to possible Commission action, (2) that it will suffer direct palpable injury, (3) that the harms complained of could be redressed by an order herein, and (4) that the grievances it complains of are not generalized grievances of the public at large. As general support for these assertions, the Staff cites the following cases: *Lujan v. National Wildlife Federation*, ___ U.S. ___, 110 S. Ct. 3177, 111 L. Ed. 2d 695 (1990); *Valley Forge Christian College v. Americans United for Separation of Church and State*, 454 U.S. 464, 102 S. Ct. 752, 70 L. Ed. 2d 700 (1982); *Edlow International Co.* (Agent for Government of India on Application to Export Special Nuclear Material), CLI-76-6, 3 NRC 563 (1976); *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610 (1976).

Upon further review of our decision in LBP-91-26, we do not find our ruling on the standing issue to be inconsistent with the cases cited by the NRC Staff. Nor do we find that the LILCO Response requires that we alter our finding. We therefore reaffirm our prior decision.

III. ORGANIZATIONAL STANDING UNDER NEPA

NEPA requires federal agencies to prepare an environmental impact statement ("EIS") when they propose "major federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). In this case, SE2 is alleging that the issuance of the POL amendment to LILCO's license amounts to a *de facto* decommissioning order which, SE2 alleges, requires an EIS to be prepared outlining decommissioning alternatives. SE2 further alleges that without the opportunity to review and comment on the EIS, it is aggrieved as an organization founded to review and disseminate information on such decommissioning alternatives, which, they infer, could have varying effects on the environment.

In order for a petitioner to challenge an agency's alleged failure to comply with NEPA's mandates, it must show that it has been "adversely affected" or "aggrieved" within the meaning of section 10 of the Administrative Procedure Act. *See* 5 U.S.C. § 702; *Public Citizen v. NHTSA*, 848 F.2d 256, 262 (D.C. Cir. 1988) (*quoting Committee for Auto Responsibility v. Solomon*, 603 F.2d 992, 997 (D.C. Cir. 1979), *cert. denied sub nom. Committee for Auto Responsibility v. Freeman*, 445 U.S. 915, 100 S. Ct. 1274, 63 L. Ed. 2d 599 (1980). That section confers standing only upon those to whom the challenged agency conduct has caused actual injury to an interest within the zone of interests protected under a pertinent statute (NEPA). *Id.*

The standing analysis under NEPA has developed somewhat differently than under most statutes — the statute confers a *procedural* right to have environmental impacts considered. *Public Citizen*, 848 F.2d at 269. The twin functions of an EIS are to require agencies to take a "hard look" at the consequences of the proposed action and provide important information to other groups and individuals. *Robertson v. Methow Valley Citizens*, 490 U.S. 332, 356, 109 S. Ct. 1835, 104 L. Ed. 2d 351, 374 (1989). The broad dissemination of information mandated by NEPA permits the public and other government agencies to react to the effects of a proposed action at a meaningful time. *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371, 109 S. Ct. 1851, 104 L. Ed. 2d 377, 391 (1989). The elimination of an opportunity for individuals and organizations to see and use an EIS can constitute a constitutionally sufficient injury for standing purposes. *Sierra Club v. Andrus*, 581 F.2d 895, 900 n.16 (D.C. Cir. 1978), *rev'd on other grounds*, 442 U.S. 347, 99 S. Ct. 2335, 60 L. Ed. 2d 943 (1979). The Court further refined this theory in *Competitive Enterprise Institute v. NHTSA*, 901 F.2d 107, 122-23 (D.C. Cir. 1990) (citations omitted):

> Allegations of injury to an organization's ability to disseminate information [contained in an EIS] may be deemed sufficiently particular for standing purposes where that information

> is essential to the injured organization's activities, and where the lack of the information will render those activities infeasible. . . . To establish standing on this basis, however, petitioners must assert a plausible link between the agency's action, the informational injury, and the organization's activities. . . . [O]rganizations must point to concrete ways in which their programmic activities have been harmed. . . . NEPA's purpose of ensuring well-informed government decisions and stimulating public comment on agency actions may lower the threshold for establishing injury to informational interests. . . .

Nevertheless, a right to specific information under NEPA has so far been recognized for standing purposes only when the information sought relates to *environmental* interests that NEPA was intended to protect. *Id.* The procedural and informational thrust of NEPA gives rise to a cognizable injury for denial of its explanatory process, so long as there is a reasonable risk that environmental harm may occur. *City of Los Angeles v. NHTSA*, 912 F.2d 478, 492 (D.C. Cir. 1990).

IV. STAFF MOTION

The NRC Staff argues that SE2 has demonstrated neither that the harms it complains of are traceable to possible Commission action nor that it will suffer direct palpable injury. SE2's claim of injury is that because of the Commission's inaction in conducting an environmental review of the alleged *de facto* decommissioning of Shoreham, it is precluded from commenting on an EIS and advising its members of the environmental risks involved and reporting the findings and accommodations based upon environmental evaluations to the public and political leadership as provided for in SE2's charter. We see this argument as a clear, factual enunciation of harm to the organization's informational mission, one that would have afforded standing to the petitioners in *Competitive Enterprise Institute*, 901 F.2d at 123. The alleged harm is caused by a direct, isolated, and judicially reviewable Commission action, the issuance of the POL without an environmental review, unlike the broad, agencywide, programmatic activity that failed to form the basis for the petitioner's standing in *Lujan*.

The Staff's reliance on *Lujan* to limit the reach of *Competitive Enterprise Institute* seems misplaced. The Staff argues that *Lujan* "required that . . . organizational harm be shown which came from a proposed action for which a statement was sought, and not merely from a failure to prepare an environmental statement." Staff Motion at 6. We read this as meaning that SE2 must suffer *environmental* harm. That position, and indeed the Staff's Reconsideration Motion itself, completely ignores treatment of the line of cases beginning with *Scientists' Institute for Public Information, Inc. v. Atomic Energy Commission*,

481 F.2d 1079 (D.C. Cir. 1973), and leading up to *Competitive Enterprise Institute* and *City of Los Angeles.*

We are unable to find any language in *Lujan* that supports the NRC Staff's argument that *Lujan* requires the Petitioner to directly suffer environmental injury from the agency's action. As we have already stated, the procedural and informational thrust of NEPA gives rise to a cognizable injury from denial of its explanatory process, so long as there is a reasonable risk that environmental harm may occur. *City of Los Angeles,* 912 F.2d at 492. Here we are faced with the alleged *de facto* decommissioning of a nuclear power station that has been tested up to 5% power and which could have environmental harm resulting from decommissioning.

We also do not agree with the NRC Staff's assertion that "the harms complained of could [not] be redressed by an order herein." Staff Motion at 2. The issuance of an EIS detailing decommissioning alternatives would cure the harm SE2 claims as the basis for its intervention petition. Nor is SE2's claim of injury "generalized grievances of the public at large." *Id.; see Simon v. Eastern Kentucky Welfare Rights Organization,* 426 U.S. 26, 96 S. Ct. 1917, 48 L. Ed. 2d 663 (1976) (the standing question in its Art III aspect "is whether the plaintiff has 'alleged such a personal stake in the outcome of the controversy' as to warrant *his* invocation of federal court jurisdiction"). SE2's organizational interests are directly thwarted by the lack of information concerning decommissioning alternatives at the Shoreham facility, an injury not unique to the public at large.

The Staff has provided no basis for the Licensing Board to alter its decision on SE2's standing.

V. LILCO'S RESPONSE

On July 10, 1991, LILCO filed with the Board a document entitled "LILCO's Support of the NRC Staff's Motion for Reconsideration of LBP-91-26." In that Response, LILCO states, as did the Staff, that for the purposes of standing, SE2 is required to "detail how the grant of a POL amendment would foreclose a particular method of decommissioning." LILCO Response at 5. LILCO goes on to state:

> Unless SE2 can show how the issuance of the POL prior to any required environmental review will injure its interests, the Board can only speculate what the link between the agency's action and the alleged injury might be. Such speculation is not permissible. *See Lujan v. National Wildlife Federation,* 110 S. Ct. 3177, 3188 (1990) (a court may not assume "that general averments embrace the 'specific facts' needed to sustain a complaint").

LILCO then proceeds to argue the merits of SE2's contentions, not the standing issue that is the only issue before the Licensing Board. *See* LILCO Motion at 4-5.

The foregoing seems to illustrate a misunderstanding of the issue placed before the Licensing Board by the Staff's Motion. Regardless of LILCO's claims, SE2 does not have to detail how the grant of a POL amendment will foreclose a particular method of decommissioning to have standing in this case. As we have outlined in this Memorandum, for standing purposes, SE2 needs to demonstrate that its organizational interest is harmed by the lack of an EIS. The requirement that the Staff and LILCO propose is one needed for filing an acceptable contention and not for determining standing. *See* CLI-91-4, 33 NRC 233, 237 (1991).

Moreover, unlike the petitioner in *Lujan* who failed to achieve standing because the court found his pleading "conclusory and completely devoid of specific facts," SE2 has specifically plead how it will be injured as an organization on the basis of an isolated, judicially reviewable agency action.

LILCO has provided no basis for the Licensing Board to alter its prior finding on SE2's organizational standing.

VI. ORDER

Based on all of the foregoing, the NRC Staff's Motion for Reconsideration, of June 25, 1991, is hereby *denied.*

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Morton B. Margulies, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland
July 18, 1991.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Sheldon J. Wolfe, Chairman
Dr. James H. Carpenter
Dr. Thomas S. Elleman

In the Matter of **Docket Nos. 50-424**
50-425
(ASLBP No. 91-647-OLA-2)

GEORGIA POWER COMPANY, *et al.*
(Vogtle Electric Generating Plant,
Units 1 and 2) **July 23, 1991**

In this Memorandum and Order, the Licensing Board conditionally grants the petition for leave to intervene. The grant is conditional because the Petitioner will not be permitted to participate as a party and its petition will be dismissed if the supplement to the petition for leave to intervene, listing contentions that it seeks to have litigated, fails to satisfy the requirements of 10 C.F.R. § 2.714(b)(2) and (d)(2).

RULES OF PRACTICE: STANDING TO INTERVENE

While no affidavits were appended to the petition for leave to intervene, attesting that at least one member authorized the Petitioner to represent his or her interests, authorization might be presumed and could well be appropriate where, as here, it appeared that the sole or primary purpose of the petitioner organization was to oppose nuclear power in general or the facility at bar in particular. *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 396 (1979).

RULES OF PRACTICE: STANDING TO INTERVENE

Under certain circumstances, even if a current proceeding is separate from an earlier proceeding, the Commission will refuse to apply its rules of procedure in an overly formalistic manner by requiring that petitioners, who participated in the earlier proceeding, must again identify their interests to participate in the current proceeding. *Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-74-3, 7 AEC 7, 12 (1974).

MEMORANDUM AND ORDER
(Conditional Granting of Petition for Leave to Intervene)

MEMORANDUM

A. Background

On April 22, 1991, Georgia Power Company (Licensee) applied to amend its operating licenses for Vogtle Units 1 and 2. These proposed license amendments would change Table 4.8-1 of the Technical Specifications by deleting criteria for changing the frequency of diesel generator tests based upon 5 or more failures in the last 100 valid tests. The amendments would not change corresponding criteria based upon 2 or more failures in the last 20 valid tests. On June 14, 1991, Georgians Against Nuclear Energy (GANE) filed a petition for leave to intervene. On June 28, 1991, Licensee filed an answer opposing the granting of the GANE petition, and on July 5, 1991, the NRC Staff filed a response opposing the granting of the petition.

B. Discussion

The Staff argues that GANE has not shown that it has standing to be admitted as an intervenor in failing to address and meet the requirements of 10 C.F.R. § 2.714(a)(2) and (d)(1).[1] The Licensee concedes that possibly, as required by section 2.714(a)(2), GANE has set forth the specific aspect or aspects of the

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[1] Section 2.714(a)(2) provides that:

> The petition shall set forth with particularity the interest of the petitioner in the proceeding, how that interest may be affected by the results of the proceeding, including the reasons why petitioner should be permitted to intervene, with particular reference to the factors in paragraph (d)(1) of this section, and the specific aspect or aspects of the subject matter of the proceeding as to which petitioner wishes to intervene.

* * *

Section 2.714(d)(1) reads in pertinent part that an Atomic Safety and Licensing Board shall, in ruling on a petition for leave to intervene, consider the following factors, among other things:

> (i) The nature of the petitioner's right under the Act to be made a party to the proceeding.
> (ii) The nature and extent of the petitioner's property, financial, or other interest in the proceeding.
> (iii) The possible effect of any order that may be entered in the proceeding on the petitioner's interest.

subject matter of the proceeding as to which Petitioner wishes to intervene. However, in all other respects, the Licensee urges that other requirements of section 2.714(a)(2) and (d)(1) have not been met.

We conclude that Petitioner minimally has met the requirements for standing.[2] GANE alleges

> We believe that safety at the nuclear plant would be compromised if this request were granted and create a greater possibility of an accident which would threaten the health, lives and property of our members which live in proximity to Plant Vogtle . . . [and] that deleting the 5:100 criteria from the testing schedule significantly decreases reliability assurance. . . .

Thus, Petitioner has adequately shown its interests and those of its members in the proceeding and how those interests may be affected by the proceeding — viz., asserted that the requested relaxation in testing requirements would reduce confidence in the availability of the diesel generators and increase the risk to the public. Also it is clear that GANE has shown the specific aspect or aspects of the subject matter of the proceeding as to which it wishes to intervene. Moreover, it is clear that there has been adequate showing that the subject matter of the proceeding can be postulated to cause an injury in fact and that the injury is arguably within the zone of interests protected by the Atomic Energy Act of 1954, as amended, or the National Environmental Policy Act, as amended. Finally, the Board is persuaded to grant standing because it is aware that, in another very recent Georgia Power technical specification amendment case, a different licensing board, after initially denying standing to GANE,[3] set a date for the filing of an amendment to the petition.[4] One of the three affidavits of members of GANE appended to the amended petition asserted that the deponent resided within 45 miles of the Vogtle plant and the other two affiants identified Ms. Glenn Carroll (the person who signed the instant petition filed on June 14, 1991) as being the Co-Coordinator of GANE. While granted that no affidavits were appended to the instant petition attesting that at least one

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[2] As our discussion reflects, *infra*, GANE has been exceedingly lax in its presentation. It did not bring to our attention the fact that ultimately it had been granted standing in a recent technical specification amendment proceeding before a different licensing board and did not argue that accordingly it did not have to go through the ritual of identifying its interests here before being allowed to intervene. GANE is placed on notice and warned that further laxity will not be condoned. We will not permit it to participate as a party if the supplement listing its proposed contentions (*see* our Order, *infra*) does not satisfy the requirements of 10 C.F.R. § 2.714(b)(2) and (d)(2) of the Rules of Practice. A word to the wise should be sufficient, especially since GANE's contentions were rejected in the earlier proceeding for failing to meet section 2.714(b) and (d)(2) requirements. GANE is enjoined to read a copy of our Rules of Practice (especially section 2.714(b)(2) and (d)(2)), which is being mailed to it.

[3] *See* LBP-90-29, 32 NRC 89 (1990).

[4] We understand that, after GANE submitted an amended petition inclusive of proposed contentions, the Licensing Board granted standing during the course of the prehearing conference on September 19, 1990, but thereafter, on May 15, 1991, in LBP-91-21, 33 NRC 419 (1991), denied admission of the contentions because they failed to meet the requirements of section 2.714(b)(2) and (d)(2).

member authorized GANE to represent his or her interests, authorization might be presumed and could well be appropriate where, as here, it appeared that the sole or primary purpose of the petitioner organization (Georgians Against Nuclear Energy) was to oppose nuclear power in general or the facility at bar in particular.[5] Again, while true that no affidavits were appended to the instant petition attesting that at least one member of GANE lived in close proximity to the Vogtle facility, we deem it was not necessary for GANE once again to establish this requisite interest of one of its members. Having established in the very recent, similar technical specification case that one of its members resided in close proximity to the Vogtle facility, we will not delay the timely progress of the instant case by demanding that such affidavit be filed. The Commission has ruled that, under certain circumstances, even if a current proceeding is separate from an earlier proceeding, it will refuse to apply its rules of procedure in an overly formalistic manner by requiring that petitioners, who participated in the earlier proceeding, must again identify their interests to participate in the current proceeding.[6]

ORDER

1. GANE's petition for leave to intervene is conditionally granted. The grant is conditional because GANE will not be permitted to participate as a party and its petition for leave to intervene will be dismissed if the supplement to its petition to intervene, listing contentions that it seeks to have litigated, fails to satisfy the requirements of 10 C.F.R. § 2.714(b)(2) and (d)(2).

2. By no later than August 13, 1991, GANE shall file a supplement to its petition to intervene that lists the contentions sought to be litigated. By no later than September 3, 1991, the Licensee and the Staff shall file responses to GANE's supplement listing its proposed contentions. Pursuant to 10 C.F.R. § 2.711, the Board is extending the times for these filings in order that there will be adequate time for the preparation of these submissions and sufficient time for the Board to review them.

3. In a separate order, which will be issued soon, the Board will schedule a prehearing conference to be held in Atlanta, Georgia. Oral arguments upon GANE's proposed contentions will be heard at that time. Pursuant to 10 C.F.R. § 2.715(a), limited-appearance statements will not be heard at this prehearing conference; however, if one (or more) of the Petitioner's proposed contentions

[5] *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 396 (1979).
[6] *Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-74-3, 7 AEC 7, 12 (1974).

is admitted as an issue to be litigated, such limited-appearance statements will be taken at the beginning of subsequent conferences and the hearing.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Sheldon J. Wolfe, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland,
July 23, 1991.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF THE EXECUTIVE DIRECTOR FOR OPERATIONS

James M. Taylor, Executive Director for Operations

In the Matter of **Docket No. PRM 61-1**

SIERRA CLUB OF NORTH CAROLINA **June 25, 1991**

The Nuclear Regulatory Commission (NRC) is denying a petition, as amended, for rulemaking submitted by the Sierra Club of North Carolina (PRM 61-1). The petition and amendment requested that the NRC amend its regulations in 10 C.F.R. Part 61 to permit the licensing of a zero-release low-level radioactive waste disposal facility within the saturated zone. The NRC is denying the petition for the following reasons: (1) The design of a zero-release engineered facility for extremely long time periods is beyond the current level of demonstrated technology known to the NRC Staff, and (2) the existing rule allows for saturated-zone disposal under a specific hydrologic condition; however, the effort to develop regulations for enhanced engineered saturated-zone disposal, under a broad range of hydrologic conditions, would be significant, and the NRC is not aware of interest in this type of disposal by state authorities.

REGULATIONS: INTERPRETATION (10 C.F.R. PART 61)

The concept upon which 10 C.F.R. Part 61 is based is that the very slow release of radionuclides that meet regulatory requirements is acceptable. Therefore, designing a perpetual facility for "zero release" might require NRC to develop an entirely new regulation.

TECHNICAL ISSUES DISCUSSED

The following technical issues are discussed:

Radioactive release (zero release),

Fiber-reinforced polymer concrete,
Saturated zone.

DENIAL OF PETITION FOR RULEMAKING

I. THE PETITION

On April 12, 1990 (55 Fed. Reg. 13,797), the Nuclear Regulatory Commission published notice of receipt of a petition for rulemaking by the Sierra Club of North Carolina, and on June 7, 1990 (55 Fed. Reg. 23,206), the NRC published a subsequent amendment to the original petition for rulemaking. The petition and amendment requested that the Commission adopt regulations that would permit the design and construction of a zero-release low-level waste disposal facility entirely below the 100-year seasonal water table. The Petitioner asserts that amended regulations are necessary in order for the General Assembly of North Carolina to consider a waiver of a North Carolina statute that requires that the bottom of a low-level waste facility be at least 7 feet above the seasonal high water table.

North Carolina, which is an Agreement State under section 274b of the Atomic Energy Act, is required to impose standards that are equivalent, to the extent practicable, to those issued by the NRC. Therefore, the North Carolina Radiation Protection Commission, which determines appropriate regulations for radiation protection and has a licensing role for a low-level radioactive waste disposal facility, must meet the requirements of 10 C.F.R. Part 61, Subparts C and D. The Petitioner states that until the NRC acts favorably in regard to this petition, the North Carolina Radiation Protection Commission will be unable to approve rules for saturated-zone siting and zero-release technology. The Petitioner asserts that without amended NRC regulations, the North Carolina Low-Level Radioactive Waste Management Authority cannot undertake to consider a site and technology that could not be considered licensable by the Radiation Protection Commission. According to the Petitioner, neither the Radiation Protection Commission nor the Management Authority can recommend to the Joint Selection Committee on the Management of Low-Level Radioactive Waste that the General Assembly of North Carolina waive the provision of the statute that requires placing the bottom of a facility at least 7 feet above the seasonal high water table. The Petitioner provided a sample design for a low-level waste (LLW) vault, which he asserted would be immune to water infiltration over long time periods, and therefore, disposal could be safely accomplished within the saturated zone. Petitioner asserts that current

NRC and North Carolina regulations preclude much of the state as potential LLW sites due to high water tables throughout the state.

The Petitioner believes that the performance objectives for low-level radioactive waste disposal facilities can best be realized by a finding that water-impermeable vaults in the saturated zone meet the requirement that diffusion be the predominant mechanism of radioactivity transport from disposed low-level radioactive waste. Further, the Petitioner offers that three levels of water-impermeable containment (vault, overpack, and high-integrity container) provide a credible basis for developing regulations for a disposal facility designed for zero release.

The Petitioner states that the NRC, by a timely action permitting disposal facility placement in the saturated zone, providing that the specific siting and design requirements are met, will facilitate corresponding changes in the governing statutes and in the rules of the North Carolina Radiation Protection Commission. The Petitioner asserts that the changes are required if the North Carolina Low-Level Radioactive Waste Management Authority is to consider and authorize a contractor to site, design, and construct a zero-release, saturated-zone-located, inadvertent-intruder-protected, disposal facility for the Southeast Compact by the planned startup date of January 1, 1993.

In the amendment to the original petition, the Petitioner provided new and relevant information regarding polymer and concrete technology. The Petitioner requested that the Commission consider the new information on polymer concrete technology as an alternative means for realizing the objective of the original petition.

II. PUBLIC COMMENTS ON THE PETITION

The notices of filing of petition and amendment for rulemaking in the *Federal Register* invited interested persons to submit written comments concerning the petition. The NRC received fourteen comment letters in response to the original petition and the amendment. Two comment letters were received from states, three from private organizations, two from associated industries or their representatives, one from a utility, and six from private individuals. The commentors generally focused on the two main elements of the petition — burial within the saturated zone and use of a zero-release structure.

One commentor supported the concept of burial within the saturated zone. The commentor, from another state, agreed that this concept allows far more of the state to be potentially analyzed as a disposal site. Eleven commentors opposed burial within the saturated zone. The commentors stated that this type of disposal is nonconservative and not supportable. As indicated in the reasons for denial, NRC agreed with the commentors that the current level of technology

cannot support a rule change allowing saturated-zone burial, unless the exception in 10 C.F.R. § 61.50(a)(7) can be demonstrated.

Two of the commentors liked the goal of a zero-release structure. However, they felt that there is too much uncertainty in the long-term performance of a zero-release structure to warrant burial in the saturated zone. As indicated in the reasons for denial, NRC believes that the design of a zero-release engineered facility for extremely long time periods is beyond the current level of demonstrated technology known to the NRC Staff. Two commentors opposed a zero-release rule. One commentor referenced the environmental impact statement (EIS) in support of 10 C.F.R. Part 61. The commentor noted that, in the EIS, the NRC concluded that zero release is not necessary to adequately protect public health and safety. The commentor also stated that the Petitioner has not provided adequate evidence to warrant any changes to the existing position, and NRC agrees with this comment.

III. REASONS FOR DENIAL

The NRC is denying the petition, as amended, for the following reasons:

1. The concept of a zero-release engineered facility in perpetuity is beyond the current level of demonstrated technology known to the NRC Staff.
2. To NRC's knowledge, states' authorities have not shown an interest in placing an LLW site within the saturated zone.

The NRC agrees with the Petitioner that there have been significant advances in concrete-type structures and materials. Many states are planning to propose the use of concrete structures for LLW disposal facilities. The NRC will continue to support research into the use of engineered structures to enhance the performance of LLW disposal facilities. The NRC is also conducting research to assess the performance of concrete structures in the saturated and unsaturated zones.

The following discussion more fully explains the reasons for denying the petition.

1. The design concept highlights the use of fiber-reinforced, polymer concrete in the vault structure as a major means of ensuring that the structure would remain virtually hermetically sealed for an indefinitely long period of time. It is true that such concretes have performed well in the field for periods of time on the order of a decade or so. This experience has not been sufficient, however, to enable the Staff to conclude that there is reasonable assurance that a structure constructed of these materials would remain almost entirely sealed for centuries. The lack of demonstrated performance, or a credible basis, for extrapolating from short-term studies with the proposed fiber-reinforced polymer

concrete would make it very difficult, if not impossible, to support a finding in a hearing that there is reasonable assurance for long-term containment of the low-level radioactive waste in the hermetically sealed vault structure. The Staff is supported by NRC consultants from the U.S. Army Corps of Engineers and the National Institute of Standards and Technology in recognizing the uncertainties that are inherent in the long-term performance of the proposed fiber-reinforced polymer concrete.

Another major source of uncertainty in the proposed design concept is potential leakage at construction joints and the locations where the vault roof would meet the vault walls. Conventional water stops for concrete structures are not expected to last for more than about 50 years. Even with improved materials or methods of construction at the joints, it is not clear that the proposed design would ensure zero leakage over extended periods of time. Thus, it is the Staff's opinion that preventing leakage at joints for a submerged vault structure for centuries would present a design and construction problem that could be insurmountable.

In summary, the capacity to design for zero release has not been demonstrated. The NRC believes that structural stability can be ensured for long periods of time even with conventional construction materials. It is quite another matter, however, to expect that a concrete structure alone (even one constructed of "improved" materials) would ensure zero release by remaining hermetically sealed for centuries. Ultimately, the sealing of the "constructed stagnant saturated zone" could fail and leakage develop, which even under small hydraulic gradients would result in flow and transport of radionuclides. Thus, the NRC concludes that the proposed design concept would not provide reasonable assurance of zero release.

2. The development of regulations meeting the requirements of the Petitioner would be extremely difficult. The concept upon which 10 C.F.R. Part 61 is based is that the very slow release of radionuclides that meet regulatory requirements is acceptable. Therefore, designing a perpetual facility for "zero release" might require NRC to develop an entirely new regulation. Research would be required to determine not only the feasibility of the concept, but that practical implementation is possible. This type of research would be costly, time-consuming, and uncertain because extrapolation over long periods from relatively short periods of data is at best an educated guess.

To NRC's knowledge, no state indicated that it would give serious consideration to an engineered structure within the saturated zone during the development of 10 C.F.R. Part 61. Therefore, because of the uncertainty that regulations could be developed, and if developed, whether any states would seriously consider this

type of proposal, the NRC believes that using limited resources in an attempt to meet Petitioner's proposal would not be appropriate.

FOR THE NUCLEAR
REGULATORY COMMISSION

James M. Taylor
Executive Director for Operations

Dated at Rockville, Maryland,
this 11th day of July 1991.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Ivan Selin, Chairman
Kenneth C. Rogers
James R. Curtiss
Forrest J. Remick

In the Matter of **Docket Nos. 50-528-OLA-2**
50-529-OLA-2
50-530-OLA-2

ARIZONA PUBLIC SERVICE COMPANY, *et al.*
(Palo Verde Nuclear Generating Station, Units 1, 2, and 3) **August 16, 1991**

The Commission considers Licensees' appeal of a Licensing Board decision granting Petitioners' request for a hearing on one contention concerning pressurizer safety valves. The Commission declines to accept one of the two bases on which the Board relied in admitting the contention, but finds that the contention was properly admitted for litigation. The Commission therefore denies the appeal.

RULES OF PRACTICE: INTERVENTION PETITION (PLEADING REQUIREMENTS)

While the Licensing Board may appropriately view a petitioner's support for its contention in a light that is favorable to the petitioner, it cannot do so by ignoring the requirements set forth in 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii).

RULES OF PRACTICE: INTERVENTION PETITION (PLEADING REQUIREMENTS)

The Commission's regulations demand that all petitioners provide an explanation of the bases for the contention, a statement of fact or expert opinion upon which they intend to rely, and sufficient information to show a dispute with the applicant on a material issue of law or fact. 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii).

RULES OF PRACTICE: INTERVENTION PETITION (PLEADING REQUIREMENTS)

If any one of the requirements in 10 C.F.R. § 2.714(b)(2)(i), (ii), or (iii) is not met, a contention must be rejected.

RULES OF PRACTICE: INTERVENTION PETITION (PLEADING REQUIREMENTS)

The requirements in 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii) are designed to raise the Commission's threshold for admissible contentions and to require a clear statement as to the basis for the contentions and the submission of more supporting information and references to specific documents and sources that establish the validity for the contentions.

RULES OF PRACTICE: CONTENTIONS (CHALLENGE OF COMMISSION RULE)

While petitioners cannot attack the methodology of the ASME Code requirements incorporated in the Commission's regulations at 10 C.F.R. § 50.55a, they can attack new proposed performance requirements. The two are not the same.

RULES OF PRACTICE: CONTENTIONS (BASIS)

The question of whether a licensee's written commitment to resolve a concern that is a basis for an otherwise satisfactorily pleaded contention is a matter that ought properly to be addressed after admission of the contention. That commitment cannot be used to negate a petitioner's rationale for a contention.

MEMORANDUM AND ORDER

I. INTRODUCTION

This matter is before the Commission on an appeal by Arizona Public Service Company, *et al.* ("Licensees" or "APS") from LBP-91-19 (33 NRC 397 (1991)), a Memorandum and Order of the Atomic Safety and Licensing Board ("Licensing Board") that granted Petitioners Allan L. and Linda E. Mitchell's ("Petitioners") request for a hearing ("LBP-91-19"). Licensees request that the Commission reverse the Board's determination that Petitioners' Contention No. 1 is admissible and that a hearing is warranted.

Petitioners urge that the Licensees' appeal be denied, while the Staff believes that the contention should be admitted for litigation, albeit on only one of the two bases relied upon by the Licensing Board.

After due consideration, we have determined that Licensees' appeal must be denied. Contention No. 1 was properly admitted for litigation and a hearing should be held. However, we decline to accept one of the bases upon which the Licensing Board relied in admitting the contention. We have determined that the first basis of the contention, concerning the High Pressurizer Pressure Trip ("HPPT") response time, must be rejected. However, the second basis relied upon, the possible dangers of excessive setpoint drift, is properly pleaded and is an acceptable basis for the contention.

II. BACKGROUND

On December 27, 1990, this agency published in the *Federal Register* a notice of a proposed license amendment submitted by Licensees for the Palo Verde Nuclear Generating Station (Units 1, 2, and 3). The proposed amendment would:

> increase the allowable setpoint tolerance for the pressurizer safety valves [PSVs] from 2500 psia plus or minus 1% to 2500 psia plus 3% or minus 1%; increase the allowable setpoint tolerance for the main steam safety valves [MSSVs] from 1250 psig and 1315 psig plus or minus 1% to the same settings plus or minus 3%; reduce the minimum required feedwater flow from 750 gpm to 650 gpm; and reduce the response time for the high pressurizer pressure reactor trip from 1.15 seconds to 0.5 seconds.

55 Fed. Reg. 53,220 (1990).

Petitions for Leave to Intervene and Request for Hearing were submitted on January 28, 1991, by Allan and Linda Mitchell; and Myron L. Scott, Barbara S. Bush, and the Coalition for Responsible Energy Education (CREE), respectively. Licensees opposed both petitions. (The Scott/Bush/CREE Petition was later

dismissed; all further references to Petitioners include only the Mitchells.) The Licensing Board found that Petitioners had standing, but required supplemental petitions to be filed by March 11, 1991. *See* LBP-91-4 (33 NRC 153 (1991)), Memorandum and Order (Ruling upon Petitions for Leave to Intervene).

On March 11, Petitioners filed a supplemental petition. Five contentions were submitted for examination by the Licensing Board. Contention No. 1 stated that:

> The request to amend the setpoint tolerances for the Main Steam Safety Valves (MSSVs) and the Pressurizer Safety Valves (PSVs) would cause a safety limit violation in the event of a loss of condenser vacuum (LOCV). Setpoint drift in the increasing direction of the Pressurizer Safeties setpoint with a setting high in the band would exceed the safety limits.

Petitioners also provided factual support for this contention, relying on Technical Specification Bases and the Application for the license amendment. Petitioners additionally submitted four other contentions to the Licensing Board.

Licensees opposed this supplemental petition, claiming that no contention was admissible. The Licensees argued that none of the proffered contentions met the standards of 10 C.F.R. § 2.714, which sets out guidelines that contentions must meet to be admissible.

On April 10, 1991, Petitioners and Licensees met in settlement negotiations. Licensees attempted to assuage Petitioners' concerns that were reflected in Contention No. 1 (*see supra*), promising that "any valves that are found outside the range of plus or minus one percent of their nominal setpoint will be readjusted to within plus or minus one percent." Petitioners found this insufficient for their purposes, and the negotiations failed.

On May 9, the Licensing Board issued LBP-91-19, "Memorandum and Order (Granting Mitchell Petition for Leave to Intervene and Request for Hearing)." The Licensing Board admitted the Mitchells' proposed Contention No. 1 for litigation and denied the other four. Licensees appealed this decision.

III. LBP-91-19

In LBP-91-19, the Licensing Board decided to admit only Contention No. 1 for litigation. It examined the substantive standards for contentions in NRC proceedings (as stated in 10 C.F.R. § 2.714(b)) as well as the standards for construing contentions. Regarding the latter point, the Licensing Board found Petitioners to be "entitled to a liberal construction of their contention, and their allegation should be construed most favorably to them." LBP-91-19, 33 NRC at 398-99, 402.

The Licensing Board divided the Petitioners' technical support for Contention No. 1 into two bases, the first with four subparts, the second with seven. *Id.* at 405-06. The bases are as follows:

The first basis stated that a drift of plus or minus 1% would exceed the safety limits proposed for the valves, and that because such drifts had occurred before, safety limit violations were likely to occur. According to this basis these drifts could result in numerous plant shutdowns.

The second basis was concerned with the unreliability of PSVs and MSSVs. It stated that the proposed amendment would reduce testing, resulting in "unacceptable setpoint drift," and that if the setpoint tolerances were increased, greater setpoint drift could occur. Such setpoint drifts are unsafe, according to this basis.

The Licensing Board stated that it "had difficulty understanding the first basis." *Id.* at 406. In an effort to resolve the difficulty, the Licensing Board read the basis as "a challenge to the assumed HPPT response time." *Id.* at 407. Using such an interpretation, the Board found this basis acceptable as support for the first contention.

Turning to the second basis, the Board noted that the Licensees characterized it as "a challenge to 10 C.F.R. § 50.55a(g)(4), which . . . incorporates the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code with respect to testing frequencies and sample sizes." *Id.* at 408. The Board disagreed, stating that the second basis claimed that "the magnitude of possible setpoint drift could cause the 9.1 psia safety margin . . . to be exceeded." *Id.* The Board concluded its order by accepting Contention No. 1 on the strength of its two bases (detailed above).

IV. LICENSEES' APPEAL AND RESPONSES

On May 28, 1991, the Licensees filed an appeal of LBP-91-19. The Licensees argued that both Contention No. 1 and the request for hearing should properly have been denied.

The Licensees began by arguing that Petitioners' bases were inadequate to call into question HPPT response time. The Licensees noted that nowhere does the petition itself refer to this aspect of the amendment; rather, it was inferred by the Board after the Petitioner failed to supply adequate supporting information. Licensees' Appeal at 10-11.

The Licensees then turned to the second accepted basis for Contention No. 1, concerning setpoint drift. They argued that this basis is a not-so-veiled attack on 10 C.F.R. § 50.55a(g)(4). Such an attack, they claimed, is barred by 10 C.F.R. § 2.758, which states that, except for special circumstances (not claimed here), "any rule or regulation of the Commission . . . shall not be subject to attack . . . in any adjudicatory proceeding involving initial licensing . . . ." *Id.* at 14 (quoting 10 C.F.R. § 2.758(a) (1991)). The Licensees read the second basis as attempting "to add requirements, beyond those [in] section 50.55a(g)(4), to

provide additional protection against . . . setpoint drift." *Id.* The Licensees also reiterated their commitment to reset valves to tolerances of plus or minus 1% (which commitment did not previously satisfy Petitioners). *Id.* at 16.

In their response to Licensees' appeal, Petitioners again argued that Contention No. 1 was validly admitted. Petitioners claimed that at this stage of intervention, they need only make a " 'minimum showing' of a general factual dispute . . . not . . . allege every fact in support of their contention." Petitioners' Appeal Brief at 4 (quoting 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989)). Furthermore, Petitioners stated that NRC guidelines mandated that pleadings "be construed most favorably to the intervenor, . . . and that issues should be decided on their merits [and] not dismissed by legal niceties . . . ." Petitioners' Appeal Brief at 5. Accordingly, Petitioners claimed, the Board's inference of an attack on the HPPT response time was justified. *Id.*

Petitioners then challenged the Licensees' assertion that their Contention No. 1 attacked 10 C.F.R. § 50.55a(g)(4). Petitioners argued that they actually presumed, for purposes of the second basis, that Licensees would follow that section's requirements. *Id.* at 6. Their concern, as stated, was that "the newly proposed setpoint tolerances [would] still . . . exceed[] the safety limits." *Id.*

The NRC Staff, in its response to Licensees' appeal, also recommended upholding the admission of Contention No. 1. The Staff stated that the setpoint drift issue was not, as the Licensees had argued, an attack on section 50.55a(g)(4). NRC Staff Response at 8. The Staff noted that "[w]hile petitioners cannot attack the methodology . . . of the regulation, they can challenge the Licensees' proposal to liberalize the performance requirements against which the valves are evaluated." *Id.* at 9. Such an action by the Licensees, said the Staff, could "effectively nullify the regulatory requirement to accelerate testing of valves which perform poorly while [preventing] any challenge from those . . . who would be affected by the change." *Id.* at 10.

On the issue of a challenge to the HPPT response time, the Staff found itself in agreement with Licensees. The Staff found that Petitioners did not comply with the requirements of 10 C.F.R. § 2.714(b)(2)(ii) and (iii) when they failed to provide facts supporting such a challenge, or sufficient information to show a genuine dispute with the Licensees on that issue. *Id.* at 11. The Staff therefore also advocated rejection of the HPPT response time issue as a basis of support for Contention No. 1. *Id.*

The Staff concluded by urging that the Licensees' appeal be denied, and that Contention No. 1 be admitted on the single basis of setpoint drift. *Id.* at 13-14.

V. ANALYSIS

Our analysis of the Licensing Board's decision considers two issues: first, whether the alleged HPPT response time basis was correctly admitted; and second, whether the basis of setpoint drift should be rejected as an impermissible attack on the Commission's regulations.

A. HPPT Response Time

In LBP-91-19, the Board inferred that the first basis of Contention No. 1 was a challenge to the HPPT response time. LBP-91-19, 33 NRC at 407. Although the Board noted that the basis did "not contain words to that effect," the Board still made this inference, concluding that the absence of words challenging the HPPT response time was probably a "drafting oversight."[1] *Id.*

While the Board may appropriately view Petitioners' support for its contention in a light that is favorable to the Petitioner, it cannot do so by ignoring the requirements set forth in 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii). These sections demand that all petitioners provide an explanation of the bases for the contention, a statement of fact or expert opinion upon which they intend to rely, and sufficient information to show a dispute with the applicant on a material issue of law or fact. If any one of these requirements is not met, a contention must be rejected. Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989).

Nowhere in Contention No. 1 do Petitioners maintain a challenge to the HPPT response time. Licensees note in their appeal that the Board viewed Petitioners' contention as claiming insufficient information in the application on HPPT response time. However, Licensees also point out that under 10 C.F.R. § 2.714(b)(2)(iii), such an allegation must provide "the identification of each failure and the supporting reasons for Petitioner's belief." Licensees' Appeal at 11. Licensees argue that their application is more than adequate.

Whether or not this is the case, Petitioners have clearly failed to meet the aforementioned petition requirements. These requirements are designed to raise the Commission's threshold for admissible contentions and to require a clear statement as to the basis for the contentions and the submission of more

[1] The Licensing Board also noted that Petitioner's counsel is new to NRC practice and should not be held to the same drafting standards as experienced counsel, citing *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), ALAB-279, 1 NRC 559, 576-77 (1975). In view of our disposition of the Licensees' appeal, we need not reach the question as to whether this is an appropriate application of earlier case law to the new contention pleading requirements of 10 C.F.R. § 2.714(b). We would note, however, that, in contrast to the prior versions of 10 C.F.R. § 2.714, the current section 2.714(b) provides rather clear and explicit notice as to the pleading requirements for contentions.

supporting information and references to specific documents and sources that establish the validity of the contention. *See* 54 Fed. Reg. 33,168, 33,170 (Aug. 11, 1989). Were this basis to be admitted as it exists now, it would fail to meet the standard requiring that petitioners explain the basis for the contention and read the relevant parts of the license application and show where the application is lacking. *Id.* Accordingly, the first basis, concerning HPPT response time, is rejected.

B. Setpoint Drift

The second basis of Contention No. 1 is the concern of Petitioners that increased setpoint tolerances for the PSV and MSSV valves could result in reduced testing of those valves, which in turn could lead to setpoint drift and safety violations. LBP-91-19, 33 NRC at 406-09. Licensees argue that such concerns mask an attack on the ASME Codes described in 10 C.F.R. § 50.55a(g)(4) and thus are an attack on the regulation itself. Such an attack, if made, would be barred by 10 C.F.R. § 2.758.

As the NRC Staff Response points out, the testing method described in the ASME Code "is . . . directly related to the performance requirements of the valves." If such requirements are too strict, testing will occur too frequently. If the requirements are overly lax, insufficient testing might well be the result. NRC Staff Response at 9. While Petitioners cannot attack the methodology, they can attack new proposed performance requirements. *Id.* The two are not the same. As the Board noted in its opinion, the real underpinning of Contention No. 1 is that the ASME requirements "would be *properly applied* to the *wrong tolerance ranges*," resulting in excessive setpoint drift that would go undetected due to decreased inspection. LBP-91-19, 33 NRC at 408 (emphasis in original).

The NRC Staff also notes that because Petitioners' challenge is "premised on the application of a regulatory surveillance testing schedule," that challenge is even more important. Otherwise, Licensees could continue to propose increased setpoint tolerances, negating the regulatory requirement of increased testing of faulty valves while preventing challenges from affected individuals. NRC Staff Response at 10.

Finally, Licensees argue that their written commitment to reset the PSV and MSSV valves to plus or minus 1% answers the concern set forth in this basis. However, the question as to whether such a commitment would serve to satisfactorily resolve the concern raised in an otherwise adequately pleaded contention is a matter that now ought properly to be addressed after the contention is admitted. That commitment cannot be used here to negate Petitioners' rationale for their contention. Therefore, the Commission rejects Licensees' arguments on this matter. Petitioners' second basis for Contention No. 1, as specified in LBP-91-19, is valid and admissible for litigation.

VI. CONCLUSION

For the foregoing reasons, we deny Licensees' Appeal insofar as it requests dismissal of Contention No. 1 and denial of Petitioners' request for hearing. We grant Licensees' Appeal insofar as it requests dismissal of that first basis of Contention No. 1 which is based on HPPT response time. Petitioners' Contention No. 1 is admitted for litigation on its second basis.

IT IS SO ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 16th day of August 1991.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges:

Peter Bloch, Presiding Officer
Peter Lam, Technical Advisor

In the Matter of

Docket Nos. 70-00270
30-02278-MLA
(ASLBP No. 90-613-02-MLA)
(RE: TRUMP-S Project)
(Byproduct License No. 24-00513-32;
Special Nuclear Materials
License No. SNM-247)

CURATORS OF THE
UNIVERSITY OF MISSOURI

August 5, 1991

The Presiding Officer determined that the relief issued in LBP-91-31 could be implemented *sequentially,* with Licensee implementing first one paragraph and then another, so long as at least one paragraph is in effect at all times. He also clarified his opinion concerning the prohibition that a vehicle using combustible fuels cannot be in the basement of MURR at the same time that actinides are actually *in use* in the laboratory. A few other minor corrections also were made.

RULES OF PRACTICE: MOTION FOR RECONSIDERATION AFTER APPEAL

The presiding officer has jurisdiction over a timely motion for reconsideration of a final initial decision, even though an appeal also has been filed. This is true both under Subpart L and Subpart G. 10 C.F.R. §§2.1259, 2.771.

MEMORANDUM AND ORDER
(Clarification and Corrections in LBP-91-31)

Clarifications of LBP-91-31 (34 NRC 29) are in order in response to Licensee's Motion for Partial Reconsideration of Final Initial Decision, July 22, 1991, which seeks clarification of ordering paragraph 1, 34 NRC at 130, which stated:

> 1. The Licensee shall, within 30 days, take one of the following actions:
>
> - Disclose procedures (or adopt new procedures) that ensure a fire loading and continuity of burnable materials (in the basement outside the Alpha Laboratory) that will ensure conditions equivalent to those observed by Mr. Purington[1] [originally footnote 199]; or
> - Propose procedures ensuring a new maximum loading (and continuity), higher than observed by Mr. Purington, and demonstrate by analysis or expert testimony that the new maximum loading (and continuity) will prevent a credible fire from spreading into the Alpha Laboratory from outside; or
> - Install an automatic fire sprinkler system in the rectangular area of the basement immediately adjacent to the Alpha Laboratory and extending from the Laboratory to the Hot Cell.[2] [Originally footnote 200.]
>
> The Licensee's response to this ordering ¶ 1 shall be promptly communicated to the Staff of the Nuclear Regulatory Commission, which shall verify the adequacy of the response.

Intervenors' principal objection is that the Presiding Officer lacks jurisdiction once an appeal has been taken.[3] *Georgia Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), ALAB-859, 25 NRC 23, 27 (1987); *see also Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), ALAB-699, 16 NRC 1324, 1327 (1982). However, I find this objection unpersuasive. The cited precedent covers situations in which a party filed information relating to a pending appeal and does not comment on whether the Licensing Board retains jurisdiction over a timely motion for reconsideration. When there is no motion for reconsideration, all the issues have been transferred to the appeal body, which is the only authority with jurisdiction over the pertinent issue. However, the rules expressly provide for an exception to the transfer of jurisdiction by

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[1] "Vehicles that rely on combustible fuels must, of course, be effectively excluded from the basement during any time actinides are in use in the laboratory." LBP-91-31, 34 NRC at 130 n.199.

[2] "If this is done, further changes in procedures are unnecessary *except* for the effective exclusion of vehicles with combustible fuel from the basement while actinides are in use in the laboratory. For a map of the area of the basement, *see* Intervenors' Motion for Leave to Submit Evidence Respecting Critical Safety Failures Identified in Site Inspection of May 18, 1991, May 22, 1991, Exh. 5." LBP-91-31, 34 NRC 130 n.200.

[3] Intervenors' Response to Licensee's Motion for Partial Reconsideration of Final Initial Decision (Intervenors' Response), August 1, 1991, at 1-2.

providing for motions for reconsideration. 10 C.F.R. §§ 2.1259, 2.771. Since the rule expressly permits a motion for reconsideration[4] to be filed within 10 days, the licensing board or presiding officer necessarily has jurisdiction to decide such a motion.

In its motion, Licensee first requests clarification concerning whether it may first issue an appropriate procedure, as authorized, and then subsequently install a sprinkler and rescind the procedure. Intervenors object to this on the ground that once Licensee has implemented a procedure to prevent the accumulation of combustibles in the vicinity of the Alpha Laboratory, it should not be permitted to change its practice.[5]

Although I did not explicitly address Licensee's sequential implementation of relief, the Licensee's request is entirely reasonable. Any of the different relief subparagraphs is considered by me to be adequate relief, providing that they are continuously in effect once relief has been implemented. Hence, compliance with one paragraph, followed by notification to the Staff and compliance with another paragraph, is quite adequate.

Second, Licensee requests clarification concerning its use of a gasoline-powered forklift in the basement. Apparently, Licensee is concerned that the prohibition on the use of a gasoline-powered forklift might be burdensome if the term "in use" [in both of the footnotes] were interpreted too broadly.

Intervenors do not see the ambiguity here.[6] I agree with them. "In use" should bear its common meaning. It does not apply merely to storage of materials in the appropriate vault or to the presence of trace contamination in filters or equipment because of prior use. "In use" means that actinides are actively being used in some way in the laboratory, such as for an experiment or for cutting into different portions for subsequent experimentation. The phrase was not intended to exclude all gasoline-powered vehicles from the MURR basement during the entire duration of the experimental period. The presence of small amounts of contamination in the glove box and associated filters, due to routine operations, would not require exclusion of the vehicle.

There is, of course, the chance of an unanticipated accident, such as a spill of powdered actinide. In such an event, Licensee would be expected to take appropriate extraordinary precautions, which generally would require exclusion of gasoline-powered vehicles from the vicinity of a large spill. The purpose of excluding a combustible-fuel vehicle is to exclude a source of fire that might

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[4] The motion must, of course, be filed before the trial body, which is the only body that can "*re*consider." *See also* Order of the United States of America Nuclear Regulatory Commission, August 1, 1991 (unpublished), at 1, setting a schedule for the filing of appellants' briefs that is based in part on the date the presiding officer decides the motion for reconsideration.

[5] Intervenors' Response at 2.

[6] *Id.* at 2-3.

exceed the expected fire loading or not be easily controlled by a water sprinkler system.

The following correction, brought to my attention by a letter from Intervenor's attorney of July 19, 1991,[7] also should be made in LBP-91-31:

- Add the following, in the proper alphabetical order, to the credentials presented at 34 NRC 43-49:

George Bunn — Member in Residence at the Center for International Security and Arms Control, Stanford University, Stanford, CA. 1950-51, attorney for the U.S. Atomic Energy Commission; 1951-61, associate and partner in Arnold, Fortas & Porter, Washington, D.C.; 1961-69, General Counsel and a "backstopper" and negotiator for the U.S. Arms Control and Disarmament Agency (1965-68, helped negotiate the nuclear Non-Proliferation Treaty, became an ambassador in 1968); 1969-83, professor of law at the University of Wisconsin Law School. During three of those years, was Dean and two of those years was chairman of the NRC's GESMO (Generic Environmental Statement on Mixed Oxides) Hearing Board; 1983-86, professor of international law or military strategy or both at the U.S. Naval War College, Newport, RI (served on a task force on nuclear terrorism that considered the increasing danger of terrorists stealing plutonium to make nuclear bombs as more and more countries acquired separated plutonium); the report of this task force and a paper appeared in Paul Leventhal and Yonah Alexander, *Preventing Nuclear Terrorism* (Lexington, MA: Lexington Books, 1987). Has been at Stanford University since 1986.

Respectfully ORDERED,

Peter B. Bloch, Presiding Officer
ADMINISTRATIVE JUDGE

Bethesda, Maryland

[7] The letter merely brought to my attention the apparent oversight in omitting Mr. Bunn's credentials from the final initial decision. It bears on its face the notation that it was served on opposing counsel but it apparently was not served in the docket.

Cite as 34 NRC 163 (1991) LBP-91-35

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulies, Chairman
Dr. George A. Ferguson
Dr. Jerry R. Kline

In the Matter of

Docket No. 50-322-OLA
(ASLBP No. 91-621-01-OLA)
(Confirmatory Order Modification,
Security Plan Amendment, and
Emergency Preparedness Amendment)

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

August 29, 1991

RULES OF PRACTICE: CONTENTION

Amended 10 C.F.R. § 2.714(b) raises the threshold for the admission of contentions to require a proponent to supply information showing the existence of a genuine dispute with the applicant on an issue of law or fact. It specifies what is required of a petitioner as part of its burden of going forward with information in support of a contention.

MEMORANDUM AND ORDER
(Ruling on Petitions to Intervene and Contentions)

I. INTRODUCTION

The Licensing Board in LBP-91-23, 33 NRC 430 (1991), found that Scientists and Engineers for Secure Energy, Inc. (SE2), had established standing on an alleged claim of injury cognizable under the National Environmental Policy Act (NEPA) and permitted it to file contentions in the proceeding considering the three licensing changes, the Confirmatory Order Modification, the Security Plan Amendment, and the Emergency Preparedness Amendment.

In an effort to assist the Licensing Board in deciding the standing issue on a claim, under the Atomic Energy Act (AEA), of radiological injury stemming from the Security Plan Amendment, SE2 and Shoreham–Wading River Central School District (School District) were permitted to file contentions on the issue. All other claims for standing by Petitioners on the three licensing actions were denied by the Licensing Board.

In a joint filing dated June 21, 1991, SE2 filed four contentions on the NEPA issue and both Petitioners submitted one contention, with seven subparts, seeking relief under the AEA. Licensee Long Island Lighting Company (LILCO) and NRC Staff (Staff) filed responses on July 3, 1991, and July 11, 1991, respectively, in which each asserted that Petitioners had not filed an admissible contention and that their petitions for intervention and hearing on the three license changes should be denied.

A prehearing conference was held on July 23, 1991, at Bethesda, Maryland, during which the contentions and responses were considered.

In this Memorandum and Order, the Licensing Board rules on the undecided standing issue and on the contentions. After considering the record before us, the Licensing Board concludes that Petitioners have not met the regulatory requirements for intervention, and their petitions are denied.

II. BACKGROUND

In LBP-91-23, we found that SE2 had established organizational standing under NEPA in regard to the three licensing changes and afforded it the opportunity to file one or more contentions on NEPA issues, as prescribed in 10 C.F.R. § 2.714(b)(2). Petitioner was informed that the contentions were required to meet the Commission's instructions on such contentions which were specified in CLI-90-8, 32 NRC 201 (1990), *aff'd on reconsideration*, CLI-91-2, 33 NRC 61 (1991), and CLI-91-4, 33 NRC 233 (1991).

In its petitions for intervention, SE2 asserted that its claim of injury cognizable under NEPA was caused by the Commission permitting the *de facto* decommissioning of Shoreham and the agency's failure to require LILCO to maintain Shoreham at a full-power operational status under the Shoreham operating license. SE2 claimed that a NEPA Environmental Impact Statement (EIS), considering resumed operation as an option, was required prior to agency decisionmaking on the alleged ongoing decommissioning of Shoreham, of which the three licensing changes were part.

In CLI-90-8, the Commission determined that the decision not to operate the facility is exclusively the private determination of the Licensee and that under the existing circumstances the NRC lacks authority to direct a licensee to operate a licensed facility. It is the decision on a method of decommissioning that requires NRC review and approval. CLI-90-8, 32 NRC at 207. It further determined that resumed operations, or other methods of generating electricity, are alternatives to the decision not to operate Shoreham and are beyond Commission consideration. *Id.*

The Commission went on to find that the broadest NRC action related to the Shoreham decommissioning will be approval of the decision on how the decommissioning will be accomplished and that under NEPA the Commission need only be concerned with whether the three licensing changes will prejudice how the decommissioning will be accomplished. It stated, "[c]learly they [did] not, because they have no prejudicial effect on *how* decommissioning will be accomplished." *Id.* at 208.

The Commission expanded on its decision in CLI-90-8, in CLI-91-4, *supra*, a Memorandum and Order ruling on an interlocutory appeal of LBP-91-1, 33 NRC 15 (1991). It stated that its comments were not intended to preclude the Licensing Board, as a matter of law and jurisdiction, from considering properly supported contentions that an EIS must be prepared at this time. CLI-91-4, 33 NRC at 236.

The Commission went on to define what is required for a properly pled contention on the need for an EIS for the three actions. It stated:

> A properly pled contention will at a minimum need to offer some plausible explanation why an EIS might be required for an NRC decision approving a Shoreham decommissioning plan *and* how these actions here could, by foreclosing alternative decommissioning methods or some other NEPA-based considerations, constitute an illegal segmentation of the EIS process.

Id. at 237 (emphasis in original).

In LBP-91-23, SE2 and School District were authorized to file contentions on claims of injury, cognizable under the AEA, that the proposed reduction in physical security of vital plant systems would unacceptably increase the risk of

radiological sabotage and adversely affect the radiological health and safety of SE2, its members, and School District's employees.

Although Petitioners previously identified particular actions that might result from radiological sabotage they failed to show that they can be traced to the Security Plan Amendment. They thus failed to meet the standing requirement of section 2.714(b)(2) of showing that the claimed injury will result from the proposed action. Normally, this would foreclose a finding of standing. However, Petitioners claimed that their inability to have access to LILCO's security plan hampered their ability to make the required showing. As a result we deferred ruling on standing and permitted Petitioners to file contentions, in accordance with section 2.714(b)(2) on the issue raised under the AEA. A meritorious contention would help bolster their standing claim which could then be pursued further. We advised that in deciding the merits of the contentions submitted we would take into account the lack of the availability of the security plan. We further advised that if no meritorious contention was filed we would decide the standing issues against the Petitioners. LBP-91-23, 33 NRC at 440-41.

III. STANDARDS FOR CONTENTIONS

An admissible contention must meet the requirements of section 2.714(b)(2), amended by the Commission on August 11, 1989, which provides:

> (2) Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide the following information with respect to each contention:
>
> (i) A brief explanation of the bases of the contention.
>
> (ii) A concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing, together with references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion.
>
> (iii) Sufficient information (which may include information pursuant to paragraphs (b)(2)(i) and (ii) of this section) to show that a genuine dispute exists with the applicant on a material issue of law or fact. This showing must include references to the specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief. On issues arising under the National Environmental Policy Act, the petitioner shall file contentions based on the applicant's environmental report. The petitioner can amend those contentions or file new contentions if there are data or conclusions in the NRC draft or final environmental impact statement, environmental assessment, or any supplements relating thereto, that differ significantly from the data or conclusions in the applicant's document.

Further, 10 C.F.R. § 2.714(d)(2) provides that contentions shall not be admitted (i) if the contention and supporting material fail to meet the requirements of section 2.714(b), or (ii) should the contention be proven it would be of no consequence in the proceeding because it would not entitle petitioner to relief.

In its comments on the amendments to section 2.714, the Commission advised that it would raise the threshold for the admission of contentions to require the proponent of the contention to supply information showing the existence of a geniune dispute with the applicant on an issue of law or fact. 54 Fed. Reg. 33,168 (1989).

It further went on to explain:

> Under these new rules an intervenor will have to provide a concise statement of the alleged facts or expert opinion which support the contention and on which, at the time of filing, the intervenor intends to rely in proving the contention at hearing, together with references to the specific sources and documents of which the intervenor is aware and on which the intervenor intends to rely in establishing the validity of its contention. This requirement does not call upon the intervenor to make its case at this stage of the proceeding, but rather to indicate what facts or expert opinions, be it one fact or opinion or many, of which it is aware at that point in time which provide the basis for its contention.
>
> In addition to providing a statement of facts and sources, the new rule will also require intervenors to submit with their list of contentions sufficient information (which may include the known significant facts described above) to show that a genuine dispute exists between the petitioner and the applicant or licensee on a material issue of law or fact. This will require the intervenor to read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, and to state the applicant's position and the petitioner's opposing view. When the intervenor believes the application and supporting material do not address a relevant matter, it will be sufficient to explain why the application is deficient.

Id. at 33,170.

The Commission noted the amended version's consistency with *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 468 (1982), *rev'd in part on other grounds*, CLI-83-19, 17 NRC 1041 (1983), where the Appeal Board stated:

> [A]n intervention petitioner has an ironclad obligation to examine the publicly available documentary material pertaining to the facility in question with sufficient care to enable [the petitioner] to uncover any information that could serve as the foundation for a specific contention. . . . [N]either Section 189a. of the Atomic Energy Act nor Section 2.714 of the Rules of Practice permits the filing of a vague, unparticularized contention, followed by an endeavor to flesh it out through discovery against the applicant or staff.

The revised rule does not shift the ultimate burden of persuasion from the applicant on the issue of whether the license should be issued. The rule specifies what is expected of a petitioner as part of its burden of coming forward with information in support of a proposed contention. 54 Fed. Reg. at 33,171.

The rule requires that a petitioner include in its submission some alleged fact in support of its position sufficient to indicate that a genuine issue of material fact or law exists. The use of this standard has been supported by the Federal Courts. In *Connecticut Bankers Ass'n v. Board of Governors*, 627 F.2d 245, 251 (D.C. Cir. 1980), the court stated that "a protestant does not become entitled to an evidentiary hearing merely on request or on a bald or conclusory allegation that such a dispute exists. The protestant must make a minimal showing that material facts are in dispute thereby demonstrating that an 'inquiry in depth' is appropriate."

IV. DISCUSSION

The Licensing Board has reviewed and fully considered "Petitioners' Amendment and Supplement to Petitions to Intervene" dated June 21, 1991, LILCO's response dated July 3, 1991, Staff's response dated July 11, 1991, along with the explanations presented at the prehearing conference of July 23, 1991, and the prior record in the proceeding. Based upon all the foregoing, we decide as follows.

A. The NEPA Contentions

CONTENTION 1: Petitioners contend that the NRC must require LILCO to prepare an environmental report and that the NRC Staff must then publish a draft environmental impact statement ("DEIS") for comment, prepare a final environmental impact statement ("FEIS"), and follow other NRC procedures for the consideration of the environmental impact of the proposal to decommission Shoreham before issuing the Confirmatory Order, Emergency Preparedness Amendment and/or the Security Plan Amendment because all three of those actions are within the "scope" of the proposal to decommission Shoreham, which is a proposal for a major federal action significantly affecting the quality of the human environment requiring such environmental consideration before the issuance of any "form of approval" by the NRC of the proposal to decommission Shoreham or any of its subsidiary proposals, including the three actions within the scope of this proceeding. 42 U.S.C. § 4332 (1988); 10 C.F.R. § 51.100(a) (1991).

The three actions which are the subject of this proceeding are within the scope of the proposal to decommission Shoreham because they are "interdependent parts of [that] larger action and depend [sic] the larger action for their justification." 40 C.F.R. § 1508.25(a)(1)(iii). It is also clear that the NRC Staff relied on the existence of the Confirmatory Order as a significant part of the basis for its approval of the emergency preparedness and security plan amendments. Staff Safety Evaluation Supporting Proposed Exemption and Amendment No. 6 to Facility Operating License No. NPF-82 at ¶ 1.0 (July 31, 1990); Staff Safety Evaluation Support Amendment No. 4 to Facility Operating License No. NPF-82 at ¶ 2.0 (June 4, 1990). Thus, it is clear that the security plan and emergency preparedness plan amendments also constitute actions which "[c]annot or will not proceed unless other actions [i.e., the Confirmatory Order] are taken previously or simultaneously." 40 C.F.R. § 1508.25(a)(1)(ii). These actions also constitute cumulative actions "which when viewed with other proposed

actions [both within and without the current scope of this proceeding] have cumulatively significant impacts and should therefore be discussed in the same impact statement." 40 C.F.R. § 1508.25(a)(2). Such an EIS also "shall consider . . . the 3 types of alternatives . . . namely the "[n]o action alternative", "[o]ther reasonable courses of actions", and [m]itigation measures (not in the proposed action)." 40 C.F.R. §§ 1508.25 1508.25(b). And that EIS is also required ("shall consider") 3 types of impacts, namely (1) Direct; (2) Indirect; (3) Cumulative." 40 C.F.R. § 1508.25(c). In asserting that these principles govern the need for an EIS embracing the proposal to decommission Shoreham (including its component parts), Petitioners note that the NRC explicitly adopted 40 C.F.R. § 1508.25. 10 C.F.R. § 51.14(b) (1991).

The hearing notice and Commission guidance define the scope of the proceeding. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-91-7, 33 NRC 179, 182 (1991). Contention 1 calling for a full NEPA environmental review "of the proposal to decommission Shoreham" goes beyond the matters at issue in this proceeding. It disregards the Commission's holding that the decision not to operate is exclusively a private determination of the licensee and it is the decision on how decommissioning is accomplished that requires NRC review and approval. CLI-90-8, 32 NRC at 207.

In response to the Commission's requirement that some plausible explanation of why an EIS might be required for an NRC decision approving a Shoreham decommissioning plan and how the three licensing actions constitute an illegal segmentation of the EIS process, SE2 responds with bald conclusory allegations that are contrary to the Commission and federal pleading requirements.

Using the language of the Council on Environmental Quality (CEQ) regulations governing the scope of environmental impact statements, SE2 merely proclaims that the three actions are "within the scope of the proposal to decommission Shoreham because they are 'interdependent parts of [that] larger action and depend [on] the larger action for their justification' " and that "they constitute cumulative actions 'which when viewed with other proposed actions [both within and without the current scope of this proceeding] have cumulatively significant impacts and should therefore be discussed in the same impact statement.' "

Similarly, the contention merely declares that a full NEPA review is required for the three actions because they are "within the 'scope' of the proposal to decommission Shoreham, which is a proposal for a major federal action significantly affecting the quality of the human environment requiring such environmental consideration before the issuance of 'any form of approval' by the NRC" and then cites 42 U.S.C. § 4332 (1988) and 10 C.F.R. § 51.100(a) (1991).

It is patent on its face that the contention submitted neither provides the plausible explanation called for by the Commission in CLI-91-4, nor does it conform to the requirements of 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii). It fails

to contain a brief explanation of the bases of the contention. There is no concise statement of the alleged facts or expert opinion that support the contention and on which Petitioner intends to rely together with references to specific sources and documents. Neither are there references to specific portions of the applications that the Petitioner disputes along with supporting reasons.

The very basis for the contention, that the three actions are part of the decommissioning of Shoreham because they are interdependent parts of the larger action and depend on the larger action for their justification, presents a factual consideration. In addition to there not being a brief explanation of the basis for this allegation, there is no concise statement of the alleged facts or expert opinion that support the allegation or any other required documentation.

Although SE2 alleged that the licensing actions were mutually dependent, for which it cited in support Staff reports on the amendments, the licensing actions were not linked to the need for an EIS in any meaningful way. The contention fails to meet what the Commission defined in CLI-91-4 as being required for a properly pled contention. Furthermore, there was no material compliance with the pleading requirements in section 2.714(b)(2).

As part of Contention 1, SE2 alleged that the required EIS shall consider the no-action alternative, other reasonable courses of action, and mitigation measures not in the proposed action, and direct, indirect, and cumulative impacts. Cited in support are 40 C.F.R. § 1508.25(b) and (c), the CEQ regulations governing the scope of environmental impact statements.

These are matters Petitioner had previously raised before the Commission in its motion for reconsideration of CLI-90-8 in the context of seeking that the NRC order operation of the Shoreham plant. The Commission noted that although the CEQ's regulations are entitled to "substantial deference" where applicable, they only apply to federal actions to which NEPA applies. The Commission found that the decision not to operate Shoreham is a private decision. CLI-91-2, 33 NRC at 72 n.2 (1991).

The Commission went on to find that the "no-action" alternative is one to reject a proposed decommissioning plan, not to reject the decision of decommissioning, as Petitioner would have. The "no-action" alternative is not the operation of Shoreham. *Id.* at 70-71. It further found that the scope of an EIS is not a relevant issue because discussion of an EIS's scope cannot precede the decision to prepare an EIS. The Commission rejected Petitioner's claims on the scoping requirements of the CEQ regulations.

In its contention, SE2 does not present the matter of the scope of the EIS in the context of restart, which has already been decided by the Commission. Petitioner only does so in the abstract. Merely restating the requirements of CEQ's scoping regulations, without further explanation, does not show the existence of a genuine dispute as is required by the regulation.

Additionally, Petitioner not having submitted an admissible contention placing in issue the need for an EIS makes the scope of an EIS irrelevant and only of academic interest. It is not a proper matter for adjudication.

Petitioner has not placed at issue how the three licensing actions could preclude any NEPA-based considerations and constitute an illegal segmentation of the EIS process. No attempt was made in the contention to show that the licensing changes would foreclose any decommissioning methods.

Contention 1 is defective, not having made the requisite showing of a genuine issue of fact or law, as specified in 10 C.F.R. § 2.714(b). It is therefore not admissible. 10 C.F.R. § 2.714(d)(2)(i).

> *CONTENTION 2:* The need for an EIS on the proposal to decommission Shoreham is established by the Commission's determination in 10 C.F.R. § 51.20(b)(5) in the 1988 Edition and earlier years that a proposal to decommission a nuclear power reactor "should be covered by an environmental impact statement." That requirement continues to exist for the proposal to decommission Shoreham because the removal of the categorical requirement for EISs on all proposals to decommission nuclear reactors was based upon the *Final Generic Environmental Impact Statement on Decommissioning Nuclear Facilities*, NUREG-0586 (August 1988) ("GEIS") which was limited in its scope to facilities where decommissioning is necessary because such facilities are either "at the end of their normal lifetimes" or where there is a "premature closure of a reactor due to an accident." GEIS at 8-1. Since Shoreham is not at the end of its "normal life" and has suffered no permanently disabling accident, the proposal to decommission Shoreham is outside the scope of the GEIS and, therefore, the categorical requirement continues in full force and effect with respect to a proposal to decommission Shoreham. Petitioners have made this assertion to the Commission repeatedly and the Commission has never denied that a proposal to decommission Shoreham is outside the scope of that GEIS.

Contention 2 asserts that the Commission's "Final Generic Environmental Impact Statement on Decommissioning Nuclear Facilities," NUREG-0586 (1988) (GEIS) is inapplicable to Shoreham because the GEIS only extends to facilities at the end of their normal lifetimes or where there is a premature closure of a reactor due to an accident, neither of which applies to the Shoreham situation. SE2 contends that because of the inapplicability of the GEIS to Shoreham, which is prematurely closed for reasons other than an accident, one must look to the regulation as it existed prior to the Commission's amendment of its regulations that provided the basis for the GEIS. The regulation 10 C.F.R. § 51.20(b)(5), abrogated in 1988, provided that a proposal to decommission a nuclear reactor "should be covered by an environmental impact statement." This is the basis for the contention that a site-specific EIS is required for Shoreham.

Staff's position, *inter alia*, is that the GEIS would apply to Shoreham because the " 'amendments apply to nuclear facilities that operate throughout their normal lifetime as well as those that may be shutdown prematurely.' 53 Fed. Reg. 24,019."

Assuming *arguendo* that the GEIS would be inapplicable to the Shoreham situation, Contention 2 is premised on assumptions not based in fact or law so that it fails as an admissible contention.

SE2 has failed to submit an admissible contention on the issue of whether the three licensing actions require an EIS, yet Contention 2 is premised on that assumption. Without that assumption there is no basis to discuss the applicability of the GEIS to Shoreham. The GEIS is but one form of an EIS. To debate whether the GEIS extends to the Shoreham situation, without the assumption of a requirement for an EIS, would be to engage in an irrelevant academic exercise. The contention is based on the very point SE2 ultimately seeks to establish and is thus fallacious.

The Commission made clear in its comment on the General Requirements for Decommissioning Nuclear Plants, 53 Fed. Reg. 24,018 (June 27, 1988) that one does not start with the assumption of a need for a site-specific EIS, but that the need will be determined by way of an environmental assessment that shows the impacts for a particular plant to be significantly different from those studied generically. The Commission stated:

> The relative impacts are expected to be similar from plant to plant, so that a site-specific EIS would result in the same conclusions as the GEIS with regard to methods of decommissioning. Although some commentators correctly point out that an EA is much less detailed in its assessment of impacts than an EIS, if the impacts for a particular plant are significantly different from those studied generically because of site-specific considerations, the environmental assessment would discover those and lay the foundation for the preparation of an EIS. If the impacts for a particular plant are not significantly different, a Finding of No Significant Impact would be prepared.

Id. at 24,039.

The Commission discussion puts to rest SE2's claim asserting the repromulgation of abrogated regulation section 51.20(b)(5). Furthermore, the claim is meritless because it rests on a baseless rule of construction for its justification.

No substance can be found in that part of the contention that states that the Commission has never denied that a proposal to decommission Shoreham is outside the scope of the GEIS. The Commission's silence cannot be considered as acquiesence. CLI-91-2, 33 NRC at 74.

Contention 2 is without merit and does not make the requisite showing of a genuine issue of fact or law as specified in section 2.714(b)(2). It is therefore not admissible. 10 C.F.R. § 2.714(d)(2)(i).

> *CONTENTION 3:* Petitioners contend that LILCO's environmental report should be in the format prescribed by Regulatory Guide 4.2 (Rev. 2, July 1976) as appropriately modified for the proposal at issue as a result of the future application of the Commission's scoping procedures at 10 C.F.R. §§ 51.28 & 51.29 (1991) since that format for an environmental

report on a nuclear power station has been determined by the NRC Staff to be the format "acceptable to the NRC Staff for implementing [these] specific parts of the Commission's regulations." NUREG-0099, Cover Sheet (July 1976).

Contention 3 does not present a litigable issue. Its concern is the format of an environmental report that has not been shown to be required for the three licensing actions. The format therefore is only a matter of academic interest.

SE2 wants an environmental report in the format prescribed by Regulatory Guide 4.2 (Rev. 2, July 1976). Regulatory Guides give guidance as to acceptable methods for implementing the general criteria. An applicant may select other methods to achieve the same goal. *Petition for Emergency and Remedial Action*, CLI-78-6, 7 NRC 400, 406-07 (1978). The Regulatory Guide itself provides that compliance with the format is not required and that an environmental report with a different format will be acceptable if it provides an adequate basis.

Contention 3, as submitted, only presents an academic preference not founded in the law. It does not present a genuine issue of fact or law for litigation, as specified in section 2.714(b). It cannot be admitted because even if proven, the contention would be of no consequence in the proceeding for the reason that it would not entitle petitioner to relief. 10 C.F.R. § 2.714(b)(2)(ii).

CONTENTION 4: An EIS is required for Commission consideration of the proposal to decommission Shoreham because the Plan submitted by the Long Island Power Authority in U.S.N.R.C. Docket No. 50-322 by letter of December 29, 1990 which LILCO has requested the NRC Staff to consider pursuant to 10 C.F.R. § 50.82 by SNRC-1781 (January 2, 1991) proposes the selection of the DECON alternative (Plan at ¶ 2.1) which would foreclose the consideration of alternative decommissioning methods including SAFSTOR and ENTOMB. Also, the NRC Staff has recognized that issuance of the POL allows the licensee to "ship the fuel support castings and peripheral pieces for off-site disposal . . . ." *See* SECY-91-129, Subject: Status and Developments at the Shoreham Nuclear Power Station (SNPS) at 3 (May 13, 1991). The Commission approved SECY-91-129 in its Memorandum and Order in *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-91-8 (at p. 13), [33 NRC 461, 471] (June 12, 1991). Since DECON is the *only* alternative "in which the equipment, structures, and portions of the facility and site containing radioactive contaminants are removed . . . from the site," it is clear that allowing LILCO to proceed with the disposal of reactor internals at this time would prejudice the consideration both of SAFSTOR which "is the alternative in which the nuclear facility is placed and maintained in a condition that allows the nuclear facility to [be] safely stored and subsequently decontaminated (deferred contamination) to levels that permit release for unrestricted use" and of ENTOMB which is "the alternative in which radioactive contaminants are encased in structurely [*sic*] long-lived material, such as concrete; the ENTOMB structure is appropriately maintained and continued surveillance is carried out until radioactivity decays to a level permitting release of the property for unrestricted use." GEIS at ¶ 2.4.

Further, with particular reference to a boiling water reactor such as Shoreham, proceeding with DECON without a prior EIS forfeits the consideration of the NRC's recognition that SAFSTOR "is advantageous in that it can result in reduced occupational radiation exposure in situations where urgent land use considerations do not exist." GEIS at ¶ 5.3.2. It also would

deny the similar benefits of avoidance of radiation exposure available through the ENTOMB alternative which explicitly foresees the entombment of "the pressure vessel internals and their long-lived . . . isotopes . . . , along with other radioactive material." GEIS at ¶ 5.3.3. The avoidance of radiation exposures available through the choice of SAFSTOR or ENTOMB are "NEPA-based considerations" and Atomic Energy Act considerations which would be addressed in the EIS and would be foreclosed by allowing LILCO's proposed actions to go forward without such an EIS. *See Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1) CLI-91-4 (at p. 5), [33 NRC 233, 237] (April 3, 1991).

Contention 4 is irrelevant to the matters at issue in this proceeding. They are whether the Confirmatory Order Modification, the Security Plan Amendment, and the Emergency Preparedness Amendment are part of the alleged decommissioning process of Shoreham, whether the decommissioning process requires an EIS and whether the three licensing actions would foreclose decommissioning methods or some other NEPA-based considerations. CLI-91-4, 33 NRC at 236-37.

Contention 4 ignores the three licensing actions that are at the heart of the proceeding. The contention is meaningless in the context of the proceeding because it is not linked to the three licensing actions. It is of no help to Petitioner if we were to consider Contention 4 as part of another contention, because SE2 in the other contentions never linked the three licensing actions to the matters at issue in accordance with the regulatory requirements.

SE2, in Contention 4, looks only to a Long Island Power Authority proposal to decommission Shoreham and the NRC's issuance of a possession-only license (POL) as the mechanisms in the alleged decommissioning process that would foreclose decommissioning methods or some other NEPA-based considerations. Each is the subject of a separate proceeding in which Petitioner seeks to intervene. They are docketed as 50-322-OLA-3 and 50-322-OLA-2, respectively.

Because the Long Island Power Authority proposal to decommission Shoreham and the issuance of the POL are unconnected to the three subject licensing actions, no useful purpose would be served in engaging in an academic discussion of whether those activities support an admissible contention. That is best left to be considered in the other proceedings.

Contention 4 does not present a relevant issue. It fails to meet the requirements of section 2.714(b)(2) and (d)(2)(i). The contention is not admissible.

B. The Security Plan Amendment Contention

CONTENTION 5: Petitioners contend that the reduction in vital areas, vital equipment and plant security staff, as well as possible other changes made by the Security Plan Amendment ("Amendment") reducing the quality and quantity of the security afforded areas, equipment, and activities at Shoreham under the Site Security Plan ("Plan") are inconsistent

with adequate assurance of, and create an unreasonable risk to, the public health and safety, fail to minimize danger to life and property, do not promote the common defense and security, and are inconsistent with serving a useful purpose proportionate to the quantities of special nuclear material authorized to be utilized under the Shoreham full-power operating license, and are thus, in violation of the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2011 *et seq.* (1988), in particular, 42 U.S.C. § 2133, and the Commission's regulations and other guidance thereunder, and would particularly constitute unreasonable risks to the health and safety of Petitioners and the persons they represent arising from the Licensee's inability to meet the design basis threats to vital equipment and special nuclear material at Shoreham.

Not having access to the Security Plan as it existed prior to the Amendment, or the NRC Staff, LILCO and other parties' positions on either Plan, or the Staff Safety Evaluation Report of either Plan, or the Commission or Licensing Board(s) or Appeal Board(s) rationales for approving the Plan as it existed prior to the Amendment, or the record of those prior proceeding(s), or related settlement agreements, or other relevant "facts" which could be subject to expert analysis, Petitioners are at this time prevented from stating their contentions with the particularity sought by 10 C.F.R. § 2.714(b)(2) (1991). However, Petitioners attempt to identify initially at least the following additional and subsidiary issues on the basis of existing NRC Regulations and other guidance.

The additional and subsidiary issues referred to are designated (a) through (g). We will discuss each seriatim.

As we discussed previously, at page 166 the Licensing Board deferred final ruling on standing for both SE2 and School District and permitted them to file contentions on the security plan because of Petitioners' claim that they were handicapped on the causal issue by lack of access to the security plan. The Licensing Board stated that on reviewing contentions it would take account of Petitioners' lack of access to the security plan. Although such lack of access might adversely affect Petitioners' ability to fully demonstrate that the security plan is the cause of the matter complained of, it should otherwise not hinder SE2's ability to establish the other elements of an acceptable contention, as provided for in section 2.714(b)(2).

Contention 5 alleges that the amendment permitting reduction in plant vital areas, vital equipment, and security personnel is a danger to public health and safety and in violation of the Atomic Energy Act of 1954 and the Commission's regulations. The contention, however, is submitted (1) with no additional explanation of the basis, (2) without a statement of alleged facts or expert opinion that supports the contention, and (3) without sufficient information to demonstrate that a genuine dispute exists with the Licensee on a material issue of law or fact. .

Petitioners plead that they are prevented from stating their complaint with the particularity sought by section 2.714(b)(2) because they have not had access to the security plan as it existed prior to amendment or in its present form, do not know the Commission's rationale for approving either plan, lack other essential information, and therefore cannot provide an expert analysis of the security plan

amendment. That general pleading will not suffice to gain admittance of the contention.

The Licensing Board previously recognized that Petitioners did not have access to the amended security plan. When it previously deferred ruling on standing and permitted the filing of contentions on the amendment, it expected Petitioners to analyze available public information to establish at least a threshold basis for positing possible hazards to public health and safety attributable to Shoreham in its present physical configuration. If such basis were shown, we would have permitted further examination of the amended security plan to determine its adequacy in preventing or reducing public risk. Absent some adequately supported assertion of public risk (or risk to Petitioners), however, we see no basis for proceeding further.

Petitioners' contention stands as an unsupported allegation of potential injury to public health and of violation of law as a consequence of the amendment; it falls far short of meeting the pleading requirements of section 2.714(b)(2) for basis and specificity. Petitioners' reasons for lack of particularity do not suffice to save the contention. There is no reason Petitioners could not analyze or take account of information in the public record, as for example the current defueled state of the reactor, sources and location of radioactivity within the reactor complex, amount of radioactivity on site, and physical plant and equipment configuration given in the Final Safety Analysis Report, to frame a contention having the required specificity in all but limited aspects previously discussed if a public hazard from fuel theft or sabotage exists at Shoreham. They are required to do so. *See Catawba, supra.* Petitioners have not provided the threshold specificity and analyses in support of Contention 5 as required by section 2.714(b)(2), and, accordingly, Contention 5 is not admitted.

The Licensing Board will consider the individual subparts of Contention 5 to determine whether any admissible issue has been proffered regarding the security plan amendment. Subpart 5(a) is restated in abbreviated form for clarity as follows:

> (a) The Amendment does not meet the requirements of 10 C.F.R Part 73 (1991). Part 73 *prescribes requirements* for the establishment and maintenance of a physical protection system that has capabilities *for the protection* of special nuclear material at fixed sites . . . and *of plants* in which special nuclear material is used. 10 C.F.R § 73.1(a) (emphasis in original). The requirements of Part 73 apply in their fullness to Shoreham, regardless of its present mode. The fact that Shoreham has not operated in the approximately 2 years since receiving its operating license means, at most, that the physical security requirements for Shoreham should be the same as those for any other full-power operating nuclear plant licensee that has been in an "extended outage" of 2 years or more. No other similarly situated licensee has been allowed similar reductions in the security plan.

Subpart (a) alleges in essence that the Commission is prohibited by the provisions of 10 C.F.R. Part 73 from reducing the physical security requirements on Shoreham, based on its current defueled mode. It further alleges that Shoreham, which has not operated for about 2 years, is similarly situated to plants with a full-power operating license that have been in an extended outage for 2 years and that have not been permitted to reduce their physical security requirements. This is asserted as the basis that such reductions would be a violation of the NRC's physical security requirements and of the Atomic Energy Act.

This subpart alleges the existence of a legal constraint on the Commission that requires it to maintain full physical security at all nuclear plants having a full-power operating license with no discretion to adjust, or relax, security requirements to take account of the actual public risk posed by the reactor in individual cases. This legal theory is submitted without citation to authority and therefore does not have sufficient specificity for admission in this case.

This deficiency is not remedied by Petitioner's unsupported argument that Shoreham is similarly situated to nuclear plants having a full-power operating license but which are in an extended outage. We reject that argument for two reasons. First there is no supporting basis proffered for the assertion that Shoreham, which has not operated at full power and is defueled, is in fact similarly situated with respect to other reactors in extended outage but which are likely to be restarted. Second, there is no legal authority cited to suggest that the Licensing Board could impose requirements on Shoreham based on an analogous situation with other reactors rather than the provisions of 10 C.F.R. Part 73.

Petitioners' legal theory appears to conflict with the plain language of Part 73. Petitioners have not referenced or discussed the import of 10 C.F.R. §73.5 which authorizes the Commission to make exemptions from the provisions of Part 73 "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." Regardless of whether, or not, that provision has been invoked in this case, it suggests on its face that Part 73 permits consideration of public risk in implementing its provisions and it does not inflexibly bind the Commission as the contention suggests. Moreover, section 73.2 defines the term "vital equipment" as any equipment the failure or destruction of which could directly or indirectly endanger the public health and safety by exposure to radiation. The definition of vital equipment appears on its face to permit interpretation of security requirements in a manner that takes account of public risk in specific cases. Petitioners have not proffered any legal authority, factual basis, or expert opinion tending to show that the Commission misinterpreted its regulations or acted beyond its authority when it granted the physical security amendment for

Shoreham or that the risk to public health is greater than contemplated by Staff or Licensee.

The failure to supply specific information cannot be attributed to Petitioners' lack of access to the amended security plan. Rather Petitioners have not taken advantage of the public information available to them to frame a contention with adequate bases. Subpart 5(a) is not admitted because of failure to meet the requirements of section 2.714(b)(2).

Subpart 5(b) may be summarized as follows:

> (b) Part 73 establishes the design-basis threat to be used to design safeguard systems, protect against acts of radiological sabotage, and prevent the theft of special nuclear material. 10 C.F.R. § 73.1(a)(1) (1991). Petitioners submit that the Plan both before and after the Amendment is inadequate to meet the design-basis threat.

Petitioners cite a supporting example. On October 16, 1989, at 8:45 a.m. an unknown individual manually activated a fire pump and fire suppression deluge valve onto the vertical cable trays of the reactor building where the emergency core cooling system pumps are located. Petitioners allege that Licensee's desultory performance of security responsibility in investigating the incident indicates a lack of compliance with Part 73 and a need for heightening, not lessening, security plan requirements.

Subpart 5(b) invites an inquiry into the adequacy of the physical security plan at Shoreham both before and after the amendment was granted and alleges that both versions of the plan are inadequate to meet the design-basis threat specified in 10 C.F.R. § 73.1(a)(1).

The jurisdiction of this Licensing Board was specified in the published notice of opportunity for hearing. Our jurisdiction is limited to a determination of whether the amendment to Shoreham's physical security plan should be sustained. We are not empowered to consider and resolve a controversy over the adequacy of the previous plan or the Licensee's performance under the previous version of the security plan. To the extent that subpart 5(b) invites such an inquiry, it cannot be admitted.

There is no additional factual basis or expert opinion submitted with subpart 5(b) to support the assertion that the amended security plan is inadequate to meet the design-basis threat to the reactor in its present defueled condition. The failure is not attributable to Petitioners' lack of opportunity to review the amended plan. In proffering this contention, Petitioners merely persist in advancing their legal theory, without citation to legal authority or some plausible foundation, that the license conditions for Shoreham must meet all the requirements applicable to a plant with a full-power operating license. Petitioners have likewise failed to support this contention with citations to publicly available information or expert opinion indicating the existence of some form of risk to public health arising

from the defueled Shoreham reactor. For all of the foregoing reasons, subpart 5(b) is not admitted. Subpart 5(c) is summarized as follows:

> (c) Petitioners contend that the Amendment does not conform with the guidance for implementation of Part 73 made mandatory by the Commission's physical protection upgrade rule, 44 Fed. Reg. 68,184 (Nov. 28, 1979), namely the Fixed Site Physical Protection Upgrade Rule Guidance Companion, Vols. 1 and 2. Nor does it comply with Regulatory Guide 5.7, (Rev. 1, May 1980), Reg. Guide 5.14 (Rev. 1, May 1980), and Reg. Guide 5.44 (Rev. 2, May 1980).

Subpart 5(c) alleges that the amendment does not conform to the guidance implementing the Physical Protection Upgrade Rule and a number of other cited regulatory guides. The subpart has no supporting information or expert opinion supplied that even hints at how such failures to comply have occurred as a result of the Security Plan Amendment. No information is supplied to indicate how the cited rule is applicable to nuclear power plant security. Further, it is settled in NRC proceedings that compliance with NRC regulatory guides is not mandatory. An allegation of failure to comply with one or more regulatory guides is therefore inadequate without additional basis to meet the pleading requirements of section 2.714(b). The discussion of the failure to comply with regulatory guides under Contention 3 is applicable here. Subpart 5(c) is not admitted.

Subpart 5(d) reads as follows:

> (d) The reduction in guard force violates the settlement agreement among the parties in the operating license proceeding for Shoreham and, therefore is invalid. U.S.N.R.C. Docket No. 50-322, Transcript of Management Level Meeting Between the Nuclear Regulatory Commission and Long Island Lighting Company at 76 (July 28, 1989).

Subpart 5(d) alleges that the reduction in guard force violates a settlement agreement in the operating license proceeding for Shoreham and is therefore invalid. No supporting basis is provided beyond a cryptic citation to a transcript of a management-level meeting held in 1989. This citation alone is simply inadequate. The relevance of a management meeting held in 1989 to the current amendment is not specified. Without more, we are unwilling to assume that the parties to a past settlement agreement bargained away the Licensee's entitlement under NRC regulations to seek amendments to its operating license, or that the Staff concurred in such a settlement. Moreover, no party to the settlement has complained to this Licensing Board. In any event, it is the current regulations contained in 10 C.F.R. Part 73 by which the acceptability of an amendment to Shoreham's physical security plan must be tested. Petitioners provide no factual or legal basis for their assertion of invalidity of the amendment under the applicable regulation. Subpart 5(d) is not admitted.

Subpart 5(e) reads as follows:

> (e) Insofar as the Amendment allows for a response team of less than ten armed and trained personnel immediately available at the facility at all times, it is in violation of the requirements of 10 C.F.R. § 73.55(h)(3) because, among other reasons, any reduction from the nominal number of such guards cannot be justified on consideration of the eleven factors specified by the Commission in discussion item (3) of Requirements for the Physical Protection of Nuclear Power Reactors, 42 Fed. Reg. 10,836 (February 24, 1977).

Subpart 5(e) asserts that any reduction in the number of armed guards below ten permitted by the amendment is a violation of 10 C.F.R. § 73.55(h)(3) because it does not comport with an element contained in a Commission discussion on Requirements for the Physical Protection of Nuclear Power Reactors which was published in the *Federal Register* in 1977.

The assertion is contrary to the plain language of section 73.55(h)(3) which provides that the nominal number of armed guards immediately available at a facility shall be ten "unless specifically required otherwise on a case by case basis by the Commission; however this number may not be reduced to less than five (5) guards." Plainly, the number of armed guards required at Shoreham is permitted to be flexible under the regulation and is not fixed immutably at ten. The relevance of discussion item (3) in a Commission publication for supporting a contrary view has not been specified. The regulation is controlling. Without some basis in law or fact for suggesting that its provisions are not met under the amendment, Subpart 5(e) must be and hereby is denied admittance.

Subpart 5(f) reads as follows:

> (f) Since Section 238(b) of the Atomic Energy Act declares "the unauthorized use of or tampering with the machinery, components, or controls of any (utilization facility licensed under this Act) a crime punishable by fine and/or imprisonment and since Shoreham is such a licensed utilization facility all "machinery, components or controls" of the nuclear-related portions of Shoreham should be considered "vital equipment" and should be with a "protected area." [citation omitted]. To the extent that such Shoreham machinery, components or controls," by virtue of the Amendment, are no longer classified as "vital equipment" or are outside of "vital areas" and/or "protected areas" that Amendment is in violation of 10 C.F.R. Part 73 and the Atomic Energy Act.

Subpart 5(f) generally alleges that certain provisions of the Atomic Energy Act constrain the Commission from granting a license amendment at Shoreham that would permit it to reclassify "vital equipment" as nonvital. Although the alleged connection between the referenced section of the Atomic Energy Act and 10 C.F.R. Part 73 is difficult to understand, the Licensing Board reads the contention to assert in essence that any equipment that was classified as "vital" under the requirements of Part 73 applicable to a full-power operating license cannot be classified as nonvital in a non-operating defueled plant, because the

Atomic Energy Act prohibits the unauthorized use or tampering with the nuclear-related machinery, components, or controls of a utilization facility licensed under the Act. Petitioners apparently read the cited portion of the Atomic Energy Act as a blanket and unalterable requirement for the protection of nuclear-related machinery, components, and controls that permits no relaxation of the requirements of Part 73 based on specific circumstances.

Petitioners' assertion is but another variation on their often-asserted and rejected claim that there can be no relaxation of security requirements that are applicable to possessors of full-power operating licenses regardless of the state or mode of the reactor or the degree of risk it poses to the public. That rigid interpretation of NRC rules conflicts on its face with the definition of "vital equipment" given in 10 C.F.R. § 73.2. That definition permits consideration of public risk from exposure to radiation in defining vital equipment in a nuclear power plant.

Petitioners have provided nothing in the form of citations to authority or any other bases for their novel interpretation of law. There is neither argument nor authority provided that even suggests that the cited provisions of the Atomic Energy Act are in any way in conflict with the proposed reclassification of equipment at Shoreham.

Nor has any factual basis been provided suggesting that risk to the public health might arise from tampering with reclassified equipment at Shoreham in its present defueled condition.

Subpart 5(f) is not admitted because Petitioners have failed to provide the legal or factual basis required by section 2.714(b)(2).

Subpart 5(g) reads as follows:

> (g) The Amendment does not comply with the requirements of 10 C.F.R. § 73.67 (1991) and LILCO is not exempt from the requirements of that section because, according to Petitioners' expert Dr. Stephen Musolino, a significant number of the fuel elements do not have a "total external radiation dose rate in excess of 100 rems per hour at a distance of three feet from any accessible surface without intervening shielding" and those fuel elements do not otherwise meet the exemption standards of 10 C.F.R. § 73.67(b)(1) (1991).

Subpart 5(g) asserts that the amendment does not comply with the requirements of 10 C.F.R. 73.67 and LILCO does not meet the exemption requirements of section 73.67(b)(1). This subpart is supported by the expert opinion of Dr. Stephan Musolino who asserts that the Shoreham fuel elements do not meet the requirements for exemption in section 73.67(b)(1). That section grants an exemption from certain security performance requirements for special nuclear material that exceeds specified total external radiation dose rates. Staff and Licensee assert in their replies that LILCO has not sought an exemption to the provisions of that section nor has it asserted that it is entitled to an exemption.

In light of the assertions and responses of the participants, the Licensing Board concludes that Subpart 5(g) fails to show that a genuine dispute exists with the Applicant on a material issue of law or fact regarding the requirements of section 73.67. All participants agree that no exemption under section 73.67(b)(1) is warranted; no exemption has been sought or granted. No other basis is provided for asserting a violation of section 73.67. Petitioners' central claim in Contention 5 is that the reduction of vital areas or vital equipment and plant security staff at Shoreham creates a risk to public health and safety and that the amendment of the security plan is therefore in violation of the Atomic Energy Act and the Commission's regulations. Subpart 5(g), however, does nothing to provide any additional basis or specificity to that claim. Subpart 5(g) is not admitted for failure to meet the requirements of section 2.714(b)(2).

Contention 5 has been denied admittance to this proceeding in its entirety for failure of Petitioners to meet the pleading requirements of section 2.714(b)(2). Had Petitioners proffered a contention asserting some arguable scenario of a public risk or hazard arising from the license changes, which may have been based on publicly available information, they would have provided a basis for proceeding further on the matter of opening up the security plan for review.

Petitioners' security plan contentions, however, failed to provide any basis whatever for asserting a public radiological risk that could arise at Shoreham in its present defueled configuration. Neither have they addressed even a possible causal connection between a claimed injury and the proposed action, which is a vital element of standing. *Dellums v. NRC*, 863 F.2d 968, 971 (D.C. Cir. 1988).

It was incumbent on Petitioners to go forward and develop their claim for standing and not to again rely on the excuse that the security plan was unavailable to them. Petitioners have failed to meet the standing requirements of 10 C.F.R. § 2.714(a)(2) which requires them to come forward and to connect the Security Plan Amendment and their unsupported claim of injury. Their petitions to establish standing on the AEA issue are denied.

C. Miscellanea

In "Petitioners' Amendment and Supplement to Petitions to Intervene" they object to the Order in LBP-91-23 requiring the filing of the NEPA Contentions prior to LILCO's filing of an environmental report. They claim that this "severely prejudices the Petitioners' rights and the persons they represent, and is contrary to the public interest." No explanation was offered as to the manner in which they were prejudiced or injured. Absent such explanation no relief is warranted.

In the June 21, 1991 petition, School District argues its grounds for standing on the NEPA issue. SE2 had twice before placed its case before the Licensing Board, in its original petitions to intervene and in its amended petitions. The

Licensing Board considered its positions in LBP-91-1 and LBP-91-23. In the latter, we confirmed a prior holding that School District had not established standing on the NEPA issue. For Petitioner to again raise and reargue the matter with the submittal of contentions is untimely and out of order. The Licensing Board will not again consider the matter.

Additionally, to the extent that the matters presented at the July 23, 1991 prehearing conference explained Petitioners' contentions, filed June 21, 1991, and LILCO's and Staff's answers, we have considered them. Any attempt at adding new matters to the filings was not considered.

V. CONCLUSIONS

The contentions that SE2 has filed on the NEPA issue do not meet the requirements of section 2.714(b)(2), and they are not admissible as provided in section 2.714(d)(2). SE2 shall not be permitted to participate as a party on that issue in the proceeding.

SE2 and School District have failed to establish standing on the Security Plan Amendment as provided for in section 2.714(a)(2). The contention that they have filed on the issue does not meet the requirements of section 2.714(b)(2) and is not admissible as provided in section 2.714(d)(2). They should not be permitted to participate as parties on that issue in the proceeding.

Order

Based upon the foregoing, it is hereby ORDERED:

1. SE2's petition to intervene is denied.
2. School District's petition to intervene is denied; and
3. Pursuant to 10 C.F.R. § 2.714a, within 10 days of service, Petitioners may appeal this Memorandum and Order to the Commission by filing a notice of appeal and accompanying brief.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Morton B. Margulies, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland
August 29, 1991

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Ivan Selin, Chairman
Kenneth C. Rogers
James R. Curtiss
Forrest J. Remick

In the Matter of **Docket Nos. 50-250-OLA-5**
50-251-OLA-5

FLORIDA POWER AND LIGHT COMPANY
(Turkey Point Nuclear Generating Plant, Units 3 and 4) **September 11, 1991**

The Commission reviews an Appeal Board decision affirming a Licensing Board decision that dismissed, for lack of standing, the sole remaining intervenor in an operating license amendment proceeding concerning the Turkey Point plant. The Commission decides not to disturb the Appeal Board's decision, but explicitly rejects and overrules the Licensing Board's ruling that a Board may raise a *sua sponte* issue in an operating license or operating license amendment proceeding where all parties in the proceeding have withdrawn or been dismissed. The Commission also provides guidance on the requirements for organizational standing.

RULES OF PRACTICE: INTERVENTION (STANDING)

Judicial concepts of standing are to be used to determine whether a petitioner has a sufficient interest to intervene in an NRC adjudicatory proceeding.

RULES OF PRACTICE: INTERVENTION (STANDING)

An organization that wishes to intervene in an NRC proceeding as of right must either demonstrate an injury in fact to the organization within the zone of interests of the governing statute, or it must establish standing as the representative of one or more members of the organization who can demonstrate such an injury within the zone of interests of the statute. *See, e.g., Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327 (1983); *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610 (1976).

RULES OF PRACTICE: INTERVENTION (STANDING)

An organization whose objectives in regard to nuclear power are clearly defined and well advertised is not relieved of standing requirements. *Pebble Springs*, CLI-76-27, *supra*, 4 NRC at 613-14.

RULES OF PRACTICE: INTERVENTION (DISCRETIONARY)

A would-be intervenor who cannot fulfill standing requirements, but who can nevertheless make a valuable contribution to the adjudicatory process, may request consideration of discretionary intervention. *Id.* at 614-17.

RULES OF PRACTICE: LICENSING BOARD REFERRAL OF ISSUES TO STAFF (LACK OF PROCEEDING)

When there is no proceeding before a board, a board is deprived of the ability to gain the perspective on issues that is acquired by receiving the input of parties to a proceeding. In such circumstances, it is more appropriate to apply the expertise of the NRC's Staff and the informal Staff review process to the issues.

RULES OF PRACTICE: *SUA SPONTE* ISSUES (LACK OF PROCEEDING)

A licensing board does not have the authority to raise a *sua sponte* issue relating to an application for an operating license or amendments to an operating license when there is no proceeding before the board relating to the application.

RULES OF PRACTICE: LICENSING BOARD REFERRAL OF ISSUES TO STAFF (LACK OF PROCEEDING)

If, as a result of its involvement in a proceeding, a licensing board believes that there are serious safety issues that remain to be addressed, in circumstances where a single intervenor left in that proceeding voluntarily or involuntarily has withdrawn from the proceeding, the board should dismiss the case and refer the issues to the Staff for review.

RULES OF PRACTICE: INTERVENTION (WITHDRAWAL)

Where there is only a single intervenor in a proceeding, the withdrawal of the intervenor brings the proceeding to a close. *Public Service Co. of Colorado* (Fort St. Vrain Independent Spent Fuel Storage Installation), October 29, 1990, published as an attachment to CLI-91-13.

MEMORANDUM AND ORDER

In ALAB-952, 33 NRC 521 (1991), the Appeal Board affirmed a Licensing Board decision dismissing the Nuclear Energy Accountability Project (NEAP), the sole remaining intervenor in an operating license amendment proceeding concerning the Florida Power and Light Company's Turkey Point plant, for lack of standing to intervene. The Commission has determined not to disturb the Appeal Board's Memorandum and Order in this case. However, to avoid uncertainty regarding rules applicable to NRC adjudicatory proceedings, we provide the following comments regarding two aspects of this proceeding.

1. We agree with the Appeal Board's decision to affirm the Licensing Board's dismissal of NEAP as a party to this proceeding for lack of standing to intervene. The mere fact that NEAP is a small organization that has locally focused interests and purposes is not sufficient in itself to provide the foundation for organizational standing, regardless of how well those interests and purposes are known in the community.

The Commission long ago decided that judicial concepts of standing are to be used to determine whether a petitioner has a sufficient interest to intervene in an NRC adjudicatory proceeding. Under these concepts, an organization that wishes to intervene in a proceeding as of right must either demonstrate an injury in fact to the organization within the zone of interests of the governing statute, or it must establish standing as the representative of one or more members of the organization who can demonstrate such an injury within the zone of interests of the statute. *See, e.g., Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327 (1983); *Portland General Electric*

Co. (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610 (1976). An organization whose objectives in regard to nuclear power are clearly defined and well advertised is not relieved of these requirements. A would-be intervenor who cannot fulfill these requirements, but who can nevertheless make a valuable contribution to the adjudicatory process, may of course request consideration of discretionary intervention. *Pebble Springs*, CLI-76-27, 4 NRC at 614-17.

2. Because the parties to an operating license proceeding may fail to raise a serious matter that can profitably be addressed in the proceeding, the Commission's regulations at 10 C.F.R. § 2.760a permit matters not put into controversy by the parties to be examined and decided by the presiding officer where he or she determines that a serious safety, environmental, or common defense and security matter exists. However, this provision for *sua sponte* review is intended to operate only in the context of an ongoing operating license proceeding. When there is no proceeding before a board, it is deprived of the ability to gain the perspective on issues that is acquired by receiving the input of parties to a proceeding. In such circumstances, the Board loses its reason for being — to serve as a forum for hearing parties with differing viewpoints. Absent that function, we believe that it is more appropriate to apply the expertise of this agency's staff and the informal staff review process to the issues.

Therefore, with respect to views expressed by the Licensing Board in this proceeding regarding the declaration of *sua sponte* issues (*see* LBP-90-32, 32 NRC 181 (1990)), we wish to make clear that a licensing board does not have the authority to raise a *sua sponte* issue relating to an application for an operating license or amendments to an operating license when there is no proceeding before the board relating to the application. This rule applies, for example, where a single intervenor left in a proceeding voluntarily or involuntarily has withdrawn from the proceeding.[1] If, as a result of its involvement in such a proceeding, a licensing board believes that there are serious safety issues that remain to be addressed, it should dismiss the case and refer the issues to the Staff for review.

Accordingly, we explicitly reject and overrule the Licensing Board's ruling in LBP-90-32 that a board may raise a *sua sponte* issue in an operating license

[1] Where there is only a single intervenor in a proceeding, the withdrawal of the intervenor brings the proceeding to a close. *Public Service Co. of Colorado* (Fort St. Vrain Independent Spent Fuel Storage Installation), October 29, 1990, published as an attachment to this decision.

or operating license amendment proceeding where all parties in the proceeding have withdrawn or been dismissed.

IT IS SO ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 11th day of September 1991.

ATTACHMENT

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

Kenneth M. Carr, Chairman
Kenneth C. Rogers
James R. Curtiss
Forrest J. Remick

In the Matter of | Docket No. 72-9 (50-267)

PUBLIC SERVICE COMPANY OF
COLORADO
(Fort St. Vrain Independent Spent
Fuel Storage Installation) | October 29, 1990

ORDER

On June 22, 1990, the Public Service Company of Colorado ("PSC") filed an application with the Commission for a materials license that would authorize it to possess spent fuel and other radioactive materials associated with the storage of spent fuel in an independent spent fuel storage installation located at PSC's Fort St. Vrain Nuclear Generating Station. On August 29, 1990, the NRC Staff ("Staff") published a Notice of Opportunity for Hearing regarding the application in the *Federal Register*. *See* 55 Fed. Reg. 35,384 (Aug. 29, 1990). On September 28, 1990, the State of Colorado ("State") filed a timely Petition for Leave to Intervene.

On October 5, 1990, the State, the Staff, and PSC signed an agreement resolving the State's concerns regarding PSC's application. The agreement also provided that the State would withdraw its petition to intervene and the State filed a Notice of Withdrawal that same day. Where there is only a single intervenor, its withdrawal brings that proceeding to a close. *Houston Lighting & Power Co.* (South Texas Project, Units 1 and 2), ALAB-799, 21 NRC 360, 382 (1985).

Therefore, pursuant to 10 C.F.R. § 2.772(k), the Notice of Withdrawal is hereby accepted and the proceeding is closed.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 29th day of October 1990.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Sheldon J. Wolfe, Chairman
Dr. James H. Carpenter
Dr. Thomas S. Elleman

In the Matter of **Docket Nos. 50-424-OLA-2**
50-425-OLA-2
(ASLBP No. 91-647-OLA-2)

GEORGIA POWER COMPANY, *et al.*
(Vogtle Electric Generating Plant,
Units 1 and 2) **September 12, 1991**

In this Memorandum and Order, the Licensing Board grants the Licensee's unopposed motion to terminate and, without condition, terminates the proceeding regarding the application to amend technical specifications of the operating licenses.

RULES OF PRACTICE: MOTION TO TERMINATE

When a licensee has withdrawn its application to amend its operating licenses and moved to terminate the proceeding without condition, where the Licensing Board has not admitted any contentions as issues in controversy, and when there is no opposition to the motion, there is no reason to issue a notice of hearing. In such circumstances, a motion to terminate without condition will be granted.

MEMORANDUM AND ORDER
(Terminating Proceeding re Application to Amend Operating Licenses)

Memorandum

I. BACKGROUND

On April 22, 1991, Georgia Power Company (the "Licensee") applied to amend its operating licenses for Vogtle Units 1 and 2. These proposed license amendments would change Table 4.8-1 of the Technical Specifications by deleting criteria for changing the frequency of diesel generator tests based upon 5 or more failures in the last 100 valid tests. The amendments would not change corresponding criteria based upon 2 or more failures in the last 20 valid tests. On June 14, 1991, Georgians Against Nuclear Energy ("GANE") filed a petition for leave to intervene. On June 28, 1991, Licensee filed an answer opposing the granting of the GANE petition, and on July 5, 1991, the NRC Staff filed a response opposing the granting of the petition.

By letter dated July 15, 1991, Counsel to the NRC Staff provided the Board with a corrected copy of a Commission Staff Requirements Memorandum dated June 28, 1991. That memorandum, *inter alia*, requested that the Staff establish reliability levels for each licensee's emergency diesel generator and address the nuclear industry's request for relief from accelerated testing requirements for a problem diesel generator, as discussed in a May 21, 1991 Nuclear Management and Resource Council ("NUMARC") letter to Commissioner Curtiss.

On July 23, 1991, this Board issued a Memorandum and Order (LBP-91-33, 34 NRC 138) granting GANE's petition to intervene, conditional upon the filing by August 13, of a supplement to the petition, with contentions advanced by GANE, which satisfied the pleading requirements of 10 C.F.R. § 2.714(b)(2) and (d)(2). The Licensee and the Staff were directed to file responses to GANE's supplement by September 3, 1991. A prehearing conference was scheduled for September 12, 1991, by Order of the Board, dated July 30, 1991 (unpublished). Pursuant to the Memorandum and Order of July 23, on August 9, 1991, GANE filed a supplement to the petition, which listed its proposed contentions.

On August 16, 1991, the Licensee notified the NRC Staff of its withdrawal of the application for proposed license amendments, in light of the NUMARC request of May 21, 1991. Counsel for the Licensee notified the Board and the parties of the Licensee's withdrawal of the application by letter, also dated August 16, 1991, and received by facsimile on August 20, 1991. On August 20, 1991, the Licensee formally moved for an order under 10 C.F.R. § 2.730 terminating this proceeding, and advised that the NRC Staff did not oppose the

Licensee's motion. In two orders of August 23, 1991 (unpublished), the Board cancelled the date for the filing of the Licensee's and the Staff's responses to the proposed contentions and cancelled the prehearing conference. Therein, the Board stated that, after it considered the Licensee's motion and any response thereto, it would either grant the motion and terminate the proceeding or deny the motion and set forth a due date for the filing of responses to GANE's proposed contentions and reschedule the prehearing conference. GANE did not file a response to the Licensee's motion for an order terminating the proceeding.

II. DISCUSSION

It is clear from the background discussion, *supra*, that the Licensee has withdrawn its application to amend its operating licenses. Also it is clear that the Board has not approved any issues for hearing listed in GANE's supplement to its petition. The Staff does not oppose the granting of the motion to terminate the proceeding, and GANE has not filed a response. Thus, there is no reason to issue a notice of hearing. Obviously the matter is moot. *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), LBP-86-37, 24 NRC 719, 724 (1986).

Judge Elleman agrees with but was unavailable to sign this issuance.

Order

The Motion for an Order Terminating Proceeding is granted. This proceeding is terminated without condition.

THE ATOMIC SAFETY AND
LICENSING BOARD

Sheldon J. Wolfe, Chairman
ADMINISTRATIVE JUDGE

James H. Carpenter
ADMINISTRATIVE JUDGE

Bethesda, Maryland
September 12, 1991

Cite as 34 NRC 196 (1991) LBP-91-37

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. Jerry R. Kline
Frederick J. Shon

In the Matter of

Docket No. 9999004-R
(ASLBP No. 91-648-01-R
(General License Authority of
10 C.F.R. § 40.22)
(EA 87-223)

WRANGLER LABORATORIES,
LARSEN LABORATORIES,
ORION CHEMICAL COMPANY,
and JOHN P. LARSEN

September 26, 1991

In a show-cause proceeding involving a challenge to the Staff's Order revoking Licensees' right to operate under a general license for small quantities of source material, the Licensing Board terminates the proceeding upon the withdrawal from further participation of the Licensees.

COMMISSION PROCEEDINGS: MOOTNESS

When an enforcement proceeding is terminated because of the withdrawal of the Licensees, prior decisions as to which no appeals are extant should not be vacated for mootness, under the doctrine articulated in *United States v. Munsingwear, Inc.*, 340 U.S. 36 (1950), and its progeny.

MEMORANDUM AND ORDER
(Terminating Proceeding)

In ALAB-951, 33 NRC 505 (1991), the Appeal Board reversed our Initial Decision in this show-cause proceeding (LBP-89-39, 30 NRC 746 (1989)) and remanded for further determinations by us on a number of specified questions. By Memorandum and Order dated July 3, 1991 (unpublished), we sought the parties' recommendations on how best to proceed.

The Staff provided its suggestions, but the Licensees, by letter from Mr. John P. Larsen, dated July 31, 1991, indicated that they did not wish to pursue further their challenge to the Staff's order revoking their general license. Thereafter, by Memorandum and Order dated August 6, 1991 (unpublished), we sought the Staff's advice on whether any prior decisions in this proceeding should be vacated for mootness.

By a filing dated September 11, 1991, the Staff took the position that, because no appeals of prior decisions were extant at the time the Licensees advised that they did not wish to pursue further their challenge, the proceeding should be terminated but prior decisions should not be vacated. Terminating the proceeding in this manner, according to the Staff, will leave in effect the revocation order initially challenged by the Licensees.

We agree with the Staff that the doctrine articulated by the United States Supreme Court in *United States v. Munsingwear, Inc.*, 340 U.S. 36 (1950), and its progeny, directing an appellate court to vacate a lower court decision that has become moot pending an appeal, does not govern the current proceeding. Our Initial Decision has been reviewed on appeal, and no party has sought Commission review of ALAB-951. Further, we agree with the Staff that no further order on our part is necessary to permit the Staff to effectuate its order revoking the Licensees' general license.

Accordingly, for the reasons stated, it is, this 26th day of September 1991, ORDERED

1. This proceeding is hereby *terminated.*

2. In accordance with 10 C.F.R. § 2.760, this order is effective immediately and, subject to review by the Commission pursuant to 10 C.F.R. § 2.786, shall become the final action of the Commission forty (40) days after issuance, unless the Commission extends the time for its review. Any party may file a petition

for Commission review of this Memorandum and Order within fifteen (15) days after its service, on the grounds specified in 10 C.F.R. § 2.786(b)(4).

THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Dr. Jerry R. Kline
ADMINISTRATIVE JUDGE

Frederick J. Shon
ADMINISTRATIVE JUDGE

Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ivan W. Smith, Chairman
Dr. Walter H. Jordan
Dr. Jerry R. Kline

In the Matter of	**Docket Nos. 50-528-OLA-2** **50-529-OLA-2** **50-530-OLA-2** **(ASLBP No. 91-633-05-OLA-2)** **(Allowable Setpoint Tolerance)**
ARIZONA PUBLIC SERVICE COMPANY, *et al.* **(Palo Verde Nuclear Generating Station, Units 1, 2, and 3)**	**September 30, 1991**

MEMORANDUM AND ORDER
(Terminating Proceeding)

Intervenors Allan L. and Linda E. Mitchell, Licensees, and the NRC Staff have agreed to settle the sole remaining issue in the proceeding and have jointly moved this Board to terminate the proceeding with prejudice.[1]

Since the settlement is founded on the voluntary withdrawal of the Intervenors' only contention, there is nothing for this Board to approve or disap-

[1] Settlement Agreement and Joint Motion to Terminate Proceeding, September 4, 1991.

prove. Terminating the proceeding is a ministerial act in that the withdrawal of the Intervenors brings the proceeding to a close.[2]

Accordingly, this proceeding is terminated with prejudice.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Ivan W. Smith, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland
September 30, 1991

[2] *Florida Power and Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-91-13, 34 NRC 185, 188 n.1 (1991).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of **Docket Nos. 50-445**
50-446

TEXAS UTILITIES ELECTRIC COMPANY
(Comanche Peak Steam Electric Station, Units 1 and 2) **September 18, 1991**

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by Ms. Betty Brink, on behalf of Citizens for Fair Utility Regulation (CFUR), requesting action with regard to Comanche Peak Steam Electric Station, Units 1 and 2. Specifically, the Petition alleged that Texas Utilities Electric Company (TU Electric) had maintained and currently maintains waste disposal sites containing Class I hazardous chemicals on the site in violation of federal and local environmental statutes and regulations, that fires or explosions could occur, that the cooling water to the plant could be contaminated and corrode vital components of the plant's cooling system, and that in violation of 10 C.F.R. § 50.9, TU Electric failed to reveal environmental and safety-related information that was material to the licensing of the Comanche Peak plant. The Petitioner requests that a supplemental environmental impact statement be prepared pursuant to 10 C.F.R. § 51.20(a) and that appropriate action be taken against TU Electric for its violation of 10 C.F.R. § 50.9.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDINGS

The institution of proceedings pursuant to 10 C.F.R. § 2.206 is appropriate only where substantial health and safety issues have been raised. *See Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2

NRC 173, 176 (1975), and *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984).

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

I. INTRODUCTION

On April 5, 1991, Ms. Betty Brink (the Petitioner) filed a request (the Petition) with the Director, Office of Nuclear Reactor Regulation, on behalf of Citizens for Fair Utility Regulation (CFUR), requesting that the U.S. Nuclear Regulatory Commission (NRC) take action with regard to waste disposal sites at the Texas Utilities Electric Company's (TU Electric or Licensee) Comanche Peak Steam Electric Station (CPSES).

Specifically, CFUR requested that a supplemental environmental impact statement be prepared in accordance with 10 C.F.R. § 51.20(a) and that the NRC take action against the Licensee for violation of 10 C.F.R. § 50.9. The Staff has also received Ms. Brink's handwritten, unsigned letter to the Office of the General Counsel, of April 17, 1991; Ms. Brink's handwritten letter to the Director, Office of Nuclear Reactor Regulation, of April 5, 1991; and the attachments to these letters. These attachments include a February 20, 1991 letter and summary of proceedings from the Texas Water Commission (TWC) to Ms. Brink, a list of forty-three names on a document titled "TWC Public Hearing — TU Electric Closure Plan," and a March 8, 1991 letter from TWC to Gerald Johnson of TU Electric.[1] Although CFUR did not explicitly cite section 2.206, it is appropriate to treat this request as a petition filed pursuant to section 2.206.

In my letter of May 23, 1991, I acknowledged receipt of the CFUR Petition and stated that the NRC would take action on the Petitioner's request within a reasonable time. I have now completed my evaluation of the CFUR Petition. I have determined for the reasons set forth below, that no adequate basis exists to take action against the Licensee for the Comanche Peak Steam Electric Station, Units 1 and 2.

[1] In addition to the April 5, 1991 letter, CFUR submitted a letter on August 18, 1991, requesting the Staff to incorporate by reference the Citizens Association for Sound Energy (CASE) July 19, 1991 report on the waste disposal sites at CPSES, and all other letters and supporting documents submitted by CASE at any time regarding this subject, into CFUR's section 2.206 Petition. The letters received by the NRC from CASE on this subject are dated November 15, 1990; and July 19 and 27, and August 3, 9, 19, 23, 29, and 31, 1991. The Staff has examined the information contained in these documents that is relevant to the CFUR assertions contained in its Petition. The Staff concludes that the information provided in these CASE letters does not alter the conclusions reached in this Director's Decision.

II. DISCUSSION

The bases for the Petitioner's request are the assertions contained in the Petition, which are summarized below:

1. Since 1974, Brown & Root, Inc., the principal contractor for CPSES, and several subcontractors have maintained at least fifteen and possibly twenty unlicensed waste dumps containing at least 157 types of toxic chemicals and construction waste, some of which are classified as Class I hazardous waste;
2. Fires or explosions could occur with the current mix of wastes and methane gas;
3. The waste sites are unlined, and three of them are at the edge of or in Squaw Creek Reservoir, which supplies cooling water to the Licensee's nuclear plant and which mixes with surface water used by the public;
4. The Licensee has reported to the TWC that groundwater samples recently taken from a monitoring well near the Squaw Creek Reservoir were found to contain carcinogens and other contaminants above reportable drinking water levels;
5. Toxic or hazardous materials could enter the plant's safety systems or could corrode vital components of the plant's cooling system;
6. The NRC decision to rely on the TWC to monitor the waste dumps was based on incomplete and inaccurate information supplied by the Licensee to the NRC concerning the number and location of dumps and the types and amounts of hazardous material, and moreover, the TWC is not qualified to determine the safety significance of hazardous waste to a nuclear plant;
7. The closure plan submitted by the Licensee to TWC violates 40 C.F.R. § 265.111 because no removal or decontamination has been proposed;
8. The Licensee violated the National Pollutants Discharge Elimination System (NPDES) permit issued by the U.S. Environmental Protection Agency (EPA) for the cooling water intake structure because the Licensee located unauthorized and unreported hazardous waste dumps near the cooling water intake system;
9. The Licensee violated the Resource Conservation and Recovery Act land ban disposal restrictions;
10. The Licensee violated the Texas Administrative Code, § 335.43, by failing to provide proper information regarding the waste dumps;
11. The presence of the waste dumps reflects new information which, in accordance with 10 C.F.R. § 51.53(a), the Licensee was required to report to the NRC before the February 1990 issuance of an operating license for Comanche Peak Unit 1; and

12. The Licensee did not reveal environmental and safety-related information that was material to the licensing of the Comanche Peak plant regarding the presence of unauthorized hazardous waste dumps, thus violating section 50.9.

The Petitioner's allegations raise four basic issues for resolution. First, do the waste disposal sites at CPSES raise safety concerns that require NRC action? (Items 1 through 3, 5, 6.) Second, did the Licensee fail to file any supplemental environmental reports as required by sections 51.53(a) and 51.45(d), and if so, did the Licensee fail to provide information material to the NRC's licensing process in violation of section 50.9? (Items 11 and 12.) Third, does the presence of the waste disposal sites at CPSES require preparation of a supplemental environmental impact statement pursuant to 10 C.F.R. § 51.20? (Items 1 through 3, 5, 6, 12.) Fourth, has the Licensee complied with applicable environmental laws for the licensing, operation, and closure of the waste disposal sites at CPSES? (Items 1 through 4, 7 through 10.) The Staff's evaluation of these four issues raised by the Petitioner is provided below.

A. Safety Concerns

The Petitioner alleges that toxic or hazardous materials present in waste disposal sites at CPSES could cause explosions, or could enter the plant's safety systems, or could corrode vital components of the plant's cooling system. Our understanding of the types of material in the landfills and of the location of the landfills with respect to CPSES safety-related structures, combined with the plant safety features described below, is sufficient to conclude that no substantial concern exists regarding the safe operation of CPSES Units 1 and 2.

The Staff has, as part of its normal review process, reviewed the plant design and operational programs at CPSES with respect to the impact of corrosive substances and fouling agents on safe plant operation. The station service water system (SSWS) is the only safety-related system that utilizes water directly from either the Squaw Creek Reservoir or the safe shutdown impoundment, thus making the water susceptible to direct contact with corrosive agents from the environment. The design features and operating characteristics of the SSWS are described in Chapter 9 of the Licensee's Final Safety Analysis Report and are evaluated by the Staff in its Safety Evaluation Report related to the operation of CPSES, Units 1 and 2 (NUREG-0797 and its supplements). The SSWS is designed to be highly resistant to corrosion, and its integrity is further ensured by a chemical addition system to control corrosion and fouling in the SSWS. The Licensee periodically monitors the quality of the SSWS water to determine the effectiveness of this corrosion-inhibiting system. In a recent inspection (NRC Inspection Report 50-445, 50-446/90-38, dated October 2, 1990), the Staff concluded that the Licensee's program for inspection, testing, and maintenance

of the SSWS was comprehensive in nature and consistent with the requirements of the Technical Specifications and commitments made in response to NRC Generic Letter 89-13. The combination of system design features, corrosion and fouling prevention programs, and the periodic monitoring of system performance and water quality, leads the Staff to conclude that the CPSES Units 1 and 2 are adequately protected from potential corrosive agents from the surrounding environment.

The potential for explosions at the landfill sites that contain hazardous materials, as postulated by the Petitioner, is not a significant safety risk to CPSES. The nearest known landfill containing hazardous material is located approximately 0.5 mile from CPSES safety-related structures, which are designed to withstand substantial external hazards (e.g., earthquakes, tornados, and tornado-generated missiles). The Staff concludes that these safety-related structures would not be adversely affected by the Petitioner's postulated chemical reactions in landfills located this far from the structures.

B. Supplemental Environmental Reports and 10 C.F.R. § 50.9

The Petitioner alleges that the Licensee failed to file supplemental environmental reports as required by 10 C.F.R. § 51.53, and failed to reveal the presence of unauthorized hazardous waste sites material to the licensing process in violation of section 50.9. The Staff concludes that the Licensee informed the Staff of the waste sites in a timely manner before the February 1990 issuance of the operating license for Comanche Peak Unit No. 1. Therefore, we conclude that the Licensee did not fail to provide material information to the NRC during the licensing process as alleged by Petitioner.

Applicants for an operating license must file environmental reports supplying information identified by 10 C.F.R. § 51.45. 10 C.F.R. § 51.53(a). The applicant must report on the status of its compliance with applicable environmental quality standards and requirements, and list all federal permits, licenses, approvals, and other entitlements that must be obtained in connection with a proposed action. 10 C.F.R. § 51.45(d). In two letters to the Staff, dated February 6 and May 17, 1989, the Licensee described the extent and content of the five landfills that were found to contain hazardous substances within the definition provided by 40 C.F.R. § 261.3, the measures proposed by the Licensee to close and monitor these landfills, and the basis for the Licensee's conclusion that the landfills did not adversely impact the environment. Those letters also indicate the status of proceedings before the TWC concerning the operation, licensing, and closure of the waste sites. Consequently, contrary to the Petitioner's allegation, the Licensee did inform the Staff of the waste sites and of their status in a manner permitting timely consideration before issuance of the operating license for

CPSES Unit 1. Accordingly, the Licensee did not violate section 50.9 by failing to provide the Staff with information required by section 51.53(a).

C. Supplemental Environmental Impact Statement

The Petitioner requests the preparation of a supplemental environmental impact statement addressing the waste disposal sites at CPSES. The Staff concludes that 10 C.F.R. § 51.20(a) does not require the preparation of a supplemental environmental impact statement. Section 51.20(a) requires the preparation of an environmental impact statement if a major federal action is pending, or if the Commission, in its discretion, determines that a matter should be covered by an environmental impact statement. Since no major federal action is pending concerning CPSES, and since no circumstances exist that require preparation of an environmental impact statement pursuant to 10 C.F.R. § 51.20(b), the Petitioner has not provided any bases justifying the preparation of a supplemental environmental impact statement.

D. Compliance with Environmental Laws

The Petitioner alleges that the Licensee's operation of waste disposal sites at CPSES has violated federal and local environmental laws. The operation, licensing, and closure of waste disposal sites at CPSES are matters directly within the jurisdiction of the EPA and the TWC, pursuant to delegations by EPA under the Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6926(b). The NRC has no direct authority over the federal or local environmental issues raised by the Petitioner's allegations regarding the number, location, and contents of waste disposal sites at CPSES. The Staff's evaluation of the impact on plant safety of the known disposal sites has been addressed in Section II.A of this Director's Decision. Accordingly, the NRC must rely on EPA and TWC to resolve possible violations of federal and local environmental law. CFUR supplied both EPA and TWC with a copy of its Petition. Should TWC or EPA take any action, or should information be revealed in proceedings before TWC or EPA regarding compliance with NRC requirements, the Staff will review such material to determine whether NRC action is appropriate.

III. CONCLUSIONS

The NRC Staff has reviewed the Petitioner's requests for action in response to the Licensee's alleged violation of section 50.9 and for preparation of a supplemental environmental impact statement pursuant to section 51.20.

The institution of proceedings in response to a request made pursuant to section 2.206 is appropriate only when substantial health and safety issues have been raised. *See Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 176 (1975), and *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). This standard has been applied to determine if any NRC action in response to safety allegations in the Petition is warranted. Our present knowledge of the types of material in the landfills and of the location of the landfills with respect to safety-related structures at CPSES, combined with the Licensee's water quality monitoring program and the Licensee's corrosion and fouling prevention programs, is sufficient to conclude that no substantial concern has been raised regarding the safe operation of CPSES. For the reasons discussed above, no basis exists for taking any action in response to safety allegations in the Petition, as no substantial health or safety issues have been raised by the Petition. Accordingly, no action pursuant to section 2.206 is being taken in this matter.

The Staff concludes that no violation of section 50.9 has occurred. Because the Licensee's submittals provided the information required to be reported by sections 51.45(d) and 51.53(a) approximately 1 year before issuance of the operating license, the Licensee supplied in a timely manner any information regarding the waste disposal sites at CPSES that could be considered material to licensing of CPSES.

The Petitioner's request for a supplemental environmental impact statement is denied. A supplemental environmental impact statement is not required because no proposed major federal action is pending and no other circumstances exist that would require preparation of an environmental impact statement pursuant to section 51.20. No other action is necessary because the landfills at the Comanche Peak site do not represent a substantial safety issue.

The Petitioner's contentions regarding violations of federal and local environmental law raise matters within the jurisdiction of EPA and TWC, and not the NRC. However, should EPA or TWC take any action, or should information be revealed in proceedings before the TWC regarding compliance with NRC requirements, the Staff will review such material to determine whether any NRC action is appropriate.

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

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 18th day of September 1991.

Cite as 34 NRC 209 (1991) DD-91-5

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of **Docket No. 50-445**

TEXAS UTILITIES ELECTRIC COMPANY
(Comanche Peak Steam Electric Station, Unit 1) **September 27, 1991**

The Director, Office of Nuclear Reactor Regulation, denies a Petition filed by Ms. Betty Brink requesting that a proceeding be instituted to determine if the operating license issued to Texas Utilities Electric Company (TU Electric) for the Comanche Peak Steam Electric Station, Unit 1, should be revoked, modified, or suspended. As bases for the request, the Petitioner asserts concerns regarding the continued failure of Borg-Warner check valves at Comanche Peak and the failure of TU Electric to take adequate corrective actions to resolve these check-valve failures.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDINGS

The NRC will not institute a show-cause proceeding where the petition fails to raise any substantial health or safety issue.

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

I. INTRODUCTION

On November 20, 1990, Ms. Betty Brink (the Petitioner) filed a request (the Petition) with the Executive Director for Operations in accordance with section 2.206 of Title 10 of the *Code of Federal Regulations* (10 C.F.R. § 2.206)

on behalf of the Citizens for Fair Utility Regulation (CFUR) for action to be taken regarding the Comanche Peak Steam Electric Station. Specifically, CFUR requested that a proceeding be instituted or such other action as may be proper to determine if the operating license for the Comanche Peak Steam Electric Station should be revoked, modified, or suspended. The Petition argued that "issues of safety" exist at Comanche Peak Steam Electric Station, based on CFUR assertions that (1) Borg-Warner check valves continue to fail and have never been able to perform their design function at the Comanche Peak Steam Electric Station; (2) the safety of certain Borg-Warner check valves installed at Comanche Peak is questionable because of the use of internal parts in the valves from suppliers who were not adequately qualified and the possible use of questionable replacement parts; (3) the Texas Utilities Electric Company (the Licensee) failed to take adequate corrective actions to resolve the Borg-Warner check valve failures at the Comanche Peak Steam Electric Station; (4) the competence and integrity of the Texas Utilities Electric Company's management is questionable; and (5) there was a failure to provide adequate documentation regarding the adequacy of the Borg-Warner check valves at the Comanche Peak Steam Electric Station.

In my letter of December 24, 1990, I acknowledged receipt of the CFUR Petition and stated that the U.S. Nuclear Regulatory Commission (NRC) would take action on the Petitioner's request within a reasonable time. I have now completed my evaluation of the CFUR Petition. I have determined, for the reasons set forth below, that no adequate basis exists to institute a proceeding, or for other such action to revoke, modify, or suspend the license for the Comanche Peak Steam Electric Station, Unit 1.

II. BACKGROUND

In support of the request the Petitioner cites a series of events involving Borg-Warner check valves that have occurred at Comanche Peak. The Petitioner used these events, described below, to identify a number of the issues in the Petition.

During hot functional testing performed before the plant was licensed, two events (one on April 23, 1989, and another on May 5, 1989) occurred at the Comanche Peak Steam Electric Station involving the flow of feedwater back through Borg-Warner check valves installed in the auxiliary feedwater (AFW) system. During these events, manual isolation valves were operated concurrently when they should have been operated sequentially. This action resulted in secondary system water flowing from the steam generators through stuck open Borg-Warner check valves in the AFW system to the condensate storage tank. During subsequent evaluations, both the Licensee and the NRC Staff found that the bonnet-disc assemblies in the Borg-Warner check valves in the AFW system

had been improperly adjusted in the vertical elevation. This improper adjustment had allowed the discs to lodge under the upper seat surface such that the valves could not fully close. The NRC sent an Augmented Inspection Team (AIT) to independently investigate the events and determine the root causes.

During the evaluations following these two events, the investigators found that a swing arm (used in the check valves to connect the valve disc to the bonnet) had failed in a Borg-Warner check valve in the Station Service Water System. This failure raised concerns regarding use of commercial-grade parts in safety-related systems. Responding to this concern, the NRC inspected BW/IP International, Incorporated, the supplier of the Borg-Warner check valves to Comanche Peak. The inspection was conducted in September 1989, and the report was issued on January 12, 1990.

On January 5, 1990, during postwork testing at Comanche Peak Steam Electric Station Unit 1, the Licensee radiographed Borg-Warner check valves installed in the steam supply to the turbine-driven AFW system and found one valve with its disc lodged under the seat, while one other valve disc was laying off, but not lodged under, the seat.

In April and May 1990, during the startup test program after licensing and before commercial operation, feedwater flowed back through the Borg-Warner check valves in the AFW system on three separate occasions. The Licensee subsequently performed tests and found that the feedwater had flowed back through the check valves because of low differential pressure across the check valves. The Licensee found that the check valves were not stuck open.

An additional event involving Borg-Warner check valves occurred on April 19, 1991, which was after the Petition was filed. The event involved one of the Borg-Warner check valves in the AFW system at Comanche Peak Steam Electric Station that stuck open during testing of a downstream motor-operated isolation valve. This testing was conducted while the plant was shut down for a maintenance outage. The Petitioner was informed of the event by the NRC Staff.

III. DISCUSSION

The basis for the Petitioner's request is its assertion that the information cited in nineteen documents, attached to the Petition, identifies a wide range of "issues of safety" at the Comanche Peak Steam Electric Station, including the following: (1) check valves continue to fail and have never been able to perform their design function at the Comanche Peak Steam Electric Station; (2) certain Borg-Warner check valves installed at the Comanche Peak Steam Electric Station are of questionable safety because they contain internal parts from suppliers who were not adequately qualified and possibly include questionable replacement

parts; (3) the Licensee failed to take adequate corrective actions to resolve the Borg-Warner check valve failures at the Comanche Peak Steam Electric Station; (4) the competence and integrity of the Licensee's management is questionable; and (5) adequate documentation was not provided to support the adequacy of the Borg-Warner check valves at the Comanche Peak Steam Electric Station. The NRC will also address a number of miscellaneous issues raised in CFUR's Petition.

The NRC Staff acknowledges that the performance of Borg-Warner check valves installed in Comanche Peak has been poor. Our inspection program and operations evaluation program are aimed at finding such poor equipment performance problems and requiring the Licensee to take corrective actions. These regulatory processes have been followed by the Staff in the case of Comanche Peak, and the results are discussed in the following sections.

Each of the specific issues raised by the Petitioner is characterized below, followed by the Staff's evaluation.

A. Check Valves Continue to Fail and Have Never Been Able to Perform Their Design Function

The Petitioner contended that the check valves have leaked on three different occasions: April and May of 1989 during hot functional testing at Comanche Peak Steam Electric Station Unit 1; on January 5, 1990, before licensing; and, in April and May 1990, during the startup test program. The Petitioner claimed that the continued leakage indicates that the check valves have failed and continue to be jammed open in such a way that they are unable to perform their design function. The Petitioner also stated a concern regarding ongoing disassembly of Borg-Warner check valves at the Comanche Peak Steam Electric Station to correct the leaking.

In addressing this contention, a brief explanation of the safety function[1] of check valves is helpful. Piping systems often have multiple branches that supply liquid or vapor to other components in the plant (such as tanks, heat exchangers, steam generators, and the reactor vessel). Check valves are installed in these piping systems to prevent the liquid or vapor from one of the branches from flowing backwards through another branch of the piping system while the system operates. This design ensures that the liquid or vapor will continue to flow to the component being supplied in sufficient quantity for the supplied component to

[1] The Petitioner refers to the "design function" of check valves. Check valves have several design functions, including allowing forward flow and preventing reverse flow. The Staff is primarily concerned with the safety functions of check valves, in line with its responsibility to ensure the public health and safety. In addition, the Petition deals with issues that relate to the safety function of the Borg-Warner check valves, and not the entire scope of design functions. The Staff will, because of the two aforementioned reasons, only address the safety function of the Borg-Warner check valves in its response.

perform its own safety function. When a check valve cannot prevent sufficient backflow during system operation to ensure that supplied components have adequate flow to perform the supplied components' safety function, the check valve is considered to have failed to perform its safety function.

The Petitioner contends that the events that occurred in April and May 1989 during hot functional testing of the Comanche Peak Steam Electric Station, Unit 1, were the result of failures of Borg-Warner check valves. The Staff also considers these two events to be related to failures of Borg-Warner check valves. However, these problems with the Borg-Warner check valves were found and corrected during the testing program before the plant received its license or began to operate. These problems, therefore, did not present a safety concern.

In NRC AIT Report 50-445/89-30, 50-446/89-30 of July 10, 1989, the Staff discussed the root causes and contributing factors for the failure of the Borg-Warner check valves in April and May 1989. Two significant issues raised in this report concerning the check valve failures were (1) the root cause of the valve disc jamming under the valve seat as a result of vertical misalignment of the check valve disc because of inadequate maintenance procedures, and (2) a lack of postmaintenance testing to ensure that the Borg-Warner check valves, when reassembled, would perform their safety function before the associated system is placed back into operation, a contributing cause to the failure of the check valves. The Licensee's corrective actions in response to these issues were stated in letters to the NRC, TXX-89596[2] of August 18, 1989, and TXX-89744 of October 14, 1989. The Licensee revised the reassembly procedures for Borg-Warner check valves and provided for postwork testing of Borg-Warner check valves. In addition, to ensure that the check valves were aligned properly and could perform their safety function, the Licensee tested all Borg-Warner check valves in the Comanche Peak Steam Electric Station, Unit 1, and common systems, using either reverse-flow testing (which ensures that the check valves prevent a sufficient amount of backflow) or radiography. The Licensee performed these corrective actions to provide assurance that, following work on Borg-Warner check valves, any problems are identified and corrected before the affected system is restored to service.

The Staff reviewed and evaluated the Licensee's actions specified in the referenced letters. The Licensee's actions were found to be appropriate and effective in providing reasonable assurance that the Borg-Warner check valves will perform their safety function. As a result of these corrective actions, no Borg-Warner check valve has failed to perform its safety function with its associated system in service during plant operation. The Staff has documented its evaluations in Inspection Reports (IR) 50-445, 50-446/89-30, 89-52,

[2]The Licensee uses this numbering scheme to identify correspondence.

89-71, 89-73, 90-03, and 90-09. Areas of inspection included witnessing the testing, corrective maintenance and reassembly of Borg-Warner check valves, and performing followup inspections on open items resulting from the AIT report. Based on the NRC inspections and the Licensee's corrective actions, the Staff has determined that the Licensee has adequately addressed the root causes of the April and May 1989 events.

The Petitioner contends that the January 1990 event also indicated a failure of Borg-Warner check valves to perform their safety function. This event occurred while the Licensee was conducting postmaintenance radiography as part of the corrective action program resulting from the April and May 1989 events. The Licensee found two Borg-Warner check valves in the main steam supply to the turbine-driven AFW system in abnormal configurations. The abnormal configurations could have rendered one of the valves inoperable, which indicates that the valve may not have performed its safety function if the plant had been licensed and operating. In June 1989, the Licensee had performed maintenance on this valve, but had not conducted the postmaintenance testing until January 1990. The Staff considers this event to be an extension of the April and May 1989 events, since the Licensee found the abnormal conditions as part of the corrective actions to verify before plant licensing that all Borg-Warner check valves were aligned properly and could perform their safety function, as described above. The Licensee evaluated this event, as documented in Technical Evaluation WC-90-79 (described in Staff IR 50-445, 446/90-03), and determined that forward- and reverse-flow testing, and radiographic testing, of all Borg-Warner check valves verified that the remaining Borg-Warner check valves would not exhibit the same problem. In Staff IR 50-445, 446/90-09, the Staff documented its evaluation of the Licensee's actions and noted that the two valves found in the abnormal configurations had been disassembled, inspected, reassembled, and successfully air tested in the reverse-flow direction. Based on the information in IR 50-445, 446/90-09, the Staff found that the Licensee's corrective action for this event was adequate to ensure that the two affected Borg-Warner check valves would perform their safety function during plant operation.

The Petitioner contended that the April and May 1990 events, involving leakage back through Borg-Warner check valves in the AFW system, also indicated a failure of Borg-Warner check valves to perform their safety function. In the Licensee's letters TXX-90172 of April 27, 1990, and TXX-90188 of May 18, 1990, the Licensee stated that the leakage through the AFW check valves was minor, and that there was assurance the AFW check valves would perform their safety function because of the required surveillance testing and rework with postwork testing conducted during the transition from operational Modes 6 through 1. In addition, the Licensee conducted tests and monitored the temperature of the AFW piping to quantify the leakage rates across the AFW

check valves. As a result, the Licensee found that the check valves had not hung open. The Licensee concluded that the check valves would perform their primary safety function of stopping backflow during an upstream pipe break. The Licensee did consider these events to be an operational concern because actions were required by the operators to minimize the heating of AFW piping caused by the AFW check valve leakage during plant startups. The Licensee subsequently modified the Borg-Warner check valves in the AFW system to reduce the operational effect on the operators, by adding a counterweight to the disc to enhance the seating characteristics of the valve.

The Staff has reviewed and evaluated the Licensee's assertions and corrective actions stated in the referenced letters. The Staff agrees with the Licensee's assessment that the backleakage through the check valves in the AFW system during the April and May 1990 events was minor. Based on NRC inspection reports, the Staff considers the Licensee's corrective actions appropriate to address the operational concerns. The Staff documented its inspections in IRs 50-445, 446/90-13, 90-19, 90-22, and 90-45. The Staff inspected the test program to quantify reverse flow through the AFW check valves and evaluated the safety implications of the April and May 1990 events. Based on NRC inspections, the Staff determined that the minor backleakage has had no adverse effect on AFW system operability[3] and does not affect the safety function of the valves.

The Petitioner also cited a general concern regarding ongoing disassembly of Borg-Warner check valves at the Comanche Peak Steam Electric Station to correct the leakage problems. The Petitioner cites as a Staff concern, stated in the AIT Report (NRC IR 50-445, 446/89-30), that disassembly and reassembly of Borg-Warner check valves may have contributed to the problems during hot functional testing.

The Licensee evaluated this issue and determined that the practice or frequency of disassembling check valves to allow their use as flush and drain paths, which was the actual concern identified by the AIT, did not contribute to the failure of the Borg-Warner check valves. In the Licensee's response to the AIT, they stated that the failures of the Borg-Warner check valves resulted instead from inadequate installation procedures. The Licensee documented its response to this issue in a Texas Utilities Electric Company memorandum, CPSES-9001379 (discussed in NRC IR 50-445, 446/90-03).

The Staff reviewed and evaluated the Licensee's response to this issue. The Staff documented its inspections in IRs 50-445, 446/89-30, 89-73, and 90-03. The Staff agreed with the Licensee's evaluation that the frequency

[3] "Operability" is defined in the Comanche Peak Steam Electric Station Technical Specifications as the ability of a system, subsystem, train, component, or device to perform its specified function(s).

of disassembly of Borg-Warner check valves did not contribute to the AFW backflow events.

The April 18, 1991 event (an event that occurred after receipt of the Petition) involved one of the eight Borg-Warner check valves in the AFW system. The check valve involved was in the flow path used to conduct Motor-Operated Valve Testing (MOVAT) of an isolation valve downstream of the affected Borg-Warner check valve. The Licensee submitted a Licensee Event Report (LER) of May 21, 1991, that documented its analysis, evaluation, and corrective actions.

After testing a downstream motor-operated valve (MOV) during a maintenance outage, the Licensee conducted reverse-flow testing of the associated AFW Borg-Warner check valve, in accordance with its corrective action program for the 1989 events. During the reverse-flow testing, the Licensee identified excessive reverse flow through the check valve. The Licensee radiographed the check valve and determined that the valve was stuck fully open with the disc fully raised. This deficient condition is different from the failures of Borg-Warner check valves identified in April and May 1989, when the disc was jammed under the valve seat. In addition, the Licensee found the April 18, 1991, condition during postwork testing of a specific valve, and not during an integrated functional test as was the case during the April and May 1989 events. After disassembling the valve, the Licensee discovered that the counterweight, installed to improve the seating characteristics of Borg-Warner check valves, had become lodged above a casting remnant,[4] causing the failure during reverse-flow testing. The Licensee disassembled and inspected the other seven check valves in the AFW system, and none of the other valves had this casting remnant. The Licensee removed and inspected the remnant, reassembled the valve, and successfully forward-flow- and reverse-flow-tested the valve. To verify that no other failure mechanism contributed to this event, the Licensee tested the other AFW isolation valves in a manner similar to the tests of MOVs that initiated the event. The Licensee also conducted reverse-flow testing on all eight AFW check valves to ensure that the valves would perform their safety function before restoring the AFW system to operation.

The Staff has evaluated this event and documented its review in IR 50-445, 446/91-14. The Staff concluded that because the AFW piping was not observed to have an elevated temperature before the maintenance outage, it is unlikely that the Borg-Warner check valve with the casting defect was lodged open before the Licensee tested the MOVs. Therefore, it is likely that the affected Borg-Warner check valve would have performed its safety function in the operating period before the maintenance shutdown. Furthermore, the Licensee identified the condition during postwork testing that was performed as a result of the corrective

[4] This casting remnant was an approximately 1/8-inch-wide ridge left on the valve throat at the upper part of the disc cavity following valve manufacture.

action program implemented to address the 1989 failures. This corrective action program enabled the Licensee to identify the deficient condition and correct it before returning to operation after the maintenance shutdown.

The NRC Staff also evaluated this event in the context of the preceding events cited by the Petitioner. This most recent event resulted from a deficient condition isolated to one Borg-Warner check valve, and therefore provides no indication of a generic deficiency in the design or manufacture of Borg-Warner check valves.

In summary, the NRC Staff inspected the Licensee's maintenance and testing of Borg-Warner check valves at the Comanche Peak Steam Electric Station. The Staff also assessed the Licensee's corrective actions in response to the events in April and May 1989, January 1990, April and May 1990, and April 19, 1991. The Staff has concluded that the Licensee has satisfactorily addressed the issues raised by the Petitioner and that these issues do not present a substantial health or safety issue.

B. The Questionable Safety of Borg-Warner Check Valves Because of Internal Parts from Suppliers Not Adequately Qualified

The Petitioner contends that questions exist regarding the safety of Borg-Warner check valves at the Comanche Peak Steam Electric Station because of certain swing arms that may be installed in the Borg-Warner check valves. The Petitioner cites as evidence the problems found by the NRC during a vendor inspection at BW/IP International, Incorporated, in September 1989, and reported in IR 99900030/89-01 of January 12, 1990.

The NRC inspected BW/IP as a result of the failure of a swing arm in the service water system at the Comanche Peak Steam Electric Station and the Licensee's subsequent filing of a construction deficiency report in accordance with 10 C.F.R. § 50.55(e) for the failed Borg-Warner check valves in April and May 1989. The inspection determined that BW/IP activities failed to meet certain NRC requirements and BW/IP procedures. In particular, in IR 99900030/89-01, the Staff found that BW/IP did not adequately document the qualification of certain swing arms installed in Borg-Warner check valves. However, since TU Electric remains responsible for safety-related equipment at Comanche Peak, independent of Staff activities at BW/IP, the Licensee developed a test program to evaluate the acceptability of the swing arms installed in Borg-Warner check valves at the Comanche Peak Steam Electric Station. The Licensee's program, described in TXX-89596 of August 18, 1989, with modifications and additional details provided in TXX-89860 of December 20, 1989, involved testing conducted by APTECH Engineering Services, Inc., on all Borg-Warner check valves installed in the Comanche Peak Steam Electric Station, Unit 1, and common systems to determine if

the swing arms are suitable for use in safety-related systems. During the test program, some of the swing arms that were manufactured using a sand-casting method were found unacceptable and were replaced with swing arms manufactured using investment-casting methods. The investment-cast swing arms successfully passed the required tests and inspections for unrestricted operation. All replacement sand-cast swing arms installed in Unit 1, including some swing arms from Unit 2, were also tested using the APTECH test program. APTECH found these sand-cast swing arms to be suitable for use in safety-related systems for at least three fuel cycles. The Licensee committed, in letters TXX-90139 of April 9, 1990, and TXX-90149 of April 12, 1990, to replace all sand-cast swing arms with investment-cast swing arms, procured with acceptable quality assurance programs, before starting up from the third refueling outage.

The Staff reviewed and evaluated the Licensee's testing program and replacement of sand-cast swing arms and found that the program is appropriate for determining the suitability of swing arms for use in safety-related systems. The Staff also found that there is reasonable assurance that the remaining sand-cast swing arms are acceptable for three fuel cycles. The NRC Staff inspections are documented in IR 50-445, 446/89-30, 89-64, 89-73, and 90-22. The Staff found the Licensee's program to evaluate the continued use of sand-cast swing arms acceptable as documented in NUREG-0797, "Safety Evaluation Report Related to the Operation of Comanche Peak Steam Electric Station, Units 1 and 2," Supplement No. 24, April 1990. The Staff concluded in the Safety Evaluation Report that the Licensee's commitment to replace all sand-cast swing arms with investment-cast swing arms was appropriate.

The Staff reviewed the programs for testing and replacing the swing arms in Borg-Warner check valves. The Staff concluded that the Licensee satisfactorily addressed the issues raised by the Staff and cited by the Petitioner. Therefore, these issues do not present a substantial health or safety issue. Subsequent to the filing of this Petition, the Licensee discussed, at a public meeting held on June 12, 1991, in Rockville, Maryland, their technical bases for a finding that the sand-cast swing arms in Borg-Warner check valves are acceptable for long-term operation. The Licensee subsequently submitted its detailed justification by letter dated June 21, 1991 (TXX-91229), based on extensive testing conducted by Southwest Research Institute on arms removed from Comanche Peak Steam Electric Station Unit 1 and common-system Borg-Warner check valves. The NRC Staff concluded that the sand-cast Borg-Warner check valve swing arms still installed in Comanche Peak Steam Electric Station Unit 1 and common systems are acceptable for long-term service. This conclusion, documented in NRC letter dated September 16, 1991, is based on examination of actual material properties of sand-cast swing arms removed from service from Borg-Warner check valves during the APTECH testing described above, which demonstrated

that the criteria used during the APTECH testing adequately screened out unacceptable swing arms.

C. Texas Utilities Electric Company Failed to Take Adequate Corrective Actions to Resolve the Borg-Warner Check Valve Failures

The Petitioner contends that the NRC objected to most of the Licensee's initial plans to correct the check valve problem before loading the fuel. The Petitioner cited an October 27, 1989 NRC report[5] as containing these objections. The Petitioner then cited a specific Staff concern regarding testing methods used on AFW piping that the NRC identified in a letter of September 14, 1989.

The NRC issued the October 27, 1989 letter to notify the Licensee of a noticed meeting and enforcement conference. The enclosure to this letter listed the potential violations of NRC requirements identified by the AIT (discussed above) for problems that led to the check valve failures in April and May 1989. The Staff viewed the May 1989 event as nearly identical to the April event and determined that the Licensee's ineffective corrective actions following the April event could justify the issuance of a Notice of Violation (NOV). In the Staff's letter of January 25, 1990, which attached the NOV that followed, the Staff made clear that the Licensee's corrective actions taken in response to the April 1989 event should have prevented recurrence of the May 1989 event.

The Petitioner is correct in stating that the Staff letters of October 27, 1989, and January 25, 1990, document the Licensee's ineffective corrective actions in response to the April 1989 event. However, the Staff has subsequently reviewed and evaluated the overall issue of the adequacy of the Licensee's corrective actions to correct the problems with Borg-Warner check valves at the Comanche Peak Steam Electric Station. The Licensee has taken extensive corrective action to address the Borg-Warner check valve issues. The Licensee documented these corrective actions in letters TXX-89424 of June 19, 1989; TXX-89596 of August 18, 1989; TXX-89744 of October 14, 1989; TXX-89849 of December 21, 1989; TXX-90139 of April 9, 1990; TXX-90149 of April 12, 1990; TXX-90172 of April 27, 1990; TXX-90188 of May 18, 1990; TXX-90215 of June 18, 1990; TXX-90253 of July 27, 1990; and TXX-91076 of March 22, 1991.

The Staff has reviewed and evaluated the Licensee's responses to all the issues identified following the failures of Borg-Warner check valves at the Comanche Peak Steam Electric Station and has concluded that the Licensee has taken adequate corrective actions to resolve these issues. The Staff has documented its evaluations in IRs 50-445, 446/89-30, 89-52, 89-64, 89-71, 89-73, 89-75, 90-03, 90-09, 90-13, 90-19, 90-22, 90-45, and 91-05.

[5] The cited reference is not a "report," in that it does not describe a separate inspection or findings, but is a letter identifying potential violations based on a prior inspection report.

The Petitioner takes exception to the Staff's ultimate acceptance in IR 50-445, 446/90-03 of the Licensee's use of ultrasonic inspections to verify that no plastic deformation occurred in AFW piping. The Petitioner's exception was based on the Staff's concern expressed in the Staff's September 14, 1989 letter that changes in piping (the specific type referred to by the Licensee as "plastic deformation") cannot be determined without knowing the original configuration of the piping. In response to this Staff concern, the Licensee revised its use of ultrasonic and radiographic testing to ensure that the piping met minimum thickness requirements and that no deteriorative damage had occurred. The Licensee provided its description of this approach in TXX-89744, of October 14, 1989.

The Staff has reviewed and evaluated the Licensee's evaluations and inspection program for identifying any damage to the AFW piping at the Comanche Peak Steam Electric Station, Unit 1. The Staff considers the Licensee's evaluations and inspection program sufficient to determine the adequacy of the AFW piping for the remainder of plant life. The Staff documented its inspections of the issue of AFW piping damage raised by the Petitioner in IRs 50-445, 446/89-30, 89-73, 89-75, and 90-03.

The Staff reviewed the adequacy of the Licensee's corrective action with regard to the Borg-Warner check valve failures and has concluded that the issues raised by the Petitioner have been satisfactorily addressed by the Licensee and do not present a substantial health or safety issue.

D. The Questionable Competence and Integrity of Texas Utilities Electric Company's Management

The Petitioner contends that serious questions are raised about the competence and integrity of the Licensee's officials and their commitment to the safe operation of a nuclear facility. The Petitioner bases the contention on the following two assertions. The first assertion is that the Licensee's management "made commitments cynically simply to expedite the licensing" of the Comanche Peak Steam Electric Station, Unit 1. The second assertion is that the Licensee's management has made misleading statements to the NRC Staff that the Borg-Warner check valves would be corrected and able to perform their design function before licensing.

The Petitioner's contention that the Licensee's management "made commitments cynically simply to expedite the licensing" of the Comanche Peak Steam Electric Station, Unit 1, implies that the Licensee's management made commitments without intending to comply with the commitments. The Licensee's corrective actions and commitments are provided in letters TXX-89424 of June 19, 1989; TXX-89596 of August 18, 1989; TXX-89744 of October 14, 1989; TXX-89849 of December 21, 1989; TXX-90139 of April 9, 1990; TXX-90149

of April 12, 1990; TXX-90172 of April 27, 1990; TXX-90188 of May 18, 1990; TXX-90215 of June 18, 1990; TXX-90253 of July 27, 1990; and TXX-91076 of March 22, 1991. The Staff has reviewed and evaluated the Licensee's responses to all the issues identified following the failures of Borg-Warner check valves at the Comanche Peak Steam Electric Station, including technical, operational, and management issues. The Staff has determined that the Licensee has adequately met its commitments, and that there is no justification to support the contention that the Licensee made its commitments without intending to meet those commitments. The Staff has documented its evaluations in IRs 50-445, 446/89-30, 89-52, 89-64, 89-71, 89-73, 89-75, 90-03, 90-09, 90-13, 90-19, 90-22, 90-45, and 91-05.

The Petitioner's contention that the Licensee's management has made misleading statements to the Staff that the Borg-Warner check valves would be corrected and perform their design function before licensing is based on the Petitioner's assertion that the Borg-Warner check valves at the Comanche Peak Steam Electric Station continue to fail and have never been able to perform their design function. Based on its review and evaluation as discussed in response to Contention (A) above, the Staff believes that the Borg-Warner check valves at the Comanche Peak Steam Electric Station will perform their safety function. The Staff finds, therefore, that this contention is not supported and that the Licensee's management has corrected the identified problems with the Borg-Warner check valves at the Comanche Peak Steam Electric Station, and there is reasonable assurance that the Borg-Warner check valves will perform their safety function. The Staff considers this contention to be without merit.

The Petitioner questioned the competence and integrity of the Licensee to operate a nuclear facility. The Staff evaluated the Licensee's management in two special inspections, the Operational Readiness Team Inspection (IR 50-445, 446/89-200) conducted before licensing, and a Special Performance Assessment (IR 50-445, 446/90-20) conducted before the facility exceeded 50% of rated power. Based on these inspections, the Staff found the Licensee's management responsive, sound, and reliable. The Staff further found that the Licensee's staff had demonstrated the proper concern to safely operate the reactors and had successfully made the transition from a construction- to an operations-based organization. The Staff has continued to evaluate the Licensee management's ability to operate the Comanche Peak Steam Electric Station and has found the Licensee's management acceptable. The most recent summary of the Staff's assessment is provided in the Systematic Assessment of Licensee Performance (SALP) Report 50-445, 446/90-46 of May 10, 1991.

The Staff reviewed the Licensee's resolution of the issues related to Borg-Warner check valves at the Comanche Peak Steam Electric Station, has assessed the Licensee's management, and concludes that the Licensee's management has adequately implemented its commitments and has the proper concern to safely

operate the Comanche Peak Steam Electric Station. The Staff, therefore, finds that the Petitioner's contention is without merit and does not present a substantial health or safety issue.

E. Failure to Provide Adequate Documentation Regarding the Acceptability of Borg-Warner Check Valves

The Petitioner contends that the Licensee and its vendors consistently have failed to provide documentation to support the adequacy of Borg-Warner check valves at the Comanche Peak Steam Electric Station. The Petitioner cites specific examples, including one issue regarding the Licensee's revision of the root cause of a 1985 event that was a precursor to the April and May 1989 events and several issues regarding BW/IP International, Incorporated.

Citing from IRs 50-445, 446/89-73 and 89-84, the Petitioner contends that the Staff inspectors determined that there was "no documentation" to support the Licensee's revision of a root-cause analysis regarding a failed Borg-Warner check valve in 1985. The Staff has reviewed the IRs cited by the Petitioner and found that the IRs cite extensive documentation provided by the Licensee to support the basis for the revised root cause of the 1985 failure of a Borg-Warner check valve. The documentation included two Failure Analysis Reports, analytical documentation, vendor information, a Problem Report, and two internal Licensee memoranda. However, this documentation did not include a record of one of the Licensee's discussions with the vendor, BW/IP International, Incorporated. This discussion led to the Licensee reevaluating the original, and ultimately correct, root cause of a 1985 event that was a precursor to the April and May 1989 events. Thus, the Licensee had provided extensive documentation to justify its determination of the revised root cause for the 1985 precursor event, even though the revised root cause was incorrect. The Staff issued a violation related to this event because the Licensee did not take adequate corrective action to follow up on the original, and ultimately correct, root cause, not for lack of documentation. Therefore, the Staff concludes that the Petitioner's contention is without merit.

The Petitioner's other examples relate to a more general contention regarding lack of documentation by the check valve vendor, BW/IP International, Incorporated, to support the quality assurance of swing arms installed in Borg-Warner check valves for use in safety-related systems. The Petitioner identified the examples as being contained in IR 99900030/89-01. In the subject IR, the Staff identified the lack of documentation as a nonconformance with NRC regulations. The vendor evaluated its programs and identified corrective actions to ensure that future internal parts would include an adequate assurance of quality, with documentation to certify that the parts are suitable for use in safety-related

systems. The vendor discussed its corrective actions in letters of February 22, 1990, and May 4, 1990.

The Staff has evaluated the effect of this lack of documentation. The Staff has determined that, because the Licensee's program for evaluating the suitability of sand-cast swing arms in Borg-Warner check valves at Comanche Peak Steam Electric Station is acceptable, the lack of documentation at BW/IP International, Incorporated, does not present a substantial health or safety issue at the Comanche Peak Steam Electric Station.

F. Other Concerns Raised by the Petitioner

The Petitioner identified the following additional issues:

1. Body-to-Bonnet Leakage in Borg-Warner Check Valves

The Petitioner implied that body-to-bonnet leakage in Borg-Warner check valves at the Comanche Peak Steam Electric Station is equivalent to the seat failures experienced in April and May of 1989. The Petitioner referred to IR 50-445, 446/90-03 as stating "that several of the check valves continued to leak." The Petitioner also contended that the corrective actions for the body-to-bonnet leakage are questionable.

Check valves have a safety function of preventing reverse flow by having a disk sit against a seating surface (both the disk and seat are inside the valve body). In the Borg-Warner check valves that failed at the Comanche Peak Steam Electric Station, the disk is attached to a bonnet on top of the valve. The bonnet is bolted into the upper portion of the valve body, and, in conjunction with a ring that seals the small gap between the body of the valve and the edges of the bonnet, closes the valve body from the external environment. Thus, because leakage between the body and the bonnet ("body-to-bonnet leakage") is not in the flow path through the valve, it does not affect the safety function of the valve. In IR 50-445, 446/90-09, the Staff also stated that because the body-to-bonnet leaks do not affect the operability of the check valves, there is no safety concern with the body-to-bonnet leakage. Thus, body-to-bonnet leakage is not related to leakage past the seating surface of the Borg-Warner check valves, and thus is not related to a failure of the Borg-Warner check valves to perform their safety function.

In IR 50-445, 446/90-03, the Staff stated that the Licensee had identified the body-to-bonnet leakage in Borg-Warner check valves. The referenced IR discusses the Licensee's actions to correct the leakage, including honing and hot

torquing.[6] The Staff reviewed and evaluated the Licensee's corrective actions and determined that the actions were effective in correcting the body-to-bonnet leakage with the exception of minor leakage on two of the Borg-Warner check valves at the Comanche Peak Steam Electric Station. The Staff has determined that the remaining minor leakage raises no safety concerns. In IRs 50-445, 446/90-03 and 90-09, the Staff documented the Licensee's corrective actions, and the Staff's evaluation of the Licensee's corrective actions.

Based on the Staff's inspections which evaluated the significance of, and corrective actions related to, body-to-bonnet leakage in Borg-Warner check valves at the Comanche Peak Steam Electric Station, the Staff has concluded that the Licensee has satisfactorily addressed the issues raised by the Petitioner. Therefore, these issues do not present a substantial health or safety issue.

2. *Use of Hydraulic Lifts on Main Feedwater Isolation Valves*

The Petitioner contends that the Licensee used a hydraulic lifting device to help operators lift the Main Feedwater Isolation Valve (MFWIV) discs off their seats on April 27, 1990. On May 9, 1990, at a public meeting with the Staff, the Licensee discussed this issue, and the Staff identified a concern about possible damage to the MFWIVs. The Licensee evaluated the effect of using hydraulic lifting devices on MFWIVs and determined that the MFWIVs would not be overstressed. The Licensee provided its evaluation in letter TXX-90188 of May 18, 1990.

The Staff reviewed the Licensee's evaluation regarding this concern and found it acceptable. The Staff documented its inspections in IRs 50-445, 446/90-19 and 90-20.

The Staff conducted these inspections to determine if the MFWIVs could be damaged by the use of hydraulic lifting devices. Based on these inspections, the Staff concludes that the Licensee has satisfactorily addressed the issues raised by the Staff and identified by the Petitioner and that these issues do not present a substantial health or safety issue.

3. *Availability of the Report of the Vendor Inspection at BW/IP International, Incorporated*

The Petitioner contends that the availability of the January 12, 1990 report of the vendor inspection at BW/IP International ("vendor inspection report"),

[6] "Hot torquing" is the tightening of the nuts that hold the bonnet in the body of Borg-Warner check valves at hot (normal-operating-temperature) conditions. When hot, the body, bonnet, and studs onto which the nuts are being tightened all expand. When tightened at hot conditions, the expanded studs allow additional tightening of the nuts, so that when the valve cools, the studs contract, increasing the pressure on the body-to-bonnet seal.

raised serious questions regarding the integrity of the licensing process and the safety of Comanche Peak Steam Electric Station, Unit 1. The Petitioner contends that Region IV did not receive the referenced report until October 16, 1990; therefore, the Petitioner had no way of knowing about the report until almost 10 months after the licensing decision. The Petitioner further contends that serious questions about the integrity of the licensing process were raised because the vendor inspection report was in existence less than a month before Comanche Peak Unit 1 was licensed and Region IV may not have known about the referenced report at the time of licensing.

The Staff has evaluated the Petitioner's contention. The referenced report was distributed through the NRC's internal distribution system (Regulatory Information Distribution System [RIDS]) to numerous offices and to the Public Document Room. The distribution code identified for the Inspection Report, RIDS IE:09, includes all regions, including Region IV. The distribution made through this system is made within approximately 2 weeks of issuance, as evidenced by receipt of the vendor inspection report in the PDR on February 1, 1990. Thus, the referenced report was available to CFUR, as it was to the rest of the general public, shortly after it was issued.

At the time the Vendor Inspection Report was issued and throughout the licensing of Comanche Peak Unit 1, the inspection and licensing activities at Comanche Peak were being managed by the Associate Director for Special Projects (ADSP), Office of Nuclear Reactor Regulation, and not Region IV. The Vendor Inspection Report was received by the appropriate ADSP inspection Staff, all of whom were located on site, and by ADSP management and licensing Staff at NRC Headquarters, Rockville, Maryland, shortly after it was issued. The ADSP licensing and inspection staff evaluated the information contained in the vendor inspection report prior to licensing Comanche Peak Unit 1. Since the vendor inspection report was available and was evaluated by the appropriate NRC Staff prior to the licensing decision, the Staff considers the underlying premise for the Petitioner's contention to be invalid.

The vendor inspection evaluated the quality assurance certification process at BW/IP and would not have directly determined the safety of the swing arms actually installed at Comanche Peak. The Licensee's test program, as discussed in detail in Section B of this response, tested all of the swing arms actually installed in Comanche Peak Unit 1 prior to licensing. The NRC Staff determined that the results of this test program provided assurance that the swing arms actually installed in Comanche Peak Unit 1 were acceptable for use in safety-related systems. The NRC Staff, therefore, had sufficient information, independent from the BW/IP inspection, to determine that the AFW check valves at Comanche Peak were acceptable prior to licensing, and the information contained in the vendor inspection report did not alter the NRC Staff conclusions

regarding the acceptability of the swing arms installed at Comanche Peak Unit 1.

Thus, the NRC Staff considers the questions raised by the Petitioner regarding the integrity of the licensing process and safety of the plant itself based on the existence and availability of the Vendor Inspection Report of BW/IP to be without merit.

4. *The Director, NRR's Knowledge and Use of the Information in the Vendor Inspection Report*

The Petitioner contends that the Director of NRR knew of the Vendor Inspection Report of BW/IP and its findings prior to issuance of a low-power license and chose to ignore it.

The Director of NRR was not specifically aware of the vendor inspection report at the time of low-power licensing, although the subject of the adequacy of Borg-Warner check valves was reviewed by the Director at the time. The ADSP Staff had conducted an evaluation of the impact that the results the vendor inspection may have had on the safety of Comanche Peak Unit 1 prior to licensing. The ADSP Staff appropriately determined, based on its review of the Texas Utilities Electric Company test program of all of the swing arms installed in Borg-Warner check valves at Comanche Peak Steam Electric Station Unit 1, that the swing arms installed at the time of low-power licensing were acceptable, and the quality assurance problems identified at BW/IP in the vendor inspection report did not alter the NRC Staff conclusions regarding the acceptability of the Borg-Warner check valves installed at Comanche Peak Steam Electric Station Unit 1. Because the issues in the vendor inspection report did not affect the safety of the Borg-Warner check valves actually installed at Comanche Peak Steam Electric Station Unit 1, the vendor inspection was not identified to the Director of NRR as an issue in licensing the facility.

Because of the nature of this additional assertion, a copy of the Petition was provided to the NRC Inspector General on December 24, 1990, for action as appropriate.

5. *NRC Knowledge of and Use of the Information in the Vendor Inspection Report*

The Petitioner contends that the Commission may not have known about the January 12, 1990 Vendor Inspection Report of BW/IP in making its decision to issue the full-power license for Comanche Peak. As discussed in detail in response to additional Contentions F.3 and F.4, above, the ADSP Staff evaluated the information in the vendor inspection report and determined that it did not

affect the conclusions regarding the acceptability of the swing arms installed in Borg-Warner check valves at Comanche Peak Unit 1. Therefore, the vendor inspection report was not identified to the Commission during the full-power licensing deliberations.

Based on Staff assurance of the safety of the Borg-Warner check valves actually installed at Comanche Peak Steam Electric Station Unit 1 that was gained through plant-specific evaluation of the internals of Borg-Warner check valves, and that the vendor inspection report did not change that assurance, the Staff has concluded that the contention raised by the Petitioner that the availability of the vendor inspection report raised serious questions about the licensing process is without merit, and does not present a significant health or safety issue.

IV. CONCLUSIONS

The NRC Staff reviewed the arguments in CFUR's Petition that the failures of Borg-Warner check valves at the Comanche Peak Steam Electric Station represented "issues of safety" sufficient to require the Licensee to show cause why its license to operate Comanche Peak Steam Electric Station, Unit 1, should not be revoked. The Staff found that the Licensee's corrective actions to resolve failures and other problems associated with the Borg-Warner check valves were appropriate and responded to the Staff's concerns and to the safety and operational issues involved in the failures and other problems with Borg-Warner check valves at Comanche Peak Steam Electric Station.

The NRC Staff assessed the specific references and citations in the Petition and all of the technical analyses, inspections, reviews, and evaluations conducted by both the Licensee and the Staff. The Staff reviewed the complete text of all nineteen of the documents attached to the Petition as well as many additional documents regarding Borg-Warner check valves at the Comanche Peak Steam Electric Station. The documents relied upon by the Petitioner in support of the petition were existing NRC and Licensee documents. Based on its entire review, the Staff has not found any substantial health and safety issues that would call into question the continued safe operation of Comanche Peak Steam Electric Station.

The institution of proceedings in response to a request in accordance with 10 C.F.R. § 2.206 is appropriate only when substantial health and safety issues have been raised. *See Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 176 (1975), and *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). This standard has been applied to determine if any action in response to the Petition is warranted. For the reasons discussed above, no basis exists for

taking any action in response to the Petition as no substantial health or safety issues have been raised by the Petition. Accordingly, no action pursuant to section 2.206 is being taken in this matter.

The Staff will file a copy of this Decision with the Secretary of the Commission for the Commission's review in accordance with 10 C.F.R. § 2.206(c).

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 27th day of September 1991.

Cite as 34 NRC 229 (1991) LBP-91-38

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Marshall E. Miller, Chairman
Charles Bechhoefer
G. Paul Bollwerk, III

In the Matter of

Docket Nos. 50-440-A
50-346-A
(ASLBP No. 91-644-01-A)
(Suspension of Antitrust Conditions)
(Facility Operating License Nos. NPF-58, NPF-3)

OHIO EDISON COMPANY
(Perry Nuclear Power Plant, Unit 1)

CLEVELAND ELECTRIC ILLUMINATING COMPANY and
TOLEDO EDISON COMPANY
(Perry Nuclear Power Plant, Unit 1; Davis-Besse Nuclear Power Station, Unit 1)

October 7, 1991

In a prehearing conference order, the Licensing Board rules upon hearing requests and intervention petitions emanating from an NRC Staff determination to deny license amendment applications seeking the suspension of the antitrust conditions in the operating licenses for the Perry and Davis-Besse facilities. After determining that it has jurisdiction to consider the various hearing and intervention petitions, the Board grants the applicants' hearing requests and

three of the four intervention petitions, one as a matter of discretion. The Board denies the other intervention petition, which was late filed, as inadequate to merit intervening party status. The Board also admits two issues put forth by one of the license amendment applicants alleging improper congressional interference and prejudgment relating to the Staff's decisional process and establishes discovery rules for those issues. Finally, the Board establishes a schedule for the submission of a jointly formulated "bedrock" legal issue regarding the continuing validity of the antitrust conditions in the Perry and Davis-Besse operating licenses to be followed by the filing of dispositive motions relative to that issue.

ATOMIC ENERGY ACT: INTERPRETATION; DENIAL OF APPLICATION

Agency regulations establish that, as a longstanding matter of statutory construction, when an applicant/licensee's request for licensing action is denied, it is considered an "interested person" within the meaning of section 189a of the Atomic Energy Act (AEA), 42 U.S.C. § 2239(a). *See* 10 C.F.R. §§ 2.103(b), 2.105(d), 2.108(b), 2.1205.

ATOMIC ENERGY ACT: INTERPRETATION

An applicant/licensee is a "person" within the meaning of the Atomic Energy Act. *See* 42 U.S.C. § 2014(s).

ATOMIC ENERGY ACT: INTERPRETATION

In a proceeding involving the terms and conditions of its own permit, an applicant/licensee has an "interest" that "may be affected" within the meaning of AEA section 189a, 42 U.S.C. § 2239(a).

LICENSE AMENDMENT(S): DEFINITION

A licensee request that the agency nullify certain conditions in its license is a request for an "amendment."

ADJUDICATORY BOARDS: DELEGATED AUTHORITY (RELATION TO NRC STAFF)

LICENSE AMENDMENT(S): ROLE OF NRC STAFF

It is standard practice for the NRC Staff, acting pursuant to Commission delegation, to undertake a technical and legal assessment of a license amendment application and make a determination concerning the propriety of the request. *See, e.g.*, 10 C.F.R. §§ 2.101(a)(1), 2.102(a); NRC Manual, ch. 0123-32. In the absence of a hearing request, the Staff's administrative determination regarding the application generally will be dispositive. If a hearing request is filed, then one of the sets of hearing procedures specified in 10 C.F.R. Part 2 (or other hearing procedures specified by the Commission in any particular instance) may be afforded to provide an independent adjudicatory determination regarding the merits of the application.

ATOMIC ENERGY ACT: ANTITRUST JURISDICTION

NUCLEAR REGULATORY COMMISSION: ANTITRUST AUTHORITY; JURISDICTION

The narrow supervisory antitrust jurisdiction accorded the Commission under AEA section 105c, 42 U.S.C. § 2135(c), cannot be considered to circumscribe the Commission's more general authority, as reflected in AEA section 189a, 42 U.S.C. § 2239(a), and 10 C.F.R. § 50.90, to amend a facility license at the request of the licensee.

RULES OF PRACTICE: NOTICE OF PROPOSED ACTION OR OPPORTUNITY FOR HEARING; INTERVENTION PETITION(S) (TIMELINESS)

A filing deadline specified in a notice of opportunity for hearing is not tolled or otherwise affected by language in a notice establishing a licensing board that simply declares that hearing requests and intervention petitions can be filed. *See* 10 C.F.R. § 2.105(d).

RULES OF PRACTICE: INTERVENTION PETITION(S) (GOOD CAUSE FOR LATE FILING)

A party that fails to provide good cause for submitting its intervention request after the specified filing date must make a compelling showing regarding the other four factors that govern the admission of late-filed intervention petitions.

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

RULES OF PRACTICE: UNTIMELY INTERVENTION PETITIONS (BROADENING OF ISSUES OR DELAY)

The fifth factor governing the admission of late-filed intervention petitions — the extent to which petitioner's participation in the proceeding will broaden the issues or delay the proceeding — is one "of immense importance to the overall balancing process." *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-743, 18 NRC 387, 402 (1983).

ATOMIC ENERGY ACT: STANDING TO INTERVENE (INJURY IN FACT)

RULES OF PRACTICE: STANDING TO INTERVENE (INJURY IN FACT)

An electric cooperative seeking to intervene in a proceeding regarding antitrust conditions in a facility operating license lacks "injury in fact" when it does not operate in licensee's geographic market or have any other significant relationship with licensee or its direct competitors.

ATOMIC ENERGY ACT: STANDING TO INTERVENE (ZONE OF INTEREST(S))

RULES OF PRACTICE: STANDING TO INTERVENE (ZONE OF INTEREST(S))

An "economic" interest in a facility generally is not sufficient to afford an intervenor standing in a Commission licensing proceeding regarding health and safety matters. *See, e.g., Public Service Co. of New Hampshire* (Seabrook Station, Unit 2), CLI-84-6, 19 NRC 975, 978 (1984). In the context of an antitrust-related proceeding, however, such interests take center stage; indeed, they are matters that fall squarely within the "zone of interests" that the Congress sought to protect, as reflected in AEA section 105, 42 U.S.C. § 2135. *See Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), ALAB-470, 7 NRC 473, 474-75 (1978).

ATOMIC ENERGY ACT: STANDING TO INTERVENE (INJURY IN FACT)

RULES OF PRACTICE: STANDING TO INTERVENE (INJURY IN FACT)

When the only injury a petitioner might suffer as a result of a proceeding is establishment of a bad precedent that might be relied upon in a future proceeding in which it could be involved, this is the sort of "generalized grievance" that is unduly remote and, therefore, insufficient to establish the "injury in fact" necessary to establish standing as of right. *See Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332-33 (1983); *Transnuclear Inc.*, CLI-77-24, 6 NRC 525, 531 (1977). *See also Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), ALAB-304, 3 NRC 1, 5-6 (1976).

RULES OF PRACTICE: INTERVENTION (DISCRETIONARY)

A primary consideration in determining whether to grant discretionary intervention is the extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record. *See Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 616 (1976). *See also Fermi*, ALAB-470, 7 NRC at 475 n.2; *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Units 1 and 2), ALAB-413, 5 NRC 1418, 1422 (1977).

ATOMIC ENERGY ACT: STANDING TO INTERVENE (INJURY IN FACT)

RULES OF PRACTICE: STANDING TO INTERVENE (INJURY IN FACT)

Until a municipality decides whether it will institute an electrical distribution system, any injury it purports to suffer as a consequence of a proceeding to suspend the antitrust conditions governing the activities of its potential supplier is too abstract and hypothetical to establish the "injury in fact" necessary to afford it standing as of right.

RULES OF PRACTICE: INTERVENTION BY GOVERNMENTAL AGENCY

In an antitrust proceeding relating to a commercial power reactor construction permit or operating license application, under AEA section 105c(5), 42 U.S.C.

§ 2135(c)(5), the authority of the Department of Justice (DOJ) to participate is unquestionable. In a regular license amendment proceeding, however, DOJ participation hinges upon its compliance with the standards governing intervention in such proceedings.

ADJUDICATORY HEARINGS: STATUS OF NRC STAFF

ADJUDICATORY PROCEEDINGS: STATUS OF NRC STAFF

LICENSING BOARD(S): CONSIDERATION OF NRC STAFF EVIDENCE

The Staff views relative to the matters to be litigated before a licensing board are to be accorded the same status of those of any other party and its biases can be scrutinized accordingly. *See, e.g., Indian Point,* ALAB-304, 3 NRC at 6; *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-268, 1 NRC 383, 399 (1975).

BIAS OR PREJUDGMENT: STANDARDS

DISQUALIFICATION: STANDARDS

In performing a review of an agency decision allegedly subject to bias, including improper legislative influence, the independent assessment that an adjudicatory decisionmaker (such as a licensing board) renders regarding the merits of the parties' legal positions will rectify any earlier impropriety. *See Gulf Oil Corp. v. FPC,* 563 F.2d 588, 611-12 (3d Cir. 1977), *cert. denied,* 434 U.S. 1062 (1978).

BIAS OR PREJUDGMENT: STANDARDS

DISQUALIFICATION: STANDARDS

To support a finding of improper legislative interference with an agency's decisionmaking process, in the context of a judicial or quasi-judicial proceeding, the "appearance of bias or pressure" may be sufficient, while in other circumstances a showing of actual influence may be necessary. *D.C. Federation of Civic Ass'ns v. Volpe,* 459 F.2d 1231, 1246-47 (D.C. Cir.), *cert. denied,* 405 U.S. 1030 (1972). *See also Town of Orangetown v. Ruckelshaus,* 740 F.2d 185, 188 (2d Cir. 1984).

ADJUDICATORY PROCEEDINGS: ROLE OF NRC STAFF

ADMINISTRATIVE PROCEDURE ACT: EX PARTE COMMUNICATIONS

LICENSE AMENDMENT(S): ROLE OF NRC STAFF

RULES OF PRACTICE: STAFF MEETINGS WITH PARTIES

A Staff administrative review determination relative to a license amendment application is not an "adjudicatory" function because, among other things, restrictions prohibiting off-the-record, ex parte contacts, which are a hallmark of judicial decisionmaking, *see Sierra Club v. Costle*, 657 F.2d 298, 400 (D.C. Cir. 1981), are not applicable. As a matter of policy, Staff often conducts public meetings relating to its application review function, *see* 43 Fed. Reg. 28,058 (1979), but there is no statutory or regulatory requirement that it do so. *See* 10 C.F.R. § 2.102(a). *See also id.* § 2.4 (definition of "Commission adjudicatory employee").

RULES OF PRACTICE: APPLICANT HEARING REQUESTS (PLEADING REQUIREMENTS)

An applicant seeking a hearing following a Staff denial of its request for licensing action is not subject to the pleading requirements applicable to intervening parties under 10 C.F.R. § 2.714(b). Applicants in such circumstances must identify the issues they wish to litigate, which must be within the scope of the hearing.

PREHEARING CONFERENCE ORDER

(Ruling on Hearing/Intervention Petitions and Issues/Contentions; Setting Schedule for Summary Disposition Motions and Responses)

Now before us for disposition in this antitrust-related proceeding are two hearing petitions and four requests to intervene. We previously had designated these matters for consideration at a prehearing conference scheduled for September 19, 1991.[1] As preliminarily announced at that prehearing conference and as described more fully herein, based upon our determination that we have jurisdiction to entertain these hearing/intervention requests, we grant the two hearing

[1] *See* Memorandum and Order (June 19, 1991) (unpublished); Notice of Rescheduled Prehearing Conference (July 30, 1991) (unpublished).

petitions and three of the four intervention requests, one as a matter of discretion. We deny the other intervention request, which was late filed, as inadequate to merit intervening party status. In addition, we admit two of the issues put forth by one of the licensees who have requested this hearing, establish ground rules for discovery relative to those issues, and, with the agreement of all the parties, establish a schedule for the submission of a jointly formulated "bedrock" legal issue, which the parties suggest will be controlling in this case, and for the filing of dispositive motions relative to that issue.

I. BACKGROUND

In a May 1, 1991 *Federal Register* notice,[2] the NRC Staff declared that it had denied both the request of Ohio Edison Company (OE) for an amendment to the operating license for the Perry Nuclear Power Plant, Unit 1, and the joint application of Cleveland Electric Illuminating Company and the Toledo Edison Company (CEI/TE) for amendments to the operating licenses for the Perry facility and the Davis-Besse Nuclear Power Station, Unit 1. In both instances, the amendments proffered by these facility owners (hereinafter referred to jointly as "applicants" or "licensees") sought the suspension of the antitrust conditions imposed upon them in a previous antitrust review proceeding before this agency.[3] The May 1 notice also stated that an opportunity for a hearing was being afforded with respect to the Staff's denial action. Under the terms of the notice, licensee hearing requests or petitions by interested persons to intervene in any hearing were required to be filed on or before May 31, 1991.

In response to this notice of opportunity for hearing, on May 31, OE and CEI/TE filed hearing requests.[4] On that same date, the City of Cleveland, Ohio (Cleveland), filed an opposition to these hearing requests, contesting the licensees' right to a hearing regarding the denial of their applications.[5] Alternatively, Cleveland asks that if either of the licensee hearing requests is granted, it be admitted to the proceeding as an intervening party. Intervenor status also is sought by Alabama Electric Cooperative, Inc. (AEC), American

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[2] 56 Fed. Reg. 20,057 (1991).

[3] *See Toledo Edison Co.* (Davis-Besse Nuclear Power Station, Units 1, 2, and 3), LBP-77-1, 5 NRC 133 (1977), *aff'd as modified*, ALAB-560, 10 NRC 265 (1979).

Two other co-owners of the Perry facility, Pennsylvania Power Company and Duquesne Light Company, have not joined in the requests of OE and CEI/TE for suspension of the antitrust conditions in the Perry license.

[4] *See* Request for a Hearing with Respect to the Denial of the Application to Amend the Perry Operating License to Suspend the Antitrust Conditions Insofar as They Apply to [OE] (May 31, 1991); Request for a Hearing with Respect to the Denial of the Application to Amend the Perry and Davis-Besse Operating Licenses to Suspend the Antitrust Conditions Insofar as They Apply to [CEI/TE] (May 31, 1991).

[5] *See* Opposition of [Cleveland] to a Hearing with Respect to the Denial of Applications to Suspend Anti-trust License Conditions and Petition to Intervene in the Event Hearing Is Requested and Is Granted (May 31, 1991) [hereinafter Cleveland Petition].

Municipal Power–Ohio, Inc. (AMP-Ohio), and the City of Brook Park, Ohio (Brook Park).[6] The United States Department of Justice (DOJ), which earlier provided the Staff with comments regarding the licensees' amendment requests, also has filed a notice of intent to participate in this proceeding.[7]

At a day-long September 19, 1991 prehearing conference held in Bethesda, Maryland, we entertained oral argument from the licensees, the various intervention petitioners, the NRC Staff, and DOJ concerning the various pending requests and made preliminary determinations on a number of matters.[8] A fuller explication of our rulings is set forth below.

II. OE AND CEI/TE HEARING PETITIONS

Under the terms of the May 1991 notice of opportunity for hearing, OE and CEI/TE submitted timely hearing petitions. Further, by reason of their status as the applicants for license amendments seeking the suspension of certain provisions of their existing licenses, they appear to fall squarely within the directive of section 189a(1) of the Atomic Energy Act of 1954 (AEA), as amended, that "[i]n any proceeding under [the AEA], for the granting, suspending, revoking, or *amending* of any license . . . the Commission shall grant a hearing upon the request of any person whose interest may be affected by the proceeding, and shall admit any such person as a party to such proceeding."[9] Intervenor Cleveland (with moral support from AMP-Ohio) nonetheless attempts to forestall any further agency proceedings regarding the licensees' amendment requests. In its initial filing and a July 10 supplement thereto, Cleveland asserts that applicants' hearing petitions should be denied on several different grounds.[10]

According to Cleveland, applicants are not entitled to a hearing because (1) they are not "persons whose interest may be affected" by this proceeding; (2) the subject matter of this proceeding — applicants' requests to suspend the antitrust provisions in the Perry and Davis-Besse operating licenses — does not fall into one of the categories of licensing actions enumerated in section 189a(1) as subject to a hearing; (3) applicants already have had their hearing; and (4) the Commission lacks authority to grant the relief requested. In their

[6] *See* Petition of [AEC] for Leave to Intervene (May 30, 1991) [hereinafter AEC Petition]; Petition of [AMP-Ohio] for Leave to Intervene (July 3, 1991) [hereinafter AMP-Ohio Petition]; Petition of [Brook Park] for Leave to Intervene (Aug. 8, 1991).

[7] Notice of Intent to Participate (July 22, 1991).

[8] *See* Tr. 1-236 (transcript of prehearing conference).

[9] 42 U.S.C. § 2239(a)(1) (emphasis supplied).

[10] In its July supplement, Cleveland presents these arguments as a series of "contentions" to be litigated. *See* 10 C.F.R. § 2.714(b)(1) Supplement to Conditional Petition to Intervene of [Cleveland] Submitted in Connection with July 25, 1991 Prehearing Conference (July 10, 1991) at 13-16 [hereinafter Cleveland Supplement]. *See also* Supplement by [AMP-Ohio] to Petition for Leave to Intervene (July 10, 1991) at 1-2.

reply to Cleveland's opposition, licensees maintain that each of these assertions is mistaken.[11] In its written response to the licensees' hearing petitions, the Staff makes no specific mention of Cleveland's arguments, other than to state that it does not oppose the grant of licensees' hearing requests.[12] During the prehearing conference, however, in response to Cleveland's oral presentation seeking the denial of applicants' hearing requests, the Staff detailed its disagreement with Cleveland's positions regarding this Board's jurisdiction to conduct this proceeding.[13]

Dismissal of Cleveland's first three assertions requires little detailed discussion. To accept its first argument, we would have to put aside the various provisions of the agency's regulations establishing that, as a longstanding matter of statutory construction, the Commission considers an applicant/licensee to be an "interested person" within the meaning of section 189a in instances in which its request for licensing action is denied.[14] Even if we were to do so, however, it is apparent that an applicant/licensee is a "person" within the meaning of the AEA,[15] and that in a proceeding involving a determination about the continuing validity of the terms and conditions of its own permit, an applicant/licensee certainly has an "interest" that "may be affected" within the meaning of section 189a.[16] Licensees thus have no difficulty fulfilling these statutory hearing prerequisites.

By the same token, we are unwilling to accept Cleveland's crabbed interpretation of section 189a as it relates to the category of licensing action sought by the applicants in this instance. It is not altogether clear that licensees' request to "suspend" (as opposed to "delete") the existing Perry and Davis-Besse operating license antitrust conditions constitutes in form what is generally considered an

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[11] Answer of [OE] to Opposition of [Cleveland] to a Hearing with Respect to the Denial of Applications to Suspend Antitrust License Conditions and Petition to Intervene in the Event Hearing Is Requested and Granted (June 17, 1991) at 2-6 [hereinafter OE Answer to Cleveland Opposition]; Answer of [CEI/TE] to Opposition of [Cleveland] to a Hearing with Respect to the Denial of Applications to Suspend Antitrust License Conditions and Petition to Intervene in the Event Hearing Is Requested and Granted (June 17, 1991) at 3-9 [hereinafter CEI/TE Answer to Cleveland Opposition].

[12] *See* NRC Staff's Response to Petitions for Leave to Intervene Filed by [Cleveland] and [AEC] (June 20, 1991) at 11-12 [*hereinafter Staff Response to Cleveland and AEC Petitions*].

[13] *See* Tr. 175-82.

[14] *See* 10 C.F.R. § 2.103(b) (notice of denial or proposed denial for materials licensing application shall inform applicant of right to a hearing); *id.* § 2.105(d) (notice of proposed action shall specify that applicant may file a hearing request); *id.* § 2.108(b) (in event application is denied by Staff for failure to supply information, notice of denial must provide that applicant may demand a hearing); *id.* § 2.1205 (materials or operator licensing applicant issued denial or proposed denial may file request for informal hearing).

[15] *See* 42 U.S.C. § 2014(s).

[16] Although Cleveland asserts that the decision of the United States Court of Appeals for the District of Columbia Circuit in *Union of Concerned Scientists v. NRC*, 735 F.2d 1437, 1446-48 (D.C. Cir. 1984), *cert. denied*, 469 U.S. 1132 (1985), supports its reading of AEA section 189a as not applicable to an applicant/licensee, *see* Cleveland Petition at 24; Cleveland Supplement at 9 n.*, for the reasons given in the OE and CEI/TE oppositions we find that case inapposite. *See* OE Answer to Cleveland Opposition at 2-3; CEI/TE Answer to Cleveland Opposition at 3-5.

"amendment."[17] Nonetheless, we have no doubt that the substantive thrust of their request for relief — that this agency nullify those conditions as applied to them — is, by any reasonable interpretation of the term, a request for an "amendment" of their existing authorization under the Perry and Davis-Besse operating licenses.[18]

Regarding Cleveland's third argument, it is apparent that the Staff's initial administrative review and determination relative to licensees' amendment requests cannot be equated to or considered a substitute for the hearing to which these applicants would otherwise be entitled under AEA section 189a. It is standard practice for the Staff, acting pursuant to Commission delegation, to undertake a technical and legal assessment of a license amendment application and make a determination concerning the propriety of the request.[19] In the absence of a hearing request, the Staff's administrative determination regarding the application generally will be dispositive. If, however, a hearing request is filed, then one of the sets of hearing procedures specified in 10 C.F.R. Part 2 (or other hearing procedures specified by the Commission in any particular instance) must be afforded to provide an independent adjudicatory determination regarding the merits of the application. In this instance, the formal hearing procedures specified in Part 2, Subpart G, are being utilized to afford licensees any "hearing" to which they may be entitled under section 189a.[20]

Cleveland's fourth argument regarding the agency's jurisdiction to entertain licensees' application is somewhat more problematic. Cleveland contends that Commission and Appeal Board decisions interpreting AEA section 105,[21] the provision of the Act concerning the scope of the Commission's authority to review antitrust matters, establish that regardless of who initiates the request, the

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[17] *See infra* note 41.

[18] According to Cleveland, any action to discontinue the antitrust conditions in the Perry and Davis-Besse licenses will not "amend" those authorizations because, by definition, such an "amendment" can only be a revision that will "improve" or "change for the better" or "involve no change in substance or essence." Cleveland Petition at 5 (citing *Black's Law Dictionary* 106 (rev. 4th ed. 1968)). Cleveland asserts that the licensees' requests here cannot be "amendments" because they would only inure to the detriment of itself and other local utilities and will involve an obvious change in the substance of the licenses. This argument, of course, ignores the fact that licensees consider their requests to be beneficial because they will correct what applicants assert are license defects. Moreover, despite Cleveland's claim to the contrary, we find nothing in the definition of "amend" or "amendment" that precludes such actions from effectuating substantive change. *See Black's Law Dictionary* 80, 81 (6th ed. 1990) ("[t]o change, correct, revise," or "[t]o alter by modification, deletion, or addition").

[19] *See, e.g.*, 10 C.F.R. §§ 2.101(a)(1), 2.102(a); NRC Manual, ch. 0123-032 (Director of Nuclear Reactor Regulation delegated authority to issue, renew, and amend reactor operating licenses except where decision rests with an administrative law judge, a licensing board, or the Commission after a hearing pursuant to 10 C.F.R. Part 2).

[20] Cleveland maintains that the District of Columbia Circuit's decision in *Citizens for Allegan County, Inc. v. FPC*, 414 F.2d 1125, 1129 (D.C. Cir. 1969), establishes that the Staff's assessment of licensees' applications is sufficient to afford them any hearing rights they might have under section 189a. *See* Cleveland Petition at 7-8. At best, this case suggests that such an assessment by the Commission, in contrast to the Commission's staff, might be adequate to satisfy applicants' hearing rights. *See also Kerr-McGee Corp.* (West Chicago Rare Earths Facility), CLI-82-2, 15 NRC 232 (1982), *aff'd sub nom. City of West Chicago v. NRC*, 701 F.2d 632 (7th Cir. 1983).

[21] 42 U.S.C. § 2135.

Commission has no authority to modify any antitrust condition subsequent to the issuance of an operating license.[22] After reviewing these cases, however, we are convinced that notwithstanding the limitations they recognized exist regarding the Commission's antitrust jurisdiction, in accord with the legislative policy underlying section 105, the Commission (and this Board) has the authority to consider the OE and CEI/TE amendment applications.

Section 105 states initially that nothing in the AEA is to "relieve any person from the operation of" several specified antitrust laws, including the Sherman, Clayton, and Federal Trade Commission Acts.[23] This section's subsequent provisions nonetheless make it apparent that the Commission itself does not have unlimited authority to consider and act to counter anticompetitive situations that may arise from activities otherwise subject to its regulatory supervision. For instance, section 105b requires that the Commission "report promptly to the Attorney General any information it may have with respect to any utilization of special nuclear material or atomic energy which appears to violate or tend toward the violation" of the antitrust laws listed in section 105a, or to restrict free competition in private enterprise.[24] The agency, however, is given no enforcement or hearing initiation responsibilities with respect to this information. Indeed, only if "a court of competent jurisdiction" has found a violation of the antitrust laws in the conduct of an AEA-licensed activity is the Commission authorized to "suspend, revoke or take such other action as it may deem necessary with respect to any license" to rectify the matter.[25]

The one specific expansion of this otherwise limited authority is found in section 105c. That provision declares that upon receipt of an application for a license to construct or operate a commercial power reactor, the Commission must seek the advice of the Attorney General of the United States concerning the antitrust implications that may arise from the facility application under consideration.[26] Based on this advice, and any evidence adduced at any hearing that it may convene regarding the subject matter of this advice, the Commission is to make a finding "whether the activities under the license would create or maintain a situation inconsistent with the antitrust laws" specified in section 105a.[27] On the basis of these findings, the Commission has the authority to refuse to issue a license or to impose appropriate conditions.[28] Yet, even this review

[22] In making this argument, Cleveland "incorporates by reference" more than 25 pages of a filing made earlier before the Staff. In the future, we expect the parties to make their arguments in full directly in their papers filed with this Board; any attempt to incorporate by reference substantial portions of a previous filing will be disregarded.

[23] 42 U.S.C. § 2135(a).

[24] *Id.* § 2135(b).

[25] *Id.* § 2135(a).

[26] *Id.* § 2135(c)(1).

[27] *Id.* § 2135(c)(5).

[28] *Id.* § 2135(c)(6).

authority is circumscribed in that section 105 specifies that any review can take place in connection with an operating license application only upon a showing that "significant changes in the licensee's activities or proposed activities have occurred subsequent to the previous [construction permit] review."[29]

In the 1977 *South Texas* decision referenced by Cleveland,[30] the Commission was called upon to interpret section 105 to determine, in the absence of any adverse findings during the construction permit antitrust review, under what circumstances the co-holder of a construction permit could obtain an antitrust review of its co-permittee's activities occurring subsequent to issuance of the permit. All parties before the Commission were in agreement that the question of whether "significant changes" had occurred should be promptly addressed. This could not be done in the context of the operating license proceeding, however, because the final safety analysis report (FSAR), which the regulations mandated must accompany the operating license application, would not be completed for some time. The co-permittees seeking the antitrust review, the Staff, and DOJ argued that, notwithstanding the lack of any operating license proceeding, the Commission could convene a hearing to consider whether an additional antitrust review was warranted under the authority of AEA section 186,[31] a provision that gives the Commission authority to revoke a license for any reason that would have warranted a refusal to grant a license on an original application. In addition, DOJ asserted that such authority could be found in AEA section 161c,[32] which empowers the Commission to hold any meetings or hearings it deems necessary to assist it in the exercise of its AEA responsibilities.

Based upon an extensive review of the history of the 1970 legislative action that resulted in the adoption of section 105c in its present form, the Commission concluded that:

> Congress had no intention of giving this Commission authority which could put utilities under a continuing risk of antitrust review. Had Congress agreed with the proposition that this Commission should have broad antitrust policing powers independent of licensing, the statute that emerged from these discussions would have looked quite different. . . . Consequently, we find that the Commission's antitrust authority is defined not by the broad powers contained in [sections 186 and 161], but by the more limited scheme set forth in Section 105.[33]

As a result, the Commission found it could convene the hearing desired by the parties only, as the other co-permittee suggested, by waiving the requirement

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[29] *Id.* § 2135(c)(2). Section 105c has other provisions relating to reactors that already had construction permits at the time this antitrust review provision became effective in 1970. *See id.* § 2135(c)(3), (8).

[30] *Houston Lighting & Power Co.* (South Texas Project, Units 1 and 2), CLI-77-13, 5 NRC 1303 (1977).

[31] 42 U.S.C. § 2236.

[32] *Id.* § 2201(c).

[33] *South Texas*, CLI-77-13, 5 NRC at 1317 (footnote omitted).

that the FSAR accompany the operating license application, thereby allowing the application to be filed and the operating license proceeding to begin.[34]

While noting in its *South Texas* decision the existence of its "continuing police power over conditions properly placed on licenses, after [section] 105(c) antitrust review," the Commission found that "once an initial, full antitrust review has been performed, only 'significant changes' warrant reopening."[35] Some 2 months later, however, in *St. Lucie*,[36] the other decision relied upon by Cleveland, the Appeal Board had occasion to consider whether there might be broader aspects to the Commission's antitrust jurisdiction. The Appeal Board there concluded that the rationale underlying the Commission's *South Texas* decision was dispositive of an intervenor challenge to the Licensing Board's refusal to convene an antitrust review for several reactor facilities that previously had been awarded operating licenses. According to the Appeal Board, the Commission's *South Texas* ruling made it clear that "[e]xcept perhaps as necessary to enforce the terms of a license or to revoke one fraudulently obtained, or in circumstances where a plant is sold or so significantly modified as to require a new license," the agency's "supervisory antitrust jurisdiction over a nuclear reactor licensee does not extend over the full 40-year term of the operating license but ends at its inception."[37] In addition, in response to the Commission's simultaneous referral to both the Appeal Board and the Director of Nuclear Reactor Regulation of a separate intervenor motion to obtain a declaratory judgment regarding the appropriate procedures for having its antitrust concerns resolved, the Appeal Board declared that in light of the Commission's *South Texas* ruling, the Director likewise lacked jurisdiction to initiate a post-operating license antitrust review.[38]

Cleveland contends that these two decisions establish that once an operating license issues, the Commission lacks jurisdiction to take any further action concerning the antitrust aspects of facility operation, including suspending or removing a previously imposed antitrust condition. We agree that nothing in the language of section 105 explicitly directs the Commission to exercise antitrust review authority to undertake such an action. Nonetheless, unlike the situations confronting the Commission and the Appeal Board in their respective *South Texas* and *St. Lucie* decisions, we conclude that the narrow supervisory antitrust jurisdiction accorded the Commission under section 105c cannot be considered to circumscribe the Commission's more general authority, as reflected in AEA section 189a and 10 C.F.R. § 50.90, to amend a facility license at the request of the licensee.

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[34] *See id.* at 1319.
[35] *Id.* at 1317.
[36] *Florida Power and Light Co.* (St. Lucie Nuclear Power Plant, Unit 1), ALAB-428, 6 NRC 221 (1977).
[37] *Id.* at 226 & n.12.
[38] *See id.* at 227.

As is evident from the extended discussion and analysis of the legislative history of section 105 in the Commission's *South Texas* decision,[39] in structuring that provision a paramount congressional concern was that those utilities seeking permission to construct and operate nuclear power facilities not be faced with the continuing uncertainty of having to undergo antitrust review. Rather, in all but the most unusual circumstances, affirmative antitrust review is to take place once, at the construction permit stage, with additional scrutiny possible thereafter only as part of the operating license proceeding when it can be established that subsequent to issuance of the construction permit there was a "significant change" in the permittee's activities. In addition, as the Commission acknowledged in *South Texas*, this limitation on the scope of the Commission's antitrust authority to a prelicensing review mirrors a congressional recognition of the agency's unique capacity to identify and correct incipient anticompetitive influences that may flow from a utility's access to nuclear power, an electrical energy source that can be utilized only pursuant to an NRC license. According to the Commission, this singular Commission presence is not attendant in the postlicensing context, in which the DOJ Antitrust Division, the Federal Trade Commission, and the courts provide antitrust enforcement forums that are as (if not more) suitable.[40]

In considering applicants' requests for licensing action, however, it is apparent that neither of these limiting considerations is applicable. Commission consideration of licensees' request to nullify the previously imposed antitrust conditions does not invoke the same potential uncertainty that likely would be present if the Commission exercised continuing supervisory antitrust jurisdiction over each facility licensee. Indeed, as the architects of this amendment proceeding, licensees necessarily accept any uncertainty arising from its prosecution. At the same time, as when it exercises prelicensing antitrust review, the Commission's role here is unique. Following extensive consideration of the circumstances surrounding the construction and operation of the Davis-Besse and Perry facilities, it was the Commission's judgment that the situation warranted the imposition of the antitrust conditions in question. By the same token, this agency is in the best position to make a judgment about whether the requirements it dictated now should be suspended or otherwise altered. Indeed, it seemingly is the only entity in a position to grant applicants the relief they seek.

We thus perceive no basis for advancing the reach of the Commission's *South Texas* decision or the Appeal Board's *St. Lucie* decision to this circumstance involving licensee-initiated requests for amendments to their existing license

[39] *See* CLI-77-13, 5 NRC at 1312-16.

[40] *See id.* at 1316-17. The Commission's interpretation of congressional intent in this regard seemingly is unchanged, as is evidenced by the recently proposed rule that would not require any antitrust review in connection with reactor operating license renewals. *See* 55 Fed. Reg. 29,043, 29,055 (1990).

conditions.[41] Accordingly, we reject this Cleveland attack upon our jurisdiction to conduct this proceeding.[42] In addition, recognizing their status as "person[s] whose interest may be affected" by this proceeding, we grant licensees' requests to be admitted as parties.[43]

III. CITY OF CLEVELAND PETITION TO INTERVENE

As was indicated previously, in response to the May 1991 notice of opportunity for hearing, Cleveland requested that if we grant the licensees' hearing petitions, we also permit it to participate in this proceeding as an intervening party.[44] In its petition, Cleveland states that it is a municipal corporation that owns and operates Cleveland Public Power (CPP), an electric distribution system that serves portions of the Cleveland metropolitan area and is in direct competi-

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[41] Our conclusion in this regard is consistent with that reached by the Appeal Board, albeit in a decision rendered prior to the Commission's *South Texas* determination. In *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), ALAB-381, 5 NRC 582, 593 n.15 (1977), the Board suggested that an amendment request in accordance with 10 C.F.R. § 50.90 afforded an appropriate avenue for a licensee to seek relief from an antitrust condition it found untenable. Although in its intervention petition supplement Cleveland questions the applicability of the license amendment procedures in 10 C.F.R. Part 2, Subpart A, to the licensees' requests, *see* Cleveland Supplement at 6-8, it is apparent that its arguments are based upon its misapplication of those provisions, particularly sections 2.101(c) and 2.102(d). Although these provisions govern the initial antitrust review proceeding at the construction permit/operating license stage pursuant to section 105c, they have no direct application to the amendment requests before us pursuant to section 189a and 10 C.F.R. § 50.90.

Of course, our analysis here assumes that by fashioning their applications as requests for a license "amendment," applicants properly can invoke (and obtain a section 189a adjudicatory hearing relating to the Staff's denial of) what normally is considered as the discretionary enforcement remedy of "suspension." In its post-*South Texas* decision imposing the antitrust conditions now at issue, the Appeal Board suggested that a licensee seeking relief from an antitrust condition in its license should file a petition with the NRC Staff pursuant to 10 C.F.R. § 2.206 requesting that the Staff institute an enforcement-type "show cause" hearing. *See Davis-Besse*, ALAB-560, 10 NRC at 294-95. Licensees did not take this approach; as a practical matter, however, the result appears to be the same. Their requests have resulted in a Staff-initiated adjudicatory proceeding being convened in which these licensees will be afforded an opportunity to argue the merits of their petitions for appropriate licensing action.

[42] The other possible basis for our jurisdiction over this proceeding arises from the Commission's *South Texas* interpretation that it has "continuing police power over conditions properly placed on licenses, after [section] 105(c) antitrust review." CLI-77-13, 5 NRC at 1317. Our concern on this score, which we apparently share with the Staff, *see* Tr. 177, is that the Commission's recognition of its "policing" power was in the context of its authority to *enforce* existing conditions, a circumstance that may not encompass these licensees' requests to be relieved of previously imposed conditions. *See also Cities of Statesville v. AEC*, 441 F.2d 962, 974 (D.C. Cir. 1969) (en banc) (AEA gives Commission continuing "police" power over licensees' activities and that provides it with the ability to take remedial action if a license is being used to restrain trade). Nonetheless, in relying upon AEA section 189a and 10 C.F.R. § 50.90 as the basis for our jurisdiction here, we leave open the question of the extent to which AEA section 105 provides a basis for Commission antitrust review subsequent to issuance of a facility operating license.

[43] In both its initial opposition to the OE and CEI/TE hearing requests and its July supplement, Cleveland also references its earlier argument to the Staff that the issue preclusion doctrines of res judicata and collateral estoppel as well as the tenets of law of the case and laches bar consideration of the licensees' hearing requests. *See* Cleveland Petition at 8; Cleveland Supplement at 15-16. These nonjurisdictional concerns are most appropriately presented as grounds supporting summary disposition in Cleveland's favor. In presenting such arguments, however, Cleveland should recognize that, notwithstanding a similar docket designation, this proceeding is separate and apart from the earlier Commission antitrust proceedings regarding Davis-Besse and Perry that resulted in the license conditions now at issue.

[44] *See* Cleveland Petition at 8-9.

tion with applicant CEI for the sale of electricity to residential, commercial, and industrial customers in that area. According to Cleveland, by mandating that it have access to CEI's transmission facilities, the existing antitrust conditions give Cleveland access to power from sources other than CEI. This, in turn, has resulted in substantial cost savings that have enabled CPP to survive and continue as a viable competitor to CEI. Cleveland declares that this establishes that it is a direct beneficiary of the antitrust conditions at issue in this proceeding and, as a consequence, that its interests will be directly and adversely affected if, as the applicants request, those conditions are suspended.

Applicants and the Staff have expressed no quarrel with Cleveland's analysis of its standing to participate in this proceeding.[45] We find no reason to disagree either. Accordingly, Cleveland's intervention request is granted.

IV. AMP-OHIO PETITION TO INTERVENE

Also requesting intervening party status in this proceeding is AMP-Ohio. In its July 3 petition,[46] AMP-Ohio declares that it is a nonprofit corporation operated on a cooperative basis for the purposes, among others, of generating, purchasing, acquiring, transmitting, and selling electric power and resources to, and promoting the interests of, the seventy-five (out of a total of eighty-four) Ohio municipal electric utilities that are AMP-Ohio members. According to AMP-Ohio, in carrying out these purposes it has direct business dealings with all three licensees. AMP-Ohio also states that all of the municipal electric systems within the transmission service areas of OE and CEI/TE are AMP-Ohio members and thus are direct beneficiaries of the Perry and Davis-Besse license conditions whose continuing validity is at issue here.[47] AMP-Ohio asserts that its direct business dealings with the three licensees as well as its status as a representative of its members establish its standing to intervene in accordance with section 2.714(d)(1).

If made in a timely submission, AMP-Ohio's uncontroverted showing regarding its interest in this proceeding clearly would fulfill the requirements necessary to establish its standing to participate as a party. As both the licensees and the Staff assert in their responses to its intervention request,[48] AMP-Ohio's petition

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[45] *See* OE Answer to Cleveland Opposition at 2; CEI/TE Answer to Cleveland Opposition at 2 n.3; Staff Response to Cleveland and AEC Petitions at 11-12.

[46] *See* AMP-Ohio Petition at 2-4.

[47] AMP-Ohio also notes that it was an intervenor in the licensing proceeding that resulted in the license conditions now under challenge, although it withdrew prior to that proceeding's conclusion. *See id.* at 2 n.1.

[48] *See* Answer of [OE] to Petition of [AMP-Ohio] for Leave to Intervene (July 18, 1991) at 1-2 [hereinafter OE Answer to AMP-Ohio Petition]; Answer of [CEI/TE] to Petition of [AMP-Ohio] for Leave to Intervene (July 18, 1991) at 1-2 [hereinafter CEI/TE Answer to AMP-Ohio Petition]; NRC Staff's Response to Petition for Leave to Intervene Filed by [AMP-Ohio] (July 23, 1991) at 6-8 [hereinafter Staff Response to AMP-Ohio Petition].

was not timely filed. Although the notice of opportunity for hearing published on May 1 specified that any hearing or intervention requests had to be filed on or before May 31,[49] AMP-Ohio's petition was not submitted until July 3, some 33 days late.

Faced with the plain language of the May 1 notice, AMP-Ohio proffers the argument that the June 20, 1991 notice establishing this Licensing Board somehow tolled the May 31 filing date specified in the notice of opportunity for hearing. This assertion is singularly unpersuasive. The June 20 notice, which simply repeated the wording of the May 1 notice without providing for any other filing date, clearly had no effect upon the May 31 deadline specified in the notice of opportunity for hearing.[50] As a consequence, AMP-Ohio's intervention petition was filed out of time.

Anticipating this result, in its petition AMP-Ohio addresses, albeit briefly, each of the factors in section 2.714(a)(1) that govern the admission of late-filed intervention requests and declares that the balancing of these factors supports its admission.[51] Neither the licensees nor the Staff contests this assertion.[52]

Undertaking our own analysis of these factors, as section 2.714(a) mandates, it is apparent that the first factor — good cause for the failure to file on time — does not weigh in AMP-Ohio's favor. The only excuse AMP-Ohio offers for its dereliction in complying with the May 31 filing deadline (other than its already-rejected argument that this was not the deadline) is that because it was not served with the OE or CEI/TE hearing requests and thus was unaware that a hearing had been requested, it seemed "pointless" to intervene. This ignores the fact, which clearly was evident to Cleveland and AEC as reflected in their timely requests, that any intervention petition supporting the Staff's denial of the requested amendments would not become operative in the absence of a hearing request opposing the Staff's action. We cannot consider this excuse good cause for missing the filing date so plainly specified in the notice of opportunity for hearing.

Having failed to provide good cause for its late filing, AMP-Ohio must make a compelling showing regarding the other four factors.[53] In this regard, it is apparent that factor two — the availability of other means to protect petitioner's interest — supports AMP-Ohio's participation in this proceeding. As previously

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[49] *See supra* p. 236.

[50] *See* 10 C.F.R. § 2.105(d) (request for hearing or intervention shall be filed within time specified in *Federal Register* notice of proposed licensing action or such *lesser* time as the Commission may specify).

[51] *See* AMP-Ohio Petition at 4 n.2.

[52] *See* OE Answer to AMP-Ohio Petition at 1; CEI/TE Answer to AMP-Ohio Petition at 1; Staff Response to AMP-Ohio Petition at 8-10.

[53] *See, e.g., Mississippi Power & Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-704, 16 NRC 1725, 1730 (1982).

described,[54] the distinctive nature of the Commission's authority to consider and address the validity of the antitrust conditions it imposed leads us to agree with AMP-Ohio that no other forum or means now available can provide equivalent protection for its interest in seeing that the existing license conditions are maintained.

The third late-filed factor — the extent to which petitioner's participation will assist in developing a sound record — also strongly supports the grant of AMP-Ohio's petition. AMP-Ohio represents that it already is well acquainted with the OE and CEI/TE applications, having filed extensive comments with the Staff in opposition to their license amendment requests. No doubt, it can reasonably be expected to continue providing such input.

By the same token, its status as an entity that both does business directly with the three licensees and that represents numerous Ohio municipal electric companies establishes that its admission should be permitted under the fourth factor — the extent to which a petitioner's interests will be represented by existing parties. Cleveland, which is one of AMP-Ohio's members, has been granted intervenor status in this proceeding.[55] Nonetheless, because AMP-Ohio is engaged in business dealings with licensees on behalf of numerous Ohio municipal electric utilities, the interests it represents are more diverse than those of Cleveland, so as to merit separate representation.

Finally, the fifth factor — the extent to which petitioner's participation will broaden the issues or delay the proceeding — supports AMP-Ohio's admission as well. Because this proceeding is just beginning, we cannot foresee that AMP-Ohio's participation will be the cause of any delay. Nor can we conclude that its participation will broaden the issues being heard to any significant degree. AMP-Ohio, like Cleveland, states that its principal reason for intervention is to contest the legal and factual arguments made by licensees in favor of suspension of the existing license conditions. In these circumstances, this factor, which has previously been denominated as "of immense importance in the overall balancing process,"[56] poses no barrier to the late admission of AMP-Ohio.

While AMP-Ohio thus has not shown good cause for its failure to file its intervention petition within the time specified in the May 1, 1991 notice of opportunity for hearing, after considering its presentation relative to the other four factors governing late-filed petitions we are convinced that compelling support exists for permitting its late intervention. Accordingly, AMP-Ohio's request to intervene in this proceeding is granted.

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[54] *See supra* p. 243.

[55] *See supra* pp. 244-45.

[56] *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-743, 18 NRC 387, 402 (1983).

V. AEC INTERVENTION PETITION

The AEC intervention petition presents a different concern from that posited by the AMP-Ohio request. While its May 30 petition clearly is timely filed, significant questions exist concerning AEC's standing to participate as a party intervenor in this proceeding. Both applicants and the Staff oppose the grant of AEC's petition for lack of standing.[57]

Referencing the prior antitrust review litigation before this agency and the United States Court of Appeals for the Eleventh Circuit concerning the licensing of Alabama Power Company's (APC) Farley facility,[58] AEC asserts that it is the explicit beneficiary of the antitrust license conditions imposed by the Commission there that are "very similar and identical in remedial purpose to those conditions which are the subject of this proceeding."[59] These conditions, AEC declares, are significant in maintaining its viability in its particular regional electric power market. Arguing that the Staff's evaluation in support of its denial of the OE and CEI/TE amendment requests (and DOJ's recommendation to take that action) rested in significant part on the Appeal Board and Eleventh Circuit decisions in the *Farley* proceeding, AEC professes its fear that success by the applicants in this proceeding could serve as a precedent for vitiating the conditions in the Farley license. This, AEC declares, establishes that it has a direct and substantial interest in the outcome of this proceeding.

AEC also maintains, in reply to the filings of applicants and the Staff opposing it intervention request, that neither the Staff nor DOJ can adequately represent its interests. This is so, AEC asserts, because each has an obligation to serve the interest of the public that may not coincide with protecting AEC's interests. Further, according to AEC, Cleveland cannot be counted on to protect AEC's interests because it is uncertain whether Cleveland can or will do so given the unfair burdens this would impose. Finally, AEC states that its participation will not encumber or delay this proceeding because it does not plan to offer any evidence or cross-examine any witnesses on matters relating to the economics of the Perry and Davis-Besse nuclear plants, but merely will present its views on the proper legal principles to be applied to whatever facts regarding economics are put forth by the other parties.

AEC is most articulate in making its plea for intervention; nonetheless, it fails to fulfill the requirements necessary to establish it has standing to

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[57] *See* Answer of [OE] to Petition of [AEC] for Leave to Intervene (June 14, 1991) at 3-6 [hereinafter OE Answer to AEC Petition]; Answer of [CEI/TE] to Petition of [AEC] for Leave to Intervene (June 14, 1991) at 2-6 [hereinafter CEI/TE Answer to AEC Petition]; Staff Response to Cleveland and AEC Petitions at 12-14.

[58] *Alabama Power Co.* (Joseph M. Farley Nuclear Plant, Units 1 and 2), LBP-77-24, 5 NRC 804 (1977) and LBP-77-41, 5 NRC 1482 (1977), *aff'd as modified*, ALAB-646, 13 NRC 1027 (1981), *aff'd*, 692 F.2d 1362 (11th Cir. 1982), *cert. denied*, 464 U.S. 816 (1983).

[59] AEC Petition at 2.

intervene as a matter of right. Under the well-recognized judicial standards for standing that are applicable in NRC adjudicatory proceedings,[60] it is apparent that AEC fails to meet the "injury in fact" test. AEC does not operate in the licensees' geographic market area or have any other significant economic relationship with licensees or their direct competitors, such as Cleveland.[61] As such, the outcome of this proceeding will have no apparent impact upon its fiscal/competitive position, i.e., it will suffer no "injury in fact." Indeed, the only injury it might suffer — the establishment of a bad precedent — is the sort of "generalized grievance" that would be shared by any other utility in the country engaged in the generation, distribution, or sale of electricity in competition with a utility subject to antitrust license conditions.[62] That this asserted injury is unduly remote is demonstrated by the fact that, even if we agree with applicants about the continuing validity of the Perry and Davis-Besse antitrust conditions, the application of our conclusions to the Farley plant would require that its licensees come forward with information sufficient to warrant a reexamination of the particulars regarding that facility.[63]

We can readily sympathize with AEC's interest in maintaining the integrity of the precepts established in the extensive administrative and judicial litigation over the Farley facility. In the end, however, its interest in doing so is one that, in the context of this proceeding, is too "academic" to cloak it with standing. AEC's request to intervene as of right must, therefore, be denied.

There remains the question of the propriety of permitting discretionary intervention.[64] In its polar *Pebble Springs* decision,[65] the Commission outlined a number of factors that are to guide us in making such a determination:

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[60] *See, e.g., Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-91-13, 34 NRC 185, 187 (1991) (citing *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327 (1983), and *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610 (1976)).

[61] An "economic" interest in a facility generally is not sufficient to afford an intervenor standing in Commission licensing proceedings regarding health and safety matters. *See, e.g., Public Service Co. of New Hampshire* (Seabrook Station, Unit 2), CLI-84-6, 19 NRC 975, 978 (1984). In the context of an antitrust-related proceeding, however, such interests take center stage; indeed, they are matters that fall squarely within the "zone of interests" that the Congress sought to protect, as reflected in AEA section 105. *See Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), ALAB-470, 7 NRC 473, 474-75 (1978).

[62] *See Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332-33 (1983); *Transnuclear Inc.*, CLI-77-24, 6 NRC 525, 531 (1977).

[63] *See Three Mile Island*, CLI-83-25, 18 NRC at 333; *Transnuclear, Inc.*, CLI-77-4, 6 NRC at 531-32. *See also Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), ALAB-304, 3 NRC 1, 5-6 (1976) (possibility that NRC Staff and Licensing Board will take position adverse to interest of utility with pending application for construction permit for another facility is insufficient to establish its standing to intervene in this proceeding).

[64] Both licensees and the Staff oppose discretionary intervention for AEC. *See* OE Answer to AEC Petition at 7-9; CEI/TE Answer to AEC Petition at 6-8; Tr. 34.

[65] *See Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 616 (1976).

(a) Weighing in favor of allowing intervention —
  (1) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.
  (2) The nature and extent of the petitioner's property, financial, or other interest in the proceeding.
  (3) The possible effect of any order which may be entered in the proceeding on the petitioner's interest.
(b) Weighing against allowing intervention —
  (4) The availability of other means whereby petitioner's interest will be protected.
  (5) The extent to which the petitioner's interest will be represented by existing parties.
  (6) The extent to which petitioner's participation will inappropriately broaden or delay the proceeding.

Looking to the first and (as the Commission has made clear[66]) primary consideration, AEC's uncontroverted representations regarding its two decades of participation in the *Farley* litigation make it apparent that, when it comes to Commission antitrust review matters, AEC is a campaign-hardened veteran. We thus have little doubt that it is particularly well suited to provide a seasoned perspective on the central legal issue concerning the scope of AEA section 105 that, as we describe more fully *infra*, the parties are attempting to frame in this proceeding. This factor strongly supports discretionary intervention.

Factors two and three also weigh in favor of discretionary intervention. Although AEC's interests are insufficient to establish the "injury in fact" necessary to afford it standing, they certainly are within the "zone of interests" relevant to this proceeding.[67] Further, while the possible effect of any order we may enter in this proceeding is, as we have already indicated, too speculative to provide AEC with standing, its concerns about the ramifications of this proceeding as a "case of first impression" are not totally unfounded, particularly if this litigation culminates in broad legal rulings by the Commission concerning the scope of AEA section 105.

In contrast, factors four and five identified by the Commission in its *Pebble Springs* decision weigh against permissive intervention here. As licensees' competitors, Cleveland and AMP-Ohio appear to have interests similar to those AEC is trying to protect vis a vis APC and its Farley facility. No doubt Cleveland and AMP-Ohio will defend those interests vigorously. Further, there apparently are other means available to AEC to protect its interest in maintaining the Farley antitrust conditions. If APC wants relief such as that sought by applicants here, it likewise will have to request agency licensing action regarding the antitrust conditions in the Farley operating license. At that point, AEC can participate by

[66] *See id.* at 617. *See also Fermi*, ALAB-470, 7 NRC at 475 n.2; *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Units 1 and 2), ALAB-413, 5 NRC 1418, 1422 (1977).
[67] *See supra* note 61.

seeking to intervene in the adjudicatory proceeding that must be offered relative to such a license amendment request.[68]

Ultimately, however, these negative considerations are substantially offset by factor six. AEC has represented that it wishes only to participate on the issues put forth by other parties and then only to the extent of providing legal arguments rather than evidentiary presentations. Accordingly, its participation here will not inappropriately broaden or delay this proceeding.

After carefully reviewing these factors, particularly AEC's experience in AEA antitrust matters and its seeming ability to make a substantial contribution to the development of a sound legal record in this proceeding, we conclude in this instance that the balance weighs in favor of permitting AEC to become an intervening party. We do, however, make its participation subject to the restrictions it has represented it will accept, i.e., AEC will not be permitted to offer any evidence or to cross-examine any witnesses on matters relating to the economics of the Perry and Davis-Besse facilities. The same is true with respect to the OE issues regarding purported decisionmaker bias and prejudgment.

VI. BROOK PARK INTERVENTION PETITION

Asserting that it recently initiated a study of the feasibility of establishing a municipal electric system within licensee CEI's existing electrical service area, on August 8 Brook Park filed a petition seeking leave to intervene in this proceeding. Under the terms of the May 1991 notice of opportunity for a hearing, Brook Park's submission is over 2 months out of time. In its initial intervention petition, however, Brook Park did not address the impact of this tardiness. Pursuant to our August 16, 1991 directive to discuss the matter, in a September 4 supplement to its petition Brook Park argues that a balancing of the section 2.714(a) factors governing the admission of late-filed intervention petitions supports its intervention in this instance.[69] In their responses to the petition and the supplement, both the licensees and the Staff urge that Brook Park's petition be denied because it lacks standing and because a balancing of the section 2.714(a) standards governing late intervention do not support its admission.[70]

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[68] In fact, if the Farley licensee makes a request similar to that of applicants here, by participating as an intervening party in this proceeding, AEC may become a better target for issue preclusion (i.e., res judicata and collateral estoppel) claims than if it played no role in this proceeding.

[69] *See* [Brook Park] Supplement to Petition for Leave to Intervene (Sept. 4, 1991) at 3-6.

[70] *See* Answer of [OE] to [Brook Park] Petition for Leave to Intervene (Sept. 16, 1991) at 2-9; Answer of [CEI/TE] to [Brook Park] Petition for Leave to Intervene (Sept. 16, 1991) at 2-7; NRC Staff's Answer to Petition of [Brook Park] for Leave to Intervene (Aug. 28, 1991) at 3-7; NRC Staff's Response to [Brook Park] Supplement to Petition for Leave to Intervene (Sept. 16, 1991) at 4-9.

We agree that Brook Park lacks standing to intervene here, a circumstance that arises from its failure to show any "injury in fact." According to Brook Park, its intervention is necessary to protect its interest in access to the interconnection, wholesale power sale, and wheeling services now available from CEI under the existing antitrust conditions in the Perry facility's operating license. Yet, it is apparent that any injury Brook Park purportedly might suffer as a consequence of this proceeding is entirely hypothetical until it reaches its decision actually to institute a municipal electrical system. As counsel for Brook Park advised us during the prehearing conference, such a determination will not come, at the earliest, until November of this year.[71] At that time, Brook Park citizens will vote on whether to amend the municipality's charter to establish an electrical distribution system. If they do so, Brook Park's stake in this proceeding then will cease to be provisional and it will become subject to the same concrete injury in fact that could accrue to Cleveland or AMP-Ohio as a result of a determination in this proceeding in favor of licensees.[72] At present, however, the abstract, hypothetical nature of the injury to Brook Park is insufficient to establish its standing to intervene in this proceeding.

Brook Park's lack of standing is dispositive of its request for late intervention as of right. We note, nonetheless, that it also is questionable whether, even if it had standing, Brook Park's current showing would be sufficient to meet the standards for late-filed intervention. Critical in this regard is its failure to make an adequate demonstration regarding the third late-filed factor — the extent to which petitioner's participation will assist in developing a sound record. Brook Park admits that it had no real interest in this proceeding prior to June 25, 1991, when the municipal council passed an ordinance authorizing a study of whether Brook Park should establish a power system. Its familiarity with the OE and CEI/TE applications thus cannot match that of AMP-Ohio, which participated in the administrative review process before the Staff. Moreover, as compared to AEC, Brook Park has made no particular showing about the legal or technical experience it might bring to this proceeding. Based upon its present showing, therefore, a balancing of the factors set forth in section 2.714(a) does not support late intervention.[73]

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[71] *See* Tr. 42-43, 45-49.

[72] The conditional nature of Brook Park's present interest is further highlighted by the fact that a previous attempt to have elected officials establish a municipal electric system by ordinance failed for lack of enough affirmative votes. *See* Tr. 48.

[73] For the same reasons, we conclude that discretionary intervention is not appropriate for Brook Park.

VII. DOJ INVOLVEMENT

The final "intervention" issue that we must confront involves the participation of the Justice Department. In its July 22 filing, invoking AEA section 105c(5), DOJ declares that it intends to participate in this proceeding. In an antitrust proceeding relating to a commercial power reactor construction permit or operating license application, under that provision its authority to do so is unquestionable. As we have already explained, however, that section is not the jurisdictional basis upon which our consideration of the licensees' applications rests.[74] Instead, applicants and those seeking intervention are before us as in any other license amendment proceeding. Whether to permit DOJ participation here must, therefore, be governed by the standards applicable to intervention in such proceedings.

DOJ's status as a statutory party in AEA section 105c antitrust proceedings, including that which resulted in the license conditions now under attack, reflects a congressional judgment about DOJ's role as a principal overseer and enforcer of the antitrust laws. In light of its function, its standing to participate in this proceeding is apparent. Nonetheless, as with the AMP-Ohio and Brook Park requests for intervening party status, DOJ's July 22 filing is untimely. We have no difficulty, however, in concluding that it meets the standards for late-filed intervention.

DOJ's failure to seek timely intervention undoubtedly reflects what even the Staff concedes is the uncertain role of section 105c as the jurisdictional basis for this proceeding.[75] In these circumstances, this provides a substantial measure of good cause for its late filing. In addition, while DOJ's authority to institute judicial antitrust proceedings provides it with access to other forums that can impose antitrust conditions, as we observed with regard to AMP-Ohio,[76] this agency's role in crafting the conditions at issue also renders it a singular arena for contesting (and defending) their continuing validity. Undoubtedly, the Department's expertise and experience both in terms of antitrust law generally and the circumstances of this case establish that its ability to assist in developing a sound record is significant. Further, although the "public interest" championed by DOJ to some degree parallels that represented by the Staff, it is not coextensive to a degree that weighs against intervention. As DOJ counsel reminded us at the prehearing conference,[77] as the legal spokesman for the federal government as a whole, the Department's perspective is not necessarily the same as that of the Staff. Finally, in view of DOJ's representation that it now

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[74] *See supra* pp. 240-44.
[75] *See supra* note 42.
[76] *See supra* p. 247.
[77] *See* Tr. 21.

contemplates its participation likely will be at a "minimal" level,[78] we do not anticipate that its participation will broaden the issues or delay the proceeding to any appreciable degree. We thus conclude that DOJ should be afforded intervening party status as well.

VIII. ISSUES/CONTENTIONS AND FURTHER PROCEEDINGS

Having determined that we have jurisdiction to entertain the OE and CEI/TE hearing petitions and that these applicants, Cleveland, AMP-Ohio, AEC, DOJ, and the Staff (by operation of agency regulations) should be parties to this proceeding, we next turn to the matter of the issues to be litigated. Initially, applicants both specified three "issues" regarding the validity of the antitrust license conditions. In addition, OE set forth two "issues" regarding the impact on this proceeding of what it alleged were improprieties involving congressional contacts with the NRC and DOJ staffs and a predisposition on the part of those staffs to deny the licensees' applications. Subsequently, OE and CEI/TE each provided an additional listing that further outlines their challenges.[79] They now specify four "legal" issues and one "factual" issue that they assert may require resolution regarding the antitrust conditions in the Perry and Davis-Besse operating licenses.[80] At the same time, OE designates two additional "factual" issues questioning the weight to be accorded the NRC and DOJ staff determinations relative to the OE and CEI/TE applications because of alleged congressional interference and prejudgment.[81]

Among the intervenors, Cleveland has set forth several "contentions" for litigation in this proceeding, most of which relate to the jurisdictional arguments

[78] *See* Tr. 21, 227.

[79] *See* Letter from J. Murphy to Licensing Board (July 25, 1991) at 2; Letter from G. Charnoff to Licensing Board (July 25, 1991), encl.

[80] By way of summary, we note that applicants' first legal issue would require that we determine, based on the assumption that the Davis-Besse and Perry facilities' actual costs are higher than nonnuclear power costs, if those facilities offer licensees a "competitive advantage." If the answer to this first legal issue is "no," then their second legal issue would require a determination whether licensees' ownership shares in the Davis-Besse and Perry facilities can, in accordance with AEA section 105c, "create or maintain a situation inconsistent with the antitrust laws" so as to authorize the NRC to impose or retain those antitrust license conditions. Also resting on the assumption that the actual facility costs for Davis-Besse and Perry are higher than the costs of nonnuclear power, applicants' third legal issue poses the question whether the imposition or retention of applicants' antitrust license conditions constitutes a denial of equal protection and due process under the fifth amendment to the United States Constitution. Licensees' fourth legal issue would involve a determination about the appropriate basis for ascertaining facility "costs" so as to make the comparison for purposes of legal issues one and three. Finally, in the event we make a finding in their favor regarding the first legal issue, licensees maintain in their first factual issue that we should undertake a factual inquiry into whether the reactor facilities' actual costs are indeed higher than nonnuclear power costs.

[81] The text of OE's two "factual issues" raising bias and prejudgment claims against the NRC Staff and DOJ are set forth *infra* at note 83.

we have already rejected.[82] On the other hand, AMP-Ohio, AEC, and DOJ have indicated simply that they wish to participate (in varying degrees) with respect to all issues and subjects raised in the OE and CEI/TE hearing requests.

At the prehearing conference, applicant OE requested that if we admitted its bias/predisposition issues, we permit it to undertake discovery from both the Staff and DOJ. In contrast, none of the parties now seeks discovery on the issues put forth regarding the substantive validity of the Perry and Davis-Besse antitrust conditions. Instead, for reasons we will describe in more detail below, by way of summary disposition they want us to resolve a central, and potentially conclusive, legal question.

A. In sorting out the admissibility of the parties' issues and contentions, we deal first (as we did at the prehearing conference) with applicant OE's "issues" relating to alleged congressional interference with the initial decisionmaking process and prejudgment relative to its amendment application. With these factual issues, OE questions whether the impartiality of either the NRC or DOJ staffs was compromised by 1988 congressional activities relating to the Perry antitrust conditions and whether the NRC and DOJ staffs were improperly predisposed to deny its amendment application. A positive finding in either instance, OE alleges, would require that we give no weight to the Staff's and DOJ's negative recommendations regarding its application.[83]

Both the Staff and DOJ urge that we dismiss these issues. In its written response to the OE hearing request, the Staff made no specific challenge to the admission of these issues other than to state that they should not be considered because they do not raise "substantive issues."[84] During the prehearing conference, however, the Staff elaborated on this argument, asserting that the contentions should be dismissed because (1) the Staff is simply a party like any other before the Board whose legal arguments and evidence can be assessed on their merits and (2) the only factual support cited by applicant, i.e.,

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[82] In its July 1991 supplement, Cleveland does put forth a contention challenging the applicants' factual assertion that changed circumstances exist regarding the competitive cost advantage afforded by the Perry and Davis-Besse facilities. *See* Cleveland Supplement at 16.

[83] These issues are set forth in the enclosure to its July 25 letter to the Board as follows:

> Did the 1988 legislative proposal by Senator Howard M. Metzenbaum providing that "[t]he Nuclear Regulatory Commission shall not suspend or modify the application of any antitrust provision contained in the Perry operating license No. NPF-58, as such provision applies to any licensee of the Perry Nuclear Powerplant, Unit 1," the debate thereon in the Senate on March 29, 1988, as reflected in the Congressional Record of that date, pp. S 3257-59, and any related communications between the NRC staff and the legislative branch, compromise the actual or apparent impartiality of the staffs of the NRC and the DOJ in connection with their consideration of OE's application and, if so, should the Licensing Board and the Nuclear Regulatory Commissioners give no weight to the recommendations of the NRC and DOJ staffs?
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> Were the NRC and DOJ staffs predisposed to deny OE's application, as suggested by Senator J. Bennett Johnston's statement in the Congressional Record, 134 Cong. Rec. S 3258, 3259 (March 29, 1988), regarding a "strong rumor" that "the NRC has indicated that they have no intention of approving this application," and, if so, should the Licensing Board and the Nuclear Regulatory Commissioners give no weight to the recommendations of the NRC and DOJ staffs?

[84] *See* NRC Staff's Response to Requests for Hearing Filed by [OE], [TE], and [CEI] (June 20, 1991) at 7-8.

the senatorial statements in the *Congressional Record*, provide an insufficient factual basis to merit further consideration of OE's allegations. For its part, DOJ opposes any further exploration of applicant's claims because OE has failed to provide any factual support for its charges of improper contacts between DOJ and the Congress or DOJ prejudgment regarding OE's application.

Under whatever guise the Staff may have acted in the first instance when it issued a denial of the OE application, it is now before us as a litigant whose views are to be accorded the same status as those of any other party and whose biases can be scrutinized accordingly.[85] In asserting that no further consideration should be given to applicant's allegations, Staff contends that a distinction exists between charges of legislative interference and prejudgment relating to legal (as opposed to factual) issues and maintains that, because a determination about certain legal questions is all that is necessary to resolve this litigation, we need give no further consideration to applicant's bias claims.[86] Staff's position in this regard is supported by at least one judicial decision holding that in performing a review of an agency decision allegedly subject to bias, including improper legislative influence, the independent assessment that an adjudicatory decisionmaker (such as this Board) renders regarding the merits of the parties' legal positions will rectify any earlier impropriety.[87] This authority is persuasive. At this juncture, however, we are unable to parse the various controversies between the parties into the neat categories this analysis requires with a degree of certainty sufficient to convince us that threshold dismissal of these allegations is appropriate.

As to the question of the factual foundation for applicant's bias and prejudgment issues, we find that relative to the Staff they contain the *bare* minimum of factual support sufficient to warrant their admission for further litigation. Applicant concedes that the floor statements of Senators Metzenbaum and Johnston reported in the *Congressional Record* are the only factual proof it now has to support its bias and predisposition allegations.[88] Nonetheless, when viewed in a light most favorable to applicant OE,[89] they evidence legislative contacts with the Staff relating to the merits of its review of the OE application. Given the Staff's initial role in this instance as a decisionmaker (albeit administrative

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[85] *See, e.g., Indian Point*, ALAB-304, 3 NRC at 6; *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-268, 1 NRC 383, 399 (1975).

[86] *See* Tr. 95-98.

[87] *See Gulf Oil Corp. v. FPC*, 563 F.2d 588, 611-12 (3d Cir. 1977), *cert. denied*, 434 U.S. 1062 (1978).

[88] *See* Tr. 90-92. Subsequent to the prehearing conference, applicant provided us with copies of a March 1, 1988 letter from Senator Metzenbaum to the Staff, setting forth his views on OE's application as well as various drafts and the final version of the Staff's reply letter. *See* Letter from M. Spencer to Licensing Board (Sept. 24, 1991), encls. 1-4. We agree with applicant's assessment (*see* Tr. 72) that these documents obtained from the agency's Public Document Room provide scant support for its allegations.

[89] *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155 (1991).

rather than adjudicatory[90]) charged with acting in accordance with the public interest, on the basis of this showing we are unwilling to countenance threshold dismissal of these allegations as they relate to the Staff.

In contrast, applicant has provided nothing to support its allegations that there was improper congressional contact or prejudgment relating to DOJ's recommendations on the OE license application. Even under the more liberal pleading standards applicable to applicant's "issues,"[91] we cannot sanction the admission of questions challenging the integrity of the DOJ decisional process based on nothing more than speculation. Accordingly, further litigation regarding these issues as specified in applicant OE's July 25 statement will be limited solely to the questions of congressional interference with and prejudgment on the part of the NRC Staff.[92]

We admit these issues with some trepidation. Judicial authority concerning legislative interference recognizes the importance of congressional oversight of administrative agencies.[93] Indeed, to accommodate congressional oversight while at the same time avoiding improper ex parte communications with the

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[90] Judicial decisions regarding legislative interference in the administrative process under the so-called *Pillsbury* doctrine (named after the seminal decision of the United States Court of Appeals for the Fifth Circuit in *Pillsbury Co. v. FTC*, 354 F.2d 952 (5th Cir. 1966)) suggest that the showing necessary to support a finding of improper interference varies depending on the nature of the decisionmaker's role. In the context of a judicial or quasi-judicial proceeding, the "appearance of bias or pressure" may be sufficient, while in other circumstances a showing of actual influence may be necessary. *D.C. Federation of Civic Ass'ns v. Volpe*, 459 F.2d 1231, 1246-47 (D.C. Cir.), *cert. denied*, 405 U.S. 1030 (1972). *See also Town of Orangetown v. Ruckelshaus*, 740 F.2d 185, 188 (2d Cir. 1984). Although applicant OE has argued to the contrary, *see* Tr. 74-75, Staff's administrative review determination relative to its application does not fall into the "adjudicatory" category. Among other things, restrictions prohibiting off-the-record, ex parte contacts, one of the hallmarks of judicial decisionmaking, *see Sierra Club v. Costle*, 657 F.2d 298, 400 (D.C. Cir. 1981), seemingly were not applicable to that review. As a matter of policy, Staff often conducts meetings relating to its application review function in public, *see* 43 Fed. Reg. 28,058 (1978), but we are not aware of any statutory or regulatory requirement that it do so. *See* 10 C.F.R. § 2.102(a) (during Staff administrative review of an application, it may request any one party to confer with it informally). *See also id.* § 2.4 (under definition of "Commission adjudicatory employee" relative to ex parte and separation of functions rules (10 C.F.R. §§ 2.780-.781), Staff employees are included only if specifically designated).

[91] The Staff maintains, *see* Tr. 61-62, and we agree, that an applicant seeking a hearing following a Staff denial of its request for licensing action is not subject to the pleading standards applicable to intervening parties under 10 C.F.R. § 2.714(b). Applicants in such circumstances must identify the issues they wish to litigate, which must be within the scope of the hearing as specified in the hearing notice.

[92] As admitted, therefore, these issues read as follows:

> Did the 1988 legislative proposal by Senator Howard M. Metzenbaum providing that "[t]he Nuclear Regulatory Commission shall not suspend or modify the application of any antitrust provision contained in the Perry operating license No. NPF-58, as such provision applies to any licensee of the Perry Nuclear Powerplant, Unit 1," the debate thereon in the Senate on March 29, 1988, as reflected in the Congressional Record of that date, pp. S 3257-59, and any related communications between the NRC staff and the legislative branch, compromise the actual or apparent impartiality of the NRC staff in connection with its consideration of OE's application and, if so, should the Licensing Board and the Nuclear Regulatory Commissioners give no weight to the recommendations of the NRC staff?
>
> Was the NRC staff predisposed to deny OE's application, as suggested by Senator J. Bennett Johnston's statement in the Congressional Record, 134 Cong. Rec. S 3258, 3259 (March 29, 1988), regarding a "strong rumor" that "the NRC has indicated that they have no intention of approving this application," and, if so, should the Licensing Board and the Nuclear Regulatory Commissioners give no weight to the recommendations of the NRC staff?

[93] *See, e.g., Gulf Oil Corp.*, 563 F.2d at 610.

Commission itself, the Staff often serves as the contact for congressional inquiries regarding contested licensing cases. So as not to permit Staff actions undertaken as part of this legitimate role to be used as a pretext for probing the Staff's decisional process generally, we must give particular heed to Staff's expressed concerns about the scope of any discovery sought by applicant. Therefore, as we indicated at the prehearing conference,[94] at present we will permit applicant to undertake one round of discovery, by way of interrogatories.[95] Any further discovery by applicant, including depositions, can be conducted only with leave of the Board.

B. There remains the question of the admission of substantive issues and contentions regarding the applicants' amendment applications to abrogate the antitrust conditions in the Perry and Davis-Besse operating licenses. As we have indicated previously, several parties have specified legal and factual issues they wish to litigate in attacking or defending the Staff's administrative determination that the licensees' applications should be denied.[96] During the parties' prehearing conference presentations, however, it became apparent they were in agreement that there is a central or "bedrock" legal issue they all desire to have resolved by us as an initial matter.[97] This issue concerns the significance of facility costs as the basis for the imposition of the antitrust conditions at issue.[98] Although they were unable to do so during the course of the prehearing conference, the parties have represented that within 30 days following the issuance of our prehearing order, they will be able to provide a joint formulation of this issue. Thereafter, they will address the merits of this issue by way of summary disposition motions.

Further, as presented by the parties, it would appear that if, based upon these filings, we accept the applicants' legal position that facility costs are the linchpin for the antitrust license conditions at issue, we then would have to conduct an evidentiary hearing to determine whether the applicants are correct in their assertion that the Perry and Davis-Besse facility costs are, in fact, higher so as to warrant the nullification of those conditions. On the other hand, if we agree with the legal position of the Staff, DOJ, and the intervenors that these costs

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[94] *See* Tr. 118.

[95] In response to our preliminary ruling at the prehearing conference, applicant on September 20 served the Staff with a set of interrogatories. In accordance with 10 C.F.R. § 2.720(h)(2)(ii), we find that the answers to applicant's interrogatories are, as a general matter, necessary to a proper decision in this proceeding and that, as they involve Staff contacts with congressional personnel, the answers are not reasonably obtainable from any other source. Of course, under section 2.720(h)(2)(iv), the Staff is free to seek a protective order under section 2.740(c) with regard to any particular interrogatory it finds objectionable.

[96] *See supra* pp. 254-55.

[97] *See* Tr. 204-20.

[98] In their application, CEI/TE initially argued that suspension of the Perry and Davis-Besse antitrust license conditions also would be appropriate because the competitive environment and their competitive behavior had changed from what was found to exist at the time the conditions were imposed. *See* Tr. 166-67. Licensee OE in its application likewise made reference to changes in the competitive climate in its service area. *See* Tr. 152-54. Before us, however, neither CEI/TE nor OE relies upon such circumstances as a basis for the relief sought. *See* Tr. 154-55, 167.

are not determinative of the continuing validity of the license conditions, those parties would prevail and this proceeding would be concluded at this level.

In these circumstances, we find the parties' proposal reasonable.[99] Accordingly, within 30 days from the date of service of this order,[100] the parties are to file a joint statement of the "bedrock" legal issue (or issues) upon which they seek a ruling.[101] Thereafter, no later than 60 days from the date the joint issue statement is filed,[102] applicants are to file for summary disposition regarding that issue.[103] Cross-motions for summary disposition and/or responses to applicants' summary disposition motion from the Staff and the intervening parties, including DOJ, should be filed within 60 days after the submission of the applicants' motion. Applicants may file a response to Staff or intervenor summary disposition motions and/or a reply to those parties' responses to their summary disposition motion within 45 days after the last Staff or intervenor cross-motion/response is filed. Requests for oral argument on any dispositive motion should be made in a party's initial motion or responsive filing.

For the foregoing reasons, it is, this seventh day of October 1991, ORDERED that:

1. The hearing petitions of OE and CEI/TE are *granted* and they are admitted as parties to this proceeding.

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[99] Section 2.714(b)(1) of 10 C.F.R. declares that an intervenor can participate as a party only if it sets forth at least one contention that meets the pleading requirements in section 2.714(b)(2). While intervenors other than Cleveland have not presented any statement of specific issues labeled "contentions," they have made it clear that their intercession in this proceeding is intended to support the Staff's April 1991 administrative determination to deny the applicants' amendment request. In these circumstances, we find their statements in this regard minimally sufficient to qualify as contentions challenging the applicants' assertions concerning the "bedrock" legal issue of the significance of facility costs as a basis for the Perry and Davis-Besse antitrust conditions. Further, in agreeing to resolve this overarching legal issue first, we see no need presently to rule on the sufficiency of the parties' issues and contentions relating to the proper enumeration of those costs for each facility.

In addition, although section 2.714(b)(1) contemplates that parties will formulate their issues or contentions prior to the prehearing conference, in this instance strict adherence would run contrary to one of the principal justifications for the rule — the conservation of adjudicatory resources by avoiding piecemeal presentation of issues. With the parties' apparent agreement that there is a "bedrock" legal issue (or issues) in this proceeding, *see supra* note 97, considerations of judicial economy suggest that rather than spending time attempting to reconcile different statements of that issue, we simply afford the parties an additional opportunity to arrive at a joint formulation of the question.

[100] With respect to this filing, the provisions of 10 C.F.R. § 2.710 providing additional time for action based upon the method of service are not applicable.

[101] If the parties find they are unable to reach an agreement regarding a joint issue statement, in lieu thereof they should provide the Board with a joint status report in which they should indicate whether further efforts to arrive at a joint issue statement are likely to be fruitful and how much additional time they will need.

[102] In calculating the date upon which applicants must file for summary disposition, the provisions of section 2.710 providing additional time based upon the method of service are not applicable. Further, given the generous time limits afforded the parties for the preparation of their pleadings, the Board will not look with favor on motions for extension of time.

[103] With the exception of its timing provisions, all summary disposition motions must comply with the requirements of 10 C.F.R. § 2.749. Additionally, in light of their seeming unity of interests on "bedrock" legal issues, *see supra* note 79, in the absence of a prior showing establishing why they cannot do so, we expect all applicants (i.e., OE and CEI/TE) to file a single, joint dispositive motion relating to that question.

2. The intervention petitions of Cleveland, AMP-Ohio, AEC, and DOJ are *granted* and they are admitted as parties to this proceeding.

3. The intervention petition of Brook Park is *denied.*

4. As they relate to the NRC Staff, the two issues regarding bias resulting from congressional interference and predisposition specified by applicant OE in its July 25, 1991 proposed issues statement are *admitted* into this proceeding. Insofar as they relate to DOJ, those issues are *rejected.* Applicant is allowed to undertake one round of discovery relating to those issues by means of interrogatories to the Staff. Any further discovery by applicant on those issues can be undertaken only with leave of the Board.

5. Within 30 days from the date of service of this order, the parties are to file a joint statement setting forth their formulation of the central legal issue (or issues) for resolution relative to the merits of licensees' applications to amend the Perry and Davis-Besse operating licenses by suspending their antitrust conditions. Thereafter, the parties may seek summary disposition regarding that issue in accordance with the schedule specified in this order.

6. In accordance with the provisions of 10 C.F.R. § 2.714a(a), as it rules upon hearing requests and intervention petitions, this order may be appealed to the Commission within 10 days after it is served.

THE ATOMIC SAFETY AND
LICENSING BOARD

Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE

Charles Bechhoefer
ADMINISTRATIVE JUDGE

G. Paul Bollwerk, III
ADMINISTRATIVE JUDGE

Bethesda, Maryland
October 7, 1991

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Ivan Selin, Chairman
Kenneth C. Rogers
James R. Curtiss
Forrest J. Remick

In the Matter of

Docket No. 50-443-OLA
(Transfer-of-Ownership
Amendment)

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

November 15, 1991

The Commission considers the petitioner's appeal of a licensing board decision denying its petition to intervene and for hearing on a proposed amendment to the operating license to permit a transfer of ownership. The Commission dismisses the appeal for the petitioner's failure to file its brief on time and affirms, though on different grounds, the licensing board's order denying the petitioner standing.

RULES OF PRACTICE: APPELLATE REVIEW

Briefs filed beyond the 10-day period prescribed for appeals in 10 C.F.R. § 2.714a are justifiable only if there is a showing of good cause for the failure to have filed on time.

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

Participants in NRC proceedings are expected to familiarize themselves with the applicable rules of practice and to adhere to deadlines.

RULES OF PRACTICE: STANDING TO INTERVENE

The Commission applies contemporaneous concepts of standing in determining whether a petitioner has established a right to intervene and to a hearing in NRC proceedings; i.e., the petitioner must show that the proposed action will cause injury in fact to the petitioner's interest and that the injury is within the "zone of interests" protected by the applicable statutes.

RULES OF PRACTICE: STANDING TO INTERVENE (INJURY IN FACT)

The petitioner must establish that he or she will suffer a distinct and palpable harm that constitutes the injury in fact, that the injury can be traced fairly to the proposed action, and that the injury is likely to be redressed by a favorable decision in the proceeding.

RULES OF PRACTICE: STANDING TO INTERVENE (INJURY IN FACT)

The petitioner failed to show that favorable action in the instant proceeding would abate its claimed injury where it appears that the petitioner's alleged harm would still occur from the grant of a separately noticed license amendment that the petitioner failed to challenge.

MEMORANDUM AND ORDER

I. INTRODUCTION

On June 28, 1991, the Seacoast Anti-Pollution League (SAPL) filed a notice of appeal from the Atomic Safety and Licensing Board's Memorandum and Order, LBP-91-28, 33 NRC 557 (1991), which denied SAPL's petition for leave to intervene and for hearing on a proposed amendment to the operating license for the Seabrook Station. The proposed amendment would permit the Public Service Company of New Hampshire (PSNH), one of the licensed owners of the facility, to transfer its ownership interest in Seabrook to the North Atlantic Energy Corporation (NAEC). Although SAPL's notice of appeal was timely under our rules of practice, SAPL did not file a supporting brief at the same time as prescribed in 10 C.F.R. § 2.714a(a). Both the Nuclear Regulatory Commission (NRC) Staff and the Licensees oppose SAPL's appeal and argue that the Commission has ample grounds either to dismiss the appeal for SAPL's

failure to submit its brief on time or, alternatively, to deny the appeal on its merits.[1] For the reasons stated in this Memorandum and Order, we dismiss the appeal and otherwise affirm the Licensing Board's denial of SAPL's intervention petition.

II. BACKGROUND

On February 28, 1991, the NRC Staff published a notice of opportunity for hearing on the proposed issuance of an amendment to the Seabrook operating license, which would authorize NAEC to acquire PSNH's ownership interest in the Seabrook Station. 56 Fed. Reg. 8373 (Feb. 28, 1991). PSNH, on behalf of itself and the other Seabrook co-licensees, had submitted an application for the proposed amendment in a letter dated November 13, 1990, from Ted C. Feigenbaum to the NRC, which was further supplemented in a letter dated January 14, 1991, from Mr. Feigenbaum. As described in the *Federal Register* notice and the amendment application, transfer of PSNH's ownership interest to NAEC is contemplated under the reorganization plan ordered by the Bankruptcy Court to resolve the pending PSNH bankruptcy proceedings. The reorganization plan involves the acquisition of PSNH by Northeast Utilities (NU) and, through a merger, the formation of NAEC and "Reorganized PSNH" as two wholly owned NU subsidiaries. NAEC will acquire PSNH's 35.56942% ownership share of Seabrook, but will not assume responsibility for management, operation, and maintenance of Seabrook. Responsibility for those functions is proposed to be transferred, however, to another NU subsidiary pursuant to another amendment application, notice of which was published at 56 Fed. Reg. 9384 (Mar. 6, 1991).

SAPL filed its petition for leave to intervene and for hearing on the ownership transfer amendment on April 1, 1991, within the time prescribed in the February 28 notice, and its petition was subsequently referred to a Licensing Board established to rule on such petitions and to preside over the proceeding in the event that a hearing was ordered.[2] In its petition, SAPL described itself as a citizens' organization with its principal place of business in Portsmouth, New Hampshire, which represents the interests of citizens in New Hampshire and northeastern Massachusetts, most of whom reside within the 10-mile emergency

[1] The Staff responded on July 15, 1991, in opposition to SAPL's notice of appeal, noting SAPL's failure to file a supporting brief. The Licensees filed a motion to dismiss the appeal on July 17, which the Staff supported in an answer dated July 29. SAPL filed a brief in support of its appeal on July 23. By order of July 29, 1991, we permitted the Staff and Licensees to respond to SAPL's brief on the merits, without prejudice to our consideration whether the appeal should be dismissed owing to SAPL's untimely filing. The Licensees and the Staff filed briefs on August 6 and August 8, 1991, respectively, in response to our order.

[2] 56 Fed. Reg. 22,016 (May 13, 1991). SAPL initially filed its petition with the Licensing Board convened to hear offsite emergency planning issues in the Seabrook operating license proceeding. The proposed amendment is unrelated to the remaining issues in the operating license proceeding, and SAPL did not submit its petition in the form of a motion to reopen that proceeding.

planning zone for the Seabrook Station.[3] SAPL has previously intervened in both the construction permit and the operating license proceedings for Seabrook. SAPL averred that the transfer of PSNH's ownership interest to NAEC may cause a "material increase in the hazard of operation" of Seabrook on the basis of pending NRC investigations of alleged harassment and intimidation by Northeast Utilities (NU) of its employees at the Millstone Nuclear Power Plant in Connecticut. In SAPL's words, "[t]he fact of the NRC's investigation into NU's operation of Millstone, and its negative treatment of whistleblowers raises genuine concerns regarding the propriety of the transfer of Seabrook to that company." SAPL's Response to Licensees' Answer at 2 (Apr. 24, 1991). SAPL also pointed to comments in the Staff's Systematic Appraisal of Licensee Performance report for Millstone which, SAPL believes, indicate weaknesses in management's resolution of employee concerns.

The NRC Staff and the Licensees opposed SAPL's petition. The Licensees argued that SAPL had not demonstrated either that the interests it sought to protect or the relief it sought were within the scope of the proceeding, because the amendment at issue dealt only with ownership of the plant, not operational responsibility. The Staff made similar arguments against granting intervention but also emphasized that "the mere pendency of an investigation is not material to licensing issues and does not show a particularized harm." NRC Staff Response to SAPL Petition at 8 (Apr. 22, 1991).

On June 18, 1991, the Licensing Board denied SAPL's petition to intervene in the amendment proceeding on the transfer of ownership. The Board viewed its jurisdiction to be limited to matters related to the transfer of ownership, and not operation, of the plant. In this context, the Board found that "allegations concerning NRC investigations of regulatory violations by a parent organization at another licensed facility . . . have no place and cannot be reviewed in the instant proceeding," and that "the mere pendency of an investigation is not germane to licensing issues and does not show particularized harm." LBP-91-29, 33 NRC at 559. The Board held that SAPL had not demonstrated injury in fact or an affected interest within the scope of the proceeding and, consequently, that SAPL lacked standing to intervene.

The Board noted that its order could be appealed to the Commission within 10 days of service of the order in accordance with 10 C.F.R. § 2.714a(a). 33 NRC at 560. SAPL filed a notice of appeal on June 28, 1991, with the Commission, but did not submit a brief in support of its appeal until July 23, 1991. This

[3] In its April 1 petition, SAPL did not identify a member of the organization for whom it was acting as a representative, as usually is required to establish organizational standing. The Licensees and the Staff both noted this defect in SAPL's petition, and SAPL then identified the names of two members residing near the Seabrook plant in its April 24, 1991 response to the Licensees' Answer to the Petition (April 11, 1991). The Licensing Board accepted SAPL's representation as curing the deficiency in its original petition. LBP-91-28, 33 NRC at 558 n.4.

matter comes before us in accordance with the interim appellate procedures in effect at the time of the Licensing Board's decision.[4]

III. ANALYSIS

A. Whether SAPL's Appeal Should Be Dismissed

We consider first the question whether SAPL's appeal should be dismissed for its failure to submit a supporting brief with its notice of appeal as required under 10 C.F.R. § 2.714a(a). Both the Staff and the Licensees urge dismissal on this ground.

There is no doubt that 10 C.F.R. § 2.714a governs any appeal from the Licensing Board's order. *See Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-91-5, 33 NRC 238 (1991). Section 2.714a(a) applies to circumstances, like those here, in which the Licensing Board's order wholly denies a petition for leave to intervene or request for hearing. To assert an appeal under this provision, a party must file a notice of appeal and accompanying supporting brief within 10 days after service of the Board's order. The Licensing Board specifically noted the applicability of section 2.714a(a) in its order, 33 NRC at 560, and SAPL concedes that it should have filed its brief with its notice of appeal.[5] Although the provisions in section 2.714a may not be jurisdictional in the sense that they absolutely preclude consideration of appeals that are not perfected within the prescribed time, further consideration of the appeal is warranted only if good cause is shown for the failure to file on time. *Turkey Point*, CLI-91-5, *supra*, 33 NRC at 240.

To explain its failure to file on time, SAPL states that it mistakenly treated its appeal as an appeal under 10 C.F.R. § 2.762 from an initial decision for which SAPL would have had 30 days from the filing of its notice of appeal to file its supporting brief.[6] SAPL attributes its error to "oversight" and its "long standing practice of filing briefs" in the operating license proceeding. In view of its long participation as an intervenor in Seabrook proceedings and the timeliness of its notice of appeal, SAPL asks that we not foreclose consideration of its late brief.

For their part, the Licensees and the Staff argue that SAPL's reasons for its late filing are unpersuasive and that, on the strength of our recent decision in *Turkey Point*, CLI-91-5, *supra*, SAPL's appeal should be dismissed.[7] In

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[4] *See* 10 C.F.R. § 2.785 note (b), *published at* 55 Fed. Reg. 42,944 (Oct. 24, 1990).

[5] Brief Supporting Intervenor's Notice of Appeal of LBP-91-28 at 3 (July 23, 1991).

[6] *Id.*

[7] Licensees' Motion to Dismiss Appeal (July 17, 1991); NRC Staff Response in Support of Licensee's Motion to Dismiss Appeal (July 29, 1991). Licensees' counsel notes that SAPL did not file a motion for leave to file its

(Continued)

particular, both believe that SAPL's long participation in NRC proceedings and the Licensing Board's specific reference to 10 C.F.R. § 2.714a in its order undercut SAPL's argument that its late filing be overlooked.

We agree with the Licensees and the Staff. Neither SAPL nor its counsel is a novice to NRC proceedings. SAPL's failure to follow the applicable procedures is not excused by its averment that it was accustomed to handling other matters differently. We do not think it too much to expect participants in our proceedings to read and otherwise familiarize themselves with the applicable rules of practice. *See Duke Power Co.* (Perkins Nuclear Station, Units 1, 2, and 3), ALAB-615, 12 NRC 350, 352 (1980). Even in instances involving lay litigants, we expect adherence to deadlines to ensure the orderly administration of the adjudicatory process. *See Turkey Point*, CLI-91-5, *supra*, 33 NRC at 241. Because we do not believe that SAPL has shown sufficient cause for its failure to timely file its brief, SAPL's appeal from the Licensing Board's decision denying its petition to intervene is dismissed.

B. The Licensing Board's Denial of Standing

While we have decided that SAPL's tardy filing warrants dismissal of the appeal, we have determined on review of the Licensing Board's decision and the positions of the parties that the Board was correct in denying SAPL standing. Although we are satisfied that the Licensing Board reached the appropriate result, we rest our determination on somewhat different grounds than did the Licensing Board. SAPL has not shown, even accepting its claim of injury, that a remedy in this proceeding will abate the alleged harm.

There is no dispute over the basic principles governing the standing determination. The Commission has long applied contemporaneous judicial concepts of standing in determining whether a petitioner has established a right to intervene and to a hearing in NRC proceedings. *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332-33 (1983); *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 614 (1976). To establish standing, the petitioner must show that the proposed action will cause "injury in fact" to the petitioner's interest and that the injury is arguably within the "zone of interests" protected by the statutes governing the proceeding. *Three Mile Island*, CLI-83-25, *supra*, 18 NRC at 332. In making this showing, the petitioner must establish that he or she will suffer a distinct and palpable harm

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brief out of time. Such a motion would have been appropriate, *see Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), ALAB-424, 6 NRC 122, 126 (1977), but we have considered, in any event, SAPL's arguments for accepting its brief for purposes of our decision here.

that constitutes the injury in fact, that the injury can be traced fairly to the challenged action, and that the injury is likely to be redressed by a favorable decision in the proceeding. *See Dellums v. NRC*, 863 F.2d 968, 971 (D.C. Cir. 1988).

The Licensing Board found that SAPL had "not demonstrated any injury in fact and has alleged no basis for an interest within the scope of this proceeding." LBP-91-28, *supra*, 33 NRC at 559. Although SAPL's claim of injury rests on a somewhat tenuous chain of inferences, it is not clear that harms arising from a co-owner's relationship to or influence over the plant operator are wholly beyond the scope of an ownership transfer proceeding.[8] Nonetheless, we find that SAPL has not satisfied the threshold standing requirements, because it has failed to describe how any remedy in this proceeding can provide relief where, without objection, a separate amendment will permit an NU subsidiary to operate and manage the plant.

SAPL's position is premised on NU's alleged harassment and intimidation of employees at its Millstone plant. In SAPL's view, the alleged conduct, should it occur at Seabrook, would make operation of the plant more hazardous. SAPL's objection to NAEC's holding an ownership interest rests on the purported influence of NU through its subsidiary over the plant operator. But in order to establish its standing, SAPL bears the burden of showing that, but for the particular action it challenges, its injury would abate. *See Simon v. Eastern Kentucky Welfare Rights Organization*, 426 U.S. 26, 38 (1976); *Dellums v. NRC, supra*, 863 F.2d at 971.

About a week after the notice of the ownership transfer amendment was published, a notice appeared in the *Federal Register* of a separate amendment by which operational authority over Seabrook would be transferred from PSNH to NAESCO, a different NU subsidiary. 56 Fed. Reg. 9373-74, 9384 (Mar. 6, 1991). The latter amendment would authorize NAESCO to manage, operate, and maintain the Seabrook plant,[9] matters that are at the heart of SAPL's concern and claim of potential injury. Yet, despite its objection to NU's involvement with the Seabrook project, SAPL did not respond to that notice by filing a petition for leave to intervene or for hearing on that amendment, nor has SAPL since

[8] *Cf. Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-459, 7 NRC 179, 200 (1978) (co-owner must be licensed in view of influence owner can exert over the actions and attitudes of its agents without being in "possession" of the premises); *General Electric Co.* and Southwest Atomic Energy Associates, 3 AEC 99 (1966) (foreign corporation's ownership, control, or domination an issue in construction permit proceeding).

[9] As indicated in the notice, however, the reorganization plan contemplates that the transfer of managerial authority will be accomplished by transferring *existing* Seabrook staff and contractor support to NAESCO for the management and operation of Seabrook.

sought permission for late intervention.[10] No other challenge to the amendment has been filed. Even if SAPL were granted the relief it requests with respect to the ownership transfer amendment, it appears that the harm that SAPL claims it will suffer would still occur from an amendment SAPL has left unchallenged. Thus, we are satisfied that SAPL has not sufficiently demonstrated its standing to intervene in this proceeding concerning the ownership transfer amendment. SAPL has not shown that its alleged harm would abate if it were granted relief on the amendment at issue in this proceeding.

IV. CONCLUSION

For the reasons stated in this decision, SAPL's appeal is *dismissed* and the Licensing Board's order in LBP-91-28 is otherwise *affirmed.*

IT IS SO ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 15th day of November 1991.

[10] In the November 13 letter from Mr. Feigenbaum that transmitted the application for the ownership transfer amendment, PSNH noted its intent to separately seek both amendments. The two amendment applications were distinguished in the Secretary's transmittal of SAPL's intervention petition to the Licensing Board. *See* Memorandum for B. Paul Cotter, Jr., Chief Administrative Judge, from Samuel J. Chilk, Secretary of the Commission (Apr. 29, 1991). In addition, both the Licensees and the NRC Staff had noted SAPL's failure to seek intervention on the amendment involving NAESCO in their initial responses to SAPL's petition on the ownership transfer amendment.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Ivan Selin, Chairman
Kenneth C. Rogers
James R. Curtiss
Forrest J. Remick

In the Matter of

Docket Nos. 50-440-A
50-346-A
(Suspension of
Antitrust Conditions)

OHIO EDISON COMPANY
(Perry Nuclear Power Plant,
Unit 1)

CLEVELAND ELECTRIC ILLUMINATING
COMPANY and
TOLEDO EDISON COMPANY
(Perry Nuclear Power Plant,
Unit 1; Davis-Besse Nuclear
Power Station, Unit 1)

November 20, 1991*

The Commission *sua sponte* exercises its inherent supervisory power over an adjudicatory proceeding initiated by applicants' request for amendments that would remove certain antitrust license conditions pertaining to the Perry and Davis-Besse nuclear plants. The Commission directs its Licensing Board to suspend consideration of all matters, except for two issues referred to as the "bedrock" legal issue.

*Re-served November 21, 1991, because of correction to note 3.

DECISIONAL BIAS (NRC STAFF)

STAFF BIAS

The Commission notes that consideration of an issue of decisional bias is unprecedented in its proceedings and defers providing guidance where the "bedrock" legal issue has the potential to be dispositive of the proceeding.

ORDER

The instant proceeding was initiated by Ohio Edison Company's, Cleveland Electric Illuminating Company's, and Toledo Edison Company's (Applicants) requests for amendments to the operating licenses for the Perry and the Davis-Besse nuclear plants. The amendments would remove certain antitrust license conditions that were attached to the licenses as a result of the Commission's initial antitrust review pursuant to section 105c of the Atomic Energy Act of 1954, as amended. The opportunity for a formal adjudicatory hearing was afforded the Applicants on the occasion of the NRC Staff's announcement that after administrative consideration, it would deny the amendment request. *See* 56 Fed. Reg. 20,057 (1991). A Licensing Board was constituted to consider requests for hearing and intervention. Applicants requested the hearing on the denial and other parties sought to intervene on the basis of their interest. Intervention was granted to United States Department of Justice, City of Cleveland, American Municipal Power–Ohio, Inc., and the Alabama Electric Cooperative.[1] The NRC Staff is also a party.

The Licensing Board has recently issued orders memorializing its rulings during a prehearing conference and announcing a hearing and providing for limited appearance requests. Among other things, the Board ruled that it had jurisdiction to conduct the proceeding,[2] admitted licensee Ohio Edison's contention relating to alleged decisional bias by the NRC Staff, and provided an opportunity to submit a joint statement setting forth the "bedrock" legal issue (or issues) in this proceeding that thereafter will be the subject of possibly dispositive summary disposition motions. LBP-91-38, 34 NRC 229 (1991).

[1] Alabama Electric Cooperative's intervention was granted as a matter of discretion and was limited in various respects not here relevant.

[2] We acknowledge that the City of Cleveland, which was admitted as an intervenor in the proceeding, has appealed (relying on 10 C.F.R. § 2.714a) the Licensing Board's jurisdictional ruling in the proceeding. We will consider Cleveland's filing, and any responses thereto, in due course.

Under the Board's order the parties will for the next approximately 6 months be briefing what they have all acknowledged is a "bedrock" legal issue.[3] Ohio Edison has volunteered that the decision on the legal issue has the potential of allowing applicants to proceed to an evidentiary proceeding or of terminating the hearing in favor of maintaining the license conditions.

While intimating no opinion on this issue or any other issue before the Board, we hereby exercise our inherent supervisory power over adjudicatory proceedings to direct the Licensing Board to suspend its consideration of all matters in this proceeding with the sole exception of the so-called "bedrock" legal issue. We take this action today because the bedrock issue has the potential to be dispositive of this proceeding and particularly in light of the nature of the contention on decisional bias by the NRC Staff. The admission of such a contention appears to be without precedent in our proceedings. Thus, there is no current guidance available to the Licensing Board on this kind of issue, and the Commission is not inclined to consider how such guidance is to be provided while the possibility remains that the proceeding will be resolved without any need to reach the issue.[4]

IT IS SO ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Rockville, Maryland,
this 20th day of November 1991.

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[3] The parties have informed the Licensing Board that all of the parties have agreed upon the following as the "bedrock" legal issue (or issues) in this proceeding:

> Is the Commission without authority as a matter of law under section 105 of the Atomic Energy Act to retain antitrust license conditions contained in an operating license if it finds that the actual cost of electricity from the licensed nuclear power plant is higher than the cost of electricity from alternative sources, all as appropriately measured and compared?

and

> Are the Applicants' requests for suspension of the antitrust license conditions barred by res judicata, or collateral estoppel, or laches, or the law of the case?

See Letter from R. Goldberg and C. Strother, Jr., Counsel for the City of Cleveland, to Judges Miller, Bechhoefer, and Bollwerk (Nov. 7, 1991).

[4] We note the Staff's Response to Ohio Edison Company's Interrogatories to the Nuclear Regulatory Commission Staff was filed October 23, 1991. Ohio Edison responded with a motion to compel seeking further answers from the NRC Staff.

Cite as 34 NRC 273 (1991) LBP-91-39

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Thomas S. Moore, Chairman
Dr. George A. Ferguson
Dr. Jerry R. Kline

In the Matter of **Docket No. 50-322-OLA-2**
(ASLBP No. 91-631-03-OLA-2)
(Possession-Only License)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station, Unit 1) **November 15, 1991**

In this Memorandum and Order, the Licensing Board finds that none of the petitioner's proferred contentions are admissible and, therefore, it denies petitioner's intervention petition.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

The Commission has made it clear that the new pleading requirements of 10 C.F.R. §2.714(b) are to be enforced vigorously and that licensing boards are not free to assume any missing information in a contention. *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155-56 (1991).

REGULATORY GUIDES: STATUS

It is well settled that regulatory guides are just that — guides, not regulations — and compliance with them is not required. *See, e.g., Petition for Emergency*

and Remedial Action, CLI-78-6, 7 NRC 400, 406-07 (1978); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 737 (1985); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-788, 20 NRC 1102, 1161 (1984).

RULES OF PRACTICE: CONTENTIONS

A motion for reconsideration of a portion of the Licensing Board's earlier ruling on petitioner's standing is not a proper subject for a contention as that term is used in 10 C.F.R. § 2.714(b). The petitioner's contentions must focus on the issues identified in the notice of hearing, the applicant's amendment application, and the staff's environmental responsibilities relating to that application, not on the petitioner's own standing to raise issues concerning these matters.

MEMORANDUM AND ORDER
(Ruling on Contentions)

I.

The history of this proceeding for a "possession-only license" (POL) amendment for Long Island Lighting Company's (applicant's) Shoreham Nuclear Power Station is set forth in several earlier Commission and Licensing Board opinions and need not be repeated here.[1] It suffices to note that, in LBP-91-26, the Licensing Board (as then constituted) ruled that petitioner, Scientists and Engineers for Secure Energy, Inc. ("SE2"), had alleged sufficient injury in its intervention petition to establish standing to raise certain issues under the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 et seq., and the Commission's implementing environmental regulations, 10 C.F.R. Part 51.[2] SE2 then filed a supplemental petition containing seven contentions.[3] The applicant and the NRC staff both opposed the admission of any of the proffered con-

[1] *See* CLI-91-1, 33 NRC 1 (1991); LBP-91-26, 33 NRC 537, *reconsideration denied*, LBP-91-32, 34 NRC 132 (1991); LBP-91-7, 33 NRC 179 (1991).

[2] *See* 33 NRC at 543, 547.

[3] *See* Petitioners' Amendment and Supplement to Petitions to Intervene [hereinafter Petitioner's Supplement] (July 1, 1991).

Although a second petitioner, Shoreham–Wading River Central School District (SWRCSD), joined SE2 in filing a joint supplemental petition, that petitioner's initial intervention petition was earlier denied. *See* LBP-91-26, 33 NRC at 545-47. Although SWRCSD has filed an appeal from that ruling with the Commission, only SE2 remains as a petitioner before us.

tentions.[4] Thereafter, the Board held a prehearing conference at which it heard argument on the admissibility of the petitioner's contentions.[5]

For the reasons that follow, we conclude that none of the petitioner's proffered contentions are admissible. Accordingly, SE2's petition to intervene is denied. Below, we address seriatim each of the petitioner's contentions.

II.

A. The petitioner's first contention asserts that, before issuing the POL, the NRC must prepare an environmental impact statement (EIS) to consider the impacts of the proposal to decommission Shoreham. This is so, the contention states, because the POL is within the scope of the proposal to decommission Shoreham and the decommissioning proposal is itself a major federal action significantly affecting the quality of the human environment. Next, quoting the definitions from the NEPA regulations of the Council on Environmental Quality (CEQ) that have been adopted by the NRC in 10 C.F.R. § 51.14(b), the contention claims that the POL is within the scope of the proposal to decommission Shoreham "because it is an 'interdependent [part] of [that] larger action and depend[s upon (*sic*)] the larger action for [its] justification.' "[6] Finally, and again relying on definitions from CEQ's regulations adopted by the NRC, the contention asserts that the POL is also a cumulative action that should be discussed in a comprehensive EIS on the decommissioning of Shoreham.

In arguing that the petitioner's first contention is inadmissible, the applicant and the staff both assert that the contention does not meet the requirements for an admissible Shoreham contention laid down by the Commission in several recent rulings. They also argue that the petitioner's contention fails to meet the general standards of 10 C.F.R. § 2.714(b)(2)(ii), which requires that a contention set forth the facts or expert opinion supporting it.

The applicant and the staff are correct that the petitioner's first contention does not meet the special requirements for an admissible contention enunciated in earlier rulings by the Commission for proceedings involving Shoreham. In the first of those decisions, CLI-90-8,[7] the Commission addressed the intervention petitions of SE2 and SWRCSD in an earlier chapter of the Shoreham saga. At issue were the validity of a confirmatory order in which the applicant agreed not to refuel the reactor without agency permission and two license

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[4] *See* LILCO's Opposition to SE2's Contentions on "Possession Only" License Amendment (July 12, 1991); NRC Staff Response to Petitioners' July 1, 1991 Amended Petition and Supplement (July 22, 1991).

[5] On September 24, 1991, the Licensing Board was reconstituted to include the current Chairman. *See* 56 Fed. Reg. 49,804 (1991).

[6] Petitioner's Supplement at 7.

[7] 32 NRC 201 (1990), *reconsideration denied*, CLI-91-2, 33 NRC 61 (1991).

amendments involving changes to the applicant's security plan and offsite emergency preparedness. The petitioners argued that these agency actions amounted to a de facto decommissioning of Shoreham that could be approved under NEPA only after the NRC prepared an EIS considering the resumed operation of the facility as an alternative to decommissioning. The Commission responded that the applicant's determination not to operate Shoreham was a purely private action that did not involve the agency. As a consequence, only its decision on the method of decommissioning, not its decision whether to decommission, requires NRC approval. Further, the Commission stated that because "[t]he alternative of 'resumed operation' — or other methods of generating electricity — are alternatives to the decision not to operate Shoreham and thus are beyond Commission consideration,"[8] such alternatives "need not be considered under NEPA" so that no EIS is needed.[9] With this guidance, the Commission then forwarded the intervention petitions to the Licensing Board for further proceedings.

Thereafter, in CLI-91-4,[10] the Commission denied, as interlocutory, the appeal of the same petitioners from a Licensing Board ruling finding that they lacked standing, but permitting them to rectify the deficiencies in their petitions.[11] The Commission took the opportunity in CLI-91-4, however, to correct another portion of that ruling in which the Board decided, based on CLI-90-8, that the petitioners' claims regarding the illegal segmentation of the Shoreham decommissioning process were outside the scope of the amendment proceeding. In explaining its earlier ruling, the Commission opined that while it doubted the petitioners could credibly show that the three actions at issue were part of the decommissioning process, its decision in CLI-90-8 nonetheless was not intended to preclude an improper segmentation claim. At the same time, the Commission stated that any such contention

> will at a minimum need to offer some plausible explanation why an EIS might be required for an NRC decision approving a Shoreham decommissioning plan *and* how these actions here could, by foreclosing alternative decommissioning methods or some other NEPA-based considerations, constitute an illegal segmentation of the EIS process.[12]

Finally, in CLI-91-1, an opinion involving the present POL proceeding handed down between the two earlier discussed decisions, the Commission addressed the threshold question whether a POL request must be preceded by the applicant's decommissioning plan. It concluded that "[n]either regulations,

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[8] 32 NRC 207 (footnote omitted).
[9] *Id.* at 208.
[10] 33 NRC 233 (1991).
[11] *See* LBP-91-1, 33 NRC 15 (1991).
[12] 33 NRC at 237 (emphasis in original).

NEPA, nor policy considerations require a decommissioning plan to be submitted in conjunction with the POL application."[13] The Commission stated that

> the decommissioning rules do not contemplate that a POL would, in normal circumstances, need to be preceded by submission of any particular environmental information or accompanied by any NEPA review related to decommissioning. Accordingly, we do not believe that NEPA or 10 C.F.R. Part 51 serves as a basis for linking a POL with the filing or review of any preliminary decommissioning plan. Of course there may be special circumstances where some NEPA review for a POL may be warranted despite the categorical exclusion [of 10 C.F.R. § 51.22(c)(9)], for example if the POL clearly could be shown actually to foreclose alternative ways to conduct decommissioning that would mitigate or alleviate some significant environmental impact. But, from the papers filed with us at this preliminary stage, no such special circumstance appears in this case.[14]

It then forwarded the petitions to the Licensing Board for further proceedings "in accordance with the opinions expressed herein and in CLI-90-8."[15]

Taken together, these Commission decisions direct that, in this POL proceeding, an admissible NEPA contention must meet two tests. First, the contention must "offer some plausible explanation why an EIS might be required for an NRC decision approving a Shoreham decommissioning plan."[16] In other words, the contention must explain why the environmental impacts of decommissioning Shoreham fall outside the envelope of impacts already considered by the Commission in the agency's Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities (GEIS).[17] That GEIS formed the basis for the Commission's current decommissioning rules.[18] It also is the underpinning for the deletion of the former regulatory provision requiring an EIS for the decommissioning of every plant.[19] Because the Commission already has determined on the basis of the GEIS that the relative impacts of decommissioning a reactor are comparable from one plant to another, no purpose is served by duplicating, in a plant-specific EIS, the conclusions contained in the GEIS.[20]

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[13] 33 NRC at 6.

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

[15] *Id.* at 7.

The Licensing Board thereafter determined that the Commission's guidance in CLI-91-4 is fully applicable to this POL proceeding. The Board reasoned that, because CLI-91-4 is a modification of CLI-90-8, the modification must be followed as well. *See* LBP-91-26, 33 NRC at 542.

[16] CLI-91-4, 33 NRC at 237.

[17] NUREG-0586 (August 1988).

[18] *See* 53 Fed. Reg. 24,018 (1988).

[19] *See* 10 C.F.R. § 51.20(b)(5) (1988).

[20] As the Commission stated in the Statement of Considerations accompanying the final decommissioning regulation:

> The Commission's primary reason for eliminating a mandatory EIS for decommissioning is that the impacts have been considered generically in a GEIS. The Commission determined that examination of these impacts and their cumulative effect on the environment and their integration into the waste disposal

(Continued)

Thus, to satisfy the Commission's first test, the contention must distinguish the impacts of decommissioning Shoreham from the range of impacts already considered in the GEIS. Second, the contention must plausibly explain how the granting of the POL involves special circumstances likely to foreclose one or more of the alternatives for decommissioning Shoreham so that such agency action constitutes an illegal segmentation of the EIS process.[21] In its rulings, the Commission mandated that *both* these requirements must be met, making a contention's failure to meet either fatal to its admissibility.[22] Additionally, of course, the contention must satisfy the pleading requirements of 10 C.F.R. § 2.714(b).

The petitioner's first contention fails to meet either part of the Commission's two-prong test. In an apparent attempt to satisfy the first requirement, the contention asserts that an EIS is required because the proposal to decommission Shoreham is a major federal action significantly affecting the quality of the human environment. This assertion is completely inadequate to meet the first part of the test, requiring a reasonable explanation why the GEIS is inapplicable to the decommissioning of Shoreham. Nothing in the petitioner's first contention even hints at such an explanation.

Nor does the petitioner's contention satisfy the second requirement that it provide a "plausible explanation" of how the POL amendment constitutes an illegal segmentation of the EIS process.[23] Petitioner's contention attempts to confront this requirement by relying upon the definitions in 40 C.F.R. § 1508.25 of the CEQ regulations to claim that the POL is an interdependent part of the Shoreham decommissioning process that depends upon decommissioning for its justification. The contention also claims, again solely relying upon the definitions in the CEQ regulations, that the POL amendment is a cumulative action that has cumulatively significant impacts with decommissioning and, therefore, the POL should be discussed as part of the EIS on the decommissioning of Shoreham. Further, at the prehearing conference, the petitioner argued that it was raising only a legal argument in attempting to meet the second prong of the Commission's test.[24] But the Commission's direction that the contention contain

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process could best be examined generically. . . . The GEIS shows that the difference in impacts among the basic alternatives for decommissioning is small, and the dose impact of decommissioning is small, whatever alternative is chosen, in comparison with the impact accepted from 40 years of licensed operation. The relative impacts are expected to be similar from plant to plant, so that a site-specific EIS would result in the same conclusions as the GEIS with regard to methods of decommissioning. Although some commenters correctly point out that an EA is much less detailed in its assessment of impacts than an EIS, if the impacts for a particular plant are significantly different from those studied generically because of site-specific considerations, the environmental assessment would discover those and lay the foundation for the preparation of an EIS. If the impacts for a particular plant are not significantly different, a Finding of No Significant Impact would be prepared.

53 Fed. Reg. at 24,039.

[21] *See* CLI-91-4, 33 NRC at 237; CLI-91-1, 33 NRC at 7.

[22] 33 NRC at 237.

[23] *Id.*

[24] Tr. at 16.

a "plausible explanation" requires much more than merely quoting regulatory definitions. In order to provide a sufficient explanation, the contention, at a minimum, must spell out how the POL amendment is an interdependent part of the decommissioning process and how that amendment is unjustified except as part of that process. Similarly, the contention must elucidate how the POL has cumulatively significant impacts with decommissioning. Because these matters are not self-evident, fulfillment of the Commission's test requires a much fuller explanation in order to make the proffered explanation "plausible," even if the petitioner seeks to raise only a legal issue.

Additionally, the adequate explanation component of the Commission's two-pronged test dovetails with the pleading requirements of 10 C.F.R. § 2.714(b)(ii) and (iii). Those provisions direct, respectively, that the petitioner provide "[a] concise statement of the alleged facts . . . which support the contention" and "[s]ufficient information . . . to show that a genuine dispute exists . . . on a material issue of law or fact." Judged by either of these standards, the petitioner's contention is inadequate for the same reasons that the contention fails to meet the Commission's "plausible explanation" requirement. Further, the Commission has made it clear that the new pleading requirements of section 2.714(b) are to be enforced rigorously and that we are not free to assume any missing information in a contention.[25] When viewed in light of these strictures, it is apparent that the petitioner's first contention is inadmissible.

B. The petitioner's second contention asserts that the agency's GEIS does not apply to the proposal to decommission Shoreham because the generic impact statement is limited in its scope to facilities at the end of their useful life or to reactors closed prematurely due to an accident. Because neither situation is applicable to Shoreham, the contention claims that the NRC must apply its now abrogated regulation, 10 C.F.R. § 51.20(b)(5) (1988), that required an EIS for each decommissioning proposal.

In opposing the admission of the petitioner's second contention, the staff argues that the contention fails to establish the essential nexus between the proposed POL amendment and the decommissioning of Shoreham. Further, the staff argues that the contention fails to meet both prongs of the Commission's test for an admissible Shoreham contention. The applicant, on the other hand, argues that the second contention should be rejected because the petitioner's real intent is to raise the issue of the resumed operation of Shoreham, contrary to the Commission's earlier directives.

The petitioner's second contention is identical to a contention it filed in the earlier Shoreham confirmatory order and license amendments proceeding. In LBP-91-35, the Licensing Board rejected that contention on the grounds

[25] *See Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155-56 (1991).

that it was premised on the erroneous and unestablished premise that the three actions at issue required the preparation of an EIS.[26] That same reasoning is applicable here because the petitioner's second contention is footed upon the same mistaken premise. In this proceeding, the petitioner alleged in its first contention that the NRC must prepare an EIS on the Shoreham decommissioning before issuing the POL amendment because the POL was within the scope of that decommissioning proposal. Having rejected this contention, the instant one, which deals exclusively with the need for an EIS on the decommissioning of Shoreham without mentioning the POL, has no logical foundation. Stated otherwise, in order for the issue of Shoreham decommissioning — the sole subject of the second contention — to become relevant, the petitioner must first establish that the POL amendment — the only licensing action involved in this proceeding — is part of the proposal to decommission Shoreham. As the staff correctly argues, having failed to establish this crucial linkage, the petitioner's second contention is inadmissible.

The staff is also correct that the petitioner's contention does not meet the second prong of the Commission's test for an admissible Shoreham contention. The contention contains no explanation of how the POL amendment constitutes an illegal segmentation of the EIS process by foreclosing any decommissioning methods. Thus, the contention also must be rejected for this reason.

C. In its third contention, the petitioner asserts simply that "LILCO's environmental report should be in the format prescribed by Regulatory Guide 4.2 (Rev. 2, July 1976)."[27] The staff and the applicant both argue that the contention must be rejected for failing to raise a litigable issue. The applicant also asserts that the contention is inadmissible because it does not meet the Commission's test for an acceptable Shoreham contention.

The petitioner's third contention is clearly inadmissible. This contention also is identical to one the petitioner filed in the earlier Shoreham confirmatory order and license amendments proceeding. In LBP-91-35, the Licensing Board rejected the contention for failing to present a litigable issue. Observing that regulatory guides are not mandatory regulations, the Board concluded that even if the contention was proven, it would be of no consequence in the proceeding so as to entitle the petitioner to relief.[28] That reasoning is equally applicable here. It is well settled that regulatory guides are just that — guides, not regulations — and compliance with them is not required.[29] Indeed, the very regulatory guide cited by the petitioner specifically notes that conformance with the format set

[26] 34 NRC 163, 171-72 (1991).
[27] Petitioner's Supplement at 8.
[28] 34 NRC at 172-73.
[29] *See, e.g., Petition for Emergency and Remedial Action*, CLI-78-6, 7 NRC 400, 406-07 (1978); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 737 (1985); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-788, 20 NRC 1102, 1161 (1984).

forth in the guide is not required.[30] Accordingly, the contention fails to raise a litigable issue and, pursuant to 10 C.F.R. § 2.714(d)(2)(ii), it must be rejected.[31]

D. The petitioner's fourth contention relies upon selective quotations from the agency's GEIS and asserts that an EIS is required for the decommissioning of Shoreham because the decommissioning plan submitted by the Long Island Power Authority, and adopted by the applicant, proposes to use the DECON method. According to the contention, the use of that method will foreclose consideration of the SAFSTOR and ENTOMB decommissioning methods thereby forfeiting the advantage of reduced occupational exposures offered by the latter two alternatives. Finally, the contention asserts that because only the DECON method calls for radioactive contaminants to be removed from the site, adoption of the POL amendment permitting the applicant to ship certain reactor fuel support pieces off site for disposal effectively prejudices consideration of the SAFSTOR and ENTOMB decommissioning alternatives.

For slightly different reasons, the staff and the applicant both claim that the petitioner's fourth contention should be rejected for failing to meet the two prongs of the Commission's test for an admissible Shoreham contention. They both agree, however, that the contention neglects the first prong by offering no explanation why the GEIS is inapplicable to the decommissioning of Shoreham.

Although the petitioner's fourth contention clearly attempts to address the second requirement of the Commission's two-part test, the staff and the applicant are correct that it is fatally flawed for ignoring the first requirement. In its contention, the petitioner has not even attempted to explain why the environmental impacts of decommissioning Shoreham fall outside the envelope of impacts already considered in the GEIS. Regardless of how liberally we read it, the contention contains absolutely no language that can be construed as offering an explanation satisfying the first prong of the Commission's test. Further, in view of the fact that none of the petitioner's other contentions are admissible,

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[30] NRC Regulatory Guide 4.2 (Rev. 2), "Preparation of Environmental Reports for Nuclear Power Stations" (July 1976) at ix.

[31] At the prehearing conference, the petitioner, in effect, sought to amend Contention 3 stating that:

> We have put the contention in terms of the format prescribed by Regulatory Guide 4.2. However, that format is illustrative of the scope to be considered[.] [F]ormat in this sense does not refer to the particular numbering of chapters or subsections but to the content required for an environmental report under NEPA.
>
> The issue there would be the legal issue of whether the licensee or the Staff can show that the prescribed contents for environmental reports under NEPA as illustrated by 4.2 have been met by an acceptable and relevant environmental report for the proposal to decommission.

Tr. at 20. Putting to one side the precedents holding that the petitioner is bound by the literal terms of its own contention, *see Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-856, 24 NRC 802, 816 (1986); *Limerick*, ALAB-819, 22 NRC at 709, the petitioner's attempt to change the meaning of its contention does nothing to enhance its admissibility. In order for a contention challenging the contents of an environmental report to be admissible, the Commission's regulations require that it identify the alleged errors in the report and state the reasons why the report is in error. *See* 10 C.F.R. § 2.714(b)(2)(iii). Even as orally altered at the prehearing conference, the petitioner's third contention is still woefully deficient.

there is no basis for incorporating the required explanation from another contention, even if that were appropriate. Because a contention must meet both parts of the Commission's test to be admissible, petitioner's failure to address the first prong requires that it be rejected.

E. The petitioner's fifth contention avers that the Licensing Board's earlier ruling in LBP-91-26 erred in disapproving one of SE2's standing arguments. According to the petitioner, it claimed that the Commission's action granting a POL to the applicant in order to relieve Shoreham of the provisions of its operating license is arbitrary and capricious because the Commission has not provided similar relief to other licensed plants undergoing long outages.

The staff and the applicant both argue that the petitioner's so-called fifth contention is not a contention at all, but rather an improperly justified motion for reconsideration of LBP-91-26. They also argue that the contention must be rejected because the Licensing Board there ruled that SE2 had standing only to raise NEPA issues and this filing raises no such issues.

On its face, the petitioner's purported "contention" is concerned solely with the Licensing Board's alleged error in earlier rejecting one of SE2's standing arguments. Hence, this so-called "contention" is, in reality, a request to reconsider a portion of the Board's prior ruling on standing in LBP-91-26. A motion for reconsideration, however, is not a proper subject for a contention as that term is used in 10 C.F.R. § 2.714(b). In the instant license amendment proceeding, the petitioner's contentions must focus on the issues identified in the notice of hearing, the applicant's amendment application, and the staff's environmental responsibilities relating to that application, not on the petitioner's own standing to raise issues concerning these matters.

Moreover, even if the petitioner's filing could be considered a contention, it still must be rejected. As the applicant correctly notes, the Licensing Board previously ruled that SE2 had standing only to raise NEPA issues.[32] Because this so-called contention does not raise such issues, it is not admissible.[33]

F. The petitioner's sixth contention declares that the EIS required for the decommissioning of Shoreham must include a consideration of the indirect effects of permitting decommissioning, including the construction of fossil-fuel plants and associated transmission lines. In opposing the admission of this contention, the staff argues that the petitioner's filing is another improperly pled motion for reconsideration, this time aimed at the Licensing Board's ruling in

[32] *See* 33 NRC at 543, 547.

[33] At the prehearing conference, the petitioner stated that "[i]nsofar as [Contention 5] may be considered a motion for reconsideration, we hereby ask the Board to treat it as such." Tr. at 68. Even as a motion for reconsideration, however, the petitioner's filing is deficient in form and content. *See* 10 C.F.R. § 2.730(b). Nowhere in its filing does the petitioner explain how the Licensing Board's reasoning is in error. Nor does the petitioner's filing correct the deficiencies that the Board noted in SE2's standing argument. Thus, even if petitioner's fifth contention is viewed charitably as a motion for reconsideration, its filing fails to provide any basis for granting such relief.

LBP-91-26 that these same indirect effects of decommissioning Shoreham are outside the scope of the proceeding. Similarly, the applicant argues that the contention should be rejected because it only raises a question of law that the Licensing Board already held is not in issue in this POL proceeding.

In filing this contention, the petitioner disregarded the Licensing Board's earlier explicit ruling with respect to raising any issue involving the building of fossil-fuel plants and associated transmission lines to replace the loss of Shoreham. In LBP-91-26, the Board stated:

> Such indirect effects would be outside the scope of any required NEPA review in this proceeding. It is clear beyond cavil that the Commission has held that restart will not be considered nor will other methods of generating electricity, which include fossil fuel plants. Likewise, the effects of fossil fuel plants are beyond the scope of the proceeding.[34]

Accordingly, the Board's earlier ruling forecloses the admission of this contention.

G. The petitioner's seventh and last contention states that SE2's pursuit of a judicial stay of the POL amendment does not deprive the Licensing Board of jurisdiction to enforce 10 C.F.R. §§ 51.100 and 51.101(a)(2).[35] The staff argues that contention should be rejected because it involves regulations that only apply when an EIS is required, and the contention does not establish that the POL amendment requires a NEPA review. In a similar vein, the applicant argues that the contention is inadmissible because, even if it is accepted as true, it does not entitle the petitioner to any relief.

Although labeled a "contention," petitioner's filing is merely a statement to the effect that the Licensing Board has jurisdiction to enforce 10 C.F.R. §§ 51.100 and 51.101(a)(2), while the petitioner pursues a judicial stay of the POL amendment. As written, this purported contention is clearly inadmissible because, even if true, it would not entitle the petitioner to any relief.[36] Furthermore, even if the petitioner's filing is somehow read to claim that the agency must enforce the cited regulations, those provisions are only applicable to proposals requiring an EIS. To be admissible under this theory, the petitioner still would need to establish that the POL amendment requires the preparation of an EIS. The petitioner has made no such showing, so the contention must be rejected.

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[34] 33 NRC at 545. *See* CLI-90-8, 32 NRC at 207.

[35] Section 51.100 prohibits the agency from making any decision on a proposal requiring an EIS until the impact statement has been made available for public comment. Section 51.101(a)(2) provides that an applicant may be denied a license for a project requiring an EIS if the applicant takes any step that has an adverse environmental impact or limits the choice of reasonable alternatives before the EIS process is completed.

[36] *See* 10 C.F.R. § 2.714(d)(2)(ii).

Order

For the foregoing reasons, we find that none of the petitioner's proffered contentions are admissible. In order to become a party to the proceeding, 10 C.F.R. § 2.714(b)(1) requires that a petitioner must have at least one contention admitted. Having failed to meet this requirement, petitioner SE2's intervention petition is *denied.*

Pursuant to 10 C.F.R. § 2.714a, the petitioner, within 10 days of service of this Memorandum and Order, may appeal this Order to the Commission by filing a notice of appeal and accompanying brief.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Thomas S. Moore, Chairman
ADMINISTRATIVE JUDGE

George A. Ferguson
ADMINISTRATIVE JUDGE

Jerry R. Kline
ADMINISTRATIVE JUDGE

Bethesda, Maryland
November 15, 1991

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of Docket No. 50-302

FLORIDA POWER CORPORATION
(Crystal River Nuclear Generating
Plant, Unit 3) November 3, 1991

The Director of the Office of Nuclear Reactor Regulation denies a petition filed by Louis D. Putney, on behalf of Edward S. Wollesen, requesting action with regard to the Crystal River Unit 3 Nuclear Generating Plant (CR-3). Specifically, the Petition alleged that 1500 to 3000 safety-related instruments are not properly identified and are not in a proper calibration program, that the Security and Fire Protection Programs are insufficiently defined and are not auditable, that Florida Power Corporation has not adequately defined and does not know the exact requirements of the plant's Technical Specifications, that the uncontrolled Plant Review Committee Guidelines Manual includes mandatory instructions for nuclear operations, and that because no verification of calibration was performed when instrument calibration stickers were removed from plant instruments there is no assurance that the instruments are in calibration. The Petitioner requests that the NRC institute a proceeding pursuant to 10 C.F.R. § 2.202 to suspend or revoke the operating license of CR-3 or take such other action as may be proper.

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

INTRODUCTION

Louis D. Putney, on behalf of his client, Edward S. Wollesen, filed a request (Petition) dated June 25, 1991, with the Executive Director for Operations,

pursuant to section 2.206 of Title 10 of the *Code of Federal Regulations* (10 C.F.R. § 2.206), that the United States Nuclear Regulatory Commission (NRC) institute a proceeding pursuant to 10 C.F.R. § 2.202 to suspend or revoke the operating license of the Florida Power Corporation's (FPC or the Licensee) Crystal River Unit 3 Nuclear Generating Plant (CR-3), or take such other action as may be proper. In response to an NRC request, this Petition was supplemented by a letter from Mr. Wollesen (Petitioner) dated July 23, 1991,[1] which provided additional details and clarification regarding each allegation in the Petition. The original allegations are summarized as follows:

1. 1500 to 3000 safety-related instruments are not properly identified and are not in a proper calibration program. They do not appear on plant engineering diagrams and the diagrams do not represent the actual plant configuration.
2. FPC's Security and Fire Protection Programs are not sufficiently defined as to be auditable.
3. FPC has not adequately defined and does not know the exact requirements of the plant's Technical Specifications (TS).
4. The uncontrolled Plant Review Committee Guidelines Manual includes mandatory instructions for nuclear operations, contrary to NRC requirements.
5. Since no verification of calibration was performed when instrument calibration stickers were removed from the plant's instruments, there is no assurance that these instruments are in calibration.

NRC Inspection Report 50-302/91-15, dated September 11, 1991, documents the results of an inspection by a Region II inspection team covering the issues raised in the Petition and the July 23, 1991 letter. FPC provided its response to the Petition by letter dated September 20, 1991. Both of these documents were considered in evaluating the Petitioner's allegations.

DISCUSSION

A. Plant Instruments Not Calibrated and Not on Engineering Diagrams

The statement of this concern in the Petition is as follows:

> 1,500 to 3,000 instruments in the nuclear plant, most of which are identified to be safety related or important to safety, are not being controlled as required by the regulations of the Nuclear Regulatory Commission, that is, they are not properly identified and are not in a proper calibration program. Therefore, the operability of these instruments, which are relied

[1] Issues related to Petitioner's complaint to the United States Department of Labor regarding the termination of his employment with FPC were raised in the July 23, 1991 letter, but are not addressed herein.

upon by the nuclear operators, is questionable. This is obviously a very serious nuclear safety concern. In more technical terms, these instruments are not in Florida Power's Configuration Management Information System (CMIS), therefore there are no controlled calibration data sheets relating to these instruments. As a result, it is impossible for Florida Power to determine that the instruments meet or remain within their engineering design standards as required by the NRC. Further, the engineering diagrams of the nuclear plant do not include these instruments, and the diagrams are not representative of the actual configuration of the plant, as required by the NRC.

As elaborated by the July 23, 1991 letter, the Petitioner's allegation can be summarized as follows.

Some 1500 to 3000 instruments were removed from the Master Instrument List and do not appear in the Configuration Management Information System (CMIS). As a result, they are not in a proper calibration program and have no controlled calibration data sheets. Therefore, FPC cannot determine if these instruments meet their engineering design standards. The plant engineering diagrams do not show these instruments, particularly those used to monitor the emergency diesel generators which have previously been identified as overdue for calibration.

To correct the shortcomings in its earlier instrument calibration program, the Licensee initiated an enhanced program in early 1988 that simplified and improved the control of instrument calibration. FPC is implementing this new program under FPC's Preventive Maintenance Program, which is supported by a new computerized work control system, the Maintenance Activity Control System (MACS) and the new CMIS. More than half of the 15,000 instruments previously on the Master Instrument List have been deleted from the program because they do not require periodic calibration or are no longer in use. FPC recently removed a number of instrument data sheets, roughly corresponding to the 1500-3000 specified by the Petition, from the Document Control System because the instruments do not require periodic calibration.

Since the 1500-3000 instruments specified by the allegation were not identified, the NRC inspectors examined a random sample of eighty-three instruments on the Master Instrument List dated January 29, 1986. Of these eighty-three instruments, seven were not in the current MACS/CMIS system. However, a valid basis existed for the removal of each instrument from the program, such as removal of the instrument from the plant or installation in a system no longer used in the plant. The remaining seventy-six instruments are listed in MACS/CMIS.

The inspection team also examined a sample of fifty-two plant instruments to determine their current calibration status and schedule for routine calibration.

Some minor deficiencies were noted and identified to the Licensee for correction.[2]

Although procedures implementing MACS and CMIS were found to be generally adequate, the minor deficiencies and the lack of clarity in assignment of responsibility for maintaining instrument categories in CMIS reported by the inspection team indicate that these areas are not fully covered in the procedures and that a comprehensive procedure for controlling and using MACS and CMIS data bases for instrument calibration would be helpful. This was also identified to the Licensee.

However, the above discrepancies have not resulted in instruments not being calibrated as necessary, with no identified exceptions of importance to safety. In general, instruments reviewed by the inspection team are being calibrated even if calibration is shown as not required in CMIS or MACS. Instruments subject to calibration have calibration data sheets controlled within the FPC Documentation Control System. Other significant design information is cross-referenced by one or more CMIS functions.

The inspection team compared the engineering drawings for 21 of the instruments in the 52-instrument sample with the actual plant configuration and found two minor discrepancies which were identified to the Licensee for correction.[3] The inspection team also performed a walkdown of several emergency diesel generator systems on both diesels. For the approximately fifty instruments in the diesel generator systems, no significant discrepancies between the actual systems configuration and the drawings were found. In addition, approximately a dozen diesel-related instruments were reviewed for calibration status, and one was found to be overdue for calibration.

The Licensee has been engaged in a major program to upgrade its overall configuration management program, including a system-by-system evaluation of all components and field validation. After completion of this program on 60%

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[2] Two instruments of the fifty-two were out of calibration, but were so identified in MACS, and work requests were in place to perform calibrations. The one accessible instrument had a deficiency tag on it. Another two of the fifty-two instruments, a flow element and flow transmitter in the reactor building vent mid-range and high-range radiation monitor, were not routinely calibrated, because they were classified as not requiring calibration. These instruments are used for post-accident historical data. The Licensee has undertaken to calibrate these instruments in the future, but has not agreed that the classification is incorrect. Four additional instruments were incorrectly classified as not requiring calibration, but were in fact in calibration and scheduled for routine calibration via recurring work request. Another instrument did not have an instrument category assigned in CMIS, and as a result, was incorrectly not required by MACS to be calibrated. However, the instrument was in calibration and was scheduled for routine calibration. The inspection team requested a listing of all instruments with no assigned instrument category, and found that 90% of the 739 such instruments on the list were in fact devices that cannot be calibrated, such as thermowells and solenoid valves. The inspection team reviewed a sample of the remaining 10% of the instruments on the list and found that all the instruments in the sample were in fact calibrated and scheduled for routine calibration. The deficiency in category assignments in CMIS was identified to the Licensee for correction.

[3] Piping drawing WD-101-FE was incorrect in that the integral flow element and transmitter were shown as separate instruments, and there were no flow-element isolation valves. In addition, the drawing label for FS-65-PI, fire main pressure at the inlet to the automatic deluge valve, did not agree with the label on the instrument.

of the systems, no programmatic problems have been identified. The program ensures correction of individual discrepancies as found.

Based on the above, we conclude that although many instruments were removed from the Master Instrument List and do not appear in CMIS, they are not required to be in the current calibration program because they either do not require periodic calibration or are not in use in the plant. We further conclude that there is no significant programmatic inadequacy in the Licensee's current instrumentation calibration program, although some specific deficiencies exist and have been identified to the Licensee for correction. The Licensee maintains the necessary calibration data sheets, and the reviewed instruments requiring calibration have, in almost all cases, been calibrated and are scheduled for periodic routine calibration. Emergency diesel generator instruments reviewed were not found overdue for calibration, and no significant discrepancies between these (and other) instruments and plant engineering drawings have been identified. Therefore, we conclude that no substantial safety issue has been raised in the Petition regarding this allegation.

B. Security and Fire Protection Programs Not Adequately Defined

The statement of this concern in the Petition is as follows:

> Florida Power stated in recent Quality Audit Reports (which are required by the NRC under Florida Power's license commitments) that various audited programs, including Security and Fire Protection, complied with NRC requirements. The reports also stated that the programs needed to be defined. In fact, the audited programs are not sufficiently defined so as to be auditable as required by the NRC. These unaudited safety related programs give cause for great concern for the safety of the nuclear plant.

In the July 23, 1991 letter, the Petitioner noted that various FPC audit teams recommended that implementing procedures be listed in the program documents and questioned the procedure review process. The same kinds of questions about the procedure review process are repeated in Allegation C and are addressed in the discussion of Allegation C, below. The NRC addressed only the Security and Fire Protection programs because the Petitioner specifically identified only these programs as examples of "various audited programs."

The inspection team reviewed seven different Licensee and contractor audit reports issued between March 1990 and May 1991 that addressed security or fire protection. No report concluded that the Security or Fire Protection programs needed to be defined. One report concluded that, except for specific findings unrelated to this allegation, the Fire Protection Program was adequately defined. Another recommended that a listing of the fire protection implementing procedures be included in the Fire Protection Plan as an aid, but that, with the

exception of three unrelated findings, the Fire Protection Program was effectively controlled and implemented.

The inspection team found that cross-references between the Fire Protection Plan and implementing procedures are included in individual paragraphs in the Plan. In response to a Licensee QA audit, a separate listing of Fire Protection Plan implementing procedures is being prepared for inclusion in the Plan. In addition, the FPC Nuclear Operations Commitment System (NOCS) was sampled and shown to provide cross-references between selected Plan paragraphs, originating requirements or commitments, and implementing procedures.

The requirements for fire protection at nuclear power plants are defined in considerable detail in 10 C.F.R. § 50.48, 10 C.F.R. Part 50, Appendix R, 10 C.F.R. Part 50, Appendix A, Criterion 3, and, for CR-3 in particular, in its TS. FPC audits and NRC inspections have addressed this program without identifying significant deficiencies in definition or auditability. *See* NRC Inspection Reports 50-302/89-33 and 91-15.

The CR-3 Security Plan has been, and continues to be, in conformance with regulatory requirements. The Security Plan was originally reviewed and approved by the NRC in its Safety Evaluation for the CR-3 operating license dated July 5, 1974. Many specific changes have been reviewed and approved since that time, and review and approval of a full revision of the entire plan was completed in early 1991. (*See* letters dated July 31, 1990, and February 11, 1991, from William E. Cline (NRC) to Percy M. Beard, Jr. (FPC)). Periodic NRC inspections have demonstrated that implementation of the Security Plan is acceptable. *See* NRC Inspection Report 50-302/91-07 (SALP), at 13. The inspection team noted that the NOCS adequately cross-references the Security Plan requirements to the various implementing procedures.

Based on the above, we conclude that the Security and Fire Protection Programs are satisfactorily defined and therefore auditable. Moreover, we have found no evidence that the programs are deficient. Accordingly, we conclude that no substantial safety issue has been raised in the Petition regarding this allegation.

C. Technical Specifications Not Defined, Exact Requirements Unknown to FPC

The statement of this allegation in the Petition is as follows:

> Florida Power's license requirements with the NRC require it to meet the Technical Specifications (TS) for the nuclear plant. Florida Power has not adequately defined and does not know the exact requirements of the Technical Specifications for the nuclear plant,

therefore, Florida Power cannot accurately report that it is complying with the TS, and it is impossible to audit the TS program. This is a serious nuclear safety concern.

In the July 23, 1991 letter, the Petitioner narrowed the allegation considerably, so that the thrust of the allegation is now as follows.

1. The review required by TS 6.8.2.1.a of the implementing procedures for the Security Plan and Fire Protection Plan, and of Administrative Instructions, by the Plant Review Committee (PRC), is not defined and PRC members are not qualified to review implementing procedures.
2. Appendix A of NRC Regulatory Guide (RG) 1.33 "Quality Assurance Program Requirements," identifies certain Administrative Procedures that each licensee must prepare and maintain. Some of the implementing procedures for these Administrative Procedures are not in the group identified as Administrative Instructions, and therefore may not be reviewed at all, or may be reviewed by Qualified Reviewers (rather than the PRC), which would be a reduction in quality.

The Licensee originally proposed complete TS in its operating license application. These were reviewed thoroughly and approved by the NRC. All changes to the TS are likewise reviewed and approved by the NRC prior to issuance. Compliance with the TS is monitored by NRC inspectors. Where there has been evidence of inadequate or incorrect TS, they have been revised. The NRC has no evidence of general lack of definition of the TS or lack of knowledge of its requirements by FPC.

The following addresses the specific allegations of the July 23, 1991 letter.

1. TS 6.5.1.2 specifies areas from which supervisory personnel are to be chosen as members of the PRC, among which is Security. FPC confirmed that members are selected on the basis of qualifications and experience required for their positions. The inspection team found that the PRC "consists of a diverse group of senior nuclear plant managers." The latest NRC SALP report, Inspection Report 50-302/91-07, dated June 28, 1991, states that the PRC "continued to be staffed with qualified personnel." The inspection team further notes that FPC document AI-300, "Plant Review Committee Charter," contains requirements for training PRC members and that FPC maintains a record of such training.

   The Licensee notes that PRC procedure review is performed in accordance with existing guidelines and procedures (AI-300), although there is no checklist defining all the factors the PRC must consider. Rather, the broad experience and qualifications of the members permit an effective review of implementing procedures by collegial discussion. Although individual cases of deficiencies in plant procedures have come to the attention of the NRC (and have been corrected by

the Licensee), the NRC has no evidence that PRC review of those procedures was ineffective because of lack of PRC review definition.

2. The inspection team found that four of the required RG 1.33 Administrative Procedures are not implemented by those FPC procedures categorized as Administrative Instructions, nor are they required to be. Therefore, in accordance with TS 6.8.2.1.b, these must be reviewed by the Qualified Reviewer process, with the PRC being required to review only the 10 C.F.R. § 50.59 safety evaluation. However, the PRC in practice does more than just review the section 50.59 safety evaluation. For other than minor or routine procedure changes, the author of the change or other knowledgeable representative from the responsible department typically makes a presentation to the PRC on the change.

   The classification of "Administrative Instructions" or "other procedures" is not made on the basis of safety importance. Many of the "other procedures" are of significant importance to the safe operation of the nuclear plant, such as procedures for combatting nuclear plant emergencies and for controlling radioactivity.

   Administrative Instructions typically cover matters of general policy or broad applicability, and therefore warrant PRC review. Other procedures involve areas of narrower applicability and greater technical detail. These other procedures must be reviewed by an intradepartmental Qualified Reviewer, and where appropriate, by interdisciplinary Qualified Reviewer(s) in interfacing departments, and be approved by the responsible Superintendent or Manager. Qualified Reviewers are typically experienced personnel with a high level of technical knowledge in a particular area, who also have specialized training in review of procedures. NRC requirements for training and qualifications of Qualified Reviewers are contained in TS 6.8.2.2.

Based on the above, we conclude that the CR-3 TS are adequately defined and that the Licensee has adequate knowledge of their requirements. We further conclude that PRC members are qualified and adequately trained to review implementing procedures, that PRC review of such implementing procedures complies with TS 6.8.2.1.a, and that PRC review is adequately defined. We also conclude that review of implementing procedures of the four required RG 1.33 Administrative Procedures in accordance with TS 6.8.2.1.b (Qualified Reviewer process) is acceptable. Furthermore, there is no reason to conclude that the Qualified Reviewer process constitutes a reduction in quality. Therefore, no substantial safety issue has been raised in the Petition regarding this allegation.

D. Mandatory Instructions in Uncontrolled Documents

The statement of this concern in the Petition is as follows:

> The NRC requires that Florida Power not include mandatory instructions in uncontrolled manuals used by nuclear operations (ANSI Standard N45.2.10-1973). This is because uncontrolled manuals may be outdated, causing personnel to implement the wrong procedure. Florida Power's Plant Review Committee Guidelines Manual, an uncontrolled manual, includes mandatory instructions for nuclear operations. This is a serious nuclear safety concern.

The July 23, 1991 letter indicated that the "mandatory instructions for nuclear operations" contained in the uncontrolled PRC Guidelines Manual were instructions to comply with the TS (presumably TS 6.8) governing PRC activities, and Administrative Instruction AI-300, "Plant Review Committee Charter."

The inspection team examined copies of the PRC Guidelines Manual, and found that they contained outdated TS pages and an outdated copy of AI-300. Both the TS pages and AI-300 include mandatory instructions for conduct of the PRC. Although the PRC Guidelines Manual contains the word "guidelines," it was officially distributed to PRC members for use in performing PRC duties, and is listed in AI-300 as an implementing reference. Therefore, TS requirements and implementing procedures contained in the Guidelines Manual should be up to date. Accordingly, a noncited violation was identified (NCV 91-15-02). This violation was not cited in a Notice of Violation because criteria specified in 10 C.F.R. Part 2, Appendix C, § V.A (NRC Enforcement Policy) were satisfied. This was an isolated Severity Level V violation, and the Licensee initiated appropriate corrective action before the inspection ended, as discussed below. The NRC considers this violation to be of minor safety significance. FPC stated that it considered the PRC Guidelines Manual to be a "guidance" document and, as an uncontrolled document, did not rely on it to provide mandatory instructions of any kind. Training of PRC members includes a review of the current revision of AI-300 and emphasizes that employees refer to the latest revision of plant documents. AI-300 and the TS are controlled documents, and it is not likely that outdated copies in the PRC Guidelines Manual would have caused a PRC member to take erroneous action or to take any action that would negatively affect nuclear safety. Moreover, the Licensee took prompt initial corrective action, including revising AI-300 to delete the PRC Guidelines Manual from the list of implementing references and recalling all copies of the PRC Guidelines Manual. The NRC will review the Licensee's final corrective action.

Based on the above, we conclude that no substantial safety issue has been raised in the Petition regarding this allegation.

E. Knowledge of Instrument Calibration Status

The statement of this concern in the Petition is as follows:

> The January 1991 OPS Audit identified problems with instrument calibration at the nuclear plant. Florida Power had recently adopted a program to remove the instrument calibration stickers from the plants instruments. The stickers were the only place to obtain current information on the instruments. In implementing this program, no verification of calibration was performed, therefore, there is no assurance these safety related instruments are in calibration as required by the NRC. When this problem was identified, audit management and the nuclear plant management told the audit team to forget the issue. This is a serious nuclear safety concern.

The July 23, 1991 letter indicates that the Petitioner's concern focused on operator knowledge of the calibration status of the instruments and the alleged failure of the new calibration program to properly inform operators of instruments past due for calibration.

A system of instrument tags is the principal method by which operators are provided the required information on the status of instrument calibration. Organizations responsible for calibration of instruments attach yellow stickers to instruments overdue for calibration. Operators have been directed to assume that any instrument not so tagged is in calibration, and any instrument with a tag is either overdue for calibration or in need of maintenance. Operators are not to use such tagged instruments without further review. Although MACS provides the calibration status of individual instruments and also lists all out-of-calibration instruments associated with a particular surveillance procedure, it appears that operator training in and ability to utilize MACS is not fully effective. This was identified to the Licensee as a weakness.

Regarding the Petitioner's allegation that the calibration stickers formerly in use were the only place to obtain current calibration information on the instrument, the inspection team found that the Licensee's official record of instrument calibration was and continues to be the instrument calibration data sheets. These are retained in document control and information therein is entered into a computer data base separate from MACS and accessible from many computers, including those in the control room. The Licensee also stated that in a recent audit, random checks by each audit team member did not identify any instruments out of calibration.

Based on the above, we conclude that adequate information is readily available to operators to ascertain the calibration status of instruments. Therefore, no substantial safety issue has been raised in the Petition regarding this allegation.

CONCLUSION

The institution of proceedings pursuant to 10 C.F.R. § 2.202 is appropriate only when substantial health and safety issues have been raised. *See Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 176 (1975), and *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). The NRC has applied this standard to determine if the actions requested in the Petition are warranted. For the reasons discussed above, the NRC has no basis for taking the actions requested in the Petition, since no substantial health and safety issues have been raised by the Petition. Accordingly, the Petitioner's request for action pursuant to 10 C.F.R. § 2.206 is denied.

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

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 3d day of November 1991.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. A. Dixon Callihan
Dr. Jerry R. Kline

In the Matter of **Docket No. 30-12319-CivP**
(ASLBP No. 90-618-03-CivP)
(EA 89-223)
(Materials License
No. 35-17178-01)

TULSA GAMMA RAY, INC. **December 10, 1991**

The Licensing Board, in an Initial Decision, determines that a civil penalty sought to be imposed by the NRC Staff against a licensee should be reduced from $6,750 to $4,275. The Board in particular based its ruling on what it considered to be excessive escalation applied by the Staff.

RULES OF PRACTICE: PROPOSED FINDINGS OF FACT (FORMAT)

Although various licensing decisions assert that a party, even though not represented by counsel, is not excused from the format requirements for proposed findings of fact (10 C.F.R. § 2.754), even where limited resources are a factor, these decisions relate to licensing proceedings where an intervenor elects to become a party. They are not controlling in a situation where no local public document room is reasonably available and where a licensee (which is facing a loss of resources through a civil penalty proceeding) alleges that it cannot afford to purchase transcripts. The licensing board in that situation should use

its best efforts to understand and rule on the merits on the claims presented by the licensee.

RULES OF PRACTICE: CIVIL PENALTIES

The Commission's program for categorizing violations for the purpose of assessing and determining the amount of civil penalties is set forth in 10 C.F.R. Part 2, Appendix C. In general, the "nature and extent of the enforcement action is intended to reflect the seriousness of the violation," and civil penalties are to be tailored to particular facts and circumstances of the violation.

RULES OF PRACTICE: CIVIL PENALTIES (AGGREGATION)

Prescribed base civil penalties are subject to adjustment for the severity level 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. This authority has been construed to permit the severity level of the aggregated group to be equal to or greater than the severity level of the individual violations comprising the group. When aggregating violations, generally both the number of violations and their seriousness should be taken into account.

RULES OF PRACTICE: CIVIL PENALTIES

After the severity level of a violation has been ascertained, the resultant civil penalty may also be escalated or mitigated, under defined circumstances.

CIVIL PENALTIES: ASSESSMENT

A total of nine violations, considered collectively, including some that in themselves demonstrate a degree of safety significance, may be deemed to constitute a management deficiency sufficient to warrant assessment of a civil penalty.

TECHNICAL ISSUES DISCUSSED

Industrial radiography.

APPEARANCES

Messrs. James C. Moss and Peter James Moss, Tulsa, Oklahoma, for Tulsa Gamma Ray, Inc., Licensee.

Susan Uttal, Esq., and Joseph Rutberg, Esq., for the United States Nuclear Regulatory Commission Staff.

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INITIAL DECISION
(Order Imposing a Civil Monetary Penalty)

Opinion of Judges Bechhoefer and Callihan (Including Findings of Fact)

This proceeding involves an Order Imposing Civil Monetary Penalty, dated June 6, 1990, in the amount of $6,750, against Tulsa Gamma Ray, Inc., Tulsa, Oklahoma (hereinafter, Tulsa or Licensee).[1] Tulsa is the holder of NRC Materials License No. 35-17178-01, dated January 26, 1977, authorizing the possession of sealed radiographic sources for use in various exposure devices in the conduct of industrial radiography and for the calibration of radiation survey instruments.[2] The license includes a number of technical conditions governing the conduct of industrial radiography, including those required by the regulations in 10 C.F.R. Part 34.

The Civil Penalty Order was preceded by a written Notice of Violation and Proposed Imposition of Civil Penalty, dated December 29, 1989, which proposed a civil penalty of $7,500.[3] Based on the Licensee's response, the Staff reduced the proposed civil penalty to $6,750, the amount sought by the Civil Penalty Order.

For reasons set forth below, the majority of the Board has concluded that a significant civil penalty should be imposed but that the amount sought by the Staff should be reduced to $4,275.

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[1] The Order was published at 55 Fed. Reg. 24,949 (June 19, 1990). *See also* NRC Staff Testimony of Charles Cain, Linda Kasner, and Joseph DelMedico (hereinafter, Staff Testimony), ff. Tr. 123, Attach. 12. References to the prepared direct testimony of particular Staff witnesses (included in NRC Staff Testimony) will be referenced as (last name of witness), ff. Tr. 123, at (page of prepared testimony).

[2] Staff Testimony, ff. Tr. 123, Attachs. 4 and 12 (at A12-3).

[3] *Id.*, Attach. 11.

I. SUMMARY OF VIOLATIONS

The violations included in the Notice of Violation are set forth in full in Appendix A to this Decision. To the extent pertinent, they are also described later in this Decision.

In summary, however, they include three that appear to the Board to be quite serious: the failure of a radiographer to conduct a survey after any of four separate radiographic exposures (Violation 1a); the failure of radiographers properly to post an area where radiographic exposures were being conducted (Violation 1b); and the failure to block and brace radioactive material packages during transportation (Violation 4b). Beyond that, they include three involving the failure to maintain adequate records of radioactive exposures of radiographers (Violations 2a, 2b, 2c); one involving the failure to maintain proper inventory control of sealed sources (Violation 3); two involving the failure to maintain certain transportation records (Violations 4a and 4c); and one involving the incorrect placarding of a vehicle during transportation of radioactive material (Violation 4d). The Notice of Violation prescribed a total civil penalty of $7,500 for these violations.[4]

In its response dated February 22, 1990, to the Notice of Violation, the Licensee admitted nine out of the ten alleged violations but challenged the Staff's assessment of their severity or significance.[5] In particular, Tulsa pointed to what it deemed to be extenuating circumstances concerning many of the violations. The Licensee denied one violation (number 3, "Inventory Control") and the Staff accepted the Licensee's explanation, thereby withdrawing one of the ten alleged violations and reducing the civil penalty by 10%—to $6,750 (i.e., it treated each violation as equal in amount of penalty ($750) and reduced the proposed penalty for ten violations by 10%.

II. PROCEDURAL HISTORY

Following issuance of the Civil Penalty Order, the Licensee filed a timely response dated July 3, 1990. It claimed in essence that the violations are not significant enough to warrant imposition of a civil penalty. It sought reconsideration (by the Staff) of the civil penalty and in the alternative (as set forth in the Civil Penalty Order) requested a hearing.

By letter dated July 31, 1990, the Director of NRC's Office of Enforcement (OE) refused to withdraw the Civil Penalty Order.[6] As a result, a Licensing

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[4] *Id.*

[5] *Id.*, Attach. 13; DelMedico, ff. Tr. 123, at 28-29, 31-33.

[6] Notice of Hearing and Other Matters, LBP-90-31, 32 NRC 107 (1990).

Board was established to preside over the hearing.[7] On August 29, 1990, the Board issued a Notice of Hearing.[8] As set forth in that Notice, the issue to be heard (prescribed by the Civil Penalty Order) is "whether, on the basis of the violations admitted by the licensee, consisting of the violations set forth in the Notice of Violation as modified by the withdrawal of Violation 3, this Order should be sustained [in the amount of $6,750]."

In issuing the Notice of Hearing, the Board urged the parties to attempt to reach agreement on the scope of the prescribed issue and schedules for the ensuing litigation, as well as settlement of the proceeding. After advice from the Staff that the parties had been unable to settle the proceeding or to reach agreement on the scope of the issue to be litigated,[9] the Board scheduled a prehearing conference, to be conducted by telephone.[10] The conference commenced on October 16, 1990,[11] and continued on November 8, 1990.[12]

At the conference, the Board reiterated the limited scope of the issues permitted by the Civil Penalty Order to be considered at the hearing. Specifically, the Board defined the issue to be "whether the amount of the penalty imposed was correct under the Commission's Enforcement Policy, 10 C.F.R. Part 2, Appendix C, i.e., whether it was correct to collectively classify the Severity Level IV and V violations as a Severity Level III violation and impose a monetary penalty, and whether the amount of the penalty was correctly arrived at, taking into account the factors in the Enforcement Policy, including mitigating circumstances."[13]

Based on a colloquy at the conference, however, the Board directed the Staff to provide a further discussion of the matters of fact and law relied on by the Staff to consider the Severity Level IV and V violations collectively as a Severity Level III violation.[14] The Board also established a schedule for discovery, for filing direct testimony, and for commencement of the hearing.[15] The Staff filed direct testimony, but we later ruled that the Licensee could present its testimony orally if it wished to do so.[16]

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[7] Establishment of Atomic Safety and Licensing Board, dated August 16, 1990, 55 Fed. Reg. 34,635 (Aug. 23, 1990). The Board was later reconstituted to substitute a new Chairman, because of schedule conflicts experienced by the former Chairman. Notice of Reconstitution of Board, dated June 3, 1991, 56 Fed. Reg. 26,701 (June 10, 1991).

[8] LBP-90-31, *supra*.

[9] Letter from Staff counsel to Licensing Board, dated September 21, 1990. *See also* Letter from the Licensee to the Licensing Board Chairman, dated September 17, 1990.

[10] *See* Notice of Prehearing Conference, dated October 4, 1990, scheduling the conference for October 16, 1990.

[11] Prehearing Conference Memorandum and Order, LBP-90-42, 32 NRC 387 (1990).

[12] Memorandum and Order (Memorializing Prehearing Conference), LBP-90-43, 32 NRC 390 (1990).

[13] *Id.*, 32 NRC at 391. *See also* LBP-90-42, *supra*, 32 NRC at 387-88.

[14] LBP-90-43, *supra*, 32 NRC at 391-92. The Staff did so by letter dated November 19, 1990.

[15] *See* Hearing Notice, dated May 22, 1991, 56 Fed. Reg. 24,420 (May 30, 1991).

[16] LBP-91-25, 33 NRC 535 (June 13, 1991).

The Board conducted two days of hearings in Tulsa, Oklahoma, on June 25 and 26, 1991. (At the outset of the first hearing day, the Board conducted a prehearing conference in order to review hearing procedures with the participants.[17]) The Staff presented a panel of three witnesses: Mr. Charles Cain, Chief, Nuclear Materials Safeguards and Inspection Section, NRC Region IV; Ms. Linda Kasner, Senior Radiation Specialist, Nuclear Materials and Safeguards Inspection Section, NRC Region IV; and Mr. Joseph DelMedico, Senior Enforcement Specialist at NRC Headquarters.[18] The Licensee presented two witnesses: Messrs. James C. Moss, President and owner of Tulsa,[19] and Peter J. Moss, Vice-President of Tulsa and the son of James Moss.[20] We find each of these witnesses technically qualified to present his or her respective testimony.[21]

During the hearing, the Board established schedules for the filing of proposed findings of fact and conclusions of law.[22] In conformance with the schedules (as later modified), the Staff filed its proposed findings on August 16, 1991, the Licensee filed its response on September 9, 1991, and the Staff filed its reply on September 27, 1991.[23]

The Staff, in its Reply FOF, at 2 n.3, points out that the Licensee, in its FOF, has made no effort to comply with 10 C.F.R. § 2.754(c), which prescribes the format for proposed findings, including the use of numbered paragraphs and references to transcript citations. The Staff points to various licensing decisions that assert that a party, even though not represented by counsel, is not excused from these requirements, even where limited resources are a factor. The Staff urges that we not "excuse" the Licensee for failing to attempt to comply with the requirements.

The Licensee explains (Licensee FOF at 1) that its findings were presented without the benefit of transcripts "[b]ecause of the high cost of these documents we were unable to acquire them." In that connection, as we pointed out in our Memorandum (Proposed Findings/Conclusions and Transcripts) dated July 16, 1991 (unpublished), there is no local public document room (where transcripts would be available in microfiche form) in Tulsa (where the Licensee is located)

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[17] Tr. 93-109. *See also* Memorandum and Order (Prehearing Conference and Evidentiary Hearing) dated June 10, 1991, 56 Fed. Reg. 27,548 (June 14, 1991).

[18] Staff Testimony, ff. Tr. 123, at 1.

[19] Tr. 93 (J. Moss).

[20] Tr. 94 (J. Moss).

[21] We explicitly reject the Licensee's claim that the Staff witnesses "could be judged incompetent for a lack of practical experience" (Licensee Findings of Fact at 3). All of the Staff witnesses have had training that included operation of a radiographic exposure device (Staff Findings of Fact at 7; Tr. 124-25 (Kasner, Cain, DelMedico)).

[22] Tr. 480-84; *see also* Memorandum dated July 16, 1991 (unpublished). Thereafter, minor changes in the dates were authorized. *See* Memorandum and Order dated July 31, 1991 (unpublished). Because of service difficulties (resulting from the Licensee's failure to serve a copy of its findings on the Staff), we hereby confirm our approval by telephone of the Staff's request for an extension until Friday, September 27, 1991, to file its reply findings.

[23] These filings will hereafter be referenced as "Staff FOF," "Licensee FOF," and "Staff Reply FOF."

or, indeed, in the State of Oklahoma. The nearest (in Arkansas and Kansas, respectively) are over 200 miles away.

Contrary to the claim of the Staff, the decisions cited are not controlling: they relate to intervenors who *elect* on their own to participate in a licensing proceeding — not the situation where, as here, the Staff is attempting to impinge upon a licensee's property interests. The Licensee must participate to be able to defend its vested property interests, and if it makes a convincing showing that it cannot comply with all of the technical pleading requirements, we should use our best efforts to understand and rule on the merits of the claims presented. We are doing so here. In reaching our Decision, we have reviewed each of the proposed findings submitted by the parties; any not explicitly incorporated directly or inferentially in this Decision are rejected as being unsupportable in law or in fact or as being unnecessary to our Decision.

III. REGULATORY STANDARDS

The Commission's program for categorizing violations for the purpose of assessing and determining the amount of civil penalties is set forth in 10 C.F.R. Part 2, Appendix C, "General Statement of Policy and Procedure for NRC Enforcement Actions." In general, the "nature and extent of the enforcement action is intended to reflect the seriousness of the violation involved."[24] Further, civil penalties are to be tailored to the particular facts and circumstances of the violation involved.

Base civil penalties are set forth in Table 1A of those regulations, categorized in accordance with the type of activity authorized by the license and the particular aspect of that activity giving rise to the violation in question.[25] Here, the Licensee falls within the activity generally described at the time of the purported violations as "Industries [*sic*] users of material"[26] (specifically designated as including "industrial radiographers"). Table 1A prescribes different base civil penalties for operations and health-physics violations or, alternatively, transportation violations. The base civil penalty for the activity in which Tulsa is engaged is $10,000 for operations and health-physics violations (six of which are involved here, including two of those we find are more significant) and $5,000 for transportation violations involving the type of packaging required to be used by Tulsa (represented by four of the violations here).

[24] 10 C.F.R. Part 2, Appendix C, § V.

[25] 10 C.F.R. Part 2, Appendix C, § V.B, Table 1A.

[26] In a recent revision to the Enforcement Policy, the Commission corrected this typographical error; the category now reads "Industrial Users of Material . . . ." 56 Fed. Reg. 40,664, 40,686 (Aug. 15, 1991, effective Sept. 16, 1991).

Base civil penalties are subject to adjustment for the severity level of the particular violation or violations. The adjustment percentages of the base amounts listed in Table 1A are 100% for Severity Level I, 80% for Severity Level II, 50% for Severity Level III, 15% for Severity Level IV, and 5% for Severity Level V violations.[27]

The regulations further provide that, in each case, the severity of a violation is to 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."[28] Although not specifically defined by the regulations, this authority has been construed to permit the severity level of the aggregated group to be equal to or greater than the severity level of individual violations comprising the group. *Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), LBP-91-9, 33 NRC 212, 225-28 (1991), *appeal pending before Commission.* The Staff utilized this authority in this case.

The applicable criteria also provide for the escalation or mitigation of civil penalties. The Staff takes the position that escalation or mitigation is considered only after the severity level of a violation or violations has been ascertained,[29] but the factors that influence escalation or mitigation may also be taken into account in determining the severity level of a violation or series of violations.[30] Thus, "enforcement sanctions will normally escalate for recurring similar violations."[31] The sanction itself (i.e., the severity level), however, is also likely to be more severe when violations are recurring.[32] Appendix C also authorizes mitigation of penalties, for such factors as identification and reporting of a violation by a licensee, corrective action to prevent recurrence, and prior good performance by the licensee.[33]

According to the Staff, a civil penalty is normally assessed for a violation or group of violations categorized at Severity Levels I, II, or III, unless application of the mitigation factors reduces the amount to a zero penalty.[34] The criteria provide that a civil penalty may also be imposed for Severity Level IV violations that are similar to "previous violations for which the [L]icensee did not take effective corrective action."[35] The Staff applies this to both Severity Level IV and V violations.[36]

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[27] 10 C.F.R. Part 2, Appendix C, § V.B, Table 1B.
[28] 10 C.F.R. Part 2, Appendix C, § III.
[29] Tr. 141 (DelMedico).
[30] Tr. 312-13 (DelMedico).
[31] 10 C.F.R. Part 2, Appendix C, § V.D.
[32] Tr. 336 (Cain).
[33] 10 C.F.R. Part 2, Appendix C, § V.B.1-3.
[34] DelMedico, ff. Tr. 123, at 24.
[35] 10 C.F.R. Part 2, Appendix C, § V.B; DelMedico, ff. Tr. 123, at 24.
[36] Tr. 337 (DelMedico).

IV. DISCUSSION OF EVIDENCE

In evaluating the appropriateness of the civil penalty sought to be imposed by the Staff, we observe first that the burden of proof is on the Staff, as proponent of the Civil Penalty Order. 10 C.F.R. § 2.732. We have evaluated the record evidence with that in mind.

1. Nature of the Regulated Industry

The centerpiece of the Staff's Civil Penalty Order is the significant health and safety hazard that may be posed by radiographic operations and the concomitant obligation of a licensee to adhere strictly to the regulatory standards established to avoid adverse consequences. As set forth by the Staff,[37] and not disputed by the Licensee, radiography is the examination of the structure of materials by nondestructive methods utilizing gamma radiation emitted by an encapsulated quantity of a by-product material, an operation that usually requires mechanically moving a highly radioactive source[38] from a well-shielded position in an exposure device, through a region of little or no shielding, into another component of the equipment which provides partial shielding.[39] The first of these positions is within a box, made of a heavy metal such as lead or uranium, in which the source is located when not serving its intended function.[40]

The second part of the overall exposure device, often called the collimator,[41] is also of heavy metal, usually tungsten, located proximate to the object to be radiographed. It has two apertures — one for the entrance of the source and the other for the directed, or collimated, emission of radiation from the source toward the area to be inspected.

These two heavy-metal objects, in practice, are connected by a tube, called a guide tube, which is commonly on the order of 10 feet long.[42] The guide tube provides a path for the source between its storage position and its location in the collimator during an exposure. The guide tube provides little shielding of the source as it traverses the tube. Motion of the source is provided by a stiff

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[37] Staff FOF at 17-18, 23-25. This summary of the equipment and methodology common to industrial radiography is the Board's understanding and is gleaned and consolidated from testimony in an attempt to clarify the topic and the nomenclature by, for example, reducing the use of the jargon of the trade.

[38] The material of the source is usually cobalt-60 or iridium-192 in strengths of the order of 100 Ci. *See* Staff Testimony, Attach. 4.

[39] *See* 10 C.F.R. § 30.4; Kasner, ff. Tr. 123, at 3.

[40] The storage/transport container is sometimes called a "camera." Tr. 185 (Cain). Additionally, as confused nomenclature, "exposure device" denotes the shielding box into which the radiographic source is placed for transport and storage. Tr. 182 (Kasner); Tr. 185 (Cain). During an exposure, the source is said to be removed from the "exposure device." Tr. 188 (Kasner).

[41] Tr. 183, 192 (Kasner).

[42] Tr. 183 (Kasner).

cable to the end of which the source is attached. The cable, in turn, is fed into and through the guide tube by a mechanism incorporating a crank and reel.[43] This mechanism is located at or near the source storage container.

The dimensions of the source, the guide tube, and the cable are such that the likelihood of the source not being advanced is small.[44] The converse situation, however, can be more severe. The Staff reported disconnections of sources from control cables whereby the source was not retracted into its shield by the reverse cranking operation.[45] The consequential severity of such misoperation in relation to personnel exposures, to be discussed later, is apparent when, for example, the source remains, after the disconnect, in the lightweight guide tube.

The Staff presented a description of the potential for inadvertent and excessive radiation exposures to the public and to persons authorized to conduct radiological examinations absent adherence to established procedures such as those set forth in the regulations.[46] The intensity of the gamma radiation field adjacent to a typical source used in industrial radiography is sufficient to cause biological damage to tissue within a few seconds and to be potentially lethal after a few minutes of direct exposure.[47] Examples of such consequences are tellingly portrayed in an NRC publication titled "Working Safely in Gamma Radiography" (NUREG/BR-0024, September 1982), referenced by Staff witnesses[48] and introduced into the record.[49]

2. Discovery of Violations

The violations that gave rise to the Civil Penalty Order emanated from a routine unannounced inspection of the Licensee's operations on October 2-4, 1989, conducted by Ms. Linda Kasner. At that time, Ms. Kasner was an inspector with experience as a Medical Health Physicist; subsequently she became a Senior Radiation Specialist. Ms. Kasner had previously assisted another inspector during a routine inspection of Tulsa in November 1988, and she subsequently performed routine inspections in October 1989 (the one under consideration here), and March 1991.[50] She has had experience in performing

[43] The process whereby the cable and source are moved through the tube is called "cranking." Tr. 185 (Cain).
[44] Tr. 188-89 (Cain).
[45] Tr. 199 (Cain).
[46] *See* 10 C.F.R. Part 34.
[47] Cain, ff. Tr. 123, at 8-9.
[48] Tr. 182 (Kasner).
[49] Staff Exh. 1. Several copies were available at the hearing for the use of parties (who had prior access to the document) and the Board. Copies were thereafter distributed to the Board and the docket file by letter from Staff counsel dated July 25, 1991.
[50] Kasner, ff. Tr. 123, at 1, 2, 3; Staff Testimony, ff. Tr. 123, Attach. 2.

radiographic field operations, including cranking out radiographic sources, as described above.[51]

During the October 1989 inspection, she identified ten apparent violations, set forth in Appendix A to this Decision.[52] (As mentioned earlier, the Staff subsequently determined that one violation did not occur, leaving nine outstanding.) The Licensee was provided a copy of the inspection report by letter dated November 13, 1989.[53] Previously, however, at the exit interview of the inspection, Ms. Kasner reviewed the apparent violations with three representatives from the Licensee (two of whom appeared as witnesses in this hearing).[54]

By letter dated November 17, 1989, to NRC, the Licensee responded to the apparent violations set forth in the inspection report, with explanations and proposed or effectuated corrective actions.[55] Three days later, on November 20, 1989, NRC's findings were discussed with Mr. James C. Moss, Tulsa's President, at an Enforcement Conference held at the NRC office in Arlington, Texas.[56]

3. Staff Calculation of Civil Penalty

The specific aspects of the industrial-radiography activity giving rise to the violations here are denominated by the Notice of Violation as falling in the aggregate within Severity Level III, Supplements IV ("Health Physics"), V ("Transportation"), and VI ("Fuel Cycle and Materials Operations"). The operative language in each of these Supplements is said by the Staff to be

> Breakdown in the radiation safety program involving a number of violations that are related . . . that collectively represent a potentially significant lack of attention or carelessness toward licensed responsibilities.[57]

The nine admitted violations here fall into three general categories. Violations 1a and 1b — two of the more serious, in the Board's opinion — involve the active conduct of radiographic operations. Violations 2a, 2b, and 2c concern failures to determine and record occupational exposure data concerning several radiographers. Two of these (2b and 2c) were designated as repeat violations.

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[51] Tr. 124 (Kasner).

[52] NRC Inspection Report 30-12319/89-02, dated November 9, 1989; Staff Testimony, Attach. 5, at A5-3 through A5-12.

[53] Staff Testimony, ff. Tr. 123, at A5-1 and A5-2.

[54] *Id.* at A5-5.

[55] *Id.*, Attach. 9.

[56] *Id.*, Attach. 10, at A10-1 and A10-2; Tr. 323 (DelMedico).

[57] DelMedico, ff. Tr. 123, at 25, 29, citing similar language in 10 C.F.R. Part 2, Appendix C, Supp. IV ("Health Physics"), Severity Level III, Item C.12; Supp. V ("Transportation"), Severity Level III, Item C.5; and Supp. VI ("Fuel Cycle and Materials Operations"), Severity Level III, Item C.8.

Violations 4a, 4b, 4c, and 4d involve failures relating to the transportation of radiographic exposure devices or radiographic materials — with 4b, concerning a failure to brace or block packages containing radioactive materials during transportation being the most serious. As noted above, under Appendix C, transportation violations entail a lesser base civil penalty than do operations or health-physics violations.

Neither in the Civil Penalty Order nor the earlier Notice of Violation did the Staff assign severity categories to any of the individual violations. They were only considered in the aggregate as Severity Level III.[58]

The Staff derived the $6,750 civil penalty in the following manner.[59] As set forth in Tables 1A and 1B of the Enforcement Policy, referenced above, the base civil penalty for a Severity Level III operations or health-physics violation against a licensee in the category in which Tulsa falls is $5,000 (50% of the maximum penalty of $10,000 for that category of licensee). The Staff mitigated this penalty on the basis of prompt and comprehensive corrective action on the specific violations, but it faulted the Licensee for not having addressed to the Staff's satisfaction (at the time of the enforcement conference) the asserted lack of management attention to licensed activities.[60] Out of a possible 50% mitigation for corrective action, therefore, the Staff allowed 25% (bringing the penalty at that stage of the calculation to $3,750).

The Staff then determined that escalation should be applied, based on prior notice to the Licensee of similar events or problems and its poor prior regulatory performance. The Staff in particular cited its prior notice concerning lack of management attention to licensed activities and prior notice concerning at least six of the specific violations. The Staff testified that seven violations had been noted during a previous inspection in 1988.[61] (By the time of the 1989 inspection, six of those had been "closed," apparently to the satisfaction of the Staff, and the Licensee had proposed a solution to the other that was awaiting Staff review.[62])

The Staff pointed out that up to 100% escalation was permitted for prior notice of similar events and up to an additional 100% for poor prior regulatory performance. The Staff applied a 75% escalation to the base penalty of $5,000, out of a total possible 200% escalation, adding $3,750 to the above-calculated penalty of $3,750, reaching a total of $7,500.[63] (As stated earlier, this penalty was based on ten violations; when the Staff was satisfied that one had not been committed, the penalty was reduced by 10%, bringing it to $6,750.)

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[58] Tr. 316 (DelMedico).

[59] DelMedico, ff. Tr. 123, at 30-31.

[60] *Id.*; Tr. 127 (Cain); Tr. 128 (DelMedico).

[61] Staff Exh. 2, Notice of Violation dated January 10, 1989, based on inspection conducted on November 29-30, 1988.

[62] Staff Testimony, ff. Tr. 123, at A5-5 and A5-6.

[63] DelMedico, ff. Tr. 123, at 31.

4. Evaluation of Severity Level of Civil Penalty

The Staff's rationale for assigning the aggregated violations to a Severity Level III category appears to depend on its view that a significant number of violations *per se* translates into a management deficiency. This is so irrespective of the seriousness (in the Staff's view) of any of the particular violations or whether management could, in fact, have averted those violations by adopting any systemic program.

Prior to responding to inquiry by the Board at the hearing,[64] the Staff did not even evaluate particular violations: it merely set a severity level for all of the violations collectively, determined the penalty for that severity level, and divided the penalty proportionately for each of the violations (resulting in a penalty of $750 for each violation). Although the Staff explains that the $750 represents only "an administrative means for allocating the civil penalty"[65] for a more serious problem, the effect is the apparent imposition of the same civil penalty for activities to which widely variant severity levels are attributable.

As pointed out previously, in the proceeding before us, the Staff aggregated a group of nine mixed-severity violations, which individually ranged from Severity Level IV to Level V, into a single Severity Level III violation. It set the final severity level on the basis of its inference that the group of violations collectively demonstrated lack of management control or carelessness toward licensed responsibility and that the violations show a pattern that is attributable to the same root cause. The inference was made and the severity level assigned without first specifically evaluating and classifying each individual violation.[66]

According to the Staff, the root cause for the violations is a breakdown in management control of licensed programs, manifest by: (1) the number and nature of violations; (2) the fact that the violations were identified by NRC rather than the Licensee; (3) the fact that the Licensee had been previously warned by NRC in correspondence to improve management attention toward compliance; (4) the fact that some violations were recurring; and, (5) the lack of management attention to compliance issues raised in information notices.[67] The Staff adds that it assessed the civil penalty "specifically because the Licensee relied on the NRC to identify its violations rather than having its own management program to self identify and correct the violations."[68]

The Licensee strongly objects to the aggregation of violations with concomitant increase in the severity level that resulted in the assessment of a civil penalty. It believes that most of the violations were individually of minor safety signif-

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[64] *See* Tr. 330-38 (DelMedico, Cain).
[65] Staff Reply FOF at 6.
[66] DelMedico, ff. Tr. 123, at 26, 29-30.
[67] *Id.* at 30.
[68] Staff FOF, "Conclusion of Fact" No. 10.

icance and that no civil penalty was warranted. In referring to the infractions involving recordkeeping oversights or omissions, it queries "Should each warrant a $750 penalty?"[69] It concludes that these NRC penalties are "exorbitant and arbitrary."[70]

5. Evaluation of Severity Level of Violations

Under the Enforcement Policy, the "severity of a violation [is] characterized at the level best suited to the significance of the particular violation." Beyond that, in some cases, the Staff is permitted to evaluate violations "in the aggregate" and assign "a single severity level . . . for a group of violations."[71] That is the process the Staff followed in this case, aggregating a number of violations to reach a single Severity Level III violation.

To determine whether the Staff was justified in following that practice in this case, we must determine whether the individual violations here, when considered collectively, warrant that degree of severity. We note at the outset, however, that the several violations are clearly not of equal severity and, as a matter of sound discretion, should not be treated alike.

We turn first to the three admitted violations that we deem most serious: Violations 1a, 1b, and 4b. Then we will analyze the other less-serious violations.

(a) Violation 1a

Violation 1a involved a failure to conduct a radiation survey of an exposure device following its use at a temporary jobsite. The Staff inspector observed two radiographers engaged in activities on the rooftop of a refinery building.[72] She first observed two exposures from the ground but saw no post-exposure surveys being performed. While going up to the roof, she observed a third exposure for which no survey was performed. Once on the roof, she observed the radiographers leaving the survey instrument at the location of the crank, approaching the collimator to reposition the source guide tube for the next exposure, and (despite their awareness of her presence) failing to conduct a survey.[73] She testified that, when she later questioned the radiographers, they admitted not having performed the surveys despite their knowledge of the requirement to do so.

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[69] Licensee FOF at 2.
[70] *Id.*
[71] 10 C.F.R. Part 2, Appendix C, § III.
[72] Kasner, ff. Tr. 123, at 4; Tr. 194 (Kasner).
[73] For a further discussion, see Tr. 201 (Cain).

As set forth both in its letter of November 17, 1989, and in its February 22, 1990 response to the Notice of Violation, the Licensee claimed that the lead radiographer in question was well trained and well qualified to perform radiography but was under some stress — caused, in part, by the presence of the NRC inspector.[74] That is no excuse, however, for the violation in question. Radiographers are expected to be able to operate in accordance with regulatory requirements under all circumstances, including stressful conditions.[75]

Surveys are required to be performed after each use of the source, to ensure that it is retracted into its shielding container. 10 C.F.R. § 34.43(b).[76] Performance of a survey after each use of the source, to ensure that it is retracted into its shield, is essential to the health and safety of individuals who may be nearby such operations: failure to conduct the survey properly is the most common contributing factor in radiography incidents of overexposures of personnel.[77] Indeed, as the Staff testified, failure to conduct a survey would currently be considered a Severity Level III violation in itself,[78] and such failure also could have been considered as Severity Level III at the time of the 1989 violation.[79]

The Staff rated this violation as the most serious of the nine under review.[80] We agree.

(b) Violation 1b

Violation 1b involved the failure to post a "High Radiation Area" sign denoting an area where the radiographers were conducting radiographic operations. Indeed, the site, the job, the time frame, the radiographers, and the NRC inspector who observed the activities (Ms. Kasner) were the same as in Violation 1a, described above.[81]

Ms. Kasner testified, without contradiction, that the top of the refinery was not properly posted, as required by 10 C.F.R. §§ 34.42, 20.203(b), and 20.203(c)(1).

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[74] Licensee Exh. 1 at 2; *see also* Staff Testimony, Attach. 9 (redacted version of November 17, 1989 letter). Although the Staff, in presenting its case, has asserted the right to redact material from documents on grounds of relevancy, we question whether it was appropriate here to excise any portion of the Licensee's explanation of what happened, notwithstanding the Staff's view of the pertinence or validity of the redacted portions. We have the obligation to judge the pertinence of the Licensee's responses to the issues in this proceeding and cannot do so without being afforded the *entire* response. For that reason, we are relying on Licensee Exhibit 1 for the presentation of the Licensee's response.

[75] Tr. 174-75, 180 (Kasner); Tr. 380 (DelMedico); Tr. 382-83 (Cain).

[76] *See also* Tr. 205-06 (Kasner); Staff Exh. 1 at 118.

[77] Cain, ff. Tr. 123, at 15-16.

[78] Tr. 177 (Kasner). Subsequent to the violations at issue here, the Commission amended its enforcement criteria specifically to reference, as a Severity Level III violation, the failure to conduct a survey. Tr. 177-78 (DelMedico). *See* 55 Fed. Reg. 843 (Jan. 10, 1990).

[79] Tr. 177 (Kasner); Tr. 333-34, 368 (DelMedico).

[80] Tr. 177 (Kasner).

[81] Tr. 209 (Kasner).

One of two outside stairways leading to the roof — the one used by Ms. Kasner — was not restricted or posted at all. The other was only restricted at the top. Access to the roof could readily be gained by persons not employed by Tulsa, and no one had even checked to see if the building was occupied. Nor was the area under constant surveillance, as also required by the regulations.[82]

In its response dated November 17, 1989, to the inspection report, the Licensee stated only that each of its employees was aware of the requirement.[83] In its response dated February 22, 1990, to the Notice of Violation, however, the Licensee observed that the building was unoccupied, the only access to the roof was by three staircases (one of which presumably was inside), that the staircases were barricaded with ropes and radiation area signs, that ropes around the radiation area were erected, and that the exposure time was but 45 seconds. It concluded that "[a]lthough our operating procedures require posting of the 'High Radiation Area' signs there was no danger of anyone entering the area and receiving any radiation because of not posting a 'High Radiation Area' sign."[84]

The Licensee's claims recited above are not supported by the evidence of record supplied by the Staff, which was unrebutted. We therefore adopt the facts as advanced by the Staff with regard to the posting violation. In particular, we note that the Staff inspector did indeed reach the rooftop area through an unposted and unbarricaded stairway.[85]

The Staff also established the significance of the violation. Posting is required due to the radiation levels potentially present (where a major portion of the body could receive in any 1 hour a dose in excess of 100 millirems) and the need to make individuals in the area aware of the hazards present. Posting is important in maintaining a safe environment for performing radiography, to prevent unnecessary exposure of nonradiographic workers and the general public. Radiographers may not be capable of maintaining 360° surveillance to prevent unauthorized entry. The majority of overexposures and unnecessary exposures of members of the public are associated with failures to properly post and restrict the area.[86]

Indeed, failure to post properly could today be regarded as serious enough, in itself, to constitute a Severity Level III violation. The Staff indicated that, at the time of the violation, it would have been classed as Severity Level IV, although in some circumstances it could have been higher.[87]

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[82] Kasner, ff. Tr. 123, at 5; Tr. 174, 207-10 (Kasner); *see also* Staff Testimony, ff. Tr. 123, at A5-10.
[83] Staff Testimony, ff. Tr. 123, at A9-2 (item 6).
[84] Licensee Exh. 1 at 2; Staff Testimony, ff. Tr. 123, at A13-2.
[85] Tr. 207-09 (Kasner); Kasner, ff. Tr. 123, at 4.
[86] Cain, ff. Tr. 123, at 16-17.
[87] Tr. 335 (DelMedico); *see also* 10 C.F.R. Part 2, Appendix C, Supp. VI, C.1.

(c) Violation 4b

Violation 4b, the third of the more serious violations, involved the failure to brace or block packages containing radioactive materials during transportation. During a visit to the Licensee's facility, the NRC inspector (Ms. Kasner) observed two radiographers departing for a temporary jobsite with an overpack (containing an exposure device) within the rear compartment of a truck.[88] The truck doors were open.[89] (The lead radiographer was the same as the lead radiographer in the foregoing rooftop incidents.[90])

Because the radiographers had failed to secure the rear doors of the truck, and they had opened, the overpack was observed to be not blocked or braced at the time, leaving nothing to prevent the device from sliding across the floor or, in fact, out of the truck.[91] That it did not do so was fortuitous, in the view of Ms. Kasner.[92]

During two field inspections, Ms. Kasner also observed that two radiographic devices had been transported to the field sites without blocking or bracing, as required by a Department of Transportation regulation, thus permitting the devices to change position within the vehicle. During subsequent interviews of Licensee personnel, each radiographer interviewed admitted that overpacks used to transport radiographic devices were not normally braced or blocked during routine transportation. The Licensee earlier had acknowledged to the Staff that it had received an NRC Information Notice (IN-87-47, dated October 5, 1987) reminding licensees of the requirements to use an overpack and to block and brace the packages during transportation.

According to the Staff, the requirement for blocking and bracing is designed to prevent the transportation of packages containing hazardous material in a manner that would permit movement of the package and possible violation of the shielding it provides. Beyond that, failure to block or brace may permit the device to fall out of the vehicle and be retrieved by a member of the public, leading to a potentially hazardous exposure. Failure to observe the requirement thus may have significant safety implications.[93]

The Licensee provided a number of seemingly contradictory explanations for the acknowledged violation. In its letter of November 17, 1989, responding to the inspection report, it indicated that, as of a 1988 inspection, it was not aware of the requirement but that, "Effective November 17, 1989 all trucks used

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[88] An overpack is a steel drum containing styrofoam inserts into which the exposure device or camera is placed for transportation. Tr. 219 (Cain).

[89] Tr. 231 (Kasner).

[90] Tr. 426 (P. Moss).

[91] Kasner, ff. Tr. 123, at 6; *see also* Tr. 231 (Kasner); Tr. 239-40 (DelMedico).

[92] Kasner, ff. Tr. 123, at 6.

[93] Cain, ff. Tr. 123, at 21.

for radiography are now equipped with restraining cords to prevent movement within the vehicle." In its February 22, 1990 response to the Notice of Violation, the Licensee cited difficulties in blocking and bracing an overpack container (a separate requirement), and at the hearing the Licensee repeated this claim.[94]

The Licensee acknowledged its awareness of the requirement for blocking and bracing. It also indicated that certain common carriers did not block or brace or otherwise secure overpack containers. And it described an alternative method that it had been using to achieve the same result as blocking and bracing.

A licensee is not free to substitute its own method of achieving a result for one prescribed by regulation. We do not have an adequate record to determine whether the method used by the Licensee satisfactorily achieves the purposes sought by the requirement for blocking and bracing. But even if we did, we are not free (as the Licensee is not free) to ignore regulatory requirements. It is clear to us that the requirement for blocking and bracing has safety significance. Indeed, it appears that a failure to adhere to such requirement would fall within either of two criteria, both of which are currently evaluated as Severity Level III:

> Violations of NRC transportation requirements involving for example: . . . .
>
> 3. Any noncompliance with . . . loading . . . requirements that could reasonably result in the following:
>
> c. Substantial potential for personnel exposure or contamination . . . .
>
> [or]
>
> 5. Breakdown in the licensee's program for the transportation of licensed material . . . [i.e., the criteria relied on by the Staff in its Civil Penalty Order].

As indicated earlier, the Staff would have evaluated this violation alone (at the time it occurred) as either Severity Level III or IV and, because of the open truck door, considered it to be a Severity Level III violation.[95]

Based on these criteria and the admissions of the Licensee to the Staff, we have no doubt that the routine failure to brace and block in itself could be categorized as Severity Level III or IV, irrespective of the efficacy of the alternate method utilized.

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[94] Tr. 417-19 (J. Moss); Tr. 420-21 (P. Moss).
[95] Tr. 337-38 (DelMedico).

(d) The Six Less-Significant Violations

There are six remaining violations that the Staff (in response to Board inquiries at the hearing) characterized as Severity Level IV or V. They may be summarized as follows:

2a. Radiation exposure records for six radiographers covering the period from May 1989 through July 1989 indicated that personnel monitoring devices had been damaged and could not be analyzed. As of October 2, 1989, the Licensee had not performed evaluations to determine the radiation exposure received by the six individuals. This was classified by the Staff at the hearing as a Severity Level IV violation.[96]

2b. The Licensee failed to obtain radiation exposure information concerning the current quarterly occupational dose received by two radiographers prior to assigning them work in restricted areas. This was alleged to be a repeat violation. The Staff classified this as a Severity Level IV violation at the hearing.[97]

2c. The Licensee allowed an individual to receive an occupational radiation dose in excess of certain specified regulatory standards without having Form NRC-4 signed by the individual to certify the completeness of the record of accumulated dose. This was said to be a repeat violation that, at the hearing, the Staff classified (when standing alone) as Severity Level V.[98]

4a. On October 2, 1989, a Licensee representative transported two exposure devices containing iridium-192 in packages bearing "Radioactive Yellow II" labels that did not specify the identity and activity of the nuclide. This was classified as a Severity Level IV violation at the hearing.[99]

4c. On October 2, 1989, a Licensee representative transported a source and carried shipping papers showing: (1) an incorrect transportation index for a package labeled "Radioactive Yellow II," and (2) incorrect package identification descriptions. This was classified at the hearing as a Severity Level IV violation.[100]

4d. On October 2, 1989, a Licensee representative transported a package appropriately labeled "Radioactive Yellow II" in a vehicle bearing a "Radioactive" placard. Such vehicle labeling is reserved for packages bearing the "Radioactive Yellow III" label. At the hearing, the Staff classified this violation as Severity Level IV.[101]

The Staff presented evidence on the safety significance of each of these less-significant violations. Most persuasive was its connection of some of

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[96] Tr. 335 (DelMedico).
[97] Tr. 335 (Cain).
[98] *Id.* The Staff added that, because of repetition, the violation here might be regarded as Level IV.
[99] Tr. 337 (DelMedico).
[100] Tr. 338 (DelMedico).
[101] *Id.*

the paperwork violations to the assurance that exposures to radiographers do not exceed regulatory limits.[102] On the other hand, the importance of the overplacarding violation (4d) — i.e., the conveying of accurate information in the event of a truck accident[103] — appears no more than marginal.

(e) Aggregation of Violations

As indicated previously, the Staff determined that all of the foregoing violations, considered collectively, represent a "significant regulatory concern" resulting from a "lack of management control of the program" that equates to a breakdown that, in the aggregate, meets the criteria for a Severity Level III violation. The Staff reached this conclusion without first determining the severity level of each violation individually.[104] The Staff based this action on its determination that they all stem from the same root cause, the lack of attention to compliance with NRC requirements. The Staff made no broader inquiry into the overall operation of the Licensee's program.[105]

We reiterate that, in this case, the Staff did take into account both the number and the significance of the violations. We stress that the significance of the individual violations — considered alone — is important, because a number of violations that are extremely minor in nature might be insufficient to establish a programmatic breakdown that rises to a Severity Level III violation. However, the relatively large number of violations in this case, together with the significant safety aspects of some of them and their similarity in certain instances to earlier violations, clearly constitutes a sufficient programmatic breakdown to fall within the scope of a Severity Level III violation as denominated by the Enforcement Policy. The circumstance that some of the individual violations, in themselves, could be evaluated as Severity Level III lends even more credence to this determination.

Two additional observations are in order. First, one of the Licensee's most forceful assertions is that the NRC Inspector (Ms. Kasner) at the exit interview indicated in substance that "[t]he infractions are of the Level IV and V category" and did not constitute fineable offenses.[106] The record does not clearly support that assertion. Rather, it appears that Ms. Kasner may have advised the Licensee that many of the violations were of that nature but that some were more significant and that collectively they represented a management oversight problem.[107] Ms. Kasner clearly indicated that she also advised the Licensee that

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[102] Cain, ff. Tr. 123, at 18.
[103] *Id.* at 22-23.
[104] Tr. 313, 316, 345-46 (DelMedico); DelMedico, ff. Tr. 123, at 25, 26.
[105] Tr. 304-05 (Cain).
[106] Licensee FOF at 4; *see also* Tr. 455 (P. Moss).
[107] Tr. 145-46 (Kasner).

she did not have final authority to assign severity levels to violations[108] and that there was a possibility that NRC management might accord significance to the "number and the common nature" of the violations.[109]

Second, in transmitting the Civil Penalty Order to the Licensee, the Staff (through Hugh L. Thompson, Jr., Deputy Executive Director for Nuclear Materials Safety, Safeguards, and Operations Support) observed that "individually these violations do not normally rise above Severity Level IV . . . ."[110] This communication was unfortunate, particularly insofar as it created the impression that the Staff was attempting to "pile on" unimportant deviations to create a violation for which it could assess a civil penalty. As we have seen, this was not the case, given the individual significance of some of the violations.

The elements of a sound radiation safety program presented by Tulsa — to be discussed later, in conjunction with escalation — do not detract from the fact that a number of serious violations were in fact committed. Based on these considerations, we find no abuse of discretion by the Staff in determining that, in the aggregate, a Severity Level III violation occurred. For that reason, we are upholding the Staff's determination in this respect. A civil penalty is warranted unless some mitigating facts exist.

As previously discussed, the base civil penalty for a Severity Level III violation (involving operations, as in the case of five of the remaining alleged violations here) amounts to $5,000.[111] In reviewing the Staff's assessment of the civil penalty here, we begin with that figure.

6. Escalation

As set forth earlier, the Staff escalated its base civil penalty of $5,000 by 75%. The escalation was based on the Licensee's prior notice of similar events or problems and its poor prior regulatory performance.

The prior notice and poor prior performance cited by the Staff related largely to the violations that were not the most serious — the paperwork discrepancies, and to general notices concerning management's attention to details. In contrast, the three most-serious violations described above were first-of-a-kind and not specifically the subject of prior notice. Beyond that, as pointed out previously, those serious violations stemmed from the improper performance

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[108] Tr. 145 (Kasner); Tr. 438-39 (J. Moss). *See also* Tr. 151 (Cain).

[109] Tr. 150, 358 (Kasner).

[110] Staff Testimony at A12-1.

[111] As set forth earlier, the base Level III civil penalty for transportation violations (of which there were four, including one of the more significant) is $2,500. A good argument could be made that the base of an aggregated violation should represent a weighted average of the aggregated violations — here, $4,000. However, because the six original and five remaining operations violations (including two of the more serious) in themselves amount to a Severity Level III violation, we are utilizing the $5,000 base civil penalty for the Level III violations here.

of a single radiographer, whose credentials clearly qualified him for his position and whose performance on the job had previously been monitored and found acceptable.[112] In contrast to this one radiographer, Tulsa routinely employed twenty radiographers,[113] with no serious apparent violations attributed to any but this one.[114] Finally, there were no excessive radiation exposures attributable to any of these violations.[115]

The Staff's reliance on poor prior regulatory performance as a ground for escalation was based in large part on paperwork-type violations identified in an inspection conducted in November 1988.[116] To respond to this position, the Licensee demonstrated that it has had a functioning radiation safety program that includes measures, some in excess of regulatory requirements, to strengthen the safety of radiographic operations. Specifically:

(1) The Licensee regularly assigns two radiographers to each job for safety reasons, even though not obligated by NRC to do so.[117]

(2) Tulsa utilizes an Assistant Radiation Safety Officer in addition to the requisite Radiation Safety Officer, even though not required to do so.[118]

(3) The Licensee exercises management oversight to personally ensure that complete radiation report records are kept.[119]

(4) The Licensee conducts quarterly field inspections of its radiographers to ensure that safe practices are being used.[120]

(5) The Licensee conducts regular radiation safety meetings with employees where specific radiological safety practices are discussed. It orders correction in the behavior of nonconforming employees.[121]

(6) Licensee has in place and communicates to employees a company policy for employees to work safely, in conformance with NRC requirements. Employees are not to work under unsafe conditions even if a client is lost as a result.[122]

Additionally, although not an excuse for the violations, the Licensee had made affirmative prior efforts to obtain the information on employee radiation

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[112] Tr. 179 (Kasner); Tr. 416 (J. Moss).
[113] Staff Testimony, ff. Tr. 123, at A5-6 (item 3).
[114] During the inspection that gave rise to the violations in this case, the Staff inspected the activities of another radiographer and was satisfied with his performance. Tr. 264-65 (Kasner).
[115] Tr. 153 (Cain); Tr. 397 (J. Moss).
[116] Staff Exh. 2.
[117] Tr. 408 (J. Moss).
[118] Tr. 362 (Cain).
[119] Tr. 412 (J. Moss).
[120] Tr. 415-16, 457-59 (J. Moss).
[121] Tr. 425-29, 443-44 (J. Moss, P. Moss).
[122] Tr. 454 (J. Moss); Tr. 455-56 (P. Moss).

doses cited in Violations 2a, 2b, and 2c, but the records were incomplete at the time of the inspection.[123]

Furthermore, with respect to the two repeat violations, the Licensee emphasized their relative lack of safety significance. In particular, Violation 2c (a Severity Level V violation)[124] asserted that Tulsa allowed an individual to receive an occupational radiation dose in excess of certain standards without having a form signed by the individual to certify the record of accumulated dose. The form had been completed by the Licensee, and the inspector verified that the accumulated dose was not in excess of regulatory standards. Nonetheless, the individual had not signed the form and, thus, Tulsa could not confirm that the record was correct in its entirety. Tulsa was therefore charged with a violation.[125] Although not specifically tied to this one violation, the Licensee indicated that radiographers occasionally work late-night shifts and, when they do, may not be contacted on a daily basis.[126] Further, the Staff indicated that there is no regulatory requirement for ongoing signatures after each exposure.[127]

The other repeat violation (2b) involved the failure to obtain previous occupational exposure information for two individuals prior to assigning them to certain activities, a Severity Level IV violation.[128] Although more serious than the former, it nonetheless is not a significant violation.

Because of the relatively insignificant nature of the two repeat violations, we conclude that escalation of 75% in large part on the basis of these violations is excessive. Taking into account the many effective measures that Tulsa has adopted, the opinion of the Staff that Tulsa's radiation safety program is currently in basic compliance with regulatory requirements,[129] and the circumstance that the violations did not result in any excessive radiation exposure, we find escalation of no more than 20% ($1,000) to be appropriate.

7. Mitigation

As noted earlier, the Staff mitigated the civil penalty by 25%, based on prompt corrective action for individual violations achieved by the time of the enforcement conference. The Staff declined to mitigate an additional 25%

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[123] Tr. 408-10 (J. Moss).

[124] The statement in Staff Reply FOF at 40 n.6, that the *two* repeat violations are "generally" classified as Severity Level IV, is misleading at best. A Staff witness characterized Violation 2c as "normally" Severity Level V, although he added that, because it was a repeat violation, it might have been regarded as Severity Level IV. Tr. 336 (Cain).

[125] Tr. 383-84 (Kasner).

[126] Tr. 410-11 (P. Moss).

[127] Tr. 384-85 (Kasner, Cain).

[128] Tr. 335 (Cain).

[129] Tr. 143, 279 (DelMedico); Tr. 270 (Cain).

because Tulsa had failed to address properly the management issues cited by the Staff.

We find no basis for modifying the Staff's determination on mitigation. We are therefore approving mitigation in the amount of 25% ($1,250).

8. Amount of Civil Penalty

In deriving the amount of the civil penalty we find appropriate, we reiterate our view that there should be a better system for denominating the value of individual violations than by treating each of the ten initial and nine outstanding violations as worth $750 each, irrespective of their severity. Proper evaluation requires consideration not only of numbers of violations but, more important, their severity.[130] The record here, however, suggests no better way, and thus we are following that method in deleting an amount for the withdrawn violation.[131]

Other than the number and nature of the violations at issue here, we have seen no additional evidence of a general programmatic breakdown. More appropriate management practices would not likely have prevented the three most-serious violations from occurring, although they might have prevented the occurrence of certain of the less-serious paperwork violations. We note, with respect to several violations, the Licensee expressed some confusion as to the scope of specific regulatory requirements.[132] Although not an excuse for the violations, it is an appropriate factor to consider in assessing the amount of a civil penalty.

Taking these considerations into account, we conclude that the base civil penalty should be $5,000 (Severity Level III), that escalation of $1,000 (20%) is appropriate, and that $1,250 (25%) should be subtracted for mitigation. The civil penalty that should be imposed for all the ten initial alleged violations is therefore $4,750. Reducing that by 10% ($475) for the withdrawn violation, the net civil penalty that should be imposed is $4,275.

V. CONCLUSIONS OF LAW

1. The Staff was correct in its conclusion that the violations under consideration here in the aggregate amount to a Severity Level III violation.

2. A base civil penalty of $5,000, as sought by the Staff, is appropriate for such a violation or series of violations.

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[130] The Staff acknowledged that, in some cases involving multiple violations, the division of the total penalty among constituent parts has not been equal, where a violation was considered especially significant. Tr. 343 (DelMedico).

[131] The Staff evaluated this violation as Severity Level IV. Tr. 344 (DelMedico).

[132] In particular, the display on vehicles of information identifying their cargo (Violation 4d) (Tr. 449-50 (J. Moss)) and the requirement for blocking and bracing (Violation 4b) (Tr. 422 (P. Moss, J. Moss)).

3. Contrary to the Staff conclusion, escalation of this penalty in the amount of no more than $1,000 (20%) is warranted.

4. Mitigation in the amount of $1,250 (25%) is warranted, as concluded by the Staff.

5. The calculated civil penalty should be reduced by 10% ($475) representing the proportionate amount of the withdrawn violation (Violation 3).

6. A civil penalty of $4,275 should be substituted for the $6,750 sought by the Staff.

7. A civil penalty of $4,275 should accordingly be assessed.

Order

Based on the foregoing opinion, including findings of fact, conclusions of law, and the entire record, it is, this 10th day of December 1991, ORDERED:

1. The Order Imposing Civil Monetary Penalty, dated June 6, 1990, is *modified* by substituting a civil monetary penalty of $4,275 for the $6,750 sought by the Order. A civil monetary penalty of $4,275 is hereby *assessed* against the Licensee, Tulsa Gamma Ray, Inc.

2. This Initial Decision is effective immediately and, in accordance with 10 C.F.R. § 2.760 of the Commission's Rules of Practice, shall become the final action of the Commission forty (40) days from the date of issuance, unless any party petitions for Commission review in accordance with 10 C.F.R. § 2.786 or the Commission takes review sua sponte. *See* 10 C.F.R. § 2.786, as amended effective July 29, 1991 (56 Fed. Reg. 29,403 (June 27, 1991)).

3. Within fifteen (15) days after service of this Decision, any party may seek review of this Decision by filing a petition for review by the Commission on the grounds specified in 10 C.F.R. § 2.786(b)(4). The filing of a petition for review is mandatory for a party to exhaust its administrative remedies before seeking judicial review. 10 C.F.R. § 2.786(b)(1).

4. A petition for review shall be no longer than ten (10) pages and shall contain the information specified by 10 C.F.R. § 2.786(b)(2). Any other party may, within ten (10) days after service of a petition for review, file an answer supporting or opposing Commission review. The answer must be no longer than ten (10) pages and should concisely address the matters in 10 C.F.R.

§ 2.786(b)(2) to the extent appropriate. The petitioning party shall have no right to reply, except as permitted by the Commission.

THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Dr. A. Dixon Callihan
ADMINISTRATIVE JUDGE

Bethesda, Maryland
December 10, 1991

CONCURRING OPINION OF JUDGE CALLIHAN

I agree with the conclusion of the Board's Decision whereby a civil penalty less than that sought by the Staff is imposed upon the Licensee. The principal allegation with which the Staff charged the Licensee is a breakdown of the management control of a licensed program. In my judgment, however, the Staff's demonstration of this breakdown, with which I reluctantly agree and the Board has accepted, is marginal at best.

The history of Tulsa's activities as an industrial radiographer — for example, the assessment of no previous monetary penalty, no record of excess radiation exposure to an employee or to a member of the public, no previous identification of a violation of regulations or license conditions more severe than Level IV — demonstrates a significant level of management control. In contrast, the October 1989 inspection of Tulsa, the subject of this proceeding, disclosed a number of alleged violations of which three had potential safety significance. The remaining six mainly concerned recordkeeping and "paperwork" deemed here to be of considerably lesser importance.

The result of this October 1989 inspection, while perhaps atypical, is not unprecedented, in that earlier inspections also cited a number of violations similar in both number and severity. The Staff advised that two of the 1989 violations were repetitious of earlier citations.

In retrospect, I would have preferred that the Staff charge the Licensee with one or more clearly delineated Level III violations, rather than lumping a number of irregularities of varying severity and importance in its arrival at the imposition of a civil penalty.

Notwithstanding the recorded fact that the three more-serious of the current violations can be attributed to a single errant radiographer no longer in the employ of the Licensee and that two-thirds of the recent accusations are of little consequence, I believe an employer must assume the responsibility for the behavior of its staff.

For these reasons, I conclude that Tulsa Gamma Ray's control of licensed activities can be strengthened and that the potential for improvement exists. Consequently, I do not join my dissenting colleague in effectively condoning the Licensee's management program and the manner in which it has met its responsibilities.

DISSENTING OPINION OF JUDGE KLINE

I respectfully disagree with my colleagues' decision to assess a civil penalty against the Licensee because I conclude that the Staff did not meet its burden of proof on the factual question of whether the admitted violations collectively constituted a programmatic breakdown in the Licensee's safety program. Succeeding on that burden was a vital element of the Staff's case and, with that failure, the Staff's enforcement theory supporting imposition of a civil penalty fails. The Board may not consider an alternative theory for which prior notice to the Licensee has not been given. Accordingly, I would dismiss the case against the Licensee without imposing a civil penalty.[133]

My analysis begins with the Staff's letter to the Licensee imposing a civil penalty. The letter, dated June 6, 1990,[134] was signed by Hugh Thompson, Deputy Executive Director for Nuclear Materials Safety, Safeguards, and Operational Support, and was captioned "ORDER IMPOSING CIVIL MONETARY PENALTY — $6,750." In the letter, the Deputy Director specifically agreed with the Licensee that the "violations do not normally rise above Severity Level IV . . . ." The letter nevertheless concluded that the violations in the aggregate were significant and it referred to the Staff's general concern for the risks of overexposure. The letter did not identify specific violations as cause for the Staff's concern.

The issues specified for hearing after a prehearing conference were as follows:

> whether the amount of the penalty imposed was proper under the Commission's Enforcement Policy, i.e., whether it was correct to collectively classify Severity Level IV and V violations as a Severity Level III violation and impose a monetary penalty, and whether the amount of

[133] I find the analysis set forth in *Hurley Medical Center* (One Hurley Plaza, Flint, Michigan), ALJ-87-2, 25 NRC 219, 224 (1987), applicable to this case.

[134] Staff Testimony, ff. Tr. 123, Attach. 12.

the penalty was correctly arrived at taking into account the factors in the enforcement policy, including mitigating circumstances.

This statement was developed after consultation with the parties, and no one objected to it.[135]

Additional notice of the Staff's enforcement theory in this case was given in a Board-ordered Staff letter of notice to Tulsa Gamma Ray, dated November 19, 1990. The Staff's letter stated in relevant part:

> The violations, in the aggregate, have been classified as Severity Level III under Supplement IV, Section C.12 (Violations 2.a-2.c); Supplement V, Section C.5. (Violations 4a.-4d.); and Supplement VI, Section C.8 (Violations 1.a-1.b). These three provisions contain nearly identical language. Each refers to "a number of violations that are related . . . that collectively represent a potentially significant lack of attention or carelessness toward licensed responsibilities." In this case the NRC Staff believes that all of the violations are related because they stem from the same root cause, namely, a pattern of lack of attention to compliance with NRC regulatory requirements and carelessness toward licensed responsibilities by the RSO and management above the RSO. This pattern evidences a breakdown in the licensed program and control of the licensed activities of Tulsa Gamma Ray. . . .

The Staff restated these views in its prefiled testimony.[136] All of the foregoing notices bind the Staff in the contested hearing and, absent a request for change, no alternative enforcement theory should be considered by the Board. The notices confirmed to the Licensee that the Staff regarded all of the violations as Severity Level IV or less and that the Staff intended to prove in the hearing that it was justified in aggregating the violations to a single Severity Level III violation on the basis of an alleged breakdown in licensed programs.

In each of the Supplements in the Enforcement Policy referred to by the Staff, the Severity Level III violation is specified as a breakdown in the licensed program, whether it be radiation safety, transportation, or fuel cycle and materials operations.[137] It is clear that, when the Staff invokes these sections, the essential fact that must be proved is that a programmatic breakdown occurred within one or more of the referenced activity areas.

In context, multiple related violations or significant lack of attention to licensed responsibilities are given in Appendix C, Supplements IV, V, and VI, as factors that are involved in a programmatic breakdown, but the word "involved"

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[135] Prehearing Conference Memorandum and Order, LBP-90-42, 32 NRC 387 (1990); Memorandum and Order (Memorializing Prehearing Conference), LBP-90-43, 32 NRC 390 (1990).

[136] DelMedico, ff. Tr. 123, at 25-26, 29-30.

[137] Supplement VI, section C.8 refers to "breakdown in the control of licensed activities" rather than "breakdown in the radiation safety program" (Health Physics) or "breakdown in the licensee's program" (Transportation). No significant distinction among these descriptions of violations exists in the record and I see none. All three descriptions are included in my arguments and, for convenience, I refer to the violations collectively as a "programmatic breakdown" or a "breakdown in licensed programs."

is guidance. These factors are not defining criteria that are sufficient *per se* to establish such a breakdown. There must also be some basis established showing that the violations are more significant than marginal flaws in a functioning program. The violations collectively should support an inference that there has been a breakdown in the licensed program.

I conclude that, if the Staff chooses to take enforcement action under the authority cited to the Licensee, it incurs an obligation to show not only that multiple violations occurred, but also that collectively the violations impeach the licensed program. Where the Staff has inadequate evidence to meet this obligation, it may always choose to act on violations individually, with proper notice to the Licensee. Therefore, there was no essential regulatory goal in this case that could only be achieved by the approach adopted here.

Some of the violations were sufficiently serious to warrant a civil penalty individually. However, the Staff did not assign individual severity levels to each violation until requested to do so at the hearing. This was not timely notice to the Licensee. Therefore, the Board may not now uphold a civil penalty based on individual severity of some of the violations.

The record does not contain either an objective or an operational definition of what constitutes a programmatic breakdown. I take "program" to refer simply to the sum of actions required to control the licensed safety-related activities of the corporate Licensee. In this case, the scope of the licensed program encompassed the safety-related activities of twenty radiographers. *Webster's Third International Dictionary* defines "breakdown" (verb) in relevant part as follows: "to bring about loss of force or effectiveness; make ineffective; to become inapplicable or ineffective." And as a noun: "failure of operation; a condition marked by futile ineffectiveness; collapse, disintegration."[138]

I conclude from those definitions that the Staff's burden under the enforcement policy and the theory it chose to pursue was to prove that the Licensee's corporate safety program was in a state of breakdown, i.e., that the program encompassed within one or more Supplements was substantially ineffective or that it was dysfunctional in whole or substantial part. For reasons stated, it was not sufficient to show only that some elements of the Licensee's program were flawed and in need of improvement under the enforcement theory chosen by the Staff.

Three of the violations, 1a, 1b, and 4b, were committed by one person and two were sufficiently significant to have been classified as Severity Level III in the first instance. The Staff, however, elected not to act on these violations individually but instead chose to pursue the enforcement theory discussed here. However, I agree with the majority that in this case the Licensee was not

[138] *Webster's Third New International Dictionary*, Unabridged, 272 (1986).

imprudent in hiring the offending radiographer and that prior inspections of his performance did not reveal erroneous behavior on his part. The evidence brought by the Staff shows only that a single radiographer performed poorly during a particular NRC inspection. No additional evidence suggests that there was a flawed corporate safety program which, if corrected, might have prevented this behavior. These violations, while individually serious, do not prove that there was a breakdown in the Licensee programs.

I do not propose that the Licensee in other circumstances could escape a civil penalty by arguing that it was not responsible for the acts of its employees. It clearly could not, but those circumstances are not presented under the Staff's enforcement notice. It is immaterial to my conclusion that some other enforcement theory based on individually severe violations arguably might have been upheld in a contested proceeding.

The six remaining less severe violations have no collective characteristics suggesting that a breakdown in the licensed program occurred. I reject the Staff's assertion that the violations are collectively significant because they are related to management inattention or carelessness. Even if they are so related, and even if significant, they do not establish *per se* that a programmatic breakdown having Severity Level III safety significance occurred. Management carelessness could be a generic reason that accounts for any set of multiple violations, regardless of their safety significance. Lacking in this case is evidence linking violations that might afflict any program to a programmatic breakdown.

I conclude that the Staff presented sufficient evidence to establish only the existence of varying degrees of flawed regulatory performance by the Licensee. Under questioning, the Staff did not express serious reservations about the Licensee's overall safety program. The Licensee confessed on the record to flawed regulatory performance, but it presented testimony showing that it had a reasonably workable safety program in place. The Staff did not controvert the Licensee's assertions. On balance, I cannot conclude that something so severe as a breakdown in the Licensee's safety program occurred, even though there is demonstrated need for improved regulatory performance by the Licensee.

For the foregoing reasons, I conclude that the Staff failed to prove an essential element in its case against the Licensee under the enforcement theory it chose to pursue. We are without authority to adopt a different enforcement theory. The action called for, therefore, is to dismiss the case without assessing a civil penalty.

Dr. Jerry R. Kline
ADMINISTRATIVE JUDGE

APPENDIX A

VIOLATIONS ALLEGED

As set forth in the Appendix to the Order Imposing Civil Monetary Penalty,[139] the alleged violations for which a civil penalty is sought are as follows:

1. *Conduct of Licensed Activities at Temporary Jobsites*

   a. 10 CFR 34.43(b) requires that a survey with a calibrated and operable radiation survey instrument be made after each radiography exposure to determine that the sealed source has been returned to its shielded position. If the radiographic exposure device has a source guide tube, the survey must include the guide tube.

      Contrary to the above, on October 2, 1969, a licensee radiographer failed to conduct a survey of the exposure device and source guide tube after any of four exposures observed by an NRC inspector.

   b. 10 CFR 34.42 requires that areas in which radiography is being performed shall be conspicuously posted as required by 10 CFR 20.203(b) and (c)(1). § 20.203(c)(1) requires that each high radiation area shall be conspicuously posted with a sign bearing the radiation caution symbol and the words: "CAUTION HIGH RADIATION AREA." As defined in 10 CFR 20.202(b)(3), "high radiation area" means any area, accessible to personnel, in which there exists radiation originating in whole or in part within licensed material at such levels that a major portion of the body could receive in any 1 hour a dose in excess of 100 millirem.

      Contrary to the above, on October 2, 1969, the licensee's representatives failed, while conducting radiography, to post a high radiation area with a sign bearing the radiation caution symbol and the words: "CAUTION HIGH RADIATION AREA."

2. *Radiation Exposure Evaluations, Records and Reports*

   a. 10 CFR 20.201(b) requires that each licensee make or cause to be made such surveys as (1) may be necessary for the licensee to comply with the regulations in 10 CFR Part 20, and (2) are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present. As defined in 10 CFR 20.201(a), "survey" means an evaluation of the radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions.

      10 CFR 20.101(a) generally limits the permissible occupational exposure to the whole body to 1 1/4 rems per calendar quarter.

      Contrary to the above, the radiation exposure records for six radiographers, covering the period from May 1989 through July 1989, indicated that personal

[139] Staff Testimony, ff. Tr. 123, at A12-6 through A12-9 ("Restatement of Violations").

monitoring devices had been damaged and could not be analyzed; and, as of October 2, 1989, the licensee had not performed evaluations to determine the radiation exposure received by these six individuals.

b. 10 CFR 20.102(a) specifies that each licensee shall require any individual, prior to first entry into the licensee's restricted area during each employment or work assignment under such circumstances that the individual will receive or is likely to receive in any period of one calendar quarter an occupational dose in excess of 25 percent of the applicable standards specified in § 20.101(a) and § 20.104(a), to disclose in a written, signed statement, either: (1) that the individual had no prior occupational dose during the current calendar quarter, or (2) the nature and amount of any occupational dose which the individual may have received during that specifically identified current calendar quarter from sources of radiation possessed or controlled by other persons.

   Contrary to the above, as of October 2, 1989, the licensee had failed to obtain the required information concerning the current quarterly occupational dose received by two radiographers prior to assigning them work in restricted areas.

   This is a repeat violation.

c. 10 CFR 20.102(b) requires that before a licensee permits, pursuant to § 20.101(b), any individual in a restricted area to receive an occupational radiation dose in excess of the standards specified in § 20.101(a), the licensee shall obtain a certificate on Form NRC-4, or on a clear and legible record containing all the information required in that form, signed by the individual showing each period of time after the individual attained the age of 18 in which the individual received an occupational dose of radiation, and perform the dose calculations required by 10 CFR 20.102(b)(2).

   Contrary to the above, the licensee allowed an individual to receive an occupational radiation dose in excess of the standards specified in 10 CFR 20.101(a), without having Form NRC-4 or other authorized record signed by the individual to certify the completeness of the record of accumulated dose. (The licensee had otherwise completed the form, and the inspector verified that the individuals' accumulated dose was not in excess of regulatory standards.)

   This is a repeat violation.

3. *Inventory Control*

   10 CFR 34.26 requires that each licensee conduct quarterly physical inventories to account for all sealed sources received and possessed under the license.

   Contrary to the above, although the licensee had conducted quarterly physical inventories, such inventories failed to include iridium-192 sealed sources removed from radiography exposure devices and placed into source changers for storage. These sealed sources were still in the licensee's possession when the quarterly inventory was conducted. For example, the licensee did not account for two iridium-192 sealed sources, Serial Nos. 3031 and 3066, during quarterly inventories conducted on June 30, 1989 and September 30, 1989, respectively.

4. *Transportation of Licensed Material*

10 CFR 71.5(a) requires that each licensee who transports licensed material outside of the confines of its plant or other place of use, or who delivers licensed material to a carrier for transport, comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Parts 170-189.

a. 49 CFR 172.403 requires that each package of radioactive material labeled as "RADIOACTIVE YELLOW II" include the following information entered on the label: (1) the name of the radionuclide, (2) the content activity expressed in appropriate curie units, and (3) the transport index of the package.

   Contrary to the above, on October 2, 1989, the licensee's representatives transported two exposure devices containing iridium-192 sealed sources in packages that had "RADIOACTIVE YELLOW II" labels without having the required information on the labels.

b. 49 CFR 177.842(d) requires that radioactive material packages be so blocked and braced that they cannot change position during conditions normally incident to transportation.

   Contrary to the above, on October 2, 1989, the licensee's representatives transported Amersham Model 683 exposure devices, containing iridium-192 sealed sources, in the required overpack without having blocked or braced the package within the vehicle's darkroom where it is routinely placed for transport.

c. 49 CFR 172.200 requires that each person who offers a hazardous material for transportation shall describe the hazardous material on the shipping paper in the manner required by Subpart C of 49 CFR 172. Subpart C, § 172.203(d) describes the required entries for radioactive material, including the transport index assigned to each package bearing RADIOACTIVE YELLOW-II or RADIOACTIVE YELLOW-III labels and, for a package approved by the U.S. Nuclear Regulatory Commission (USNRC), a notation of the package identification marking.

   Contrary to the above:

   (1) On October 2, 1989, the licensee's representative carried shipping papers incorrectly showing a transport index (T.I.) of 1.8 for a package bearing a RADIOACTIVE YELLOW II label that the NRC inspector determined to have a T.I. of 0.5.

   (2) On October 2, 1989, the licensee's representative carried shipping papers with package identification descriptions that did not correspond with the markings on the package, and the package was approved by the USNRC. Further, the package descriptions on the licensee's standard shipping papers did not correspond with any packages possessed by the licensee.

d. 49 CFR 172.502(a) states, with exceptions not applicable here, that no person may affix or display on a transport vehicle any placard unless the placard represents a hazard of the material being transported.

49 CFR 172.504 prescribes the requirements for placarding vehicles used to transport hazardous materials. Specifically, Table 1 specifies that the "RADIOACTIVE" vehicle placard applies only to transport vehicles containing packages of radioactive material bearing the "RADIOACTIVE YELLOW III" label.

Contrary to the above, on October 2, 1989, the licensee's representative transported a package appropriately categorized and labeled as "RADIOACTIVE YELLOW II" in a vehicle bearing a "RADIOACTIVE" placard. No packages labeled as "RADIOACTIVE YELLOW III" were present in the vehicle.

These violations have been categorized in the aggregate as a Severity Level III problem. (Supplements IV, V, and VI.)

Cumulative Civil Penalty — $7,500 (assessed equally among the 10 violations).

Cite as 34 NRC 332 (1991) LBP-91-41

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulies, Chairman
Richard F. Cole
Frederick J. Shon

In the Matter of **Docket No. 70-3070-ML**
(ASLBP No. 91-641-02-ML)
(Special Nuclear Materials License)

LOUISIANA ENERGY SERVICES, L.P.
(Claiborne Enrichment Center) **December 19, 1991**

RULES OF PRACTICE: ADMISSION OF CONTENTIONS

The Commission looks to the petitioner to fulfill the requirements of 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii). Should any of the requirements not be met, the contention must be rejected.

RULES OF PRACTICE: ADMISSION OF CONTENTIONS

Section 2.714(b)(2) of 10 C.F.R. is satisfied where a petitioner has reviewed the pertinent portions of the application and specifically points out where petitioner differs with the applicant on the adequacy of the information provided, explains why the application is deficient, and identifies the factual information upon which it intends to rely.

RULES OF PRACTICE: ADMISSION OF CONTENTIONS

A regulatory guide can be relied upon to support a contention alleging that an application is deficient. However, this is not accomplished by the mere reliance

on a Staff letter to an applicant which requests additional information based on a regulatory guide citation. An adequate explanation is required from the petitioner.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

There is no agency requirement that bases for a contention must be original with the petitioner.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

It is improper to support a contention based upon a Staff letter seeking information on thirty-six numbered requests, when neither the Staff nor the petitioner has provided an explanation as to how the requests are relevant to the contention. Such a proffer is wholly unacceptable.

MEMORANDUM AND ORDER
(Ruling on Contentions)

I. INTRODUCTION

The matter for decision before the Board is the admissibility of contentions filed by Citizens Against Nuclear Trash (CANT) on October 3, 1991, pursuant to 10 C.F.R. § 2.714(b). The admission of a single contention would permit Petitioner to participate as a party to the application proceeding. 10 C.F.R. § 2.714(b)(1). The application, if granted, would permit Louisiana Energy Services, L.P. (LES), to construct and operate a plant near Homer, Louisiana, for the enrichment of natural uranium to a maximum of 5% U-235 by the gas centrifuge process. The facility would be called the Claiborne Enrichment Center (CEC). In a Memorandum and Order, dated July 16, 1991 (unpublished), the Board found that CANT had established standing under 10 C.F.R. § 2.714(a)(2), and permitted it to file contentions.

On October 25, 1991, LES filed an answer opposing all of the subject contentions. NRC Staff (Staff), in a response of November 4, 1991, opposed a majority of the contentions but did not oppose others. The Board heard arguments on the contentions at a prehearing conference on November 14, 1991. In this Memorandum and Order we rule on the admissibility of the contentions and CANT's status as a party.

II. STANDARDS FOR CONTENTIONS

An admissible contention must meet the requirements of 10 C.F.R. § 2.714(b)(2), amended by the Commission on August 11, 1989, which provides:

> (2) Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide the following information with respect to each contention:
>
> (i) A brief explanation of the bases of the contention.
>
> (ii) A concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing, together with references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion.
>
> (iii) Sufficient information (which may include information pursuant to paragraphs (b)(2)(i) and (ii) of this section) to show that a genuine dispute exists with the applicant on a material issue of law or fact. This showing must include references to the specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief. On issues arising under the National Environmental Policy Act, the petitioner shall file contentions based on the applicant's environmental report. The petitioner can amend those contentions or file new contentions if there are data or conclusions in the NRC draft or final environmental impact statement, environmental assessment, or any supplements relating thereto, that differ significantly from the data or conclusions in the applicant's document.

Further, 10 C.F.R. § 2.714(d)(2) provides that contentions shall not be admitted (i) if the contention and supporting material fail to meet the requirements of section 2.714(b) or (ii) if, should the contention be proven, it would be of no consequence in the proceeding because it would not entitle petitioner to relief.

In its comments on the amendments to 10 C.F.R. § 2.714 the Commission stated:

> In addition to providing a statement of fact and sources, the new rule will also require intervenors to submit with their list of contentions sufficient information (which may include the known significant facts described above) to show that a genuine dispute exists between the petitioner and the applicant or licensee on a material issue of law or fact. This will require the intervenor to read the pertinent portions of the license application, including the Safety Analysis Report and the Environmental Report, and to state the applicant's position and the petitioner's opposing view. When the intervenor believes the application and supporting material do not address a relevant matter, it will be sufficient to explain why the application is deficient.

54 Fed. Reg. 33,170 (1989).

The Commission noted the amended version's consistency with *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 468

(1982), *rev'd in part on other grounds*, CLI-83-19, 17 NRC 1041 (1983), where the Appeal Board stated:

> [A]n intervention petitioner has an ironclad obligation to examine the publicly available documentary material pertaining to the facility in question with sufficient care to enable [the petitioner] to uncover any information that could serve as the foundation for a specific contention. . . . Neither Section 189a of the [Atomic Energy] Act nor Section 2.714 of the Rules of Practice permits the filing of a vague, unparticularized contention, followed by an endeavor to flesh it out through discovery against the applicant or staff.

The amended regulations are also consistent with the Commission's long-standing practice that requires that a contention be rejected if:

> (1) it constitutes an attack on applicable statutory requirements;
>
> (2) it challenges the basic structure of the Commission's regulatory process or is an attack on the regulations;
>
> (3) it is nothing more than a generalization regarding the petitioner's view of what applicable policies ought to be;
>
> (4) it seeks to raise an issue which is not proper for adjudication in the proceeding or does not apply to the facility in question; or
>
> (5) it seeks to raise an issue which is not concrete or litigable.

Philadelphia Electric Co. (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21 (1974).

The Commission looks for the Petitioner to fulfill the requirements of 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii). In *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155 (1991), the Commission stated:

> While the Board may appropriately view Petitioners' support for its contention in a light that is favorable to the Petitioner, it cannot do so by ignoring the requirements set forth in 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii). These sections demand that all petitioners provide an explanation of the bases for the contention, a statement of fact or expert opinion upon which they intend to rely, and sufficient information to show a dispute with the applicant on a material issue of law or fact. If any one of these requirements is not met, a contention must be rejected. Rules of Practice for Domestic Licensing Proceedings — Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989).

III. DISCUSSION

The Board has fully reviewed and considered "Citizens Against Nuclear Trash's Contentions on the Construction Permit/Operating Licensing Applications for the Claiborne Enrichment Center," filed October 3, 1991, LES's answer

dated October 25, 1991, and Staff's response of November 4, 1991, along with the prehearing conference record of November 14, 1991, and the prior record in the proceeding. Based upon all of the foregoing we make the following findings.

The Contentions

Contention A. No Waste Disposal Plan

> LES does not have a plan for the disposal of the approximately 300 14-ton cylinders of radioactive and toxic depleted uranium the facility will generate per year.

CANT withdrew Contention A at the November 14, 1991 prehearing conference. The Board, with the agreement of LES and Staff, permitted the addition of the bases of Contention A to Contention B.

Contention B. Decommissioning Plan Deficiencies

> The LES decommissioning plan does not provide reasonable assurance that the CEC site can be cleaned up and adequately restored upon cessation of operations.

The contention is supported by six separately stated bases in addition to others added from withdrawn Contention A.

The focus of the original six bases is that LES does not currently have a plan for disposal of depleted uranium tails and there is no rational basis provided for the decommissioning costs in LES's decommissioning cost estimate.

For its first basis, CANT asserts that LES in its Safety Analysis Report (SAR) (Table 11.8.2) states that UF_6 tails disposal costs are estimated at $9.5 million per year of tails production, but, because Applicant does not have a plan for the offsite disposal of tails, there is no realistic basis for the estimate. CANT asserts that these figures conflict with those in the "LES CEC Depleted UF_6 Disposition Study" of September 1990, which is cited in support of the license application.

CANT takes issue with Applicant's consideration of depleted uranium as a marketable resource rather than as a waste product. CANT claims that as a waste product it will increase the cost estimates of decommissioning.

Petitioner relies on a newspaper article that states that the Department of Energy sometimes gives away UF_6. Also, it cites a Department of Energy draft study that characterizes depleted uranium as a "mixed waste," which raises disposal problems because of the unavailability of disposal sites. CANT also alleges that there will be a lack of low-level waste sites, which will impact negatively on decommissioning costs.

In its second basis, CANT contends that the application should be rejected because it does not provide reasonable assurance that LES knows how the uranium tails will ultimately be disposed of or how much it will cost.

For its third basis, CANT claims that the decommissioning plan contains no concrete information about the amount of payments LES is expected to make into the external trust that LES claims it is setting up. Cited in support of the requirement is 10 C.F.R. § 70.25.

In basis four, CANT alleges that LES provides no details on how the decommissioning costs were determined. It relies on a June 25, 1991 letter from the Chief, Fuel Cycle Safety Branch, in which he seeks additional information pertaining to the application. He relies on requirements in Regulatory Guide 3.66, "Standard Format and Control of Financial Assurance Mechanisms Required for Decommissioning Under 10 C.F.R. Parts 30, 40, 70, and 72." Additionally, CANT discusses an alleged lack of information in several specific areas. Petitioner requests that Applicant be made to explain the derivation of its estimated costs in order to assure that there is a rational basis for the decommissioning costs. CANT incorporates the June 25, 1991 letter into the bases by reference.

Basis 5 is an allegation that LES decommissioning costs do not indicate what facilities will be decontaminated and to what extent.

In Basis 6, CANT asserts that in the June 25, 1991 letter, Staff identified a number of deficiencies in LES's decommissioning cost estimates, and, to the best of Petitioner's knowledge, LES has not responded to the question. Again, CANT incorporates the letter by reference but more specifically the pages dealing with the decommissioning funding plan.

The bases submitted under withdrawn Contention A allege that: LES has submitted no plan for the disposal of the uranium tails to be generated annually; the tails are mixed waste and must be disposed of under the Resource Conservation and Recovery Act; LES has not submitted a disposition plan that is either concrete or realistic; that before a license can be obtained, LES must submit a plan for disposal of the uranium tails which fully complies with all applicable environmental laws.

The Board finds that CANT has satisfied the requirements of section 2.714(b) for the admission of Contention B to the extent indicated below. The contention, which states that the LES decommissioning plan does not provide reasonable assurance that the CEC site can be cleaned up and adequately restored upon cessation of operations, is admitted insofar as it challenges the reasonableness of LES's decommissioning funding plan. CANT has provided adequate bases to support such a contention.

The NRC has no regulatory requirement that there must be a concrete plan for the disposal of the depleted uranium that the facility would generate each year and that, before a license may issue, such disposal plan must comply with all applicable environmental laws.

The Commission in noticing the application for hearing indicated that the applicable regulations only require that an applicant have a plausible strategy for the disposition of depleted uranium hexafluoride tails. Such strategies were

identified as including: storing, as a possible resource, uranium hexafluoride tails at the plant site; continuously converting uranium hexafluoride tails to uranium oxide (or tetrafluoride) as a potential resource or for disposal; and a combination of both — onsite storage with conversion of uranium hexafluoride at the end of plant life. 56 Fed. Reg. 23,313 (May 21, 1991).

In licensing matters the hearing notice published by the Commission for the proceeding defines the scope of the proceeding and thus binds this licensing board. *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), ALAB-619, 12 NRC 558, 565 (1980); *Commonwealth Edison Co.* (Carroll County Site), ALAB-601, 12 NRC 18, 24 (1980).

The regulations do require that an applicant submit a decommissioning funding plan which must contain a cost estimate for decommissioning. 10 C.F.R. § 70.25(a) and (e). Cost estimates may be adjusted periodically over the life of the facility. For the regulation to have meaning, the cost estimate should contain reasonable estimates for an adequately described decommissioning strategy.

CANT has satisfied the requirements of 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii) in its allegation that the decommissioning funding plan does not contain reasonable estimates for decommissioning nor does it adequately describe the underlying decommissioning strategy.

As required, CANT reviewed the pertinent portions of the application and specifically pointed out where it differed with LES on the adequacy of the information provided. Explanations were offered why the application was deficient. Petitioner identified the factual information on which it intends to rely. Bases 1, 4, and 5 adequately support the contention. Sufficient information was provided to show that a genuine dispute exists with the Applicant on material facts.

Regulatory Guide 3.66, like all regulatory guides, describes methods acceptable to the Staff for implementing regulations. Equivalent methods are also acceptable to Staff. Although regulatory guides are not binding as regulations, they reflect the considered judgment of Staff and offer insight on what is needed to satisfy a regulation. Regulatory guides have been recognized as evidence of legitimate means for complying with regulatory requirements. *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-852, 24 NRC 532, 544-45 (1986).

A regulatory guide can be relied on to support a contention alleging that an application is deficient. However, this is not accomplished by the mere reliance on a Staff letter to an applicant which requests additional information based on a regulatory guide citation. An adequate explanation is required from the Petitioner. The Commission in its comments on the amendments to 10 C.F.R. § 2.714, stated, "When the intervenor believes the application and supporting material do not address a relevant matter, it will be sufficient to explain why the application is deficient." 54 Fed. Reg. 33,170 (1989).

CANT has satisfactorily met this requirement. The information in the letter provided CANT with a starting point. Petitioner went on to explain how the alleged inadequacies support its contention and provided additional information in support (Bases 1, 4, and 5).

Contrary to an argument made at the prehearing conference, there is no agency requirement that bases must be original with the petitioner.

In admitting the contention, we placed no reliance on the CANT notion that the uranium hexafluoride tails produced in operating the CEC constitute "mixed waste" under the Resource Conservation and Recovery Act (RCRA) and hence constitute a type of waste for which there are presently no disposal sites. To support this notion, CANT offers a draft of a Department of Defense (DOD) document, "Managing DOD's Growing Environmental Responsibility," Mar. 29, 1991 (Draft Version 13), in which DOD, noting that some of the department's equipment uses depleted uranium, says that "[t]he depleted uranium will cause serious disposal problems for the Department because 'mixed waste' sites for this doubly hazardous material do not exist in the United States."

At the prehearing conference, CANT also offered a letter from the Environmental Protection Agency (EPA) on the subject of "Guidance on the Definition and Identification of Commercial Mixed Low-Level Radioactive and Hazardous Waste and Answers to Anticipated Questions" with attached guidance (EPA Guidance). Ff. Tr. 63.

Both the Staff and Applicant argue that depleted uranium hexafluoride is not "mixed waste" under RCRA. Applicant asserts (as does the Staff) that depleted uranium is "source material" under the definition of "source material" in 10 C.F.R. § 40.4, and that "source material" includes compounds of uranium in any chemical or physical form. Both further argue that source material is expressly excluded from regulation as hazardous waste by RCRA and by EPA regulations.

We observe that the very guidance that CANT introduced into the transcript agrees with the position of the Staff and Applicant. The EPA Guidance says "RCRA also excludes source, special nuclear, and byproduct materials from the definition of hazardous waste and, therefore, from regulation under EPA's RCRA Subtitle C program." Ff. Tr. 63 at 8.

It thus appears that NRC regulations, EPA regulations, the statutory foundations of those regulations, and the guidance jointly developed by NRC and EPA (indeed, one of the two documents relied upon and introduced by CANT itself) all agree that depleted uranium hexafluoride is not "mixed waste." The only opinion arguing in favor of that classification for the material is an unsigned, undocumented, unauthoritative intermediate draft by someone in an agency not charged with enforcement of either of the statutes that the definition would involve. The DOD opinion seems to us to be a voice crying in the wilderness. Recognizing that great deference is due to an agency's interpretation of its own regulations and its organic statutes, we see no reason to believe that the de-

pleted uranium hexafluoride tails would be classified as mixed waste and would therefore be a material for which no disposal site is available.

Having found that Bases 1, 4, and 5 support the contention, we further find that Bases 2, 3, and 6 do not, nor do the bases transferred from Contention A.

Basis 2 is premised on the erroneous conclusion that LES must have a concrete plan for the disposal of the tails.

Basis 3 is too vague and indefinite to support a contention.

Basis 6 provides no explanation as to why the application is inadequate. It merely relies on the Staff letter of June 25, 1991.

The bases transferred from withdrawn Contention A are premised on the erroneous conclusion that Applicant must have at this time a concrete disposal plan for the tails that meets all environmental laws and that the tails are a mixed waste disposable under RCRA.

Contention B is admitted to the extent described.

Contention C. Lack of Protection Against Worst-Case Accidents

> The license application for the CEC violates NRC regulations and the National Environmental Policy Act in that it treats a number of reasonably foreseeable accidents as "not credible," and fails to fully evaluate their potential impacts on health and the environment, to protect against them in an adequate manner, or to provide adequate emergency response measures.

As bases for Contention C, CANT asserts that the Applicant improperly failed to consider seven specific accidents that it claims are "credible" and should have been considered under NEPA and/or the requirements imposed by the Commission's emergency planning regulations or the proposed general design criteria for uranium enrichment plants. The seven accidents (identified here as C.1 through C.7) that CANT asserts require further consideration are: (1) a cylinder rupture, (2) a worst-case criticality accident, (3) an autoclave rupture, (4) a storage-yard fire, (5) a transportation accident, (6) an airplane crash, and (7) a gas well explosion. Applicant opposes the contention and all its parts, maintaining that it fails to meet the requirements of 10 C.F.R. § 2.714(b)(2). Staff opposes admission of all parts of this contention except the criticality accident (C.2) and would restrict that to an assertion that Applicant has failed to evaluate credible criticality accidents and to provide criticality monitors at the facility as required by 10 C.F.R. § 70.24. For the reasons stated below, the Board denies the contention. Bases C.3 and C.7 were withdrawn by CANT at the prehearing conference. The Board considers Basis C.2 to be premature since the essence of that issue is currently under consideration by the Commission.

C.1. Cylinder Rupture

CANT's main argument appears to be that cylinder rupture accidents have occurred at two plants (Sequoyah and Portsmouth) and reliance on administrative controls to prevent such an accident is not adequate. CANT does not make any comparison of the design and operating procedures of those facilities with CEC and appears not to have considered the specific measures taken by Applicant to minimize or eliminate the possibility of the type of accidents that occurred at the Sequoyah Fuels uranium processing plant and the Portsmouth gaseous diffusion enrichment plant. CANT fails to demonstrate that the measures taken by Applicant are not adequate to avoid cylinder rupture accidents. Petitioner has not provided sufficient information to suggest that the accident should be treated as credible. Thus the proposed basis fails to meet the pleading requirements of section 2.714(b)(2).

C.2. Criticality Accident

This basis was originally captioned "worst-case criticality accident." At the prehearing conference, CANT modified this basis by removing reference to "worst case," acknowledging Applicant and Staff's position that NEPA does not require such worst-case analysis. The basis was further modified by merging it with Contention F which concerns the lack of criticality monitors. As modified, this basis would read "LES has failed to evaluate the health and environmental impact of criticality accidents because it believes they cannot occur. And on this ground, they have not provided criticality monitors at the CEC." Tr. 70.

There was no objection to the modification, but Applicant maintained its opposition to admission. The Staff would have the Board admit the basis but limit it to the issue that Applicant is not in compliance with the requirement to provide criticality monitors.

Apparently unknown at the time to CANT, Applicant applied for an exemption from the requirement to install criticality monitors on January 31, 1991, under 10 C.F.R. § 70.24(d). This preceded the May 21, 1991 publication of the Notice of Hearing and the assignment of this proceeding to the Board on May 23, 1991. The installation of criticality monitoring facilities is at the very heart of this contention and that issue is currently under consideration by the Commission. Depending upon Commission action on the exemption, there may or may not be an issue for litigation. It would be inappropriate for the Board to litigate an issue that is directly before the Commission. The Board considers Basis C.2 as premature and therefore it is denied, without prejudice.

C.3. Autoclave Rupture

Withdrawn. Tr. 77.

C.4. Storage-Yard Fire

At the prehearing conference, CANT withdrew offsite transportation accident aspects from Contentions C.4 and C.5, acknowledging that offsite aspects are covered under the generic aspects of 10 C.F.R. § 51.51(b), Table S-3. Tr. 80. As to the onsite aspects, CANT argues that LES is in error when it says that a storage-yard fire is not credible. The principal basis for the allegation is that LES proposes to avert such fires by the use of procedures that are vulnerable to human error. CANT further states that a single failure, i.e., fuel spill from a delivery truck, coupled with operator error (failure to follow procedures) and the lack of guaranteed prompt fire brigade action could result in a 30-minute (or longer) fire, which could rupture one or more uranium hexafluoride cylinders. Draft General Design Criteria, Advanced Notice of Proposed Rulemaking, "Regulation of Uranium Enrichment Facilities" (GDC), 53 Fed. Reg. 13,276-79 (1988).

Both Applicant and Staff would have the Board deny this basis, arguing that CANT is merely challenging the philosophy of relying on procedures to avert such a fire without stating any specific challenge to the Applicant's proposed methods of avoiding this type of accident. The basis fails to meet the section 2.714(b)(2) requirements for specificity because CANT has not indicated how LES fails to comply with the proposed GDC (particularly the prohibited 30-minute or longer fire), how the LES storage-yard fire analysis fails to meet the requirements, or how the various protection systems provided by LES, including several backup systems such as administrative controls, limited fuel tank sizes, yard drains, and redundant water supply tanks and pumps are inadequate. The Board agrees. Basis C.4 is denied.

C.5. Transportation Accident

As discussed under Basis C.4, CANT withdrew any offsite aspects of this contention. What remains is an onsite truck accident that would "necessarily involve a 30-minute fire." Applicant and Staff oppose the basis for the same reasons stated under Contention C.4. We find that CANT has failed to identify any deficiencies in Applicant's submittal concerning onsite transportation accidents and has provided no reason to believe that the Applicant's SAR is flawed in its conclusion that a transportation accident involving a 30-minute fire is not credible. Applicant's SAR analysis is based in part on NRC and Department of Transportation (DOT) analyses. The basis lacks the necessary specificity required under section 2.714(b)(2) and accordingly must be denied.

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C.6. Airplane Crash

CANT argues that the current evaluation of the probability of an airplane using the Homer airport and crashing into the CEC site fails to take into account the expected increase in the use of the airport resulting from the construction and operation of the CEC enrichment plant. Applicant and Staff oppose the contention, arguing that CANT has not provided any factual basis in support of its view that increased use and additional risk is likely.

We find that CANT fails to provide any facts or expert opinion to support its basis, and fails to provide references to specific sources on which CANT intends to rely to establish any facts or expert opinion, as required by 10 C.F.R. § 2.714(b)(2)(ii). CANT has further not identified any omission of information required by law, simply stating that its basis for the need of additional analyses concerning airplane crash probabilities is common sense. Tr. 81. The basis lacks the necessary specificity and is denied.

C.7. Gas Well Explosion

Withdrawn. Tr. 81.

Contention D. Lax Attitude Toward Criticality Safety

The application for the CEC demonstrates a dangerously smug attitude toward serious accidents which raises the concern that LES' maintenance and operating procedures, training programs, and general corporate attitude may not contain a serious commitment to maintaining preparedness for a criticality accident.

The principal basis is an accidental criticality accident at a fuel fabrication facility operated by an unrelated company. (General Electric's Wilmington, North Carolina, fuel fabrication facility). CANT merely alleges that the lax attitude toward nuclear criticality apparently exhibited by GE is also the attitude of Applicant LES, and the entire management program should be reviewed and revised to incorporate a more realistic view toward criticality safety at the CEC. Applicant and Staff oppose admission of this contention.

We find that no nexus has been provided between the fuel fabrication facility and the proposed fuel enrichment plant or with LES, and no basis has been provided to support the view that LES will exhibit a lax attitude toward criticality safety. The contention must be rejected pursuant to section 2.714(b)(2).

Contention E. Cylinder Rupture

The applicant fails to meet the requirements of 10 C.F.R. § 20.105 or Appendix B to Part 50 in the event of an accident involving the rupture of uranium hexafluoride cylinder.

Thus, the applicant also fails to provide reasonable assurance of adequate protection of public health and safety, as required by 10 C.F.R. §§ 40.32 and 70.31(d).

This contention was withdraw at the prehearing conference. Tr. 82.

Contention F. Lack of Criticality Monitors

The applicant violates 10 C.F.R. § 70.24 because it has failed to provide for criticality monitors at the CEC.

This contention was merged with Basis C.2 and denied, without prejudice, as being premature because an exemption to the requirement of providing criticality monitors is currently pending before the Commission. *See* discussion of Basis C.2, above.

Contention G. Inadequate Protection from Toxic Effects of UF_6

The plant boundary exposure limits for the CEC do not provide adequate protection of the public from toxic effects of uranium hexafluoride.

In this contention, CANT challenges the adequacy of the CEC's proposed limits for the protection of offsite persons against the toxic effects of uranium hexafluoride. The Notice of Hearing and Commission Order for the CEC specifies that, for the purpose of siting and design of the plant against accidental releases of uranium hexafluoride, the criteria in NUREG-1391, "Chemical Toxicity of Uranium Hexafluoride Compared to Acute Effects of Radiation," on limiting individual exposure to the chemical toxic effects of uranium hexafluoride, should be applied at the boundary of the CEC site under control of the Applicant. Applicant and Staff oppose the contention, both stating that it challenges the Commission's application of NUREG-1391 in establishing plant boundary exposure limits. CANT has already petitioned the Commission directly on this point in its comments to the Commission regarding the proposed standards for the CEC.

At the prehearing conference, CANT argued that the proposed standards are just that, they are proposed. It further argued that it was necessary to raise the matter before the Board and invoke the Board's general authority to protect the public's health and safety because there simply are no standards in effect. Tr. 83.

CANT's basic argument is that it believes that the exposure limits proposed in the LES license application and NUREG-1391 (which it agrees are comparable) are lax and do not adequately protect the public health and safety. The Board believes that CANT's attention is misplaced. Its argument is with the Commission. The Commission has directed what exposure limits should be applied and is currently considering the adoption of final standards in its

rulemaking proceeding, a proceeding in which CANT has already participated. Until final rules are published, the standards articulated in the Notice of Hearing and Commission Order are the appropriate standards. The hearing notice defines the scope of the issues in the proceeding. *Bailly*, ALAB-619, *supra; Carroll County*, ALAB-601, *supra*. CANT has not demonstrated that Applicant's proposal is not in conformance with NUREG-1391, the applicable requirement. The contention is denied because it is contrary to the Commission order instituting the proceeding.

Contention H. Emergency Planning Deficiencies

> The license application for the CEC does not provide a reasonable assurance that the public health and safety will be adequately protected in the event of an emergency at the plant.

As bases for this contention, CANT argues that LES has not complied with the Commission's GDC or the emergency planning regulation requirements of 10 C.F.R. § 70.22(i), as implemented by Draft Regulatory Guide DG-3005, "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities" (September 1990). CANT then sets out twenty-three separately alleged deficiencies with many specifically referencing DG-3005.

Applicant opposes the contention and all of its bases. Staff does not oppose the contention but would limit it to Bases 2-10, 16-20, and 23, stating that these bases generally cite and/or rely upon DG-3005, and assert that the Applicant has failed to comply with this interim regulatory guidance.

In its statement of opposition to this contention, Applicant points out that emergency planning requirements of 10 C.F.R. Part 70 for special nuclear materials facilities (e.g., CEC), are not the same as 10 C.F.R. Part 50 planning requirements for power reactors. Referencing the Statement of Considerations supporting the emergency planning regulations for materials licensees, Applicant states that because exposure levels would be low as compared to protective action guide exposures used for nuclear power plants and because of the nature of the types of accidents of concern, there is no requirement for formal evacuation planning. 54 Fed. Reg. 14,052 (1989).

LES also argued that a request for information from Staff or reliance on a draft regulatory guide does not satisfy the pleading requirements of section 2.714(b).

At the prehearing conference, Applicant also pointed out that while it is going forward with an emergency plan, Commission regulations would not require it to do so. Tr. 90-92. Section 70.22(i)(1) of 10 C.F.R. states that an emergency plan is not necessary if an evaluation shows (1) the maximum dose does not exceed 1-rem effective dose equivalent and (2) does not involve an intake of more than 2 milligrams of soluble uranium. We will rule on the contention as it

was filed and responded to by LES on October 25, 1991. Applicant's claim that it qualifies for an exception under the regulation is a new matter not previously raised. Further, it apparently does not want to rely on the exception.

At the prehearing conference, CANT withdrew Bases 8, 18, and 19. Tr. 94.

Commission regulation 10 C.F.R. § 70.22(i)(3) sets forth the required emergency plan information that is to be contained in a materials license application. The areas it covers are: (1) facility description; (2) types of accident for which protective actions may be needed; (3) classification of accidents; (4) means of detection of accidents in a timely manner; (5) mitigation of consequences; (6) assessment of releases; (7) responsibilities of licensee if an accident occurs; (8) notification and coordination of offsite response organizations and the NRC; (9) information to be communicated to offsite response organizations and the NRC; (10) training to be provided to workers, and special instructions and tours to be given to offsite emergency personnel; (11) means for safe shutdown after an accident; (12) provisions for emergency exercises and communications checks with offsite response organizations; and (13) certification by the applicant that it has met its obligations under the Emergency Planning and Community Right-to-Know Act of 1986.

DG-3005, which CANT relies upon, states that it was being developed to provide guidance to Staff on the information to be included in emergency plans and was being issued in a draft form to involve the public in the early stages of the development of a regulatory position in this area. It had not received complete Staff review and does not represent an official NRC Staff position. DG-3005 at cover and 1.

The Board, in considering the admissibility of the contention, rejects Bases 1, 11 through 15, 21, and 22 for the reasons stated below.

Basis 1 merely incorporated by reference Staff's letter of June 25, 1991, to Applicant which contains questions relating to Staff's review. The letter is offered without explanation. The basis is rejected because it does not identify any specific deficiency in the application.

Bases 11 through 15 allege offsite emergency planning inadequacies (i.e., no specific guidelines for offsite protective actions, no offsite emergency planning zone, no plan for notifying people at a national forest or at a lake site, no plan to evacuate the elderly, and no plan to provide people within the emergency planning zone with information on appropriate procedures). The bases contain no reference to any regulatory requirements or DG-3005 and appear to be based on planning standards for nuclear reactors, which are considerably more stringent.

Additionally, the need for an emergency planning zone and the preparation of informational brochures for distribution to offsite populations was rejected by the Commission in its rulemaking proceeding. 54 Fed. Reg. 14,051, 14,057

(1989). These bases constitute an impermissible challenge to the Commission's regulations. For the foregoing reasons, Bases 11 through 15 are denied.

Basis 21 is denied for lack of specificity. It alleges that Applicant has not provided emergency plans for postulated accidents but does not say which accidents must be considered or what deficiencies exist in Applicant's submittal, which discusses a variety of postulated accidents and abnormal operational events. *See* section 2, CEC Emergency Plan.

Basis 22, which alleges that LES has failed to indicate how it plans to comply with sections 303(d) and 326(2)(B) of the Emergency Planning and Community Right-to-Know Act of 1986, with reference to a designated local emergency planning committee, is denied. All Applicant is required to do is certify compliance with the cited Act. Statements of Considerations, 54 Fed. Reg. 14,051 (1989).

As to Bases 2 through 7, 9, 10, 16, 17, 20, and 23, which LES opposes and Staff does not, we find that except for Basis 9 they offer to support the contention in accordance with the pleading requirements of section 2.714(b)(2), albeit minimally.

The bases cite DG-3005, except for Basis 23 which also relies upon it. Although a draft regulatory guide does not represent an official NRC Staff position, we view it as containing preliminary suggestions as to what is required by the regulation, and it is entitled to be afforded some weight, considering its source, in supporting a contention alleging inadequacies in the application.

Looking at these bases as a whole, we conclude that CANT had adopted the requirements of DG-3005 as its own. After examining the LES application, CANT contends that the application does not address specific relevant areas, or, in those instances where they were addressed, states why they were inadequate. We view this as a sufficient explanation as to why the application is deficient.

CANT had adequately apprised LES, in accordance with the pleading requirements, of its differences with the Applicant on the adequacy of the application on emergency planning. Petitioner has shown that a genuine dispute or material dispute exists that should be adjudicated.

Of the eleven bases that we find meet the pleading requirements, the following allege a failure of the Applicant to address emergency planning needs: Basis 2, identification of the location and emergency support organizations; Basis 3, listing of hazardous chemicals at the site and identifying communication centers; Basis 4, identifying types of radioactive materials accidents for which actions may be needed to prevent or minimize exposures; and Basis 10, describing government agencies' authority and responsibility in an emergency.

The following allege inadequacies in the information that was provided. Basis 5, inadequate details on notification of state authorities and NRC; Basis 6, unclear as to emergency response authority of crew and what facilities will be made available; Basis 7, failure to list some possible emergency response

organizations; Basis 16, failure to include a provision for projection of onsite radiation exposures; Basis 17, vague description of proposed measures for mitigating onsite consequences of accidents at the CEC; Basis 20, failure to plan for ensuring that equipment and instrumentation are in good working condition and that an adequate stock of supplies is maintained; and Basis 23, the emergency plan appendix lacks showing capability of emergency organizations to respond and that there are no agreement letters for organizations discussed in Basis 7.

Basis 9 is rejected because, contrary to CANT's assertion, the emergency plan does specify where the public and media can obtain reliable information during an emergency.

Contention H is litigable to the extent described above.

Contention I. Incomplete License Application

The license application for the CEC is incomplete in many major respects.

The basis for this contention is a March 21, 1991 Staff letter to Applicant which lists areas where the NRC seeks additional information as part of its review of the application. On the basis of this letter, CANT alleges that the application is incomplete in several respects. Applicant argues that the Staff letter does not constitute legal requirements and CANT has not pointed out any legal requirements. Applicant states that the mere reference to alleged omissions, without more, does not comport with the requirements of section 2.714(b)(2). Staff, while agreeing that the application is incomplete, nonetheless opposes admission of the contention for essentially the same reasons as Applicant. CANT contends that the application is deficient and before the facility can be licensed the deficiencies must be corrected.

The Board disagrees with Applicant and Staff. There appears to be no question that the application is deficient in at least some of the areas listed in CANT's contention. The main source of CANT's belief that the application is deficient (Staff's letter of March 21, 1991) is a reasonably reliable one as to a demonstration of relevant subject matter. CANT's review of Staff's letter coupled with its review of Applicant's filings, Staff's guidance documents, and Commission regulations constitutes more than just a mere listing of incomplete portions of the application. It is the Board's view that CANT has satisfactorily pointed out certain relevant deficiencies in the application and supporting materials and has explained why it considers the material to be deficient. The contention is admitted but is limited to eleven (11) specific areas listed in CANT's contention as follows:

In the Environmental Report:

1. Environmental impacts of site preparation and construction;
2. monitoring data to support source-term determinations for gaseous effluents;
3. evaluation of means of reducing liquid effluent concentrations;
4. assessment of radiological impacts of plant operation;
5. environmental effects of accidents;
6. baseline data for preoperational effluent and environmental monitoring program; and
7. program to maintain releases as low as reasonably achievable (ALARA).

In the Safety Analysis Report:

8. Finalization of design features for earthquakes, tornadoes, and missiles;
9. quality assurance program for Class I equipment;
10. program for surveillance and maintenance of cylinders containing tails in interim storage; and
11. management and control program.

A twelfth area listed in CANT's filing involves nuclear criticality safety analyses and is related to matters pending before the Commission. This item is rejected as being premature. *See* discussion of Basis C.2 of Contention C, *supra.*

Contention J. Inadequate Assessment of Costs Under NEPA

> The Environmental Report does not adequately describe or weigh the environmental, social, and economic impacts and costs of operating the CEC. Moreover, the benefit-cost analysis fails to demonstrate that there is a need for the facility. *See, e.g., Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 90 (1977) (in a power production plant licensing case, "need for power" is "a shorthand expression for the 'benefit' side of the cost-benefit balance which NEPA mandates"). On the whole, the costs of the project far outweigh the benefits of the proposed action.

Stating that the National Environmental Policy Act (NEPA) requires the NRC to fully assess the impacts of the proposed licensing action, and to weigh its costs and benefits, CANT alleges that LES's Environmental Report (ER) contains a brief "Benefit-Cost Analysis" that is slanted in favor of the benefits of the project and contains little discussion of the potentially significant impacts and their environmental and social costs. CANT identifies nine (9) issues that it alleges are inadequately assessed in the ER as follows:

J.1. Mixed Waste

CANT alleges that the ER fails to discuss the environmental impacts caused by the generation of tons of mixed radioactive waste, for which, it argues, no disposal options exist. CANT incorporates Contentions A and B by reference. As discussed in this Memorandum and Order (*see* Contentions A and B), CANT is not correct in its classification of the depleted uranium as a "mixed waste." Pursuant to 10 C.F.R. § 40.4, depleted uranium is a source material regulated by NRC. The premise of this issue is therefore flawed and the basis cannot be accepted.

J.2. Plant Effluents

CANT alleges that LES's environmental and safety analyses are inadequate in that they fail to account for severe low-probability accidents that may result in discharges that exceed legal limits. Applicant opposes admission, arguing that they have addressed low-probability accidents as required by Commission regulations and CANT has shown no requirement for additional analyses. Staff opposes admission, describing it as an improper attempt to litigate "worst-case" accidents, which even CANT agreed was not required. *See* Contention C, Basis C.2, *supra.*

It is not clear what "legal limits" CANT is referencing. Part 20 standards for normal operation are not applied to accident situations where appropriate design and siting criteria are used to limit exposure level and dose to individuals or the public. CANT has not demonstated any consideration of the different standards for normal versus accident situations and has not pointed out any examples where Applicant has not complied with appropriate standards. The basis is denied.

J.3. Decommissioning Costs

CANT asserts that LES has not provided sufficient basis for its estimates of decommissioning costs. Staff does not oppose admission. Applicant would have us deny this basis, pointing out that it rests squarely on Bases 4, 5, and 6 of Contention B. Bases 4 and 5 of Contention B were accepted by this Board as issues in this case. Accordingly, J.3 is accepted.

J.4. Need for Facility

CANT argues that there is no need for the facility since United States enrichment capacity is more than adequate to meet domestic needs through 2010. At the prehearing conference, CANT introduced two newspaper articles. One

pertained to an allegation of Soviet "dumping" of uranium on the U.S. nuclear fuel market, while the second article related to operations at a Department of Energy (DOE) fuel enrichment facility where DOE was shutting down that portion of the plant producing highly enriched uranium. Applicant argues that the economics of the proposed facility are not within the scope of the ER and need not be addressed under NEPA. For a commercial undertaking such as the proposed enrichment facility, the potential market success is not relevant to the NEPA cost-benefit analysis. Applicant further argues that, while it has demonstrated the existence of a market for enrichment services, the economic wisdom of its proposed venture is simply not an environmental issue germane to the NEPA analysis. Staff does not oppose admission. The Board believes that CANT raises a litigable issue. The basic issue involves the following legal question: What, if any, consideration must be given to the need for the facility in fulfilling NEPA responsibilities?

J.5. Impact of Materials Diversion

CANT merely states that the ER does not discuss the potential environmental and social impacts of improper use of the CEC for production of highly enriched uranium for nuclear weapons and incorporates Contentions L, M, N, and O as additional bases. Applicant and Staff oppose this basis, both stating that the assertion is totally unsupported. The requested license, which would be enforced by NRC, would limit product enrichment to 5%. Additionally, the Commission has recently adopted final rules that provide safeguards that will apply to CEC. No basis has been provided to suggest that LES will not comply with the terms of the requested license and the safeguard requirements of the Commission. The basis is denied.

J.6. Water Contamination

CANT alleges that the ER does not contain a complete or adequate assessment of the potential environmental impacts of the proposed project on ground- and surface water. In support of this basis, CANT states that groundwater is the sole source of drinking water for all of Claiborne Parish; that the groundwater lies as close as 2.5 feet below the surface; that contaminated effluent from CEC will be carried to Lake Claiborne; that Louisiana State law allows the Claiborne Parish Watershed District to manage Lake Claiborne for potential municipal use; that the NRC has noted in a letter to LES that contamination of the CEC site during its operating life is virtually inevitable; and that effluent discharges could result in infiltration of groundwater during periods of extended low precipitation. Staff does not oppose this basis. Applicant argues that CANT has not produced any

facts in support of its proposition that CEC operations would have any adverse effect on surface or groundwater resources. CANT has identified several present and possible future water supply uses that may be impacted by the proposed facility and appear not to have been considered in the ER. The Board accepts this basis restricting it to potential impacts on present and possible future surface and groundwater drinking water supply.

J.7. Wetlands

CANT asserts that LES has not evaluated the impacts of the proposed project on wetlands located on the site or demonstrated that it either has or does not need a permit to build on the wetlands. Applicant opposes admission of this basis, stating that LES recognizes and has demonstrated its commitment and obligation to consult not only with the U.S. Corps of Engineers but also with other federal, state, and local agencies regarding applicable requirements for the construction and operation of the CEC project. LES has requested the U.S. Corps of Engineers to review the site as is noted in ER § 9.1, Table 9.4-1. Staff, while not stating its reasons, does not oppose admission of this issue.

The Board does not see an issue here. LES has clearly agreed to work with the Corps of Engineers and the review is currently taking place. The basis is rejected for failing to show that a genuine dispute exists on a material issue of law or fact, as required by section 2.714(b)(2).

J.8. Property Values

CANT disputes Applicant's claim that property values "may be enhanced due to the presence of the LES facility" arguing that because some contamination from CEC is virtually a given and that CEC has the potential to become a storage facility for enormous quantities of hazardous wastes, it is more likely that property values in the area would decline due to the perception of pollution and danger from the plant. Both Applicant and Staff oppose this basis. Each argues that CANT has provided no facts or expert opinion to support its view that property values might fall, and its position constitutes pure speculation. The Board agrees. The basis fails to meet the threshold requirements of section 2.714(b)(2) and is denied.

J.9. Impact on Communities

CANT alleges that the proposed plant will have negative economic and sociological impacts on the minority communities of Forest Grove and Cedar Springs and the ER does not adequately reflect consideration of these impacts.

The closing of Forest Grove Road, which joins the two communities, and the fact that the plant is to be placed "in the dead center of a rural black community consisting of over 150 families" are cited as sources of the impacts. Applicant opposes the issue stating that CANT's allegations are premised on speculation and it provides no support for the proposition that closing off Forest Grove Road and building the plant will have negative impacts on the two communities. Staff does not oppose admission of this issue. The Board believes that CANT has identified an issue with sufficient basis and specificity to meet the requirements of section 2.714(b)(2).

Contention K. No Discussion of No-Action Alternative

> The ER violates NEPA because it does not contain an adequate discussion of alternatives to the proposed action.

CANT states that NEPA requires that environmental reports include, *inter alia*, a discussion of "alternatives available for reducing or avoiding environmental effects," and LES fails to satisfy this requirement in the critical respect that it does not discuss the no-action alternative. CANT argues that given the significant environmental costs of this project and the fact that LES has not demonstrated a need for the facility, this alternative should have been analyzed in detail.

Applicant opposes this contention, arguing that there is no explicit regulatory requirement that the ER address the no-action alternative, and Regulatory Guide 4.9, "Preparation of Environmental Reports for Commercial Uranium Enrichment Facilities," Revision 1, October 1975, contains no mention of the need to provide an assessment of the no-action alternative in an Environmental Report.

The Staff does not oppose the admission of this contention in the context of considering Applicant's cost-benefit analysis under NEPA. The Board finds that CANT has adequately demonstrated that a genuine dispute exists with LES on the need to discuss the no-action alternative. The contention is accepted.

Contention L. Online Enrichment Monitoring

> In order to provide reasonable assurance that gas centrifuge equipment at the CEC is not unlawfully diverted to the production of highly enriched uranium (HEU), the applicant's fundamental nuclear material control (FNMC) plan should require continuous or frequent online enrichment monitoring for all cascades. To ensure the effectiveness of such monitoring, the plan should stipulate minimum process pipe inner diameters of 110 millimeters or greater at all potential measurement points. The current design of the CEC does not meet these specifications. [Footnotes omitted.]

The basis offered for this contention specifically cites the proposed rule published on December 17, 1990 (55 Fed. Reg. 51,726) (which was substantially unaltered when republished in final form on October 31, 1991) and Draft Regulatory Guide DG-5002, "Material Control and Accounting for Uranium Enrichment Facilities Authorized to Produce Special Nuclear Material of Law Strategic Significance." CANT states that 10 C.F.R. § 74.33(c)(5)(i) requires a detection program that provides high assurance of detection of any production of uranium enriched to more than 10% in U-235. And so it does, even in the final version. 56 Fed. Reg. 55,999 (1991).

CANT also notes that DG-5002 says that an extensive program for the centrifuge technology would be appropriate and that such a program can use fixed detectors, portable detectors, or uranium hexafluoride sampling.

CANT then alleges that, in order to have "high assurance" that no production or diversion of highly enriched uranium (HEU) will occur, it is necessary to employ frequent or continuous use of fixed detectors rather than intermittent use of portable detectors, giving several reasons for this position. CANT further alleges that even on-line monitoring is not effective if certain precautions regarding pipe size are not taken, citing an article by its expert, H. Hunt, which suggests errors as high as 200 percent in such monitoring if great care is not taken.

The Applicant says that, since the draft regulatory guide offers several methods, CANT's advocacy of one of them is inadmissible. We think not. As Applicant is fond of reminding us, a regulatory guide is not a regulation. Still less of a regulation is a draft regulatory guide. Where such a document offers several means of compliance with the regulations and an applicant has chosen one of them, we think it entirely appropriate for an intervenor to champion another, offering reasons why this other method will be necessary to achieve the "high assurance" required by the regulation and reasons why the method chosen will not achieve compliance. We note that it is established law that intervenors are not "precluded from demonstrating that [a] prescribed method is inadequate in the particular circumstances of the case." *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-875, 26 NRC 251, 261 (1987), *citing Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 772-73 (1977). In this case the argument offered appears supported by expert opinion.

Staff expresses a blanket opposition to the admission of all four related contentions, L, M, N, and O. Staff's position is that the recently published final rule means the contentions have been "superseded" and that they now constitute a challenge to the regulation. We cannot agree. Contention L appears to be a challenge only to the way in which the Applicant plans to satisfy the regulation. Contentions of that nature are clearly admissible. The content is adequately supported as required by section 2.714(b). We will admit Contention L.

Contention M. Monitoring of Sampling Ports, Process Valves, and Flanges

In order to preclude or detect production of HEU by a batch scheme involving misuse of sampling ports, process valves, and/or flanges, the applicant's FNMC plan should require effective monitoring by reliable technical means which accurately keep track of employee access to these process connection locations.

As a basis for this contention, CANT again cites the new 10 C.F.R. § 74.33(c)(5)(i), which requires high assurance of detecting unauthorized production of HEU, and DG-5002, which requires that the applicant discuss the use of tamper-indicating seals on process valves and flanges. CANT then offers reasons why the simple use of seals is ineffective and offers communications from personnel at Sandia National Laboratories for the fact that tamper-proofing devices more effective than seals will shortly be available. CANT wishes to make a case for requiring such devices.

LES objects to this contention as a challenge to the regulation and to the draft regulatory guide, as it did to Contention L above. Here the objection is even wider of the mark. CANT clearly urges compliance with the regulation and offers an alternative to the draft guide that is in development and may well not have been considered by the draft guide's framers.

Staff, as noted above, lumps this contention with the other three in this related group, offering no specific objection to it but viewing them all as "superseded" by the adoption of the new regulation. We do not see it that way. The new regulation clearly requires something (means of preventing unauthorized HEU production) that the contention would support. CANT would offer a novel means of complying with the regulation, a means that the draft regulatory guide does not mention, but does not clearly preclude. We will admit Contention M, having met the pleading requirements.

We note that CANT believes that it can litigate these contentions without the use of classified information. Tr. 113. Whether it can be accomplished is yet to be determined.

Contention N. Centrifuge Cell Walls

In order to assure that safeguards can be implemented effectively, opaque walls around small cells of centrifuges should be expressly prohibited during the CEC's entire license term.

At the prehearing conference, CANT agreed to withdraw Contention N upon assurance that certain language concerning the design of the plant would be included in the SAR. Tr. 109.

Contention O. Design for Effective IAEA Inspections

> Pursuant to the Hexapartite Agreement, the NRC should require that plant hardware design in every CEC cascade be conducive to effective online gas enrichment monitoring by the International Atomic Energy Agency (IAEA).

In effect, the publication of the new rule has precluded the admission of this contention. In the Supplementary Information concerning public comments that was published with the rule, the Commission stated:

> One individual commenter . . . also suggested consulting with IAEA on the plant hardware design prior to construction . . . . [A]s it is the NRC's responsibility to license the enrichment facility, its requirements for the protection of health and safety of the public and the common defense and security take precedence over IAEA inspection schemes and protocols. Nonetheless, these [material control and accountability] requirements were developed cognizant of the IAEA programs because the U.S. is a member country of the IAEA and complies with IAEA requirements. Consequently, the suggestion of the commenter is refused. 56 Fed. Reg. 55,995.

Thus it appears that the Commission deliberately refused to incorporate a requirement that the International Atomic Energy Agency (IAEA) be consulted on the design of enrichment plants to facilitate later IAEA inspections. It is clearly the Commission's position that compliance with its performance criteria, as they are expressed in the new rule, is all that is needed; that further specific provision in the plant design for projected IAEA inspection is superfluous.

CANT itself asserted at the prehearing conference that "the NRC's final rule that was published on October 31, 1991, now says that the Commission has decided not to require plants to be designed in accordance with IAEA specifications." Tr. 109. That is not quite correct. The Commission evidently believes that it has accommodated anything the IAEA would need with the provisions of the present rule.

The actual hardware needed to comply with those provisions is the subject of Contentions L and M, above. The notion that the designers of the plant need consult with the IAEA to facilitate inspections has been rejected by the Commission. We see nothing else in the contention. It is rejected.

We note here that LES has raised a general objection to the admission of these four contentions, alleging that their content is "a matter before the Commission rather than the Board." Tr. 110. The Commission in its Notice of Hearing and Commission Order of May 21, 1991, provided the opportunity to move the Commission to reconsider any portion of part III of the notice, "III. Commission Order: Criteria for the Issuance of a License," 56 Fed. Reg. 23,310, 23,313 (1991).

The document that engenders this objection, "Citizens Against Nuclear Trash's Objection to Commission Order Dated May 21, 1991, and Comments on Proposed Licensing Standards for Uranium Enrichment Plants" of October 7,

1991, does indeed pend before the Commission for whatever action that body may take. It is also true that these four contentions constitute an attachment to the document. However, a glance at the content of the document itself reveals that the attachment is meant to support CANT's comment on the proposed general design criteria for enrichment facilities. CANT evidently believes that the Commission should include among those criteria a criterion specifying that the design of the facility should be "conducive to implementation of effective, advanced . . . safeguards techniques and procedures."

CANT simply asks the Commission to "give consideration to the issues raised" in the contentions and to the material upon which the contentions are based. The only relief sought before the Commission is the inclusion of certain phraseology in its plant design criteria. Whether or not the Commission ultimately includes such a criterion in its regulations, the presence of the extant 10 C.F.R. § 74.33(c)(5)(i), taken with the material CANT has submitted, offers sufficient basis for the admission of Contentions L and M, and the Supplementary Information cited above offers sufficient grounds for rejecting Contention O. The action that the Commission may take in response to CANT's pending request for relief is simply irrelevant to the admission of these contentions.

Contention P. Liability Insurance

LES proposes to purchase $120 million in liability insurance. This amount is insufficient to cover LES' potential liability, and is not supported by adequate justification.

For its basis, CANT relies on a Staff request for information which is contained in the letter dated June 25, 1991. Without explanation, the letter states that the amount of liability insurance should be "justified in terms of a reasonable evaluation of the risks required to be covered." CANT incorporates this by reference into the contention. Petitioner adds that the assessed value of property in Claiborne Parish is $540 million, which is far more than the $120 million LES proposes to obtain.

The contention fails to meet the requirements of 10 C.F.R. § 2.714(b)(2)(i), (ii), and (iii). No rational explanation is offered to show that the amount of insurance is inadequate. Because the amount of insurance is less than the assessed value of the property in Claiborne Parish does not show that the insurance is inadequate. The issue is whether potential liability for damages that can be caused by the plant will exceed the amount of insurance. This was never discussed in the contention.

The claim that the amount of insurance is not supported by adequate justification is a bare assertion not supported by alleged facts, expert opinion, or explanation, as required by the regulations. The mere request for information

by Staff, without further explanation by Staff and the Petitioner, does not meet the regulatory requirements. The contention is rejected.

Contention Q. Financial Qualifications

LES has not demonstrated that it is financially qualified to build and operate the CEC.

Again, for its basis, CANT relies on a Staff request for information which is contained in the letter of June 25. There are six categories of questions seeking financial information. No explanation is offered by Staff or Petitioner as to why the information is requested or what the consequences are of failing to include the information in the application. The incorporation of the bare questions into the basis of the contention fails to support the contention as is required by the regulations.

Additionally, CANT asserts that LES's financial qualifications are undermined by the fact that two of the four partners in the venture, Duke Power Company and Northern States Power Company, are financially committed only to fund activities during the "venture phase" up to specific ceilings and intend to leave the LES partnership once a construction permit is granted. Petitioner relies on a document titled "Louisiana Energy Services, L.P., a Report to the North Carolina Utilities Commission from Duke Power Company," dated June 20, 1990.

The report confirms that the LES partners are financially committed only to fund LES activities during the venture phase and only up to specific ceilings. It is also the intention of Duke Power Company to sell or redeem the large majority of its shares in LES to outside investors and perhaps to retain a small interest in order to meet NRC licensing requirements. The venture phase was defined as the period during which LES will undertake the securing of an NRC license, marketing the product, and seeking major investors to finance construction of the plant.

Petitioner's contention that LES has not demonstrated that it is financially qualified to build and operate CEC because partners are not committed to fund the building and operation of the facility is admissible. It provides sufficient facts to show a dispute with the Applicant on a material issue of fact. CANT relies on information that has been prepared by one of the principal's affiliates. Should the contention be proven it could be of consequence and entitle Petitioner to relief. The regulatory requirements for the admission of the contention have been satisfied.

Contention R. Management Competence and Integrity

Urenco, the primary impetus behind LES, has proven unable to control the spread of its enrichment technology, which can be used to produce nuclear weapons. There is thus no reasonable assurance that Urenco possesses the requisite corporate character to operate the CEC in a safe and lawful manner.

For its basis, CANT relies on newspaper and trade publication articles reporting that: design blueprints for a Urenco centrifuge were seen in Iraq in 1988; in August 1990, unidentified customs officials confiscated equipment for Urenco-designed centrifuges that was destined for Iraq; and that, through covert activity, Pakistan obtained its enrichment technology from Urenco.

Objections have been raised because the contention is premised on hearsay. That is no bar to the admission of a contention. Contentions based on newspaper articles have been admitted in the past. *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), LBP-86-11, 23 NRC 294, 301 (1986); ALAB-852, 24 NRC 532, 536 (1986).

The issue is whether the contention is supported as required by section 2.714(b)(2). We find that it is not. The articles are too vague to support the contention. They allege that Urenco technology was found in the possession of Iraq and Pakistan. However, they lack sufficient specificity to claim that this was caused by Urenco. Absent any such showing, the contention is a vague, unparticularized charge which is inadmissible. *Catawba,* ALAB-687, *supra.*

Contention S. Quality Assurance

LES has not submitted an adequate quality assurance plan for construction and operation of the CEC.

The basis for the contention is the request for information contained in the June 25, 1991 Staff letter. CANT incorporates the questions raised about quality assurance by reference. No explanation is offered as to how the requests are relevant to the contention.

The request for information has thirty-six numbered requests. They ask LES to describe, consider, clarify, eliminate, or address various matters. No reliance is placed on any regulatory guides for the requested information nor are there explanations overall as to why the information is needed.

What CANT has done in effect is to ask the Board to root through Staff's inquiry and to find something that would support the contention. The proffer is wholly unacceptable. It fails to conform to the process that requires Petitioner to provide an explanation of the basis for the contention with statement of facts upon which it intends to rely that will show a dispute with the Applicant on a material issue of law or fact. The contention is rejected.

Party Status

Section 2.714(b)(1) authorizes the admission of a petitioner as a party, if it submits at least one admissible contention. CANT has satisfied this requirement and should be admitted as a party.

Further Actions

The Board will arrange for a prehearing conference for the purpose of setting a schedule for further actions in the proceeding, narrowing the issues, and considering similarly appropriate measures for moving the case forward.

IV. ORDER

Based upon all of the foregoing, it is hereby ORDERED:

1. Contentions B, H, I, J, K, L, M, and Q are admitted, in the manner described. All others are rejected; and
2. CANT is admitted as a party.

THE ATOMIC SAFETY AND
LICENSING BOARD

Frederick J. Shon
ADMINISTRATIVE JUDGE

Richard F. Cole
ADMINISTRATIVE JUDGE

Morton B. Margulies, Chairman
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland
December 19, 1991.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of **Docket No. 50-443**
(License No. NPF-86)

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, *et al.*
(Seabrook Station, Unit 1) **December 27, 1991**

The Director, Office of Nuclear Reactor Regulation, denies a petition filed by Mr. Michael C. Sinclair of Graystone Emergency Management Associates requesting that the U.S. Nuclear Regulatory Commission withhold a determination on whether the directive in ALAB-941, 32 NRC 337 (1990), was satisfied in the Seabrook Station 1990 FEMA/NRC graded exercise. Mr. Sinclair contended that the directive would not be satisfied until there is documented evidence that the vast majority of the participating schools have adequately demonstrated the ability to effect their implementing procedures for the New Hampshire Emergency Plan. As basis for the request, Petitioner asserts that the Federal Emergency Management Agency's conclusions regarding the exercise, set forth in a March 1, 1991 letter, did not adequately address the Appeal Board's directive in ALAB-941.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDINGS

The institution of proceedings pursuant to 10 C.F.R. § 2.202 is appropriate only if substantial health and safety issues have been raised.

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

INTRODUCTION

By letter of April 12, 1991, Michael C. Sinclair, of Graystone Emergency Management Associates, submitted to the Atomic Safety and Licensing Board (ASLB) a request that the U.S. Nuclear Regulatory Commission (NRC) withhold a determination on whether the directive in ALAB-941, 32 NRC 337 (1990), was satisfied in the Seabrook Station 1990 FEMA/NRC graded exercise. ALAB-941 concerns, *inter alia*, a deficiency in the scope of the June 1988 full-participation exercise at Seabrook regarding the failure to elicit sufficient school participation to have enabled the verification of the schools' integrated capability to respond to the accident scenario. In ALAB-941, the Appeal Board directed that the deficiency be cured in a subsequent exercise. Mr. Sinclair contended that the directive would not be satisfied until there is documented evidence that the vast majority of the participating schools have adequately demonstrated the ability to effect their implementing procedures for the New Hampshire Emergency Plan. Although Mr. Sinclair was not a party to the proceeding that is the subject of ALAB-941, he had previously brought his concern to the Licensing Board in a letter of March 25, 1991, in which he asserted that the Federal Emergency Management Agency's (FEMA's) conclusions regarding the 1990 Seabrook exercise, which were summarized in a March 1, 1991 letter from a FEMA official to the NRC Staff, did not adequately address the Appeal Board's directive.

By Memorandum and Order of May 24, 1991 (unpublished), the Appeal Board stated that it was treating Mr. Sinclair's letter as a request for action pursuant to 10 C.F.R. § 2.206, and, accordingly, referred the letter (hereinafter Petition) to the Executive Director for Operations (EDO) for disposition under that regulation.

By letter of June 27, 1991, I informed Mr. Sinclair (hereinafter Petitioner) that his request had been referred to me for action pursuant to section 2.206. A notice was published in the *Federal Register* on July 5, 1991, indicating that the NRC was considering the Petition (56 Fed. Reg. 30,777). In a letter of October 10, 1991, Mr. Sinclair requested a status report on the NRC's review of his Petition. In a letter of October 24, 1991, the Staff indicated that FEMA's assistance had been requested in responding to the Petition. The Staff made this request to FEMA in accordance with the April 1985 Memorandum of Understanding between FEMA and NRC.

The NRC Staff reviewed FEMA's response of October 10, 1991, and has concluded its evaluation of the Petition. For the reasons discussed below, the

NRC has concluded that the concerns raised in the Petition do not provide a basis for the action requested by the Petition, and denies the Petition.

DISCUSSION

The basis for the Petitioner's request, as set forth in the letters of March 25, 1991, and April 12, 1991, is that FEMA's conclusions regarding the 1990 Seabrook exercise set forth in a March 1, 1991 letter from a FEMA official to NRC Staff did not adequately address the Appeal Board's Directive in ALAB-941. Specifically, the Petitioner believes that the FEMA conclusions should not be interpreted as fully addressing the intent of the Appeal Board's directive to correct the failure to elicit sufficient school participation in the June 1988 exercise, nor as following FEMA's own Exercise Evaluation Methodology. In his April 12, 1991 letter, Mr. Sinclair asserts that there is a contradiction between the pre-exercise agreement, the FEMA exercise review methodology (Objective #19),[1] and what FEMA observed during the exercise. The basis for this assertion appears to be provided in Mr. Sinclair's March 25, 1991 letter in which he claims that (1) all schools were to be called, but in fact all were not contacted (because some were missing from the list and some did not answer the telephone); (2) there should have been more participation by the facilities themselves, e,g, participation by teachers in addition to school administrators; and (3) FEMA stated that it had "reached no conclusions about the adequacy of the performance of the exercise participants," and therefore could not conclude that the pre-exercise conditions were satisfied. In the Petitioner's opinion, the issue to be decided is not whether more special facilities participated in 1990, as FEMA concluded in its March 1, 1991 letter, but whether the participating facilities understood their roles and responsibilities and whether they fully implemented the procedures written for them as part of the emergency plan. According to the Petitioner, the answer to this question is not evident from the FEMA letter of March 1, 1991.

In its letter of March 1, 1991, FEMA summarized the results of the 1990 exercise and stated that

> this serves to confirm FEMA's judgemnt that the sample used in the 1990 Seabrook exercise was adequate to provide a reliable test of the provisions of the New Hampshire Radiological Emergency Response Plan (NHRERP) relating to notification of public and private schools and day-care centers. FEMA's conclusions about the adequacy of the performance of the exercise participants will be forwarded at a later time, in our exercise evaluation report.

[1] Objective 19 addresses implementation of protective actions related to evacuation of schools. Its intent is to demonstrate the ability and resources necessary to implement appropriate protective actions for schoolchildren within the plume EPZ.

On September 9, 1991, FEMA forwarded the exercise evaluation report dated August 23, 1991 (Report) to the NRC. The Report provided additional information on the evaluation of these facilities, consistent with the extent-of-play agreements (agreements made before the exercise among exercise participants as to the extent certain areas will be covered in an exercise). On October 10, 1991, FEMA responded to the NRC's request for assistance in responding to the Petition. The response provided information extracted from the Report at pages 80-88. This information contained FEMA's conclusions regarding the knowledge of the exercise participants of their roles and responsibilities during a radiological emergency, including eyewitness observations by FEMA personnel of the awareness of responsibility and the extent of preparedness of responsible personnel at a variety of schools. Based on this information, FEMA concluded in its October 10, 1991 letter to the NRC that it continued "to believe that the schools evaluated in the 1990 Seabrook exercise adequately demonstrated their knowledge of the provisions of NHRERP relating to the notification of public and private schools and day-care centers."

The NRC Staff concluded, after reviewing this information, that FEMA's evaluation included a determination of the school officials' knowledge of their roles and responsibilities during a radiological emergency and, following FEMA's own Exercise Evaluation Methodology identified only two Areas Requiring Corrective Actions (ARCA) associated with the exercise activities. These ARCA, and the schedule for corrective action provided by the State of New Hampshire, are identified in Attachment B to FEMA's October 10, 1991 letter to NRC.

Thus, the March 1, 1991 letter provided FEMA judgments about the adequacy of the number of schools that participated, and the Report followed up with more detailed and extensive information and conclusions confirming the adequacy of the implementation of protective actions and the performance of the exercise participants. This confirms that the directive of ALAB-941, *supra*, 32 NRC at 355, that "the failure to elicit sufficient school participation in the June 1988 exercise should be corrected in a subsequent exercise," has, in fact, been implemented.

Contrary to Mr. Sinclair's assertion that more participation was needed, full implementation of the plan does not require mandatory 100% participation. It is not "obligatory that the administration of every New Hampshire EPZ school participate in the exercise." (*Id.*). Also, the ALAB-941 decision does not mean "that the 1988 exercise required the direct involvement of classroom teachers, as distinguished from school administrators" (*id.* at 354). Therefore, FEMA's evaluation was properly limited to the capacity of school officials to arrive at that stage of the emergency plan that is short of mandatory 100% participation.

In a March 25, 1991 letter from the Petitioner to Judge Ivan Smith, Chairman of the ASLB, the Petitioner questioned the fact that the lists of schools and

day-care centers to be telephoned by FEMA were provided by New Hampshire Yankee, rather than by the State of New Hampshire. FEMA's response stated that the utility provided the lists in a format suitable for the telephone verification process, solely as a convenience to FEMA and the state. The lists were based entirely on existing state documents and state-provided information.

The Petitioner also criticized the inadvertent omission of a few schools and day-care centers from the lists used by FEMA to make the verification calls. FEMA does not view this as a significant omission, since the omission constitutes a small percentage of calls made in FEMA's verification effort on December 14, 1990. Both ALAB-941, 32 NRC at 342, 355, and FEMA's Guidance Memorandum EV-2 permit less than 100% verification during an exercise.

Another concern of the Petitioner relates to the pre-exercise agreement that all five school administrative offices in New Hampshire were to participate fully by calling all public and private schools in the New Hampshire portion of the emergency planning zone (EPZ). The five New Hampshire School Administrative Units (SAUs) identified in the NHRERP (SAUs 16, 17, 21, 50, and 52) participated in the December 1990 exercise. In accordance with the extent-of-play agreements, the five SAUs participated until the close of the school day. Consequently, the schools did not receive notification of the General Emergency because it occurred at 16:02, after the end of the school day, and not all schools and special facilities could be notified. However, all SAUs have been provided with tone-alert radios which can be used to notify them. The tone-alert radios, according to the extent-of-play agreements, were not activated during the exercise.

As set forth more fully in FEMA's Report, the Seabrook Station 1990 graded exercise was conducted in accordance with the exercise scenario and extent-of-play agreements. As also stated in its Report, in its evaluation, FEMA applied the criteria used in the FEMA evaluation process, including FEMA's own Exercise Evaluation Methodology (EEM). The EEM provides an objective-based method for FEMA to use in evaluating exercises pursuant to 44 C.F.R. Part 350 and 10 C.F.R. Part 50 (NRC). The exercise evaluations presented in FEMA's Report are based on the applicable objective, the extent of play, and evaluation criteria set forth in the Exercise Evaluation Forms.

CONCLUSION

The Petitioner has not raised any concerns that have not already been addressed by FEMA. For the reasons discussed above, I have concluded that the Appeal Board's directive in ALAB-941 concerning the deficiency in the June 1988 Seabrook exercise has been satisfied. Therefore, the Petitioner has

not provided a basis that would warrant the relief requested. The institution of proceedings pursuant to 10 C.F.R. § 2.202 is appropriate only if substantial health and safety issues have been raised (*see Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 175 (1975); *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 924 (1984). This is the standard that I have applied to the concerns raised by the Petitioner in this Decision to determine if enforcement action is warranted. Consequently, I have denied the Petitioner's request.

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

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 27th day of December 1991.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Thomas E. Murley, Director

In the Matter of

ALL NUCLEAR POWER REACTORS **December 31, 1991**

The Director, Office of Nuclear Reactor Regulation, denies a Petition filed by the Nuclear Control Institute and the Committee to Bridge the Gap requesting the Nuclear Regulatory Commission to institute an individual plant examination (IPE) program that would request licensees to evaluate the margin of nuclear power plants to withstand an attack by explosive-laden surface vehicles and by a larger number of attackers using more sophisticated weapons than specified in the current design-basis threat. As bases for the request, the Petitioners assert that there is a risk from terrorist activities beyond the design-basis threat, that the level of protection varies from plant to plant, that the ongoing IPE program would be a very useful and cost-effective point of departure for a similar evaluation of terrorist threats, and that vulnerabilities that are identified can be eliminated or their effects reduced.

PHYSICAL PROTECTION: PROTECTION AGAINST THE DESIGN-BASIS THREAT OF RADIOLOGICAL SABOTAGE

Section 73.55 of 10 C.F.R. requires licensees to establish and maintain an onsite physical protection system and security organization designed to protect against the design-basis threat of radiological sabotage as defined in 10 C.F.R. § 73.1(a)(1). This is accomplished by a combination of detection, interception, and physical protection.

PHYSICAL PROTECTION: PROTECTION AGAINST THE DESIGN-BASIS THREAT OF RADIOLOGICAL SABOTAGE

The design-basis threat provides a standard for judging the adequacy of physical protection systems, analogous to using design-basis accidents in judging the adequacy of safety systems. This design-basis threat of Part 73 is not an additional standard for judging the adequacy of safety systems pursuant to Part 50 requirements.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDINGS

The NRC will not institute a proceeding pursuant to 10 C.F.R. § 2.206 where the petition fails to raise any substantial health or safety issue.

SABOTAGE: RELATION TO REGULATORY REQUIREMENTS

The Commission's regulations do not require licensees to design safety systems to be resistant to various acts of sabotage, although the diverse and redundant safety systems and structures at nuclear power plants provide some inherent protection against such acts.

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

INTRODUCTION

On September 4, 1991, the Nuclear Control Institute and the Committee to Bridge the Gap (Petitioners), filed a Petition in accordance with 10 C.F.R. § 2.206 with the U.S. Nuclear Regulatory Commission (NRC or Commission). On September 20, 1991, the Petitioners submitted an Annex to the Petition. The Petition was referred to the Director, Office of Nuclear Reactor Regulation, for consideration.

The Petition asked the Commission to institute an individual plant examination (IPE) program requesting licensees to evaluate the margin of nuclear power plants to withstand an attack by explosive-laden surface vehicles and by a larger number of attackers using more sophisticated weapons than specified in the current design-basis threat. The Petition asserts as grounds for this request the following: (1) there is a risk from terrorist activities "beyond the design basis;" (2) the actual level of protection inherent in the structures and safety systems varies from plant to plant and the level of physical protection in security systems is likewise variable; (3) the ongoing IPE program would be a very

useful and cost-effective point of departure for a similar evaluation of terrorist threats, specifically to demonstrate whether the compromise of certain collocated safety equipment from a terrorist attack still leaves adequate capability to shut down the plant and maintain it in a secure state; and (4) vulnerabilities that are identified can be eliminated or their effects reduced.

On October 7, 1991, I acknowledged receipt of the Petition. I informed Petitioners that (1) the Petition would be treated pursuant to 10 C.F.R. § 2.206 of the Commission's regulations and (2) appropriate action would be taken in a reasonable time. For reasons discussed below, the Petition is denied.

BACKGROUND

The Petition asked the Commission to institute an IPE program requesting licensees to evaluate the margin of nuclear power plants to withstand safeguards events beyond the current design-basis threat. An IPE is a systematic examination of plant design and operation that looks for vulnerabilities to severe accidents and cost-effective safety improvements that reduce or eliminate the important vulnerabilities. The ongoing IPE program has been a key part of implementing the Commission's Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants (50 Fed. Reg. 32,138 (Aug. 8, 1985)). This statement describes the policy the Commission has established to resolve safety issues related to reactor accidents more severe than design-basis accidents. The Commission considered the issue of sabotage in developing the severe-accident policy statement and did not include sabotage as a potential initiating event to be addressed in evaluating existing plants. Both the proposed (48 Fed. Reg. 16,014 (Apr. 13, 1983)) and final Policy Statement include the following language:

> The issues of both insider and outsider sabotage threats will be carefully analyzed and, to the extent practicable, will be emphasized as special considerations in the design and in the operating procedures developed for *new plants*. [Emphasis added].

The NRC received no public comments regarding this statement.

To help implement the policy statement, Generic Letter 88-20, "Individual Plant Examination for Severe Accident Vulnerabilities — 10 C.F.R. 50.54(f)," dated November 23, 1988, requested that each licensee conduct an IPE for internally initiated accidental events only. On June 28, 1991, the NRC issued Supplement 4 to Generic Letter 88-20, to request that each licensee conduct a systematic IPE for severe accidents initiated by accidental external events (IPEEE). The NRC issued the request for an IPEEE after issuing the request for an IPE to allow the Staff to perform additional work to (1) identify which external hazards need to be evaluated, (2) identify acceptable examination

methods and develop procedural guidance, (3) coordinate with other ongoing external-event programs, and (4) conduct a workshop to explain the IPEEE process and to obtain comments and questions on the draft generic letter supplement and associated guidance document. In the workshop, and as later documented in the IPEEE guidance document (NUREG-1407), the Staff specifically stated that sabotage was not to be addressed as part of the IPEEE.

The general purpose of the IPEEE is similar to that of the internal-event IPE — that is, that each licensee (1) develop an appreciation of severe-accident behavior; (2) understand the most likely severe-accident sequences that could occur at its plant under full-power operating conditions; (3) gain a qualitative understanding of the overall likelihood of core damage and radioactive material release; and (4) if necessary, reduce the overall likelihood of core damage and radioactive material release by modifying hardware and procedures that would help prevent or mitigate severe accidents. Consistent with the Commission's severe-accident policy statement, neither the IPE nor the IPEEE addressed intentional acts of radiological sabotage.

The Commission's regulations do not require licensees to design safety systems to be resistant to various acts of sabotage, although the diverse and redundant safety systems and structures at nuclear power plants provide some inherent protection against such acts. Instead, 10 C.F.R. § 73.55 requires licensees to establish and maintain an onsite physical protection system and security organization designed to protect against the design-basis threat of radiological sabotage as defined in 10 C.F.R. § 73.1(a)(1). This is accomplished by a combination of detection, interception, and physical protection. The design-basis threat is defined in section 73.1(a)(1) as:

> (i) A determined violent external assault, attack by stealth, or deceptive actions, of several persons with the following attributes, assistance and equipment: (A) Well-trained (including military training and skills) and dedicated individuals, (B) inside assistance which may include a knowledgeable individual who attempts to participate in a passive role (e.g., provide information), an active role (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack), or both, (C) suitable weapons, up to and including hand-held automatic weapons, equipped with silencers and having long range accuracy, (D) hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or otherwise destroying reactor, facility, transporter, or container integrity or features of the safeguards system, and
>
> (ii) An internal threat of an insider, including an employee (in any position).

This design-basis threat provides a standard for judging the adequacy of physical protection systems, analogous to using design-basis accidents in judging the adequacy of safety systems. This design-basis threat of Part 73 is not an additional standard for judging the adequacy of safety systems pursuant to Part 50 requirements. Rather, Part 73 establishes additional independent requirements to protect against the design-basis threat.

To assure itself that this Part 73 design-basis threat remains adequate, prudent, and reasonable, the Staff continually reviews the threat from terrorist activities in the world environment (the "threat environment"). Staff analysis and recommendations are provided to the Commission semiannually. Following incidents in the Middle East in the mid-1980s in which terrorists used explosive-laden vehicles as bombs, the Commission considered if the design-basis threat should be changed to include vehicle bombs. The Commission decided that it would not be necessary to change the design-basis threat or to require licensees to provide permanent protective measures against land-vehicle bombs. However, as a matter of prudence, the Commission issued Generic Letter 89-07, "Power Reactor Safeguards Contingency Planning for Surface Vehicle Bombs," on April 28, 1989. In Generic Letter 89-07, the Commission requested licensees to prepare plans and make advance arrangements to implement, within 12 hours, short-range contingency measures in the event that the threat environment affecting reactors in the U.S. changes in a way that prompts the Commission to determine that protection against a land-vehicle bomb threat is appropriate.

The Petitioners previously requested, on January 11, 1991, that the Commission revise its regulations to increase the design-basis threat for nuclear power reactors to include explosive-laden vehicles and a larger number of attackers using more sophisticated weapons. On June 11, 1991, the Commission denied the Petition for Rulemaking based on a determination that there has been no change in the threat environment affecting reactors in the U.S. since the design-basis threat was adopted, that would justify a change in the design-basis threat (56 Fed. Reg. 26,782).

DISCUSSION

The current Petition does not present any information or identify any issues that the Commission has not already considered and addressed in its rulemaking activities concerning sections 73.55 and 73.1(a); policy decisions on severe accidents and the implementing IPE and IPEEE programs; and the denial of the Petitioners' previous request to increase the design-basis threat for radiological sabotage. In describing their perception of the need for an IPE for safeguards events, the Petitioners state that there is a risk from terrorist activities beyond the design basis. The NRC recognizes that any design-basis threat has some related residual risk. One of the purposes of establishing a design-basis threat is to define a policy position on the level of safeguards that is prudent. This issue was previously addressed in the Petition for Rulemaking to revise the design-basis threat. In denying that Petition, the Commission stated that it continues to believe that there is no credible threat targeting power reactors in this country (56 Fed. Reg. 26,782, 26,785 (June 11, 1991)). The current design-basis threat is a

hypothetical threat used to develop regulatory requirements, provide a standard against which changes in the real threat environment can be evaluated, and provide a standard that the Commission considers reasonable for evaluating the implementation of safeguards (*id.* at 26,785 and 26,788).

The Petitioners further state that although the Commission has denied their previous Petition for Rulemaking, action short of a change in the design-basis threat for radiological sabotage remains appropriate. The Staff notes that, by issuing Generic Letter 89-07, the Commission has already taken prudent action short of a change in the design-basis threat regarding surface vehicles laden with explosives.

The Petition states that the actual level of protection inherent in the structures and safety systems varies from plant to plant, that the level of physical protection inherent in security systems is likewise variable, and that the ongoing IPE Program would be a useful and cost-effective point of departure for similar evaluation of terrorist threats. In describing the proposal for a sabotage IPE, the Petition states the following:

> Specifically, using the PRA-type models developed in the IPE for plant systems, their interdependencies and relationships, and the way the plant equipment and personnel respond when one or another system or function is compromised, and using the spatial-collocation information developed for the flood-IPE and fire-IPE examinations, an analysis can readily be accomplished to demonstrate whether the compromise of certain collocated equipment from a terrorist attack still leaves adequate capability to shut down the plant and maintain it in a secure state.

The Petition further states the following:

> Of course, PRA-type methods can only be used to assess configuration-type vulnerabilities, and not to quantify in an absolute sense, the likelihood of a terrorist attack (the "initiating event" in the PRA-type analysis). Nobody can know what the likelihood of such an attack might be. Hence it is not possible to analyze for "core damage frequency" in analogy to how PRAs calculate this same frequency for inadvertent accidents.

The NRC has already performed or caused to be performed the PRA-type analyses requested in the Petition. In May 1991, the NRC completed its Regulatory Effectiveness Review (RER) Program which included performing a qualitative fault-tree analysis of every operating nuclear power plant. These fault-tree analyses use PRA-type models for plant systems, their interdependencies and relationships, and the way the plant equipment and personnel respond when one or another system or function is compromised. These fault-tree analyses also use spatial-collocation information to determine areas that, if successfully protected against adversaries, would provide adequate capability to shut down the plant and maintain it in a secure state. Since it began the RER program in 1981,

the NRC has used the results of these analyses in validating each licensee's identification of vital equipment and areas.

Since early 1987, the Staff has also used these analyses to identify specific sets of safety equipment which, if lost, would create the most significant challenge to maintaining the plant in a safe condition. The NRC has used the spatial location of these sets of equipment in table-top exercises and licensee contingency response drills to evaluate licensee capability to respond to an external threat with characteristics attributed to the design-basis threat. The Staff will continue to use the fault-tree analyses in new operational safeguards response evaluations of contingency response capabilities at sites where contingency drills were not observed by RER teams. The Staff will review available IPEs and IPEEEs, as appropriate, to update the results of fault-tree analyses from the previous RER program.

Some licensees have also used PRA-type analyses in responding to Generic Letter 89-07. At a sufficient distance, a vehicle bomb would present no safety challenge to a nuclear power reactor, regardless of the spatial relationships and interdependencies of the safety systems. Some licensees have chosen to implement their contingency plans at such distances. Other licensees have conducted analyses of spatial relationships and interdependencies of safety equipment to establish closer distances for implementing contingency plans. NUREG/CR-5246, "A Methodology to Assist in Contingency Planning for Protection of Nuclear Power Plants Against Land Vehicle Bombs," April 1989, describes a PRA-type methodology similar to that proposed by the Petitioners, which could be used by licensees to develop contingency plans.

The Annex to the Petition submitted on September 20, 1991, describes examples of plant designs and events that the Petitioners consider represent "possible types of vulnerabilities to beyond-the-design-basis safeguards events." The Petitioners assumed the success of sabotage on certain equipment before interdiction by the security force. Although the NRC Staff does not agree with all of the details and conclusions of the Annex, the examples are similar to those developed by Staff using site-specific fault-tree analyses (where it is assumed that the saboteurs have successfully damaged some equipment before interdiction) as part of the RER and follow-on programs, which evaluate the effectiveness of licensee safeguards programs to protect against various sabotage scenarios.

These effectiveness evaluations conducted by the Staff differ from those proposed in the Petition in one respect. The Staff does not address adversary capabilities beyond those specified in the design-basis threat. Conducting evaluations using more extensive threat characteristics would not provide useful information on the design of safety systems since one of the purposes of the design-basis threat is to provide a standard for evaluating implemented safeguards measures. This design-basis threat is well beyond the actual current

threat environment. The PRA-type fault-tree analyses are not affected by assumptions regarding adversary characteristics. Rather, assumptions regarding adversary characteristics influence the evaluations of the effectiveness of the physical security systems and measures in place to protect against external attacks. Although some licensees have chosen to modify safety systems to increase the difficulty of radiological sabotage, weaknesses identified from the results of the effectiveness evaluations are normally corrected by changes in the physical protection measures.

What the Petition intends in requesting an analysis of each plant's ability to withstand marginal increases in the postulated threat is not clear. The Petition contends that "an overall assessment will be feasible as to how much 'margin' exists beyond the design basis for each plant." The Petition also recognizes that PRA-type methods cannot be used to analyze for "core damage frequency" since one cannot quantify the likelihood of a terrorist attack.

On one hand, the Petition could be interpreted as a request for an analysis of the impact of marginal increases in the postulated threat on the effectiveness of safeguards measures. Having over 15 years of experience in evaluating the overall effectiveness of physical security systems, the Staff believes that such evaluations do not lend themselves to quantitative analysis or qualitative PRA-type analyses. The Staff has successfully used other types of qualitative techniques in evaluating the effectiveness of safeguards measures against general adversary capabilities. However, these techniques are insensitive to marginal changes in the postulated threat.[1]

On the other hand, based on the Petition's description of the specific type of analysis proposed and the examples in the Annex, the Petition could be interpreted as directly connecting increases in the design-basis threat with the compromise of collocated safety equipment. The Staff has been conducting the PRA-type analyses proposed in the Petition for about 10 years and has found that such a direct connection cannot be made. PRA-type analyses help identify various combinations of safety equipment which, if at least one combination is protected, would allow a licensee to maintain a plant in a safe condition. PRAs cannot assess the probability that a saboteur would choose to damage one set of equipment over another. There is no practical way to directly connect threats marginally greater than the design-basis threat with sabotage of any amount of safety-related equipment.

[1] An example of a postulated change in general adversary characteristics involved the use of a vehicle for entry into a protected area. The NRC evaluated whether this would significantly impact the effectiveness of site-specific physical security measures. In evaluating this postulated change, the Staff identified only one set of circumstances in which a vehicle could have significantly impacted the ability of a power reactor licensee to protect the public health and safety. The Licensee subsequently revised its security measures in such a way that the use of a vehicle became insignificant. However, the effectiveness of safeguards measures as measured by drills and exercises is generally insensitive to marginal increases in the postulated number of attackers.

The Petition states that "vulnerabilities" that are identified can be eliminated. It also notes that the proposed program would produce an assessment of the adequacy of the NRC's own safeguards regulations against terrorist threats. These were essentially the goals of the RER program. Having conducted comprehensive evaluations for 10 years, the Staff concluded that the NRC's safeguards regulations were sound (SECY-91-052, Feb. 26, 1991). RER reviews of safeguards effectiveness at each power reactor site led to more than 500 safeguards improvements. Although the RER program has been completed, the NRC has maintained the unique inspection capabilities developed during the RERs and is continuing to use these capabilities to evaluate the effectiveness of implemented safeguards.

In summary, the Petition is denied for the following reasons:

1. The Petition does not present any information or identify any issues that the Commission has not already considered and addressed in previous policy decisions and rulemaking.
2. The Part 73 design-basis threat for radiological sabotage provides a standard for judging the adequacy of physical protection measures, analogous to using design-basis accidents in judging the adequacy of safety systems. The design-basis threat is not an additional standard for judging the adequacy of safety systems.
3. The Commission considered the issue of sabotage in developing the severe-accident policy statement and did not include sabotage as a potential initiating event to be addressed in evaluating existing plants. Consistent with the severe-accident policy statement, neither the IPE nor the IPEEE addressed intentional acts of sabotage.
4. On June 11, 1991, the Commission denied an earlier Petition for Rulemaking from the same Petitioners requesting revision of the NRC's regulations to increase the design-basis threat for nuclear power reactors to include explosive-laden vehicles and a larger number of attackers using more sophisticated weapons.
5. The Staff has performed a qualitative fault-tree analysis of every operating nuclear power plant to ensure that sufficient equipment is protected to provide adequate capability to shut down the plant and maintain it in a secure state. The Staff used these analyses in its RER and continuing programs to evaluate the effectiveness of NRC's safeguards regulations and licensee-implemented safeguards to protect this equipment against the Commission's design-basis threat.
6. To implement Generic Letter 89-07, some licensees have chosen to develop their vehicle bomb contingency plans for distances that would present no safety challenge to a nuclear power reactor. Other licensees have conducted PRA-type analyses such as those requested in the Petition as a basis on which to develop their contingency plans.

7. Techniques for evaluating the effectiveness of physical security measures are generally insensitive to marginal increases in postulated threats, and there is no practical way to directly connect threats marginally greater than the design-basis threat with sabotage of any amount of safety-related equipment.

CONCLUSION

The NRC Staff has reviewed the Petitioners' request that the Commission institute an IPE program requesting licensees to evaluate the margin of nuclear power plants to withstand an attack by explosive-laden surface vehicles and by a larger number of attackers using more sophisticated weapons than specified in the current design-basis threat.

Institution of proceedings in response to a request made pursuant to 10 C.F.R. § 2.206 is appropriate only when substantial health and safety issues have been raised. *See Consolidated Edison Co. of New York* (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 176 (1975), and *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). The NRC has applied this standard to determine if the actions requested in the Petition are warranted. For the reasons discussed above, the NRC has no basis for taking the actions requested in the Petition, since no substantial health and safety issues have been raised by the Petition. Accordingly, the Petitioners' request for action pursuant to 10 C.F.R. § 2.206 is denied.

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

FOR THE NUCLEAR
REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor
Regulation

Dated at Rockville, Maryland,
this 31st day of December 1991.

CASE NAME INDEX

ALL NUCLEAR POWER REACTORS
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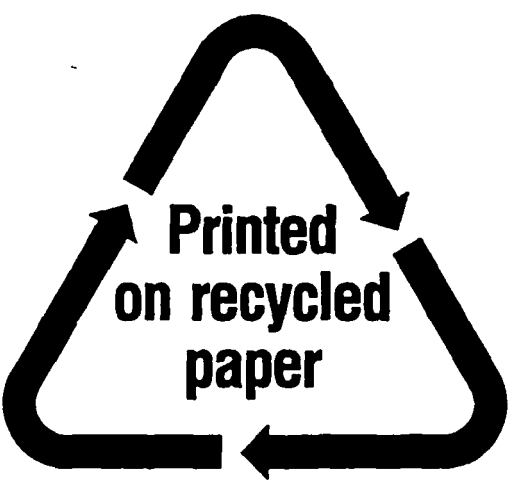

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